OFFICE de la RECHERCHE
SCIENTIFIQUE et TECHNIQUE
OUTRE MER (FRANCE)

ESTUDIO REGIONAL INTEGRADO DEL ALTIPLANO CUNDIBOYACENSE

ANEXO PLUVIOMETRICO

IGAC

INSTITUTO GEOGRAFICO "AGUSTIN CODAZZI"

BOGOTA, COLOMBIA, 1982

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P R O Y E C T O I G A C - O R S T O M

GRUPO DE HIDROCLIMATOLOGIA

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INTRODUCCION

Los datos reunidos en este anexo son el complemento lógico de un análisis pluviométrico detallado del Altiplano Cundiboyacense. Este análisis se ha efectuado en el cuadro de un estudio regional integrado, realizado conjuntamente por:

- El Instituto Geográfico "Agustín Codazzi" de Colombia (IGAC)
- L' Office de la Recherche Scientifique et Technique Outre-Mer de Francia (ORSTOM).

La región estudiada es una parte de los departamentos de Boyacá y Cundinamarca, y comprende esencialmente:

. Las cuencas de los ríos BOGOTA y SUMAPAZ

. La cuenca del río BATA (hasta Chivor).

. La cuenca del río CHICAMOCHA (hasta Paz de Río).

. La cuenca del río SUAREZ (hasta Barbosa).

Todas las estaciones de la red pluviométrica situadas en la zona del estudio no han sido consideradas porque no es el objetivo del estudio integrado mencionado.

Sin embargo, los datos de 258 estaciones se publican en este anexo con una serie de tratamientos que permiten verificar la homogeneidad de los datos y de reconstituir los valores faltantes.

En resumen, estos cálculos permiten conocer las características pluviométricas precisas de la región, tanto desde el punto de vista espacial como del cronológico, y de constituir así una base de datos completos y confiables que pueden servir al futuro desarrollo del Altiplano Cundiboyacense.

Tenemos que agradecer al HIMAT, al Servicio Hidrológico de la CAR y a la Federación de Cafeteros de Colombia, entidades que nos facilitaron la recolección de los datos, como también a la Sección de Sistemas del IGAC que se encargó de su preparación para el tratamiento automático (soporte informático). Sin todas estas personas, este largo trabajo no habría sido posible.

En este anexo, se ha resumido de manera simple la metodología empleada. Los puntos de detalles, las demostraciones y los resultados cartográficos son comentados en el ESTUDIO PLUVIOMETRICO DEL ALTIPLANO CUNDIBOYACENSE.

1. Metodología empleada (Resumen)

Con el fín de no permanecer en un contexto demasiado general, las recomendaciones que se harán desde los puntos de vista agrícola, energético, de la infraestructura y del consumo de agua potable, tendrán necesidad de un diagnóstico preciso en cuanto a la evaluación de los requerimientos y de los riesgos debidos al agua en los diferentes dominios.

Por ser la lluvia uno de los factores principales de estas necesidades y la causa primordial de los riesgos, nos ha parecido necesario analizar de manera precisa las características pluviométricas del Altiplano Cundiboyacense.

Para ello hemos empleado la metodología siguiente:

- Toma en cuenta de la red pluviométrica existente y antigua de más de 5 años.
- Análisis de cada estación pluviométrica con el fin de verificar la homogeneidad de su serie cronológica.
- Extensión de datos mensuales y anuales sobre un período de 20 años (1960-1979), permitiendo así la constitución de una red pluviométrica "operacional".

Debido al gran número de estaciones situadas en la zona de trabajo, el tratamiento de la información y los diferentes cálculos han sido efectuados en computador, tomando como base de trabajo una serie de programas elaborados por el Servicio Hidrológico del ORSTOM en los años 70 con el fín de formar un banco de datos pluviométricos para el Africa Occidental.

1.1 Composición de la red básica

En total, 258 estaciones han sido seleccionadas entre las estaciones de la red pluviométrica existente, tanto en la zona misma de estudio como en sus alrededores inmediatos con el fin de obtener una buena precisión para el trazado de las isolíneas.

Estas estaciones son administradas principalmente por el HIMAT, la CAR, la EAAB y la Federación Nacional de Cafeteros.

1.2 Análisis de los datos

Las estaciones de la red básica han sido reagrupadas por zonas geográficas (25); cada zona presenta una cierta homogeneidad desde el punto de vista del régimen pluviométrico.

Ejemplos:

- La parte baja del Valle de Tenza
- La cuenca alta del río Tunjuelo
- La ciudad de Bogotá.

Al interior de una misma zona geográfica los totales pluviométricos anuales acumulados de cada estación son analizados por el método de "simples masas" y comparados con los datos de las otras estaciones por el método de "dobles masas".

Una serie cronológica es considerada homogénea si la representación gráfica de sus totales anuales acumulados están aproximadamente sobre una misma recta, cuando se les compara, ya sea:

- Con los años tomados en cuenta (prueba de simples masas)
- Con los totales anuales acumulados de otra estación de su zona.

Las eventuales rupturas o cambios de pendiente que pueden aparecer sobre los gráficos de simples masas son quizás la consecuencia de una organización interna de la serie cronológica considerada (serie de años secos seguido de una serie de años húmedos) o bien de años excepcionales.

Con el fin de verificar si las rupturas encontradas son debidas a fenómenos no naturales (errores de medida, cambio de sitio, etc.).

es necesario comparar cada estación con todas las demás que pertenecen a la misma zona geográfica y de corroborar los resultados con la historia de la estación.

Las inconsistencias encontradas son corregidas cuando sea posible, o eliminadas.

1.3 Características de los datos seleccionados

Las estaciones en las cuales los datos no alcanzan cinco años completos han sido eliminadas.

Para las 220 estaciones restantes, varios cálculos se han efectuado con el fín de conocer las características pluviométricas completas de cada estación. Los resultados publicados se refieren a:

- Los valores medios
- Las frecuencias observadas
- Las variaciones interanuales
- La repartición en el año.
- La agresividad de la lluvia

1.4 Características de los datos extendidos sobre 20 años

Los coeficientes de correlaciones concernientes a los valores men-

suales y anuales, así como los coeficientes de regresiones concernientes a los valores anuales han sido calculados para ciertas estaciones bien repartidas espacialmente y que tienen más de 10 años completos de datos seleccionados.

Para estas estaciones, los datos faltantes han sido estimados sobre el período 1960-1979 con el fin de obtener una serie cronológica completa y homogénea de 20 años. Tal período es suficiente para obtener las características pluviométricas con una buena precisión.

Estas estaciones, en número de 100, constituyen la red pluviométrica "operacional" que servirá de base para la elaboración de cartas que acompañan el informe pluviométrico.

2. Explicaciones de los diferentes listados

Para más claridad se razonará sobre dos ejemplos:

- Una estación X que posee N años completos de observación. Sus totales anuales son designados por Xi y su media sobre N años por $\overline{XN}$.

- Una estación Y que tiene M años completos de observación, cuyos totales anuales son designados por Yi y la media sobre los M años por $\overline{YM}$.

Las dos estaciones tienen P años completos comunes y sus medias sobre ese número de años son $\overline{XP}$ y $\overline{YP}$.

2.1 Prueba de simples masas (estación X).

Esta prueba hace aparecer las siguientes variables:

- El número de años completos (N)
- Los años tomados en cuenta (AN)
- Los totales anuales (TA) tales que $TA = Xi$
- Los totales anuales acumulados (CU) : $CU = \Sigma X_i$
- La variación de la media (MOY) : $MOY = \frac{CU}{i}$
- La media sobre todo el período considerado: $\overline{XN} = \frac{CU}{N}$
- La desviación-stándar: $ETX = \left(\frac{\Sigma X_i^2 - N\,\overline{XN}^2}{N - 1} \right)^{\frac{1}{2}}$
- El coeficiente de variación $CVX = \frac{ETX}{\overline{XN}}$
- Los totales anuales reducidos (ECR) : $ECR = \frac{X_i - \overline{XN}}{ETX}$

- Los totales anuales acumulados y reducidos (PCAN):

$$PCAN = \frac{CU}{\overline{XN}} - i$$

Las variables ECR y PCAN están impresas y representadas respectivamente por un punto (.) y el signo (+).

Cuando estas dos variables se confunden, su posición está representada por un signo (*).

2.2 Prueba de dobles masas (estaciones X y Y)

Esta prueba imprime las siguientes variables:

- El número de años completos y comunes (N)
- Los años que poseen estas dos condiciones (AN)
- Los totales acumulados de las dos estaciones (CUX y CUY):

$$CUX = \Sigma X_i \qquad CUY = \Sigma Y_i$$

- Las medias de las dos estaciones sobre el período común considerado: $\overline{XP} = \frac{CUX}{P}$ $\overline{YP} = \frac{CUY}{P}$

- Las relaciones entre estas dos medias

$$\frac{\overline{XP}}{\overline{YP}} \qquad \frac{\overline{YP}}{\overline{XP}}$$

- Las relaciones anuales normalizadas (RAN)

$$RAN = \frac{X_i / Y_i}{\overline{XP} / \overline{YP}}$$

- La variable (PCAN) representando la posición relativa de los totales anuales acumulados y reducidos

$$PCAN = \frac{CUX}{\overline{XP}} - \frac{CUY}{\overline{YP}}$$

La variable RAN está representada gráficamente por un punto (.) y su variación corresponde a la escala de valores R (0, 6 ; 1, 4).

La variable PCAN está representada por el signo (+) y corresponde a la escala de valores P (-4 ; +4).

Cuando las dos variables se confunden gráficamente, su posición común está representada por el signo (*).

2.3 Interpretación de las pruebas

- En simples masas, una serie cronológica es considerada homogénea si su curva de totales acumulados (+) sigue aproximadamente el eje P = 0.0 recortándolo varias veces. De esta manera, las variables ECR (.) deben estar bien repartidas cronológicamente entre valores negativos y positivos.

Ejemplos: LA REGADERA (pág. 782)

MACANAL (pág. 88)

- A veces los totales acumulados aparecen bajo la forma de una recta separándose en diagonal del eje de origen a causa de un solo valor, ya sea muy fuerte o muy débil.

La exactitud de este valor debe ser verificado por dobles masas. Si el gráfico permanece igual cuando se compara con las otras estaciones vecinas, significa que el valor es aberrante y se debe a malas observaciones.

Ejemplo: ALMEIDA (pág. 1) donde 1961 aparece muy fuerte.
Comparando la estación con la de MACANAL (Pág. 2) y con otras, el año 1961 aparecen todavía muy fuerte.

Si la ruptura de pendiente desaparece con las pruebas de dobles masas se pueden considerar que el valor es correcto.

Ejemplo: VENTALARGA (pág. 803) donde 1950 es muy fuerte. En dobles masas con otras estaciones de FACATATIVA o de BOGOTA, la ruptura desaparece y las curvas de totales acumulados siguen el eje de origen. 1950 es pues un año excepcionalmente muy fuerte.

- En ciertos casos los totales acumulados se presentan bajo la forma de dos o varias rectas de pendientes diferentes. El ejemplo de UMBITA (pág. 264) es particularmente representativo. Para el período 1957-1964 la media interanual es X1 = 616 mm y para el período 1965-1978 la media interanual es X2= 997 mm. Se duda que tal cambio no es debido a una organización interna de la pluviometría, y las dobles masas efectuadas con las estaciones vecinas lo confirman. Se trata entonces de una modificación de la lluvia imputable a la intervención humana (error de medida, mala calibración, cambio de sitio, etc...).

  Examinando las estaciones vecinas, es evidente que el período correcto es el de 1965-1978. No teniendo historia de la estación y por consiguiente no pudiendo explicar ese cambio brutal, sería normal eliminar el período anterior.

  En este caso preciso es posible corregir el período 1957-1964 y de volver así homogénea la serie cronológica completa.

  Los pluviómetros y pluviógrafos utilizados en la zona de estudio son de dos tipos:

. Superficie receptora de 324 cm^2.

. Superficie receptora de 200 cm^2.

Si se utiliza un aparato de 200 cm^2 con una regla prevista para una superficie receptora de 324 cm^2, se obtiene la siguiente relación:

$$\frac{\text{Lluvia real}}{\text{Lluvia leída}} = \frac{324}{200} = 1.62$$

Si se consideran las medias de los dos períodos para la estación de UMBITA, se tiene:

$$\frac{X2}{X1} = \frac{997}{616} = 1.62$$

Es razonable pensar que de 1957 a 1964 hubo una mezcla de aparatos en la estación, ya sea por la regla o por que la superficie receptora fue cambiada en 1965.

Para verificar esta hipótesis se multiplican los datos de 1957 a 1964 por 1.62 y se pasan de nuevo las pruebas de simples masas y dobles masas lo cual da buenos resultados, confirmando así la hipótesis hecha.

- Cada estación está acompañada de la prueba más representativa pero es bien evidente que el análisis de una serie cronológica no puede comprenderse sino con varias pruebas.

2.4 Características de los datos seleccionados

Los cálculos siguientes han sido efectuados sobre las series cronológicas seleccionadas a partir de las pruebas precedentes, para los valores mensuales y anuales:

. El número de años de cada serie.

. El valor máximo

. El cuartil superior que es el valor máximo correspondiente a una frecuencia experimental de sobrepaso de 0.25, lo que significa que este valor es igualado o sobrepasado un año sobre cuatro.

. La mediana observada.

. El cuartil inferior, que es el valor correspondiente a una frecuencia experimental de sobrepaso de 0.75, es decir que este valor será sobrepasado tres años sobre cuatro.

. El valor mínimo

. La media interanual, así como el total de medias mensuales.

. El trimestre más seco y el trimestre más lluvioso con el fin de

caracterizar mejor el régimen pluviométrico medio.

- Los índices de FOURNIER (FOUR) y de ARNOLDUS (ARNO) que caracterizan la agresividad de la lluvia:

$$\text{FOUR} = \frac{pMAX^2}{P} \qquad \text{ARNO} = \frac{\Sigma pi^2}{P}$$

donde: pi = media mensual

pMAX= media mensual máxima

P = total de medias mensuales

- La desviación-stándar (ver definición en 2.1)
- El coeficiente de variación (ver definición en 2.1)
- El coeficiente de asimetría de FISCHER (ASY)

$$\text{ASY} = \frac{M3}{ETX^3}$$

2.5 Características de los datos extendidos sobre 20 años

Las estaciones escogidas para constituir la red pluviométrica "operacional" han sido comparadas con cada una de las otras estaciones de la zona con el fin de determinar los mejores coeficientes de correlaciones mensuales y anuales.

Los valores faltantes entre 1960 y 1979 han sido estimados a partir

de los coeficientes de regresión lineales anuales y de las relaciones mensuales.

Las características presentadas son las mismas precedentes, pero calculadas sobre los 20 años del período considerado. Otros calculos han sido hechos ajustando la serie de los totales anuales a una ley de GAUSS.

- El índice de irregularidad interanual (IRA) definido como la relación entre el valor decenal superior (Fl = 0.1) y el valor decenal inferior (Fl= 0.9).

  Se tiene:

$$IRA = \frac{\overline{XN} + 1.282\ ETX}{\overline{XN} - 1.282\ ETX}$$

- Algunos valores anuales calculados para ciertas frecuencias de sobrepaso:

  Fl = 0.05 (Valor sobrepasado un año sobre 20)

  Fl = 0.10 (Valor sobrepasado un año sobre 10)

  Fl = 0.20 (Valor sobrepasado un año sobre 5)

  Fl = 0.50 (Valor mediana)

  Fl = 0.80 (Valor sobrepasado 4 años sobre 5)

  Fl = 0.90 (Valor sobrepasado 9 años sobre 10)

  Fl = 0.95 (Valor sobrepasado 19 años sobre 20)

3. Composición del Anexo

3.1 Clasificación en categorías

- Las estaciones precedidas de un punto (.) son aquellas abandonadas después de las pruebas de homogeneidad y comprenden dos listados:

  . Los datos originales

  . Las pruebas de simples o dobles masas

  Ejemplo: 113. SAN JUAN (Bogotá D.E.)

- Las estaciones precedidas de dos puntos (..) han sido estudiadas sobre su propio período sin estimación de los valores faltantes. Ellas comprenden:

  . Los dos listados citados anteriormente.

  . Las características de los datos seleccionados.

  Ejemplo: 201 .. TIBABUYES (SUBA)

- Las estaciones precedidas de tres puntos (...) son aquellas que constituyen la red pluviométrica operacional. Se componen de:

  . Los tres listados de la categoría precedente

  . Las características de los datos extendidos sobre 20 años.

Ejemplo: 9... CALDAS (CALDAS)

3.2 Clasificación alfabética

Las estaciones están clasificadas por orden alfabético:

- Departamental (BOYACA, CUNDINAMARCA, SANTANDER, TOLIMA).
- Municipal
- Según el nombre de la estación.

-LISTA DE LAS ESTACIONES SELECCIONADAS-

No.		ESTACION	MUNICIPIO	PAGINA
		DEPARTAMENTO DE BOYACA		
1	..	ALMEIDA	ALMEIDA	1
2	...	CHIVOR	ALMEIDA	4
3	...	AQUITANIA	AQUITANIA	8
4	.	POTRERITO	AQUITANIA	12
5	..	TOQUILLA	AQUITANIA	14
6	..	ARCABUCO	ARCABUCO	17
7	.	CAMPAMENTO BUENAVISTA	BEREEO	20
8	..	BUENAVISTA	BUENAVISTA	22
9	...	CALDAS	CALDAS	25
10	..	LOS CEDROS	CAMPOHERMOSO	29
11	..	CERINZA	CERINZA	32
12	..	COMBITA	COMBITA	35
13	..	EL TUNEL	CUITIVA	38
14	..	CHAMEZA	CHAMEZA	41
15	...	CHINAVITA	CHINAVITA	44
16	..	LOS QUINCHOS	CHINAVITA	48
17	...	ESCLUSA TOLON	CHIQUINQUIRA	51
18	...	DUITAMA	DUITAMA	56
19	..	LA SIERRA	DUITAMA	60
20	..	SURBATA	DUITAMA	63
21	..	FIRAVITOBA	FIRAVITOBA	66
22	.	GARAGOA	GARAGOA	69
23	...	LAS JUNTAS	GARAGOA	71
24	...	LA GRANJA	GUAYATA	75
25	..	IZA.	IZA	79
26	..	JERICO	JERICO	82
27	.	EL VOLADOR	MACANAL	85
28	...	MACANAL	MACANAL	87
29	..	QUEBRADA HONDA	MACANAL	91
30	..	MARIPI	MARIPI	94
31	.	MONGUA	MONGUA	97
32	...	MONGUI	MONGUI	99
33	...	BERTHA	MONIQUIRA	103
34	.	MUZO	MUZO	107
35	..	BELENCITO	NOBSA	109
36	.	EL CEREZO	PAIPA	112
37	..	PALERMO	PAIPA	114
38	...	TUNGUAVITA	PAIPA	117
39	.	PAUNA	PAUNA	121
40	..	SANTA RITA	PAUNA	123

No.		ESTACION	MUNICIPIO	PAGINA
41	.	PAZ DE RIO	PAZ DE RIO	126
42	...	PESCA	PESCA	128
43	...	RAMIRIQUI	RAMIRIQUI	132
44	...	EL ZARZAL	RAQUIRA	136
45	...	LA CANDELARIA	RAQUIRA	140
46	..	RAQUIRA	RAQUIRA	144
47	..	ALTO SABOYA	SABOYA	147
48	...	ESCLUSA MERCHAN	SABOYA	150
49	.	LA GACHA	SABOYA	154
50	..	EL MORRO	SAMACA	156
51	..	VILLA DEL CARMEN	SAMACA	159
52	..	SAN LUIS DE GACENO	SAN LUIS DE GACENO	162
53	..	SAN MIGUEL DE SEMA	SAN MIGUEL DE SEMA	165
54	..	LA COMODA	SANTANA	168
55	..	CACHIPAY	SANTA MARIA	171
56	..	LENGUPA	SANTA MARIA	174
57	..	PIEDRA CAMPANA	SANTA MARIA	177
58	...	SANTA MARIA	SANTA MARIA	180
59	...	SANTA ROSA DE VITERBO	SANTA ROSA DE VITERBO	184
60	...	SANTA SOFIA	SANTA SOFIA	189
61	..	SATIVANORTE	SATIVANORTE	193
62	...	SIACHOQUE	SIACHOQUE	196
63	.	SOCOTA	SOCOTA	200
64	..	LAS CINTAS	SOGAMOSO	202
65	..	SENA	SOGAMOSO	205
66	..	SOMONDOCO	SOMONDOCO	208
67	...	SOTAQUIRA	SOTAQUIRA	211
68	...	SUTAMARCHAN	SUTAMARCHAN	215
69	...	TASCO	TASCO	219
70	.	TIBANA	TIBANA	223
71	..	SAN RAFAEL	TIBASOSA	225
72	...	TIBASOSA	TIBASOSA	228
73	...	LOS ARRAYANES	TINJACA	232
74	..	SAN PEDRO	TOCA	236
75	...	TOCA	TOCA	239
76	..	TOTA	TOTA	243
77	...	U.P.T.C.	TUNJA	246
78	...	TURMEQUE	TURMEQUE	250
79	..	EL BOQUERON	TUTA	254
80	..	SAN ANTONIO	TUTA	257

No.		ESTACION	MUNICIPIO	PAGINA
81	..	TUTASA	TUTASA	260
82	...	UMBITA	UMBITA	263
83	.	VENTAQUEMADA	VENTAQUEMADA	267
84	..	EL EMPORIO	VILLA DE LEIVA	269
85	...	PASADENA	VILLA DE LEIVA	272
86	..	VILLA DE LEIVA	VILLA DE LEIVA	276
87	.	ZETAQUIRA	ZETAQUIRA	279
		DEPARTAMENTO DE CUNDINAMARCA		
88	.	EL PORVENIR	ALBAN	281
89	..	ANOLAIMA	ANOLAIMA	283
90	...	CACHIPAY	ANOLAIMA	286
91	...	ACUEDUCTO BOSA	BOGOTA D.E.	290
92	...	AEROPUERTO ELDORADO	BOGOTA D.E.	294
93	..	ALTO CAICEDO	BOGOTA D.E.	298
94	...	ARRAYAN SAN FRANCISCO	BOGOTA D.E.	301
95	..	AVENIDA JIMENEZ	BOGOTA D.E.	306
96	..	EL CHOCHAL LOS AMARILLOS	BOGOTA D.E.	309
97	...	EL DELIRIO	BOGOTA D.E.	312
98	.	EL DIAMANTE	BOGOTA D.E.	317
99	..	EL GRANIZO	BOGOTA D.E.	319
100	...	EL GUAMO	BOGOTA D.E.	323
101	...	EL HATO	BOGOTA D.E.	327
102	..	EL VERJON	BOGOTA D.E.	332
103	..	INST. GEOF. DE LOS ANDES	BOGOTA D.E.	335
104	..	JARDIN BOTANICO	BOGOTA D.E.	338
105	...	LA CANDELARIA	BOGOTA D.E.	341
106	..	LA VIEJA	BOGOTA D.E.	345
107	..	LABORATORIOS HORMONA	BOGOTA D.E.	348
108	...	LAS SOPAS	BOGOTA D.E.	351
109	...	OBS. MET. NAL.	BOGOTA D.E.	355
110	...	PALO BLANCO	BOGOTA D.E.	359
111	..	SAN ANTONIO	BOGOTA D.E.	363
112	..	SAN DIEGO	BOGOTA D.E.	366
113	.	SAN JUAN	BOGOTA D.E.	369
114	...	SAN LUIS	BOGOTA D.E.	371
115	...	SANTA LUCIA	BOGOTA D.E.	376
116	..	SANTA ROSA CARRETERA	BOGOTA D.E.	380
117	...	SANTA ROSA LOS PUENTES	BOGOTA D.E.	383
118	...	TECHO	BOGOTA D.E.	387
119	..	VITELMA	BOGOTA D.E.	391
120	..	VIVERO DISTRITAL	BOGOTA D.E.	394

No.		ESTACION	MUNICIPIO	PAGINA
121	...	BOJACA	BOJACA	397
122	..	LA MERCED	BOJACA	401
123	.	LA LUMBRE	BOSA	404
124	...	CABRERA	CABRERA	406
125	..	LA ESPERANZA No. 1	CABRERA	410
126	..	LA PRADERA	CABRERA	413
127	..	PEÑAS BLANCAS	CABRERA	416
128	...	CARMEN DE CARUPA	CARMEN DE CARUPA	419
129	...	EL HATO	CARMEN DE CARUPA	423
130	..	EL HATO No. 1	CARMEN DE CARUPA	427
131	..	EL HATO No. 2	CARMEN DE CARUPA	430
132	..	EL HATO No. 4	CARMEN DE CARUPA	433
133	.	EL HATO No. 5	CARMEN DE CARUPA	436
134	..	EL HATO No. 6	CARMEN DE CARUPA	438
135	..	EL HATO No. 7	CARMEN DE CARUPA	441
136	.	EL HATO No. 8	CARMEN DE CARUPA	444
137	...	SOCOTA	CARMEN DE CARUPA	446
138	...	CARRIZAL	CUCUNUBA	450
139	...	CUCUNUBA	CUCUNUBA	454
140	..	EL RHIN	CHIA	458
141	..	CHIPAQUE	CHIPAQUE	461
142	..	CHOACHI	CHOACHI	464
143	...	LA IBERIA	CHOCONTA	467
144	...	REPRESA SISGA	CHOCONTA	471
145	..	SAUCIO	CHOCONTA	475
146	...	LAS GRANJAS	EL COLEGIO	478
147	..	EL CORAZON	FACATATIVA	482
148	..	EL CORZO SANTA TECLA	FACATATIVA	485
149	...	EL TESORO No. 1	FACATATIVA	488
150	..	EL TESORO No. 2	FACATATIVA	492
151	...	MANJUI	FACATATIVA	495
152	..	TESORO VERTIENTE	FACATATIVA	499
153	..	TISQUESUSA	FACATATIVA	502
154	...	VENECIA	FACATATIVA	505
155	...	LA RAMADA	FUNZA	509
156	...	EL SANTUARIO	FUQUENE	514
157	..	ISLA EL SANTUARIO	FUQUENE	518
158	...	MONSERRATE	FUQUENE	522
159	..	BETHANIA	FUSAGASUGA	526
160	..	PUESTO DE MONTA	FUSAGASUGA	530

No.		ESTACION	MUNICIPIO	PAGINA
161	...	VALSALICE	FUSAGASUGA	533
162	..	ESCUELA TENA	GACHALA	537
163	..	GACHALA	GACHALA	540
164	.	SECRETARIA AGRICULTURA	GACHETA	543
165	.	GAMA	GAMA	545
166	...	EL PUENTE	GUACHETA	547
167	.	GUACHETA	GUACHETA	551
168	.	LA FLORESTA	GUASCA	553
169	...	PALACIOS GUASCA	GUASCA	555
170	...	SAN JOSE	GUASCA	559
171	...	GUATAVITA	GUATAVITA	563
172	..	JUNIN	JUNIN	567
173	...	LA CABAÑA	LA CALERA	570
174	.	LA CASITA	LA CALERA	574
175	..	SAN RAFAEL No. 1	LA CALERA	576
176	...	HACIENDA LA PALMA	LA MESA	580
177	.	LA MESA	LA MESA	584
178	.	EL ESPINO	LENGUAZAQUE	586
179	...	EL TRIANGULO	LENGUAZAQUE	588
180	...	TAPIAS	LENGUAZAQUE	592
181	..	SECRETARIA AGRICULTURA	MACHETA	596
182	...	TIBAITATA	MOSQUERA	599
183	...	CHECUA-NEMOCON	NEMOCON	603
184	..	SANTA ANA	NEMOCON	607
185	..	ESCUELA VOCACIONAL	PACHO	610
186	..	CARACOL	PANDI	613
187	..	LA PLAYA	PANDI	616
188	..	PANDI	PANDI	619
189	..	PASCA	PASCA	622
190	..	EL CONSUELO	SESQUILE	625
191	...	GUARANI EL PEÑON	SIBATE	628
192	...	MUÑA	SIBATE	632
193	..	APOSTOLICA	SIBATE	636
194	...	SIMIJACA	SIMIJACA	639
195	...	EL FUTE	SOACHA	643
196	..	SAN JORGE	SOACHA	647
197	.	SAN CAYETANO	SAN CAYETANO	650
198	..	LA CARLINA	SAN FRANCISCO	652
199	...	CERRO DE SUBA	SUBA	655
200	...	GUAYMARAL	SUBA	659

No.		ESTACION	MUNICIPIO	PAGINA
201	..	TIBABUYES	SUBA	663
202	...	LA PRADERA	SUBACHOQUE	666
203	...	LA PRIMAVERA	SUBACHOQUE	670
204	.	LA UNION-EL ROSAL	SUBACHOQUE	674
205	..	LAS MARGARITAS	SUBACHOQUE	676
206	..	PUENTE MANRIQUE	SUBACHOQUE	679
207	..	BARRANCAS	SUESCA	682
208	...	EL HATILLO	SUESCA	685
209	..	SAN PEDRO	SUESCA	689
210	..	SUPATA	SUPATA	692
211	..	TRES ESQUINAS	SUSA	695
212	.	EL PEDREGAL	SUTATAUSA	698
213	...	EL PINO	SUTATAUSA	700
214	..	SUTATAUSA	SUTATAUSA	704
215	.	SANTA ISABEL	TABIO	707
216	...	TABIO	TABIO	709
217	...	EL ENCANTO	TAUSA	713
218	...	EL SALITRE	TAUSA	717
219	.	GUANQUICA No. 1	TAUSA	721
220	..	LOS PINOS	TAUSA	723
221	...	REPRESA NEUSA	TAUSA	726
222	...	LA ALDEA	TENJO	730
223	..	LA VUELTA	TIBACUY	734
224	...	TIBACUY	TIBACUY	737
225	..	TIBITO	TOCANCIPA	741
226	..	TOCANCIPA	TOCANCIPA	744
227	.	SANTA ROSA DE UBALA	UBALA	747
228	..	UBALA	UBALA	749
229	...	LA BOYERA	UBATE	752
230	...	NOVILLEROS	UBATE	756
231	..	UNE	UNE	760
232	...	CONTADOR	USAQUEN	763
233	...	TORCA	USAQUEN	767
234	..	USAQUEN	USAQUEN	771
235	...	BOCAGRANDE	USME	774
236	..	EL BOSQUE	USME	778
237	...	LA REGADERA No. 1	USME	781
238	.	OSPINA PEREZ	VENECIA	786
239	..	LA FORTUNA	VILLAPINZON	788
240	...	VILLAPINZON	VILLAPINZON	791

No.		ESTACION	MUNICIPIO	PAGINA
241	..	ATALA	VIOTA	795
242	...	HACIENDA JAVA	VIOTA	798
234	...	VENTALARGA	ZIPAQUIRA	802
244	...	ZIPAQUIRA	ZIPAQUIRA	807
		DEPARTAMENTO DE SANTANDER		
245	..	ALBANIA	ALBANIA	811
246	..	EL ENCINO	ENCINO	814
247	..	GAMBITA	GAMBITA	817
248	..	JESUS MARIA	JESUS MARIA	820
249	..	CENTRAL No. 2	PUENTE NACIONAL	823
250	.	CAMPIÑA	SUAITA	826
251	..	VELEZ	VELEZ	828
		DEPARTAMENTO DEL TOLIMA		
252	..	CARMEN DE APICALA	CARMEN DE APICALA	831
253	.	MARAÑONES	ESPINAL	834
254	..	NATAIMA	ESPINAL	836
255	...	AERP. SANTIAGO VILA	FLANDES	839
256	.	EL SALERO	MELGAR	843
257	..	LAS DOS AGUAS	SUAREZ	845
258	..	LUIS BUSTAMANTE	VILLARICA	848

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350714	ALMEIDA	ALMEIDA	+04 57 00	+073 23 00	2100 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1959	-9.9	4.0	54.5	109.0	144.5	253.5	237.8	298.0	250.5	319.5	172.0	83.8	-9.9
1960	75.8	115.5	57.8	172.0	249.3	264.5	288.3	205.3	165.0	147.5	195.0	72.5	2008.5
1961	7.5	25.0	117.5	260.3	210.3	446.3	520.0	319.0	334.0	421.0	197.5	34.0	2892.4
1962	32.0	4.0	224.0	200.0	344.0	341.0	325.0	150.0	174.0	41.0	74.0	26.0	1937.0
1963	24.0	63.0	33.0	204.0	257.0	182.0	211.0	254.0	136.0	52.0	68.0	24.0	1508.0
1964	0.0	15.0	3.0	117.0	251.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1965	0.0	66.0	66.0	99.0	285.0	224.0	327.0	225.0	132.0	116.0	99.0	39.0	1658.0
1966	20.0	10.0	41.0	26.0	70.0	82.0	192.0	122.0	110.0	49.0	76.0	45.0	843.0
1967	21.0	14.0	44.0	116.0	108.0	218.0	183.0	257.0	138.0	72.0	32.5	6.5	1210.0
1968	11.0	26.5	29.0	170.0	114.5	231.0	264.5	136.5	136.0	113.0	49.0	7.0	1288.0
1969	75.0	43.5	33.5	104.0	236.0	210.5	169.0	220.5	47.0	127.5	47.5	42.5	1356.5
1970	60.0	41.5	61.5	151.5	182.0	264.0	316.5	142.5	130.0	121.5	32.0	94.0	1617.0
1971	15.5	34.0	79.5	96.5	232.0	210.5	279.0	220.0	143.5	56.5	63.5	24.0	1496.5
1972	54.5	19.5	133.0	130.0	269.5	218.0	218.0	110.5	179.0	56.5	31.0	6.0	1467.5
1973	7.0	1.0	58.0	82.5	234.5	198.5	178.5	196.5	167.2	105.9	117.6	16.0	1363.2
1974	18.3	144.4	108.7	220.0	215.0	153.1	274.7	159.6	107.8	93.2	62.3	3.6	1560.7
1975	10.9	2.7	77.4	121.3	140.0	261.4	235.9	155.7	132.0	110.4	57.7	55.4	1360.8
1976	14.6	25.2	38.3	125.4	143.2	260.1	237.6	189.8	106.7	63.6	84.0	25.2	1313.7
1977	7.0	25.7	51.9	125.7	203.6	252.0	244.7	182.6	159.5	58.8	20.9	6.5	1338.9
1978	20.3	6.0	52.1	158.1	149.6	240.0	182.8	197.7	126.4	67.9	20.0	40.1	1261.5
1979	0.0	3.4	34.9	183.1	242.2	190.6	253.0	252.7	74.3	138.4	137.4	59.2	1609.2

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X MACANAL MUNICIPIO DE MACANAL PERIODO 1959 - 1979 COEF DE CORRECCION 1.000

ESTACION Y ALMEIDA MUNICIPIO DE ALMEIDA PERIODO 1959 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	CLY	RAN	RCAN	F = -4. I F : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	2433.	1009.	0.992	-0.005					*				
2	1978	4901.	2071.	1.288	0.225					I +			•	
3	1977	7047.	4210.	1.052	0.270					I +	•			
4	1976	9670.	6523.	1.310	0.336					I	+		•	
5	1975	11755.	8804.	1.007	0.242					•	+			
6	1974	13875.	8445.	0.896	0.430				•	I	+			
7	1973	15653.	9000.	0.971	0.404					• I	+			
8	1972	18270.	11275.	1.005	0.467					I	+ •			
9	1971	20700.	12772.	1.007	0.552					I	+ •			
10	1970	23911.	14369.	1.077	0.633					I	+•			
11	1969	25745.	15745.	1.128	0.747					I	+ •			
12	1968	28035.	17033.	1.107	0.666					I	+ •			
13	1967	30431.	18243.	1.299	1.124					I	+		•	
14	1966	32245.	19066.	1.415	1.382					I	+			•
15	1965	35142.	20744.	1.105	1.466					I	• +			
16	1963	37158.	22252.	0.958	1.405				•	I	+			
17	1962	39631.	24103.	0.824	1.182			•		I	+			
18	1961	41645.	27002.	0.458	0.198	•				I+				
19	1960	44342.	29090.	0.000	0.0				•	+				

N	AN	CLX	CLY	RAN	RCAN	F = -4. I F : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 2333.6 1551.1

RAZONES PROMEDIOS Y/X = 0.656

X/Y = 1.524

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-CHOCOM *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA GASTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350714	ALMEIDA	ALMEIDA	+04 58 33	+073 22 56	1910 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1963	24.0	63.0	33.0	204.0	257.0	182.0	211.0	254.0	136.0	52.0	66.0	24.0	1508.0	1963
1964	0.0	15.0	3.0	117.0	251.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1964
1965	0.0	46.0	66.0	99.0	285.0	224.0	327.0	225.0	132.0	116.0	99.0	39.0	1658.0	1965
1966														1966
1967	21.0	14.0	44.0	116.0	108.0	218.0	183.0	257.0	138.0	72.0	32.5	6.5	1210.0	1967
1968	11.0	26.5	29.0	170.0	114.5	231.0	264.5	136.5	136.0	113.0	49.0	7.0	1288.0	1968
1969	75.0	43.5	33.5	104.0	236.0	210.5	169.0	220.5	47.0	127.5	47.5	42.5	1356.5	1969
1970	60.0	41.5	61.5	151.5	182.0	284.0	316.5	142.5	130.0	121.5	32.0	94.0	1617.0	1970
1971	15.5	34.0	79.5	96.5	232.0	210.5	279.0	220.0	143.5	98.5	63.5	24.0	1496.5	1971
1972	54.5	19.5	133.0	130.0	269.5	218.0	218.0	110.5	179.0	98.5	31.0	6.0	1467.5	1972
1973	7.0	1.0	58.0	82.5	234.5	198.5	178.5	196.5	167.2	105.9	117.6	16.0	1363.2	1973
1974	18.3	144.4	108.7	220.0	215.0	153.1	274.7	159.6	107.8	93.2	62.3	3.6	1560.7	1974
1975	10.9	2.7	77.4	121.3	140.0	261.4	235.9	155.7	132.0	110.4	57.7	55.4	1360.8	1975
1976	14.6	25.2	38.3	125.4	143.2	260.1	237.6	189.8	106.7	63.6	64.0	25.2	1313.7	1976
1977	7.0	25.7	51.9	125.7	203.6	252.0	244.7	182.6	159.5	58.8	20.9	6.5	1338.9	1977
1978	20.8	6.0	52.1	158.1	149.6	240.0	162.8	197.7	126.4	67.9	20.0	40.1	1261.5	1978
1979	0.0	3.4	34.9	183.1	242.2	190.6	253.0	252.7	74.3	138.4	137.4	99.2	1609.2	1979
NUMERO DE ANOS	16	16	16	16	16	15	15	15	15	15	15	15	15	
VALOR MAXIMO	75.0	144.4	133.0	220.0	285.0	284.0	327.0	257.0	179.0	138.4	137.4	99.2	1658.0	
CUARTIL SUPERIOR	22.5	42.5	71.7	164.0	246.6	252.0	274.7	225.0	143.5	116.0	64.0	42.5	1560.7	
MEDIANA	15.0	25.4	52.0	125.5	223.5	218.0	237.6	196.5	132.0	98.5	57.7	24.0	1363.2	
CUARTIL INFERIOR	7.0	10.0	34.2	110.0	146.4	198.5	183.0	155.7	107.8	67.9	32.0	6.5	1313.7	
VALOR MINIMO	0.0	1.0	3.0	82.5	108.0	153.1	169.0	110.5	47.0	52.0	20.0	3.6	1210.0	
PROMEDIOS	21.2	32.0	56.5	137.8	203.9	222.2	238.3	193.4	127.7	95.8	61.5	32.6	1427.3	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1422.9	
PORCENTAJES	1.5	2.2	4.0	9.7	14.3	15.6	16.8	13.6	9.0	6.7	4.3	2.3		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 40. INDICE DE ARNOLDUS = 166.

DEV. ESTANDAR	22.5	34.8	32.0	39.8	57.0	34.2	49.0	45.6	33.7	27.0	35.1	30.4	141.8
COEF. VARIACION	1.058	1.090	0.566	0.289	0.279	0.154	0.206	0.236	0.264	0.282	0.571	0.933	0.099
COEF. ASIMETRIA	1.437	2.426	0.920	0.750	-0.432	-0.128	0.276	-0.190	-0.986	-0.252	0.671	1.283	0.231

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Biblioteca Nacional
Colombia

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350611	CHIVOR	ALMEIDA	+04 51 00	+073 25 00	1740 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1962	-9.9	-9.9	-9.9	499.0	1018.0	763.0	676.0	622.0	573.0	525.0	265.0	250.0	-9.9
1963	86.0	100.0	283.0	547.0	988.0	631.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1964													
1965													
1966													
1967	103.0	30.0	157.0	330.0	255.0	446.0	377.0	514.0	311.0	213.0	163.0	39.0	2938.0
1968	65.0	10.0	103.0	255.0	203.0	413.0	442.0	361.0	292.0	200.0	155.0	65.0	2564.0
1969	126.0	129.0	113.0	256.0	293.0	341.0	461.0	378.0	-9.9	253.0	135.0	129.0	-9.9
1970	92.0	91.0	167.0	296.0	315.0	516.0	364.0	235.0	221.0	250.0	79.0	179.0	2847.0
1971	65.0	131.0	273.0	252.0	469.0	446.0	538.0	406.0	286.0	252.0	135.0	115.0	3368.0
1972	116.0	85.0	173.0	250.0	564.0	406.0	421.0	340.0	288.0	176.0	106.0	31.0	2956.0
1973	21.0	3.0	128.0	182.0	345.0	426.0	354.0	452.0	264.0	314.0	159.0	74.0	2722.0
1974	52.0	90.0	45.0	213.0	375.0	303.0	449.0	364.0	257.0	209.0	104.0	11.0	2472.0
1975	43.0	15.0	182.0	210.0	286.0	516.0	337.0	313.0	199.0	230.0	120.0	107.0	2560.0
1976	60.0	49.0	113.0	282.0	412.0	516.0	551.0	327.0	243.0	140.0	181.0	84.0	2960.0
1977	1.0	69.0	95.0	166.0	336.0	406.0	477.0	249.0	314.0	184.0	92.0	34.0	2423.0
1978	83.0	18.0	180.0	321.0	373.0	464.0	335.0	333.0	252.0	213.0	70.0	84.0	2726.0
1979	48.0	1.0	78.0	299.0	372.0	405.0	341.0	359.0	161.0	177.0	245.0	174.0	2660.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARAN.O

ESTACION X CHIVEL MUNICIPIO DE ALMOLONGA PERIODO 1962 - 1979 COEF DE CORRECCION 1.000

N	AÑO	I A	CO	MOV	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1977	2666.0	2660.0	2660.0	-0.401	-0.038				+			
2	1978	2724.0	5390.0	2695.0	-0.152	-0.053				.+			
3	1977	2682.0	7605.0	2603.0	-1.264	-0.177			.	+I			
4	1976	2566.0	10709.0	2692.3	0.736	-0.107				+I	.		
5	1975	2566.0	13369.0	2665.8	-0.778	-0.182			.	+I			
6	1974	2476.0	15861.0	2633.5	-1.109	-0.288			.	+ I			
7	1973	2726.0	18529.0	2646.1	-0.167	-0.304				+ .I			
8	1972	2556.0	21479.0	2684.9	0.715	-0.236				+ I	.		
9	1971	2568.0	24047.0	2700.8	2.268	-0.018				+		.	
10	1970	2647.0	27094.0	2709.4	0.304	0.011				+ .			
11	1968	2664.0	30258.0	2750.7	-0.763	-0.062			.	+			
12	1967	2538.0	33196.0	2766.3	0.647	0.0				+ .			

N	AÑO	I A	CO	MOV	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 12 AÑOS = 2766.3

DESVIACION ESTANDAR = 266.4

COEFICIENTE DE VARIACION = 0.096

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRECTA *** GRUPO DE MICROCLIMATOLOGIA *** PROGRAMA CRECTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
3506011	CHIVOR	ALMEIDA	+04 53 27	+073 22 27	1860 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1967	103.0	30.0	157.0	330.0	285.0	446.0	377.0	514.0	311.0	213.0	163.0	39.0	2938.0	1967
1968	65.0	10.0	103.0	255.0	203.0	413.0	442.0	361.0	292.0	200.0	155.0	65.0	2564.0	1968
1969	126.0	129.0	113.0	256.0	293.0	341.0	461.0	378.0	-9.9	253.0	135.0	129.0	-9.9	1969
1970	92.0	51.0	167.0	296.0	315.0	518.0	364.0	235.0	221.0	290.0	79.0	179.0	2847.0	1970
1971	65.0	131.0	273.0	252.0	469.0	446.0	538.0	406.0	266.0	252.0	135.0	115.0	3368.0	1971
1972	116.0	65.0	173.0	250.0	564.0	406.0	421.0	340.0	288.0	176.0	106.0	31.0	2956.0	1972
1973	21.0	3.0	126.0	182.0	345.0	426.0	354.0	452.0	264.0	314.0	159.0	74.0	2722.0	1973
1974	52.0	90.0	45.0	213.0	375.0	303.0	449.0	364.0	257.0	209.0	104.0	11.0	2472.0	1974
1975	43.0	15.0	182.0	210.0	266.0	518.0	337.0	313.0	199.0	230.0	120.0	107.0	2560.0	1975
1976	60.0	49.0	113.0	282.0	412.0	518.0	551.0	327.0	243.0	140.0	181.0	84.0	2960.0	1976
1977	1.0	69.0	95.0	166.0	336.0	406.0	477.0	249.0	314.0	184.0	92.0	34.0	2423.0	1977
1978	83.0	18.0	180.0	321.0	373.0	464.0	335.0	333.0	252.0	213.0	70.0	84.0	2726.0	1978
1979	48.0	1.0	78.0	299.0	372.0	405.0	341.0	359.0	161.0	177.0	245.0	174.0	2660.0	1979
NUMERO DE ANOS	13	13	13	13	13	13	13	13	12	13	13	13	12	
VALOR MAXIMO	126.0	131.0	273.0	330.0	564.0	518.0	551.0	514.0	314.0	314.0	245.0	179.0	3368.0	
CUARTIL SUPERIOR	97.5	90.5	176.5	297.5	393.5	491.0	469.0	392.0	290.0	252.5	161.0	122.0	2947.0	
MEDIANA	65.0	49.0	128.0	255.0	345.0	426.0	421.0	359.0	260.5	213.0	135.0	84.0	2724.0	
CUARTIL INFERIOR	45.5	12.5	99.0	211.5	289.5	405.5	347.5	320.0	232.0	180.5	98.0	36.5	2562.0	
VALOR MINIMO	1.0	1.0	45.0	166.0	203.0	303.0	335.0	235.0	161.0	140.0	70.0	11.0	2423.0	
PROMEDIOS	67.3	55.5	139.0	264.8	363.7	431.5	419.0	356.2	257.3	219.3	134.2	86.6	2766.3	
												TOTAL DE LOS PROMEDIOS MENSUALES =	2774.4	
PORCENTAJES	2.4	2.0	5.0	9.2	12.7	15.6	15.1	12.8	9.3	7.9	4.8	3.1		

TRIMESTRE MAS LLUVIOSO JUN JUL AGO **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 67. INDICE DE ARNOLDUS = 305.

DEV. ESTANDAR	36.2	46.7	58.5	51.2	93.4	65.2	74.7	74.6	46.1	48.3	47.6	53.0	265.3
COEF. VARIACION	0.538	0.842	0.421	0.201	0.264	0.151	0.178	0.209	0.179	0.220	0.355	0.612	0.096
COEF. ASIMETRIA	-0.071	0.395	0.688	-0.261	0.734	-0.336	0.509	0.428	-0.795	0.495	0.870	0.459	0.892

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350611	CHIVOR	ALMEIDA	+04 53 27	+073 22 27	1860 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	56.3	120.6	200.4	201.3	355.1	209.5	550.2	576.6	339.5	242.2	216.8	122.1	3190.6	1960
1961	4.9	11.8	282.2	139.2	150.4	595.2	369.0	319.0	168.0	326.2	167.4	82.7	2616.0	1961
1962	3.7	5.0	190.3	257.1	524.5	393.1	348.3	320.5	295.2	270.5	136.5	128.8	2873.5	1962
1963	33.3	38.7	109.6	211.9	382.8	244.5	589.8	251.6	260.5	111.1	161.2	59.1	2454.1	1963
1964	1.4	32.3	84.3	179.2	414.0	349.9	437.1	221.1	357.7	180.6	213.1	65.1	2535.8	1964
1965	42.5	93.4	88.3	136.6	485.3	292.3	506.1	311.2	386.4	185.7	316.1	61.4	2905.3	1965
1966	76.0	29.1	120.2	213.9	215.3	361.9	311.4	290.4	229.2	129.0	297.4	96.5	2370.3	1966
1967	103.0	30.0	157.0	330.0	255.0	446.0	377.0	514.0	311.0	213.0	163.0	39.0	2938.0	1967
1968	65.0	10.0	103.0	255.0	203.0	413.0	442.0	361.0	292.0	200.0	155.0	65.0	2564.0	1968
1969	126.0	129.0	113.0	256.0	293.0	341.0	461.0	378.0	258.0	253.0	135.0	129.0	2872.0	1969
1970	92.0	91.0	167.0	296.0	315.0	518.0	364.0	235.0	221.0	290.0	79.0	179.0	2847.0	1970
1971	65.0	131.0	273.0	252.0	469.0	446.0	538.0	406.0	286.0	252.0	135.0	115.0	3368.0	1971
1972	116.0	85.0	173.0	250.0	564.0	406.0	421.0	340.0	288.0	176.0	106.0	31.0	2956.0	1972
1973	21.0	3.0	128.0	182.0	345.0	426.0	354.0	452.0	264.0	314.0	159.0	74.0	2722.0	1973
1974	52.0	90.0	45.0	213.0	375.0	303.0	449.0	364.0	257.0	209.0	104.0	11.0	2472.0	1974
1975	43.0	15.0	182.0	210.0	286.0	518.0	337.0	313.0	199.0	230.0	120.0	107.0	2560.0	1975
1976	60.0	49.0	113.0	282.0	412.0	518.0	551.0	327.0	243.0	140.0	181.0	84.0	2960.0	1976
1977	1.0	69.0	95.0	166.0	336.0	406.0	477.0	249.0	314.0	184.0	92.0	34.0	2423.0	1977
1978	83.0	18.0	180.0	321.0	373.0	464.0	335.0	333.0	252.0	213.0	70.0	84.0	2726.0	1978
1979	48.0	1.0	78.0	299.0	372.0	405.0	341.0	359.0	161.0	177.0	245.0	174.0	2660.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	126.0	131.0	282.2	330.0	564.0	595.2	589.8	576.6	386.4	326.2	316.1	179.0	3368.0	
CUARTIL SUPERIOR	79.5	90.5	181.0	269.5	413.0	455.0	491.5	371.0	303.1	252.5	197.0	118.5	2921.6	
MEDIANA	54.1	35.5	124.1	231.9	363.5	406.0	429.0	330.0	262.3	211.0	157.0	83.3	2724.0	
CUARTIL INFERIOR	27.1	13.4	99.0	191.6	289.5	345.4	351.1	300.8	236.1	178.8	113.0	60.2	2547.9	
VALOR MINIMO	1.0	1.0	45.0	136.6	150.4	209.5	311.4	221.1	161.0	111.1	70.0	11.0	2370.3	
PROMEDIOS	54.7	52.0	144.1	232.6	356.3	402.8	427.9	346.1	269.1	214.8	162.6	87.1	2750.7	
PORCENTAJES	2.0	1.9	5.2	8.5	13.0	14.6	15.6	12.6	9.8	7.8	5.9	3.2		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 67. INDICE DE ARNOLDUS = 300.

INDICE DE IRREGULARIDAD INTERANUAL =1.28

DEV. ESTANDAR	37.6	44.5	62.5	56.6	106.6	96.8	85.5	89.3	58.2	58.4	67.1	45.1	263.7
COEF. VARIACION	0.687	0.846	0.434	0.244	0.299	0.240	0.200	0.258	0.216	0.272	0.413	0.518	0.096

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	3185.	3089.	2973.	2751.	2529.	2413.	2317.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.200	0.541	0.775	-0.000	0.041	-0.122	0.431	1.072	0.005	0.209	0.901	0.454	0.603

IMPRESO EN COLOMBIA POR DANARAN

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
9876S4	AGUITANIA	AGUITANIA	+05 32 00	+072 53 00	3020 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1958	4.0	0.0	67.0	59.0	103.0	128.0	117.0	151.0	35.0	85.0	27.0	3.0	783.0
1959	3.0	6.0	53.0	38.0	127.0	100.0	195.0	164.0	105.0	141.0	34.0	21.0	987.0
1960	3.0	29.0	50.0	80.0	76.0	167.0	152.0	120.0	78.0	91.0	32.0	67.0	965.0
1961	6.0	4.0	26.0	40.0	53.0	124.0	127.0	140.0	81.0	175.0	93.0	0.0	873.0
1962	8.0	7.0	32.0	21.0	268.0	136.0	151.0	112.0	141.0	165.0	99.0	7.0	1147.0
1963	11.0	18.0	0.0	140.0	210.0	116.0	99.0	132.0	73.0	70.0	146.0	11.0	1026.0
1964	6.0	11.0	38.0	63.0	140.0	115.0	140.0	136.0	15.0	140.0	132.0	22.0	958.0
1965	0.0	0.0	20.0	168.0	227.0	122.0	260.0	127.0	102.0	129.0	119.0	26.0	1300.0
1966	19.0	16.0	96.0	21.0	122.0	125.0	158.0	130.0	85.0	114.0	99.0	103.0	1088.0
1967	40.0	4.0	140.0	93.0	104.0	152.0	154.0	166.0	115.0	58.0	65.0	16.0	1147.0
1968	6.0	1.0	13.0	188.0	83.0	143.0	167.0	59.0	32.0	77.0	45.0	7.0	821.0
1969	55.0	24.0	10.0	121.0	86.0	89.0	95.0	102.0	46.0	109.0	106.0	8.0	851.0
1970	34.0	29.0	8.0	22.0	131.0	110.0	180.0	127.0	109.0	91.0	52.0	0.0	893.0
1971	10.0	8.0	71.0	75.0	202.0	74.0	156.0	129.0	82.0	96.0	46.0	25.0	934.0
1972	54.0	9.0	89.0	254.0	97.0	172.0	117.0	32.0	48.0	31.0	63.0	6.0	972.0
1973	4.9	12.8	30.7	38.3	81.1	92.6	95.4	99.6	93.4	98.4	109.7	57.1	774.2
1974	14.7	9.4	46.9	65.7	136.4	85.5	124.3	52.8	88.4	62.6	73.1	3.7	763.5
1975	5.8	48.1	26.1	67.1	106.1	172.3	72.2	80.9	73.7	115.8	54.5	88.9	911.5
1976	10.2	12.2	106.6	152.6	104.2	155.5	243.4	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR LITOGRAF

ESTACION X PESCA MUNICIPIO DE PESCA PERIODO 1956 - 1976 COEF DE CORRECCION 1.000

ESTACION Y AGUITANIA MUNICIPIO DE AGUITANIA PERIODO 1956 - 1976 COEF DE CORRECCION 1.000

						F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CLX	CUY	RAN	ECAN	I	I	I	I	I	I	I	I	I
						F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1975	884.	912.	1.182	0.178					I+				
2	1974	1432.	1670.	0.933	0.124					I+				
3	1973	2057.	2449.	1.077	0.186					I+				
4	1972	2859.	3621.	1.028	0.214					I +				
5	1971	3784.	4355.	1.194	0.402					I +				
6	1970	4505.	5248.	1.012	0.413					I+				
7	1969	5338.	6099.	1.227	0.613					I +				
8	1968	6201.	6920.	1.409	0.561					I +				
9	1967	7017.	8007.	0.826	0.754					I +				
10	1966	7769.	9156.	0.806	0.604					I +				
11	1965	8567.	10455.	0.709	0.294					I +				
12	1963	9374.	11491.	0.966	0.279					I +				
13	1962	10184.	12628.	0.634	0.141					I+				
14	1961	10782.	13501.	0.860	0.615					+				
15	1960	11552.	14466.	1.052	0.666					+				
16	1959	12328.	15453.	0.935	0.0					+				
						F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CLX	CUY	RAN	ECAN	I	I	I	I	I	I	I	I	I
						F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 770.5 965.8

RAZONES PROMEDIOS Y/X = 1.254

X/Y = 0.798

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IDAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
587054	AQUITANIA	AQUITANIA	+05 31 19	+072 52 51	3050 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	4.0	0.0	67.0	59.0	103.0	128.0	117.0	151.0	35.0	89.0	27.0	3.0	783.0	1958
1959	3.0	0.0	53.0	38.0	127.0	100.0	195.0	164.0	105.0	141.0	34.0	21.0	987.0	1959
1960	3.0	29.0	50.0	80.0	76.0	187.0	152.0	120.0	78.0	91.0	32.0	67.0	965.0	1960
1961	6.0	4.0	26.0	40.0	53.0	124.0	127.0	140.0	81.0	179.0	93.0	0.0	873.0	1961
1962	8.0	7.0	32.0	21.0	268.0	136.0	151.0	112.0	141.0	165.0	99.0	7.0	1147.0	1962
1963	11.0	18.0	0.0	140.0	210.0	116.0	99.0	132.0	73.0	70.0	146.0	11.0	1026.0	1963
1964	6.0	11.0	38.0	63.0	140.0	115.0	140.0	136.0	15.0	140.0	132.0	22.0	958.0	1964
1965														1965
1966	19.0	16.0	96.0	21.0	122.0	125.0	158.0	130.0	85.0	114.0	99.0	103.0	1088.0	1966
1967	40.0	4.0	140.0	93.0	104.0	192.0	154.0	166.0	115.0	58.0	65.0	16.0	1147.0	1967
1968														1968
1969	55.0	24.0	10.0	121.0	86.0	89.0	95.0	102.0	46.0	109.0	106.0	8.0	851.0	1969
1970	34.0	29.0	8.0	22.0	131.0	110.0	180.0	127.0	109.0	91.0	52.0	0.0	893.0	1970
1971	10.0	8.0	71.0	75.0	202.0	74.0	156.0	129.0	82.0	56.0	46.0	25.0	934.0	1971
1972	54.0	9.0	89.0	254.0	97.0	172.0	117.0	32.0	48.0	31.0	63.0	6.0	972.0	1972
1973	4.9	12.8	30.7	38.3	61.1	52.8	95.4	99.6	93.4	98.4	109.7	57.1	774.2	1973
1974	14.7	9.4	46.9	65.7	136.4	85.5	124.3	52.8	88.4	62.6	72.1	3.7	763.5	1974
1975	5.8	46.1	20.1	67.1	106.1	172.3	72.2	80.9	73.7	115.8	54.5	88.9	911.5	1975
1976	10.2	12.2	106.6	152.6	104.2	155.5	243.4	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1976
NUMERO DE ANOS	17	17	17	17	17	17	17	16	16	16	16	16	16	
VALOR MAXIMO	55.0	48.1	140.0	254.0	268.0	192.0	243.4	166.0	141.0	179.0	146.0	103.0	1147.0	
CUARTIL SUPERIOR	20.5	21.0	80.0	107.0	138.2	163.8	157.0	138.0	99.2	127.5	102.5	41.0	1006.5	
MEDIANA	10.0	11.0	46.9	65.7	106.1	124.0	140.0	128.0	81.5	94.7	69.0	13.5	946.0	
CUARTIL INFERIOR	5.3	6.5	26.0	38.1	91.5	94.5	108.0	100.8	60.5	66.3	49.0	4.9	862.0	
VALOR MINIMO	3.0	0.0	0.0	21.0	53.0	52.8	72.2	32.0	15.0	31.0	27.0	0.0	763.5	
PROMEDIOS	17.0	14.6	52.4	79.5	126.3	125.5	139.8	117.1	79.3	100.7	77.0	27.4	942.1	
									TOTAL DE LOS PROMEDIOS MENSUALES =				956.4	
PORCENTAJES	1.8	1.5	5.5	8.3	13.2	13.1	14.6	12.2	8.3	10.5	8.0	2.9		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 102.

DEV. ESTANDAR	17.5	12.1	38.3	60.0	54.5	40.0	41.9	37.0	31.8	41.1	36.3	33.0	120.5
COEF. VARIACION	1.034	0.829	0.731	0.755	0.432	0.318	0.300	0.316	0.402	0.408	0.471	1.203	0.128
COEF. ASIMETRIA	1.413	1.509	0.769	1.706	1.368	0.110	0.749	-0.988	-0.218	0.315	0.360	1.381	0.229

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
3d7654	AQUITANIA	AQUITANIA	+05 31 19	+072 52 51	3050 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	3.0	29.0	50.0	80.0	76.0	187.0	152.0	120.0	78.0	91.0	32.0	67.0	965.0	1960
1961	0.0	4.0	26.0	40.0	53.0	124.0	127.0	140.0	81.0	179.0	93.0	0.0	873.0	1961
1962	8.0	7.0	32.0	21.0	268.0	136.0	151.0	112.0	141.0	165.0	99.0	7.0	1147.0	1962
1963	11.0	18.0	0.0	140.0	210.0	116.0	99.0	132.0	73.0	70.0	146.0	11.0	1026.0	1963
1964	0.0	11.0	38.0	63.0	140.0	115.0	140.0	136.0	15.0	140.0	132.0	22.0	958.0	1964
1965	0.0	0.0	16.7	140.3	189.6	101.9	217.6	106.1	85.2	107.7	99.4	21.7	1086.2	1965
1966	19.0	16.0	96.0	21.0	122.0	125.0	158.0	130.0	85.0	114.0	99.0	103.0	1088.0	1966
1967	40.0	4.0	140.0	93.0	104.0	192.0	154.0	166.0	115.0	58.0	65.0	16.0	1147.0	1967
1968	7.4	1.2	16.1	233.3	103.0	177.4	207.2	73.2	39.7	95.5	55.8	8.6	1018.4	1968
1969	55.0	24.0	10.0	121.0	86.0	89.0	95.0	102.0	46.0	109.0	106.0	8.0	851.0	1969
1970	34.0	29.0	8.0	22.0	131.0	110.0	180.0	127.0	109.0	91.0	52.0	0.0	893.0	1970
1971	10.0	8.0	71.0	75.0	202.0	74.0	156.0	129.0	82.0	56.0	46.0	25.0	934.0	1971
1972	54.0	9.0	89.0	254.0	97.0	172.0	117.0	32.0	48.0	31.0	63.0	6.0	972.0	1972
1973	4.9	12.8	30.7	38.3	81.1	52.8	95.4	99.6	93.4	98.4	109.7	57.1	774.2	1973
1974	14.7	9.4	46.9	65.7	136.4	85.5	124.3	52.8	88.4	62.6	73.1	3.7	763.5	1974
1975	5.8	48.1	26.1	67.1	106.1	172.3	72.2	80.9	73.7	115.8	54.5	88.9	911.5	1975
1976	10.2	12.2	106.6	152.6	104.2	155.5	243.4	46.9	58.4	78.7	48.6	26.8	1044.1	1976
1977	0.0	2.1	34.1	67.7	115.7	85.7	83.7	99.2	71.6	68.5	107.8	3.6	739.7	1977
1978	1.3	0.4	49.6	162.9	97.9	85.1	62.2	50.9	85.0	90.8	29.5	24.4	746.0	1978
1979	10.5	9.8	59.8	112.0	86.7	148.4	115.6	91.3	43.4	102.1	151.6	15.1	942.5	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	55.0	48.1	140.0	254.0	268.0	192.0	243.4	166.0	141.0	179.0	151.6	103.0	1147.0	
CUARTIL SUPERIOR	16.8	17.0	63.4	140.1	138.2	163.8	157.0	129.5	86.8	111.5	106.9	25.9	1035.0	
MEDIANA	9.0	9.6	36.0	77.5	105.1	120.0	133.5	104.0	79.5	93.3	83.0	15.5	950.3	
CUARTIL INFERIOR	5.3	5.2	21.3	51.5	91.8	87.3	97.2	77.0	53.2	69.3	53.3	6.5	862.0	
VALOR MINIMO	0.0	0.0	0.0	21.0	53.0	52.8	62.2	32.0	15.0	31.0	29.5	0.0	739.7	
PROMEDIOS	15.0	13.0	47.1	98.5	125.5	125.2	137.5	101.3	75.6	96.2	83.1	25.7	944.0	
PORCENTAJES	1.6	1.4	5.0	10.4	13.3	13.3	14.6	10.7	8.0	10.2	8.8	2.7		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 101.

INDICE DE IRREGULARIDAD INTERANUAL =1.42

DEV. ESTANDAR	16.9	11.8	36.7	60.4	53.3	41.0	48.6	35.9	28.8	36.2	36.4	29.7	127.1
COEF. VARIACION	1.126	0.903	0.779	0.614	0.425	0.327	0.353	0.355	0.381	0.376	0.438	1.153	0.135

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1153.	1107.	1051.	944.	837.	781.	735.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.564	1.615	1.077	0.968	1.321	0.131	0.534	-0.380	0.086	0.635	0.333	1.626	-0.112

IMPRESO EN COLOMBIA POR DANARAC

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
403045	PCTRERITO	AQUITANIA	+05 34 00	+072 39 00	3047 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1964	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	86.0	11.0	-9.9
1965	9.9	11.7	15.6	116.5	83.0	15.7	58.2	123.0	65.9	65.8	127.9	9.3	782.5
1966	8.0	6.0	79.0	28.0	79.0	94.0	101.0	91.0	139.0	76.0	183.0	102.0	986.0
1967	52.0	87.0	100.0	235.0	135.0	76.0	72.0	42.0	75.0	98.0	72.0	49.0	1093.0
1968	9.0	47.0	49.0	211.0	56.0	65.0	2.0	10.0	55.0	124.0	85.0	23.0	756.0
1969	20.0	12.0	34.0	134.0	52.0	26.0	4.0	17.0	54.0	123.0	131.0	107.0	714.0
1970	19.0	14.0	24.0	140.0	158.0	16.0	88.0	69.0	143.0	232.0	172.0	107.0	1182.0
1971	323.0	92.0	228.0	266.0	314.0	92.0	56.0	122.0	111.0	262.0	285.0	185.0	2356.0
1972	121.0	90.0	145.0	315.0	160.0	97.0	50.0	172.0	82.0	155.0	284.0	135.0	1766.0
1973	28.0	18.0	114.0	181.0	106.0	110.0	138.0	103.0	203.0	202.0	324.0	178.0	1705.0
1974	38.0	168.0	225.0	262.0	100.0	135.0	40.0	100.0	160.0	282.0	332.0	48.0	1890.0
1975	5.8	48.1	26.1	67.1	106.1	172.3	72.2	80.9	73.7	115.6	54.5	88.9	911.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR FARAMA

ESTACION X POTRERITO MUNICIPIL DE AGUITANIA PERIODO COEF DE CORRECCION

1964 - 1975 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1975	911.5	911.5	911.5	-0.677	-0.291				. + I			
2	1974	1890.0	2801.5	1400.8	1.093	0.179				I+	.		
3	1973	1705.0	4506.5	1502.2	0.759	0.505				I + .			
4	1972	1766.0	6272.5	1568.1	0.665	0.879				I *			
5	1971	2356.0	8628.5	1725.7	1.536	1.711				I	+ .		
6	1970	1182.0	9810.5	1635.1	-0.187	1.631				.I	+		
7	1969	714.0	10524.5	1503.5	-1.034	1.186			.	I	+		
8	1968	756.0	11280.5	1410.1	-0.588	0.774			.	I +			
9	1967	1093.0	12373.5	1374.8	-0.348	0.624			.	I +			
10	1966	986.0	13359.5	1335.9	-0.542	0.391			.	I +			
11	1965	782.5	14142.0	1285.0	-0.910	0.000			.	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 11 ANOS = 1285.0

DESVIACION ESTANDAR = 552.8

COEFICIENTE DE VARIACION = 0.430

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
3519 02	TOQUILLA	AQUITANIA	+05 28 00	+072 45 00	3050 METROS

AND	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1971	-9.9	-9.9	-9.9	-9.9	443.0	253.0	394.0	177.0	101.0	189.0	144.0	57.0	-9.9
1972	69.0	21.0	69.0	193.0	210.0	270.0	244.0	122.0	115.0	50.0	74.0	31.0	1468.0
1973	4.0	0.0	16.0	72.0	203.0	148.0	138.0	158.0	234.0	159.0	122.0	12.0	1266.0
1974	6.0	14.0	36.0	112.0	170.0	102.0	149.0	74.0	102.0	65.0	84.0	14.0	928.0
1975	11.0	35.0	47.0	28.5	116.0	139.0	177.0	147.0	90.0	55.0	49.0	89.0	983.5
1976	23.0	6.0	64.0	78.0	129.0	236.0	-9.9	188.0	78.0	44.0	96.0	29.0	-9.9
1977	-9.9	5.0	13.0	91.0	151.0	208.0	147.0	174.0	120.0	66.0	101.0	-9.9	-9.9
1978	7.0	18.0	49.0	147.0	125.0	152.0	129.0	142.0	159.0	101.0	45.0	20.0	1134.0
1979	7.0	7.0	138.0	201.0	159.0	216.0	155.0	157.0	98.0	176.0	147.0	30.0	1493.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAREJO

ESTACION A TEQUILLA MUNICIPIO DE AGUITANIA PERIODO 1971 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	F = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	1493.0	1493.0	1493.0	1.174	0.232				I +	.		
2	1978	1134.0	2627.0	1313.5	-0.326	0.167				. I+			
3	1975	983.5	3610.5	1203.5	-0.955	-0.021			.	+			
4	1974	926.0	4536.5	1134.6	-1.187	-0.256			.	+ I			
5	1973	1266.0	5804.5	1160.9	0.225	-0.211				+ I .			
6	1972	1468.0	7272.5	1212.1	1.069	0.0				+	.		

N	AN	T A	CU	MOY	ECR	PCAN	F = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 6 ANOS = 1212.1
DESVIACION ESTANDAR = 239.5
COEFICIENTE DE VARIACION = 0.197

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
351502	TOQUILLA	AGUITANIA	+05 31 28	+072 47 29	2930 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1973	4.0	0.0	1c.0	72.0	203.0	148.0	138.0	158.0	234.0	159.0	122.0	12.0	1266.0	1973
1974	6.0	14.0	36.0	112.0	170.0	102.0	149.0	74.0	102.0	65.0	64.0	14.0	928.0	1974
1975	11.0	35.0	47.0	28.5	116.0	139.0	177.0	147.0	90.0	55.0	49.0	89.0	983.5	1975
1976	23.0	0.0	64.0	78.0	129.0	236.0	-9.9	188.0	78.0	44.0	96.0	29.0	-9.9	1976
1977	-9.9	5.0	13.0	91.0	181.0	208.0	147.0	174.0	120.0	66.0	101.0	-9.9	-9.9	1977
1978	7.0	18.0	49.0	147.0	126.0	192.0	129.0	142.0	159.0	101.0	45.0	20.0	1134.0	1978
1979	7.0	7.0	138.0	201.0	189.0	216.0	155.0	157.0	98.0	178.0	147.0	30.0	1493.0	1979
NUMERO DE ANOS	6	7	7	7	7	7	6	7	7	7	7	6	5	
VALOR MAXIMO	23.0	35.0	138.0	201.0	203.0	236.0	177.0	188.0	234.0	178.0	147.0	89.0	1493.0	
MEDIANA	7.0	7.0	47.0	91.0	181.0	192.0	148.0	157.0	102.0	66.0	96.0	24.5	1134.0	
VALOR MINIMO	4.0	0.0	13.0	28.5	116.0	102.0	129.0	74.0	78.0	44.0	45.0	12.0	928.0	
PROMEDIOS	9.7	12.1	51.9	104.2	150.4	177.3	149.2	148.6	125.9	95.4	92.0	32.3	1160.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1149.0	
PORCENTAJES	0.8	1.1	4.5	9.1	13.1	15.4	13.0	12.9	11.0	8.3	8.0	2.8		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 27. INDICE DE ARNOLDUS = 128.

DEV. ESTANDAR	6.9	11.7	42.1	56.1	30.3	48.5	16.4	36.4	54.4	53.2	36.8	28.7	227.9
COEF. VARIACION	0.716	0.964	0.812	0.538	0.201	0.273	0.110	0.245	0.432	0.557	0.400	0.889	0.196
COEF. ASIMETRIA	1.906	1.395	1.661	0.657	0.723	-0.441	0.828	-1.619	1.610	0.876	0.048	2.092	0.687

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240163	ARCABUCO	ARCABUCO	+05 45 00	+073 26 00	2575 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1974	-9.9	-9.9	232.0	196.0	187.0	127.0	48.0	50.0	151.0	276.0	363.0	61.0	-9.9
1975	29.0	211.0	142.0	149.0	185.0	103.0	113.0	155.0	92.0	197.0	147.0	180.0	1703.0
1976	74.0	144.0	193.0	150.0	141.0	87.0	8.0	52.0	72.0	262.0	113.0	94.0	1390.0
1977	27.0	65.0	156.0	107.0	94.0	68.0	65.0	51.0	193.0	281.0	237.0	103.0	1447.0
1978	16.0	70.0	145.0	276.0	143.0	77.0	80.0	27.0	187.0	252.0	173.0	164.0	1610.0
1979	74.0	75.0	235.0	306.0	222.0	168.0	139.0	119.0	164.0	336.0	389.0	112.0	2339.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X ARCABUCO MUNICIPIO DE ARCABUCO PERIODO 1974 - 1979 COEF. DE CORRECCION 1.000

ESTACION Y SANTA SOFIA MUNICIPIO DE SANTA SOFIA PERIODO 1974 - 1979 COEF. DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
					R :	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	2339.	1409.	1.044	0.058						+			
2	1978	3949.	2517.	0.914	-0.032					•	+			
3	1977	5396.	3317.	1.137	0.071						+	•		
4	1976	6786.	4175.	1.018	0.086						+•			
5	1975	8439.	5337.	0.921	0.0					•	+			

N	AN	CUX	CUY	RAN	PCAN	P = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
					R :	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 1697.8 1067.3

RAZONES PROMEDIOS Y/X = 0.629

X/Y = 1.591

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240103	ARCABUCO	ARCABUCO	+05 45 35	+073 26 37	2550 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1974	-9.9	-9.9	232.0	196.0	187.0	127.0	48.0	50.0	151.0	276.0	363.0	61.0	-9.9	1974
1975	29.0	211.0	142.0	149.0	185.0	103.0	113.0	155.0	92.0	197.0	147.0	180.0	1703.0	1975
1976	74.0	144.0	193.0	180.0	141.0	87.0	8.0	52.0	72.0	262.0	113.0	94.0	1390.0	1976
1977	27.0	65.0	156.0	107.0	94.0	68.0	65.0	51.0	193.0	281.0	237.0	103.0	1447.0	1977
1978	16.0	70.0	145.0	276.0	143.0	77.0	60.0	27.0	187.0	252.0	173.0	164.0	1610.0	1978
1979	74.0	75.0	235.0	300.0	222.0	168.0	139.0	119.0	164.0	336.0	385.0	112.0	2339.0	1979
NUMERO DE ANOS	5	5	6	6	6	6	6	6	6	6	6	6	5	
VALOR MAXIMO	74.0	211.0	235.0	300.0	222.0	168.0	139.0	155.0	193.0	336.0	389.0	180.0	2339.0	
MEDIANA	29.0	75.0	174.5	173.0	164.0	95.0	72.5	51.5	157.5	269.0	205.0	107.5	1610.0	
VALOR MINIMO	16.0	65.0	142.0	107.0	94.0	68.0	8.0	27.0	72.0	197.0	113.0	61.0	1390.0	
PROMEDIOS	44.0	113.0	183.8	197.3	162.0	105.0	75.5	75.7	143.2	267.3	237.0	119.0	1697.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1722.8	
PORCENTAJES	2.6	6.6	10.7	11.5	9.4	6.1	4.4	4.4	8.3	15.5	13.8	6.9		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 41. INDICE DE ARNOLDUS = 173.

DEV. ESTANDAR	27.8	63.6	42.6	78.4	45.1	37.2	46.7	49.7	50.2	45.1	115.4	44.8	379.7
COEF. VARIACION	0.632	0.563	0.231	0.397	0.279	0.355	0.618	0.657	0.350	0.169	0.487	0.377	0.224
COEF. ASIMETRIA	0.459	1.178	0.362	0.507	-0.283	1.059	-0.061	1.025	-0.658	-0.081	0.511	0.343	1.659

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350803	CAMPAMENTO BUENA VISTA	BERBEO	+05 11 00	+073 06 00	1350 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1962	-9.9	-9.9	-9.9	-9.9	-9.9	287.0	310.0	154.0	191.0	97.0	150.0	68.0	-9.9
1963	36.0	29.0	32.0	179.0	288.0	249.0	276.0	316.0	208.0	133.0	192.0	53.0	1991.0
1964	0.0	15.0	4.0	140.0	310.0	238.0	290.0	268.0	161.0	135.0	177.0	28.0	1766.0
1965	41.0	54.0	48.0	195.0	346.0	254.0	299.0	361.0	183.0	205.0	253.0	90.0	2329.0
1966	35.0	3.0	110.0	96.0	109.0	226.0	192.0	191.0	170.0	91.0	133.0	125.0	1481.0
1967	32.0	6.0	45.0	146.0	200.0	261.0	255.0	338.0	233.0	148.0	61.0	27.0	1772.0
1968	32.0	23.0	44.0	206.0	249.0	242.0	329.0	248.0	165.0	211.0	124.0	3.0	1876.0
1969	33.0	92.0	52.0	180.0	234.0	203.0	267.0	227.0	199.0	177.0	90.0	33.0	1787.0
1970	52.0	54.0	62.0	192.0	321.0	244.0	387.0	237.0	195.0	181.0	48.0	146.0	2119.0
1971	50.0	43.0	90.0	124.0	414.0	154.0	344.0	253.0	124.0	131.0	155.0	48.0	1970.0
1972	45.0	17.0	103.0	192.0	285.0	347.0	248.0	194.0	214.0	138.0	113.0	33.0	1929.0
1973	9.0	0.0	78.0	96.0	292.0	253.0	218.0	287.0	186.0	217.0	167.0	34.0	1837.0
1974	31.0	45.0	43.0	131.0	187.0	166.0	282.0	170.0	206.0	164.0	230.0	10.0	1685.0
1975	10.0	6.0	156.0	108.0	373.0	442.0	306.0	431.0	242.0	410.0	139.0	83.0	2706.0
1976	109.0	19.0	147.0	215.0	289.0	396.0	481.0	384.0	350.0	352.0	176.0	138.0	3096.0
1977	10.0	53.0	57.0	202.0	325.0	311.0	486.0	431.0	473.0	357.0	112.0	5.0	2822.0
1978	7.0	25.0	156.0	226.0	244.0	300.0	287.0	275.0	151.0	184.0	149.0	83.0	2087.0
1979	0.0	8.0	52.0	276.0	239.0	284.0	318.0	320.0	183.0	254.0	303.0	132.0	2369.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAF

ESTACION : CAMPAMENTO BUENA VISTA MUNICIPIO DE BERBEO PERIODO 1962 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	2369.0	2369.0	2369.0	0.626	0.131				I+	.		
2	1978	2087.0	4456.0	2228.0	-0.019	0.127				.+			
3	1977	2822.0	7278.0	2426.0	1.663	0.473				I +		.	
4	1976	3096.0	10374.0	2593.5	2.290	0.951				I	+		.
5	1975	2706.0	13080.0	2616.0	1.397	1.242				I	+.		
6	1974	1685.0	14765.0	2460.8	-0.939	1.046			.	I	+		
7	1973	1837.0	16602.0	2371.7	-0.591	0.923			.	I	+		
8	1972	1929.0	18531.0	2316.4	-0.381	0.844			.	I	+		
9	1971	1970.0	20501.0	2277.9	-0.287	0.784			.	I	+		
10	1970	2119.0	22620.0	2262.0	0.054	0.795				.	+		
11	1969	1787.0	24407.0	2218.8	-0.706	0.648			.	I	+		
12	1968	1876.0	26283.0	2190.3	-0.502	0.543			.	I	+		
13	1967	1772.0	28055.0	2158.1	-0.740	0.389			.	I +			
14	1966	1481.0	29536.0	2109.7	-1.406	0.096			.	+			
15	1965	2329.0	31865.0	2124.3	0.535	0.207				I +	.		
16	1964	1766.0	33631.0	2101.9	-0.754	0.050			.	+			
17	1963	1991.0	35622.0	2095.4	-0.239	0.0				. +			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 17 ANOS = 2095.4

DEVIACION ESTANDAR = 437.0

COEFICIENTE DE VARIACION = 0.209

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
231206	BUENA VISTA	BUENA VISTA	+05 33 00	+073 59 00	2200 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1942	-9.9	-9.9	-9.9	-9.9	58.0	126.0	13.5	17.0	154.5	625.5	643.0	387.5	-9.9
1943	350.0	223.0	365.5	398.0	196.5	57.0	98.5	64.5	80.5	452.0	301.5	305.0	2893.0
1944	144.5	163.5	229.5	201.0	371.0	231.0	13.0	115.5	79.0	456.0	213.0	366.5	2585.5
1945	202.0	138.0	186.0	401.0	510.5	62.5	32.5	53.0	167.0	454.0	363.5	317.5	2887.5
1946	266.5	241.5	277.5	648.5	153.0	3.5	6.0	6.0	7.0	278.0	507.0	206.0	2600.5
1947	224.0	186.0	180.1	150.0	208.0	115.9	110.0	95.2	199.8	434.0	138.0	156.0	2197.0
1948	33.0	124.0	218.0	317.5	244.0	34.0	75.0	72.0	254.0	251.0	138.0	152.0	1952.5
1949	50.0	149.0	255.0	200.0	296.0	111.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1950													
1951													
1952													
1953													
1954													
1955													
1956													
1957													
1958	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	27.0	129.5	60.0	160.0	161.0	131.0	-9.9
1959	16.0	35.0	97.0	188.0	181.0	186.0	-9.9	70.0	88.0	404.0	245.0	51.0	-9.9
1960	195.0	96.0	122.0	418.0	218.0	119.0	119.0	88.0	62.0	273.0	186.0	120.0	2016.0
1961	206.0	-9.9	92.0	158.0	-9.9	104.0	72.0	21.0	-9.9	-9.9	-9.9	-9.9	-9.9
1962													
1963	-9.9	-9.9	-9.9	392.0	236.0	142.0	23.0	147.0	62.0	67.0	185.0	63.0	-9.9
1964	2.0	53.0	61.0	223.0	153.0	204.0	104.0	46.0	104.0	202.0	100.0	127.0	1379.0
1965	71.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1966	29.0	75.0	75.0	340.0	491.0	315.0	233.0	252.0	415.0	421.0	295.0	387.0	3328.0
1967	218.0	245.0	289.0	561.0	432.0	545.0	103.0	27.0	173.0	242.0	260.0	236.0	3331.0
1968	125.0	296.0	161.0	313.0	415.0	256.0	257.0	105.0	210.0	345.0	287.0	162.0	2978.0
1969	203.0	113.0	85.0	275.0	150.0	60.0	35.0	59.0	105.0	316.0	306.0	167.0	1874.0
1970	114.0	160.0	184.0	36.1	180.7	81.6	54.0	95.0	178.0	394.0	679.0	121.0	2247.4
1971	270.0	75.0	204.0	235.0	269.0	75.0	17.0	89.0	144.0	159.0	214.0	185.0	1940.0
1972	142.0	91.0	163.0	441.0	142.0	125.0	64.0	84.0	48.0	158.0	144.0	177.0	1779.0
1973	17.0	16.0	92.0	147.0	135.0	132.0	210.0	90.0	241.0	278.0	445.0	236.0	2039.0
1974	57.0	166.0	238.0	216.0	143.0	57.0	0.0	24.0	210.0	259.0	186.0	0.0	1556.0
1975	50.0	169.0	202.0	194.0	208.0	50.0	193.0	67.0	144.0	252.0	222.0	294.0	2045.0
1976	114.0	152.0	151.0	147.0	140.0	46.0	0.0	4.0	160.0	331.0	244.0	44.0	1536.0
1977	46.0	19.0	99.0	159.0	120.0	74.0	38.0	-9.9	116.0	255.0	208.0	33.0	-9.9
1978	13.0	64.0	262.0	351.0	226.0	74.0	69.0	25.0	77.0	236.0	106.0	67.0	1570.0
1979	9.0	91.0	101.0	178.0	229.0	50.0	62.0	128.0	94.0	357.0	93.0	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

FEDYECTC IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR BANARIA

ESTACION X BUENA VISTA MUNICIPIO DE BUENA VISTA PERIODO 1942 - 1979 COEF DE CORRECCION 1.000

N	AÑO	T /	CO	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1978	1570.0	1570.0	1570.0	-1.113	-0.256				+ I			
2	1976	1535.0	3105.0	1552.5	-1.171	-0.612				+ I			
3	1975	2045.0	5150.0	1716.7	-0.320	-0.697				+ . I			
4	1974	1554.0	6704.0	1676.5	-1.136	-1.002			+	I			
5	1973	2039.0	8745.0	1749.0	-0.230	-1.050			+ .	I			
6	1972	1779.0	10524.0	1754.0	-0.764	-1.295			+ .	I			
7	1971	1940.0	12464.0	1780.6	-0.455	-1.427			+ .	I			
8	1970	2247.4	14711.4	1838.5	0.618	-1.423			+	.			
9	1969	1874.0	16585.4	1842.8	-0.005	-1.585			+ .	I			
10	1968	2576.0	19566.4	1956.3	1.238	-1.253			+	I	.		
11	1967	3331.0	22894.4	2081.3	1.627	-0.764			+	I		.	
12	1966	3328.0	26222.4	2185.2	1.622	-0.276				+ I		.	
13	1964	1379.0	27601.4	2123.2	-1.432	-0.660			.	+ I			
14	1960	2016.0	29617.4	2115.5	-0.368	-0.758				+ . I			
15	1948	1552.6	31569.9	2104.7	-0.474	-0.685				+ . I			
16	1947	2197.0	33766.9	2110.4	-0.066	-0.503				+ .			
17	1946	2600.5	36367.4	2159.3	0.807	-0.740				+ I	.		
18	1945	2887.6	39254.9	2180.8	1.066	-0.449				+ I	.		
19	1944	2885.5	41840.4	2202.1	0.982	-0.293				+ I	.		
20	1943	2893.0	44733.4	2236.7	1.056	0.0				+	.		

N	AÑO	T /	CO	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 20 AÑOS = 2236.7
DESVIACION ESTANDAR = 695.0
COEFICIENTE DE VARIACION = 0.308

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO MAC-CESTA *** CALCO DE HIDROCLIMATOLOGIA *** PROGRAMA CESTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
23120b	BUENA VISTA	BUENA VISTA	+05 33 00	+073 55 00	2200 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	27.0	129.5	60.0	160.0	161.0	131.0	-9.9	1958
1959	16.0	35.0	97.0	188.0	181.0	186.0	-9.9	70.0	88.0	404.0	245.0	91.0	-9.9	1959
1960	195.0	96.0	122.0	416.0	218.0	119.0	119.0	88.0	62.0	273.0	166.0	120.0	2016.0	1960
1961	206.0	-9.9	92.0	198.0	-9.9	104.0	72.0	21.0	-9.9	-9.9	-9.9	-9.9	-9.9	1961
1962														1962
1963	-9.9	-9.9	-9.9	392.0	236.0	142.0	23.0	147.0	62.0	67.0	185.0	63.0	-9.9	1963
1964	2.0	53.0	61.0	223.0	153.0	204.0	104.0	46.0	104.0	202.0	100.0	127.0	1379.0	1964
1965	71.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1965
1966	17.9	46.2	46.2	209.7	302.9	194.3	143.7	155.4	255.9	259.6	181.9	238.7	2052.4	1966
1967	134.4	151.1	178.2	346.0	266.4	336.2	63.5	16.7	106.7	149.2	160.3	145.5	2054.2	1967
1968	77.1	162.5	99.3	193.0	255.9	183.8	158.5	64.8	129.5	215.2	177.0	99.8	1836.6	1968
1969	203.0	113.0	85.0	275.0	150.0	60.0	35.0	55.0	105.0	316.0	306.0	167.0	1874.0	1969
1970	114.0	160.0	184.0	30.1	160.7	51.6	54.0	95.0	178.0	394.0	679.0	121.0	2247.4	1970
1971	270.0	75.0	204.0	235.0	269.0	79.0	17.0	89.0	144.0	159.0	214.0	185.0	1940.0	1971
1972	142.0	91.0	163.0	441.0	142.0	125.0	64.0	84.0	48.0	158.0	144.0	177.0	1779.0	1972
1973	17.0	16.0	92.0	147.0	135.0	132.0	210.0	90.0	241.0	278.0	445.0	236.0	2039.0	1973
1974	57.0	166.0	238.0	216.0	143.0	57.0	0.0	24.0	210.0	259.0	186.0	0.0	1556.0	1974
1975	50.0	169.0	232.0	194.0	208.0	50.0	193.0	67.0	144.0	252.0	222.0	294.0	2045.0	1975
1976	114.0	152.0	151.0	147.0	140.0	48.0	0.0	4.0	160.0	331.0	244.0	44.0	1535.0	1976
1977	46.0	19.0	99.0	159.0	120.0	74.0	38.0	-9.9	116.0	255.0	206.0	33.0	-9.9	1977
1978	13.0	64.0	262.0	351.0	226.0	74.0	69.0	25.0	77.0	236.0	106.0	67.0	1570.0	1978
1979	9.0	91.0	101.0	178.0	229.0	90.0	62.0	128.0	94.0	357.0	93.0	-9.9	-9.9	1979
NUMERO DE ANOS	19	17	18	19	18	19	19	19	19	19	19	18	14	
VALOR MAXIMO	270.0	182.5	262.0	441.0	302.9	336.2	210.0	155.4	255.9	404.0	679.0	294.0	2247.4	
CUARTIL SUPERIOR	142.0	156.0	184.0	346.0	236.0	183.8	119.0	95.0	160.0	316.0	244.0	177.0	2045.0	
MEDIANA	71.0	91.0	111.5	209.7	194.5	104.0	63.5	70.0	106.7	255.0	186.0	124.0	1907.0	
CUARTIL INFERIOR	17.0	49.6	92.0	178.0	143.0	60.0	27.0	25.0	77.0	160.0	160.3	67.0	1570.0	
VALOR MINIMO	2.0	16.0	46.2	36.1	120.0	48.0	0.0	4.0	48.0	67.0	93.0	0.0	1379.0	
PROMEDIOS	92.3	98.8	137.6	239.3	197.5	121.6	76.5	73.9	128.5	248.7	223.3	130.0	1651.7	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1765.0	
PORCENTAJES	5.2	5.6	7.8	13.6	11.2	6.9	4.3	4.2	7.1	14.1	12.7	7.4		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 35. INDICE DE ARNOLDUS = 172.

DEV. ESTANDAR	80.5	55.9	62.3	105.4	55.4	73.7	62.4	44.9	60.8	88.4	136.0	77.3	254.5
COEF. VARIACION	0.872	0.566	0.453	0.440	0.281	0.606	0.816	0.607	0.484	0.355	0.609	0.595	0.137
COEF. ASIMETRIA	0.700	0.051	0.519	0.476	0.287	1.460	0.867	0.236	0.848	-0.027	2.444	0.405	-0.484

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240142	CALDAS	CALDAS	+05 33 00	+073 52 00	2655 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1965	17.4	30.7	33.2	149.0	87.9	5.3	3.8	50.7	91.3	147.0	188.1	54.3	858.7
1966	3.1	0.0	36.2	111.3	161.2	131.1	49.2	70.9	94.5	153.5	151.5	86.8	1049.3
1967	24.3	88.7	80.7	186.2	134.9	64.8	29.4	19.4	50.5	123.2	87.8	60.0	949.9
1968	37.3	30.8	79.9	241.8	92.0	145.1	14.1	47.0	179.5	115.1	54.8	21.8	1059.2
1969	42.1	26.6	52.8	191.2	49.4	41.3	5.1	23.3	125.4	194.7	147.9	49.8	949.6
1970	20.5	14.1	21.2	106.4	142.3	46.3	52.9	45.1	72.4	115.0	84.5	63.2	787.9
1971	111.8	45.8	113.3	179.0	186.1	76.9	16.4	69.5	93.5	141.1	108.4	44.2	1186.0
1972	73.1	27.9	75.8	302.9	136.8	107.9	83.8	63.4	19.4	101.4	139.8	52.2	1184.4
1973	4.5	5.6	69.1	51.6	65.0	133.4	137.9	60.9	126.3	167.5	284.0	53.0	1159.2
1974	28.1	71.3	91.7	187.6	84.8	59.3	32.5	32.2	158.0	223.5	189.2	22.9	1221.1
1975	3.5	76.7	125.9	101.8	183.7	68.6	109.9	121.3	99.4	149.0	144.2	142.8	1327.0
1976	34.4	61.2	153.6	143.1	113.7	54.5	0.6	28.7	76.8	161.1	108.5	41.2	977.4
1977	7.3	7.6	106.6	43.5	26.1	45.1	65.6	47.4	95.0	136.3	138.7	10.1	729.3
1978	6.0	32.5	119.3	166.1	175.7	69.4	59.1	26.5	55.0	132.4	48.7	64.1	974.8
1979	15.5	24.0	85.7	149.7	111.7	82.1	69.1	48.9	75.9	152.0	180.4	52.9	1087.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR CAVARAL

ESTACION X CALCAS MUNICIPIO DE CALCA PERIODO CCEF DE CORRECCION
1965 - 1979 1.000

ESTACION Y ESCLUSA TELLA MUNICIPIO DE CHICLINCLIHA PERIODO CCEF DE CORRECCION
1965 - 1979 1.000

N	AN	CLI	CUY	RAN	F=CM	-4. I F=0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	1088.	1194.	0.900	-0.021					+				
2	1978	2063.	2165.	1.060	0.048					+	•			
3	1977	2792.	3124.	0.818	-0.108				•	+I				
4	1976	3765.	4103.	1.076	-0.041					+	•			
5	1975	5056.	5167.	1.318	0.264					I+			•	
6	1974	6317.	6426.	1.066	0.336					I+	•			
7	1973	7517.	7775.	0.952	0.278				•	I+				
8	1972	8701.	8567.	1.066	0.251					I+	•			
9	1971	9887.	10265.	0.963	0.331				•	I+				
10	1970	10975.	11252.	0.856	0.206				•	I+				
11	1969	11925.	12458.	0.845	0.045				•	+				
12	1968	12984.	13850.	1.041	0.255					+	•			
13	1968	13783.	14805.	1.068	0.147					I+	•			
14	1965	14852.	15898.	0.845	0.000				•	+				

N	AN	CLI	CUY	RAN	F=CM	-4. I F=0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 1042.3 1121.3

RAZONES PROMEDIOS Y/X = 1.076

X/Y = 0.930

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-CASTOR *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CASTOR

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240142	CALDAS	CALDAS	+05 33 25	+073 52 13	2655 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1965	17.4	30.7	33.2	149.0	67.9	5.3	3.8	50.7	91.3	147.0	166.1	94.3	858.7	1965
1966	3.1	0.0	36.2	111.3	161.2	131.1	49.2	70.9	94.5	153.5	151.5	86.8	1049.3	1966
1967	24.3	66.7	80.7	186.2	134.9	64.8	29.4	19.4	50.5	123.2	67.8	60.0	949.9	1967
1968	37.3	30.8	79.9	241.3	92.0	145.1	14.1	47.0	179.5	115.1	94.8	21.8	1059.2	1968
1969	42.1	26.6	52.8	191.2	49.4	41.3	5.1	23.3	125.4	194.7	147.9	49.8	949.6	1969
1970	20.5	14.1	21.2	106.4	142.3	46.3	52.9	45.1	72.4	119.0	84.5	63.2	787.9	1970
1971	111.8	45.8	113.3	179.0	186.1	76.9	16.4	69.5	93.5	141.1	108.4	44.2	1186.0	1971
1972	73.1	27.9	75.8	302.9	136.8	107.9	83.8	63.4	19.4	101.4	139.8	52.2	1184.4	1972
1973	4.5	5.6	69.1	51.6	65.0	133.4	137.9	60.9	126.3	167.9	284.0	93.0	1199.2	1973
1974	28.1	71.3	91.7	187.6	64.8	99.3	32.5	32.2	158.0	223.5	169.2	22.9	1221.1	1974
1975														1975
1976	34.4	61.2	153.6	143.1	113.7	54.5	0.6	28.7	76.8	161.1	108.5	41.2	977.4	1976
1977	7.3	7.6	106.6	43.5	26.1	45.1	65.6	47.4	95.0	136.3	138.7	10.1	729.3	1977
1978	6.0	32.5	119.3	106.1	175.7	89.4	59.1	26.5	55.0	132.4	48.7	64.1	974.8	1978
1979	15.5	24.0	85.7	149.7	111.7	82.1	69.1	48.9	75.9	192.0	180.4	52.9	1087.9	1979
NUMERO DE ANOS	14	14	14	14	14	14	14	14	14	14	14	14	14	
VALOR MAXIMO	111.8	88.7	153.6	302.9	186.1	145.1	137.9	70.9	179.5	223.5	284.0	93.0	1221.1	
CUARTIL SUPERIOR	37.3	45.8	106.6	187.6	142.3	107.9	65.6	60.9	125.4	167.9	160.4	63.2	1184.4	
MEDIANA	22.4	29.3	80.3	157.9	112.7	79.5	40.8	47.2	92.4	144.0	139.2	52.5	1013.3	
CUARTIL INFERIOR	7.3	14.1	52.8	111.3	64.8	46.3	14.1	28.7	72.4	123.2	87.8	41.2	949.6	
VALOR MINIMO	3.1	0.0	21.2	43.5	26.1	5.3	0.6	19.4	19.4	101.4	48.7	10.1	729.3	
PROMEDIOS	30.4	33.3	79.9	157.8	112.0	80.2	44.3	45.3	93.8	150.6	136.6	51.2	1015.3	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1015.3	
PORCENTAJES	3.0	3.3	7.9	15.5	11.0	7.9	4.4	4.5	9.2	14.8	13.5	5.0		
DEV. ESTANDAR	30.0	25.6	36.6	68.5	47.4	40.4	38.1	17.1	42.5	34.5	62.3	23.1	154.9	
COEF. VARIACION	0.988	0.768	0.458	0.434	0.424	0.504	0.860	0.378	0.453	0.229	0.456	0.451	0.153	
COEF. ASIMETRIA	1.817	0.876	0.200	0.226	-0.154	0.006	1.055	-0.006	0.451	0.712	0.758	0.032	-0.350	

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 25. INDICE DE ARNOLDUS = 107.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240142	CALDAS	CALDAS	+05 33 25	+073 52 13	2655 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	20.0	51.5	84.4	178.3	133.9	41.9	50.3	72.5	85.7	168.8	71.3	67.0	1025.6	1960
1961	12.4	13.3	121.6	75.1	37.2	80.3	38.9	33.5	30.5	184.5	144.9	65.9	838.1	1961
1962	42.9	15.7	60.9	151.5	132.2	173.5	13.7	57.7	103.4	141.9	152.4	32.0	1077.8	1962
1963	17.6	73.6	108.1	159.6	137.6	89.0	27.0	46.6	78.4	181.4	141.9	71.4	1132.2	1963
1964	16.9	31.9	36.1	199.7	82.1	176.2	76.8	30.4	151.9	116.0	110.2	46.5	1074.7	1964
1965	17.4	30.7	33.2	149.0	87.9	5.3	3.8	50.7	91.3	147.0	188.1	54.3	858.7	1965
1966	3.1	0.0	30.2	111.3	161.2	131.1	49.2	70.9	94.5	153.5	151.5	86.8	1049.3	1966
1967	24.3	88.7	80.7	189.2	134.9	64.8	29.4	19.4	50.5	123.2	87.8	60.0	949.9	1967
1968	37.3	30.8	79.9	241.8	92.0	145.1	14.1	47.0	179.5	115.1	54.8	21.8	1059.2	1968
1969	42.1	20.6	52.8	191.2	49.4	41.3	5.1	23.3	125.4	194.7	147.9	49.8	949.6	1969
1970	20.5	14.1	21.2	106.4	142.3	46.3	52.9	45.1	72.4	119.0	84.5	63.2	787.9	1970
1971	111.8	45.8	113.3	179.0	186.1	76.9	16.4	69.5	93.5	141.1	108.4	44.2	1186.0	1971
1972	73.1	27.9	75.8	302.9	136.8	107.9	83.8	63.4	19.4	101.4	139.8	52.2	1184.4	1972
1973	4.5	5.6	69.1	51.6	65.0	133.4	137.9	60.9	126.3	167.9	284.0	93.0	1199.2	1973
1974	28.1	71.3	91.7	187.6	84.8	99.3	32.5	32.2	158.0	223.5	189.2	22.9	1221.1	1974
1975	2.9	64.2	105.3	85.2	153.7	57.5	91.9	101.5	83.1	124.6	120.5	119.4	1109.8	1975
1976	34.4	61.2	153.6	143.1	113.7	54.5	0.6	28.7	76.8	161.1	108.5	41.2	977.4	1976
1977	7.3	7.6	106.6	43.5	26.1	45.1	65.6	47.4	95.0	136.3	138.7	10.1	729.3	1977
1978	6.0	32.5	119.3	166.1	175.7	89.4	59.1	26.5	55.0	132.4	48.7	64.1	974.8	1978
1979	15.5	24.0	85.7	149.7	111.7	82.1	69.1	48.9	75.9	192.0	180.4	52.9	1087.9	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	111.8	88.7	153.6	302.9	186.1	176.2	137.9	101.5	179.5	223.5	284.0	119.4	1221.1	
CUARTIL SUPERIOR	35.8	50.3	107.3	186.9	139.9	119.5	67.3	62.1	114.4	175.1	151.9	66.4	1121.0	
MEDIANA	18.8	30.7	82.5	155.5	122.9	81.2	44.0	47.2	88.5	144.4	139.2	53.6	1054.2	
CUARTIL INFERIOR	9.8	14.9	56.8	108.8	83.4	50.4	15.2	31.3	74.1	123.9	98.1	42.7	949.7	
VALOR MINIMO	2.9	0.0	21.2	43.5	26.1	5.3	0.6	19.4	19.4	101.4	48.7	10.1	729.3	
PROMEDIOS	26.9	35.8	81.8	152.9	112.2	87.0	45.9	48.8	92.3	151.3	132.7	55.9	1023.6	
PORCENTAJES	2.6	3.5	8.0	14.9	11.0	8.5	4.5	4.8	9.0	14.8	13.0	5.5		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 23. INDICE DE ARNOLDUS = 106.

INDICE DE IRREGULARIDAD INTERANUAL =1.43

DEV. ESTANDAR	26.3	25.2	34.6	62.7	45.3	46.1	35.1	20.5	40.6	32.3	54.2	25.5	139.9
COEF. VARIACION	0.979	0.702	0.424	0.410	0.404	0.529	0.765	0.420	0.440	0.214	0.408	0.457	0.137

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1254.	1203.	1141.	1024.	906.	844.	793.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.103	0.589	0.004	0.246	-0.344	0.478	0.867	0.741	0.405	0.520	0.885	0.531	-0.562

IMPRESO EN COLOMBIA POR DANARAJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
900003	LOS CEDROS	CAMPOHERMOSO	+05 02 50	+073 12 10	1250 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1973	-9.9	-9.9	-9.9	-9.9	-9.9	351.0	312.0	588.0	350.0	248.0	164.0	81.0	-9.9
1974	23.0	38.0	102.0	209.0	461.0	346.0	561.0	343.0	288.0	223.0	251.0	35.0	2880.0
1975	29.0	8.0	157.0	201.0	344.0	451.0	402.0	457.0	211.0	254.0	179.0	87.0	2820.0
1976	14.0	27.0	62.0	289.0	401.0	457.0	505.0	340.0	189.0	207.0	144.0	35.0	2710.0
1977	0.0	18.0	42.0	215.0	307.0	364.0	360.0	312.0	305.0	206.0	152.0	18.0	2299.0
1978	32.0	33.0	125.0	242.0	400.0	370.0	279.0	441.0	214.0	275.0	96.0	84.0	2595.0
1979	40.0	5.0	68.0	235.0	214.0	476.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARAYO

ESTACION X LOS CEDROS MUNICIPIO DE CAMPOHERMOSO PERIODO COEF DE CORRECCION

1973 - 1979 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1978	2595.0	2595.0	2595.0	-0.286	-0.025				. +			
2	1977	2299.0	4894.0	2447.0	-1.575	-0.161			.	+I			
3	1975	2710.0	7604.0	2534.7	0.214	-0.142				+I .			
4	1975	2820.0	10424.0	2606.0	0.693	-0.082				+ .			
5	1974	2980.0	13304.0	2660.8	0.954	0.0				+ .			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 5 ANOS = 2660.8

DEVIACION ESTANDAR = 229.7

COEFICIENTE DE VARIACION = 0.086

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
900003	LOS CEDROS	CAMPOHERMOSO	+05 00 55	+073 12 26	1425 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1973	-9.9	-9.9	-9.9	-9.9	-9.9	351.0	312.0	588.0	350.0	248.0	164.0	81.0	-9.9	1973
1974	23.0	33.0	102.0	209.0	461.0	346.0	561.0	343.0	288.0	223.0	251.0	35.0	2880.0	1974
1975	29.0	8.0	157.0	201.0	344.0	451.0	402.0	457.0	211.0	294.0	175.0	87.0	2820.0	1975
1976	14.0	27.0	62.0	289.0	401.0	497.0	505.0	340.0	189.0	207.0	144.0	35.0	2710.0	1976
1977	0.0	16.0	42.0	215.0	307.0	364.0	360.0	312.0	305.0	206.0	152.0	18.0	2299.0	1977
1978	32.0	33.0	125.0	242.0	400.0	370.0	279.0	441.0	214.0	279.0	96.0	84.0	2595.0	1978
1979	40.0	5.0	68.0	235.0	214.0	478.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1979
NUMERO DE ANOS	6	6	6	6	6	7	6	6	6	6	6	6	5	
VALOR MAXIMO	40.0	38.0	157.0	289.0	461.0	497.0	561.0	588.0	350.0	294.0	251.0	87.0	2880.0	
MEDIANA	26.0	22.5	85.0	225.0	372.0	370.0	381.0	392.0	251.0	235.5	158.0	58.0	2710.0	
VALOR MINIMO	0.0	5.0	42.0	201.0	214.0	346.0	279.0	312.0	189.0	206.0	96.0	18.0	2299.0	
PROMEDIOS	23.0	21.5	92.7	231.8	354.5	408.1	403.2	413.5	259.5	242.8	164.3	56.7	2660.8	
												TOTAL DE LOS PROMEDIOS MENSUALES =	2671.6	
PORCENTAJES	0.9	0.8	3.5	8.7	13.3	15.3	15.1	15.5	9.7	9.1	6.2	2.1		
DEV. ESTANDAR	14.3	13.4	43.3	32.1	66.8	64.7	110.3	103.7	64.0	37.4	50.9	30.6	229.7	
COEF. VARIACION	0.620	0.625	0.468	0.138	0.245	0.159	0.274	0.251	0.247	0.154	0.310	0.541	0.086	
COEF. ASIMETRIA	-0.729	-0.101	0.468	1.291	-0.678	0.476	0.499	0.975	0.344	0.446	0.738	-0.161	-1.136	

TRIMESTRE MAS LLUVIOSO JUN JUL AGO **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 64. INDICE DE ARNOLDUS = 317.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240359	CERINZA	CERINZA	+05 58 00	+072 56 00	2725 METROS

AÑO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1971	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	51.0	70.0	134.0	38.0	48.0	-9.9
1972	60.0	62.0	54.0	-9.9	-9.9	87.0	-9.9	29.0	38.0	64.0	79.0	35.0	-9.9
1973	9.0	8.0	95.0	104.0	106.0	63.0	62.0	84.0	180.0	134.0	202.0	43.0	1090.0
1974	85.0	83.0	70.0	147.0	94.0	63.0	33.0	37.0	126.0	128.0	129.0	16.0	1011.0
1975	0.0	82.0	38.0	86.0	160.0	56.0	69.0	49.0	86.0	153.0	128.0	62.0	969.0
1976	0.0	62.0	114.0	124.0	91.0	48.0	34.0	20.0	43.0	203.0	116.0	74.0	929.0
1977	9.0	3.0	74.0	88.0	114.0	101.0	60.0	76.0	83.0	165.0	155.0	67.0	999.0
1978	0.0	7.0	116.0	199.0	155.0	79.0	83.0	21.0	87.0	80.0	93.0	40.0	960.0
1979	3.0	29.0	129.0	195.0	71.0	123.0	75.0	113.0	88.0	184.0	184.0	36.0	1230.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR BANARAL C

ESTACION A CERINZA MUNICIPIO DE CERINZA PERIODO 1971 - 1979 COEF DE CORRECCION 1.000

	N	AN	T A	CO	MOY	ECA	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1	1971	1230.0	1230.0	1230.0	1.572	0.198				I+		.	
2	2	1978	906.0	6190.0	1099.0	-0.649	0.133			.	I+			
3	3	1977	595.0	5139.0	1003.0	-0.270	0.106				I+			
4	4	1976	529.0	4116.0	1029.0	-0.550	0.010				+			
5	5	1975	909.0	5037.0	1017.4	-0.562	-0.048			.	+			
6	6	1974	1011.0	6096.0	1016.3	-0.154	-0.061				+.			
7	7	1973	1090.0	7186.0	1026.9	0.613	0.000				+	.		
	N	AN	T A	CO	MOY	ECA	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 7 ANOS = 1026.9

DESVIACION ESTANDAR = 103.0

COEFICIENTE DE VARIACION = 0.100

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO ICAC-CRSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240359	CERINZA	CERINZA	+05 58 14	+072 56 06	2680 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1971	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	51.0	70.0	134.0	36.0	48.0	-9.9	1971
1972	60.0	62.0	54.0	-9.9	-9.9	87.0	-9.9	29.0	38.0	64.0	79.0	35.0	-9.9	1972
1973	9.0	8.0	95.0	104.0	106.0	63.0	62.0	84.0	180.0	134.0	202.0	43.0	1090.0	1973
1974	85.0	83.0	70.0	147.0	94.0	63.0	33.0	37.0	126.0	128.0	125.0	16.0	1011.0	1974
1975	0.0	82.0	38.0	86.0	160.0	56.0	69.0	49.0	86.0	153.0	126.0	62.0	969.0	1975
1976	0.0	62.0	114.0	124.0	91.0	48.0	34.0	20.0	43.0	203.0	116.0	74.0	929.0	1976
1977	9.0	3.0	74.0	88.0	114.0	101.0	60.0	76.0	63.0	169.0	155.0	67.0	999.0	1977
1978	0.0	7.0	116.0	199.0	185.0	79.0	83.0	21.0	67.0	80.0	93.0	40.0	960.0	1978
1979	3.0	29.0	129.0	195.0	71.0	123.0	75.0	113.0	68.0	184.0	164.0	36.0	1230.0	1979
NUMERO DE ANOS	8	8	8	7	7	8	7	9	9	9	9	9	7	
VALOR MAXIMO	85.0	83.0	129.0	199.0	160.0	123.0	83.0	113.0	180.0	203.0	202.0	74.0	1230.0	
MEDIANA	6.0	45.5	84.5	124.0	106.0	71.0	62.0	49.0	66.0	134.0	126.0	43.0	999.0	
VALOR MINIMO	0.0	3.0	38.0	86.0	71.0	48.0	33.0	20.0	38.0	64.0	36.0	16.0	929.0	
PROMEDIOS	20.8	42.0	86.3	134.7	113.0	77.5	59.4	53.3	89.0	138.8	124.9	46.8	1026.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		986.4	
PORCENTAJES	2.1	4.3	8.7	13.7	11.5	7.9	6.0	5.4	9.0	14.1	12.7	4.7		
DEV. ESTANDAR	32.8	34.1	32.4	47.5	33.2	25.3	19.3	31.7	43.0	45.4	51.4	18.2	103.0	
COEF. VARIACION	1.583	0.813	0.376	0.353	0.294	0.326	0.325	0.595	0.483	0.327	0.411	0.389	0.100	
COEF. ASIMETRIA	1.585	0.025	-0.143	0.520	0.546	0.783	-0.554	0.821	1.148	-0.403	-0.110	-0.012	1.529	

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 55.

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240331	COMBITA	COMBITA	+05 38 00	+073 20 00	2730 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1958	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	66.0	26.0	64.0	112.0	26.0	-9.9
1959	8.0	22.0	34.0	86.0	162.0	116.0	74.0	137.0	26.0	130.0	103.0	14.0	912.0
1960	0.0	136.0	60.0	-9.9	-9.9	-9.9	-9.9	-9.9	11.0	206.0	88.0	164.0	-9.9
1961	-9.9	-9.9	-9.9	-9.9	6.0	66.0	48.0	36.0	38.0	110.0	105.0	12.0	-9.9
1962	10.0	12.0	183.0	69.0	108.0	140.0	72.0	75.0	104.0	325.0	228.0	20.0	1346.0
1963	93.0	33.0	134.0	75.0	169.0	155.0	109.0	80.0	50.0	119.0	249.0	0.0	1266.0
1964	0.0	0.0	5.0	131.0	95.0	126.0	58.0	71.0	125.0	141.0	135.0	57.0	944.0
1965	25.0	0.0	21.0	216.0	175.0	95.0	51.0	90.0	70.0	242.0	255.0	0.0	1240.0
1966	0.0	0.0	40.0	85.0	111.0	109.0	88.0	153.0	100.0	115.0	179.0	101.0	1081.0
1967	5.0	5.0	111.0	139.0	169.0	166.0	91.0	69.0	86.0	73.0	193.0	124.0	1231.0
1968	16.0	17.0	35.0	188.0	65.0	166.0	90.0	95.0	86.0	115.0	110.0	18.0	1001.0
1969	93.0	85.0	21.0	156.0	73.0	151.0	48.0	31.0	68.0	166.0	89.0	33.0	1014.0
1970	42.0	28.0	15.0	88.0	210.0	95.0	230.0	154.0	208.0	321.0	153.0	42.0	1587.0
1971	129.0	27.0	201.0	69.0	300.0	92.0	81.0	129.0	142.0	125.0	141.0	86.0	1526.0
1972	93.0	53.0	61.0	-9.9	-9.9	139.0	59.0	75.0	50.0	72.0	91.0	16.0	-9.9
1973	0.0	0.0	107.0	115.0	124.0	119.0	115.0	103.0	193.0	133.0	181.0	58.0	1248.0
1974	39.0	55.0	94.0	96.0	70.0	71.0	52.0	48.0	140.0	241.0	141.0	38.0	1085.0
1975	0.0	48.0	51.0	99.0	218.0	131.0	115.0	167.0	93.0	163.0	76.0	228.0	1389.0
1976	0.0	33.0	121.0	159.0	110.0	84.0	54.0	41.0	107.0	137.0	90.0	59.0	995.0
1977	0.0	0.0	58.0	58.0	94.0	75.0	64.0	60.0	49.0	61.0	123.0	26.0	668.0
1978	4.0	10.0	57.0	207.0	129.0	77.0	53.0	31.0	76.0	186.0	60.0	55.0	945.0
1979	0.0	0.0	66.0	136.0	93.0	159.0	30.0	51.0	59.0	193.0	209.0	21.0	1017.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARA C

ESTACION X COMBITA MUNICIPIO DE COMBITA PERIODO 1958 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I
1	1979	1017.0	1017.0	1017.0	-0.520	-0.107				+I			
2	1978	945.0	1962.0	981.0	-0.829	-0.277				+ I			
3	1977	668.0	2630.0	876.7	-2.014	-0.690				+ I			
4	1976	995.0	3625.0	906.3	-0.615	-0.816				+ I			
5	1975	1389.0	5014.0	1002.8	1.072	-0.596				+ I			
6	1974	1085.0	6099.0	1016.5	-0.229	-0.643				+ I			
7	1973	1248.0	7347.0	1049.6	0.468	-0.547				+ I			
8	1971	1526.0	8873.0	1109.1	1.658	-0.207				+ I			
9	1970	1587.0	10460.0	1162.2	1.919	0.187				I+			
10	1969	1014.0	11474.0	1147.4	-0.533	0.077				+			
11	1968	1001.0	12475.0	1134.1	-0.589	-0.044				+			
12	1967	1231.0	13706.0	1142.2	0.395	0.037				+			
13	1965	1081.0	14787.0	1137.5	-0.247	-0.013				+			
14	1965	1240.0	16027.0	1144.8	0.434	0.076				+			
15	1964	944.0	16971.0	1131.4	-0.833	-0.095				+			
16	1963	1266.0	18237.0	1139.8	0.545	0.017				+			
17	1962	1346.0	19583.0	1151.9	0.898	0.199				I+			
18	1959	912.0	20495.0	1138.6	-0.970	0.0				+			
							P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
N	AN	T A	CU	MOY	ECR	PCAN	I	I	I	I	I	I	I

PROMEDIO DE LOS 18 ANOS = 1138.6

DEVIACION ESTANDAR = 233.7

COEFICIENTE DE VARIACION = 0.205

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240331	COMBITA	COMBITA	+05 38 09	+073 19 51	2820 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	66.0	26.0	64.0	112.0	26.0	-9.9	1958
1959	8.0	22.0	34.0	86.0	162.0	116.0	74.0	137.0	26.0	130.0	103.0	14.0	912.0	1959
1960	0.0	136.0	60.0	-9.9	-9.9	-9.9	-9.9	-9.9	11.0	206.0	88.0	164.0	-9.9	1960
1961	-9.9	-9.9	-9.9	-9.9	6.0	58.0	48.0	36.0	38.0	110.0	105.0	12.0	-9.9	1961
1962	10.0	12.0	183.0	69.0	108.0	140.0	72.0	75.0	104.0	325.0	228.0	20.0	1346.0	1962
1963	93.0	33.0	134.0	75.0	169.0	155.0	109.0	80.0	50.0	119.0	249.0	0.0	1266.0	1963
1964	0.0	0.0	5.0	131.0	95.0	126.0	58.0	71.0	125.0	141.0	135.0	57.0	944.0	1964
1965	25.0	0.0	21.0	216.0	175.0	95.0	51.0	90.0	70.0	242.0	255.0	0.0	1240.0	1965
1966	0.0	0.0	40.0	85.0	111.0	109.0	88.0	153.0	100.0	115.0	179.0	101.0	1081.0	1966
1967	5.0	5.0	111.0	139.0	169.0	166.0	91.0	69.0	66.0	73.0	193.0	124.0	1231.0	1967
1968	16.0	17.0	35.0	188.0	65.0	166.0	90.0	95.0	86.0	115.0	110.0	18.0	1001.0	1968
1969	93.0	85.0	21.0	156.0	73.0	151.0	48.0	31.0	68.0	166.0	69.0	33.0	1014.0	1969
NUMERO DE ANOS	10	10	10	9	10	10	10	11	12	12	12	12	9	
VALOR MAXIMO	93.0	136.0	183.0	216.0	175.0	166.0	109.0	153.0	125.0	325.0	255.0	164.0	1346.0	
CUARTIL SUPERIOR	*****	*****	*****	*****	*****	*****	*****	*****	93.0	186.0	210.5	79.0	******	
MEDIANA	9.0	14.5	37.5	131.0	109.5	133.0	73.0	75.0	69.0	124.5	123.5	23.0	1081.0	
CUARTIL INFERIOR	*****	*****	*****	*****	*****	*****	*****	*****	32.0	112.5	104.0	13.0	******	
VALOR MINIMO	0.0	0.0	5.0	69.0	6.0	58.0	48.0	31.0	11.0	64.0	88.0	0.0	912.0	
PROMEDIOS	25.0	31.0	64.4	127.2	113.3	128.2	72.9	82.1	65.8	150.5	153.8	47.4	1115.0	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1061.7	
PORCENTAJES	2.4	2.9	6.1	12.0	10.7	12.1	6.9	7.7	6.2	14.2	14.5	4.5		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 22. INDICE DE ARNOLDUS = 109.

DEV. ESTANDAR	36.7	44.9	58.5	52.6	56.0	34.6	21.3	36.9	35.9	74.6	63.6	53.6	158.1
COEF. VARIACION	1.468	1.448	0.908	0.414	0.494	0.270	0.293	0.449	0.545	0.496	0.413	1.130	0.142
COEF. ASIMETRIA	1.588	1.838	1.156	0.512	-0.572	-0.835	0.239	0.694	0.005	1.297	0.599	1.302	0.135

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
243519	EL TUNEL	CUITIVA	+05 34 00	+072 56 00	3025 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1971	-9.9	-9.9	84.6	57.6	159.4	37.8	80.1	87.8	61.0	41.9	32.3	40.1	-9.9
1972	38.5	30.4	53.2	179.2	57.2	60.6	43.9	20.9	41.2	25.6	67.3	7.0	649.0
1973	1.9	0.8	44.5	54.4	39.3	45.2	50.1	74.2	83.5	86.5	84.0	45.3	615.7
1974	10.6	38.7	75.1	94.9	67.0	44.4	55.9	26.5	66.6	69.8	58.3	5.7	613.5
1975	2.3	66.9	40.1	62.9	86.8	69.0	57.0	55.1	39.4	109.7	70.6	76.2	736.0
1976	7.0	14.4	103.1	96.2	86.2	69.2	100.0	41.1	29.7	95.9	66.9	45.3	755.0
1977	0.0	1.9	17.2	132.6	112.9	82.8	34.6	76.2	75.1	73.2	114.8	-9.9	-9.9
1978													
1979	9.7	5.9	64.7	112.8	56.1	162.0	75.8	83.7	53.2	131.4	187.1	48.0	990.4

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

ESTACION X MONGUI MUNICIPIO DE MONGUI PERIODO 1971 - 1979 COEF DE CORRECCION 1.000

ESTACION Y EL TUNEL MUNICIPIO DE CUITIVA PERIODO 1971 - 1979 COEF DE CORRECCION 1.000

N	AN	CCX	CCY	RAN	FCAN	F = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
					F :	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1977	1223.	990.	1.035	0.048					+ .				
2	1976	2151.	1745.	1.030	0.079					+ .				
3	1975	2520.	2461.	0.976	-0.047				.	+				
4	1974	3655.	3095.	1.004	-0.043					*				
5	1973	4295.	3711.	0.865	-0.155				.	+I				
6	1972	5201.	4500.	1.173	0.0					+		.		
N	AN	CCX	CCY	RAN	FCAN	F = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
					F :	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 666.5 720.6

RAZONES PROMEDIOS Y/X = 0.938

X/Y = 1.193

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
243519	EL TUNEL	CUITIVA	+05 34 32	+072 56 44	3025 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1971	-9.9	-9.9	84.6	57.6	159.4	37.8	80.1	87.8	61.0	41.9	32.3	40.1	-9.9	1971
1972	38.5	60.4	53.2	179.2	87.2	80.6	43.9	20.9	41.2	29.6	67.3	7.0	649.0	1972
1973	1.9	0.8	44.5	94.4	39.3	49.2	50.1	74.2	83.5	88.5	84.0	45.3	615.7	1973
1974	10.6	38.7	75.1	94.9	67.0	44.4	55.9	26.5	66.6	69.8	58.3	5.7	613.5	1974
1975	2.3	66.9	40.1	82.9	88.8	69.0	57.0	55.1	39.4	109.7	70.6	76.2	736.0	1975
1976	7.0	14.4	103.1	98.2	86.2	69.2	100.0	41.1	29.7	95.9	66.9	45.3	755.0	1976
1977	0.0	1.9	17.2	132.6	112.9	52.8	34.6	76.2	75.1	73.2	114.8	-9.9	-9.9	1977
1978														1978
1979	9.7	5.9	64.7	112.8	56.1	162.0	75.8	83.7	53.2	131.4	187.1	48.0	990.4	1979
NUMERO DE ANOS	7	7	8	8	8	8	8	8	8	8	8	7	6	
VALOR MAXIMO	38.5	66.9	103.1	179.2	159.4	162.0	100.0	87.8	83.5	131.4	187.1	76.2	990.4	
MEDIANA	7.0	14.4	58.9	95.6	76.6	60.9	56.4	64.6	57.1	80.8	66.9	45.3	692.5	
VALOR MINIMO	0.0	0.8	17.2	54.4	39.3	37.8	34.6	20.9	29.7	29.6	32.3	5.7	613.5	
PROMEDIOS	10.0	22.7	60.3	98.8	83.1	70.6	62.2	58.2	56.2	80.0	85.2	38.2	726.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		725.6	
PORCENTAJES	1.4	3.1	8.3	13.6	11.5	9.7	8.6	8.0	7.7	11.0	11.7	5.3		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 13. INDICE DE ARAOLOUS = 71.

DEV. ESTANDAR	13.2	24.3	27.3	42.7	38.4	39.6	21.5	26.2	18.7	33.8	47.3	24.7	142.5
COEF. VARIACION	1.321	1.068	0.453	0.432	0.462	0.561	0.346	0.450	0.333	0.422	0.555	0.647	0.196
COEF. ASIMETRIA	2.141	1.077	0.031	0.870	1.163	2.126	0.634	-0.383	0.043	-0.089	1.627	-0.131	1.564

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
351903	CHAMEZA	CHAMEZA	+05 13 00	+072 52 00	1100 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1975	11.0	14.0	201.0	146.0	511.0	755.0	387.0	472.0	276.0	389.0	299.0	252.0	3713.0
1976	29.0	12.0	364.0	358.0	449.0	627.0	736.0	376.0	275.0	375.0	356.0	117.0	4078.0
1977	5.0	20.5	51.0	253.0	526.0	563.0	224.0	140.0	224.0	557.0	269.0	33.0	2865.5
1978	20.0	5.0	112.0	436.0	330.0	575.0	411.0	771.0	706.0	419.0	156.0	117.0	4058.0
1979	14.0	5.0	56.0	292.0	486.0	888.0	400.0	411.0	514.0	506.0	386.0	140.0	4098.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR CAMERA 2

ESTACION K CHAMEZA MUNICIPIO DE CHAMEZA PERIODO 1975 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	4093.0	4098.0	4098.0	0.638	-0.089				+			
2	1978	4058.0	8156.0	4078.0	0.502	0.168				I+			
3	1977	2865.5	11021.5	3673.8	-1.705	-0.071				+			
4	1976	4078.0	15099.5	3774.9	0.600	0.013				+			
5	1975	3713.0	18812.5	3762.5	-0.094	0.0				*			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 5 ANOS = 3762.5

DEVIACION ESTANDAR = 525.9

COEFICIENTE DE VARIACION = 0.140

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
351903	CHAMEZA	CHAMEZA	+05 13 09	+072 52 14	1120 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1975	11.0	14.0	201.0	146.0	511.0	755.0	387.0	472.0	276.0	389.0	299.0	252.0	3713.0	1975
1976	29.0	12.0	364.0	358.0	449.0	627.0	736.0	376.0	275.0	379.0	356.0	117.0	4078.0	1976
1977	5.0	20.5	51.0	253.0	526.0	563.0	224.0	140.0	224.0	557.0	269.0	33.0	2865.5	1977
1978	20.0	5.0	112.0	436.0	330.0	575.0	411.0	771.0	706.0	419.0	156.0	117.0	4058.0	1978
1979	14.0	5.0	56.0	292.0	486.0	888.0	400.0	411.0	514.0	506.0	386.0	140.0	4098.0	1979
NUMERO DE ANOS	5	5	5	5	5	5	5	5	5	5	5	5	5	
VALOR MAXIMO	29.0	20.5	364.0	436.0	526.0	888.0	736.0	771.0	706.0	557.0	386.0	252.0	4098.0	
MEDIANA	14.0	12.0	112.0	292.0	486.0	627.0	400.0	411.0	276.0	419.0	299.0	117.0	4058.0	
VALOR MINIMO	5.0	5.0	51.0	146.0	330.0	563.0	224.0	140.0	224.0	379.0	156.0	33.0	2865.5	
PROMEDIOS	15.8	11.3	156.8	297.0	460.4	681.6	431.6	434.0	399.0	450.0	293.2	131.8	3762.5	
											TOTAL DE LOS PROMEDIOS MENSUALES =		3762.5	
PORCENTAJES	0.4	0.3	4.2	7.9	12.2	18.1	11.5	11.5	10.6	12.0	7.8	3.5		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 123. INDICE DE ARNOLDUS = 433.

DEV. ESTANDAR	9.1	6.6	130.6	109.3	78.5	138.2	166.5	226.6	205.3	78.0	69.4	78.6	526.0
COEF. VARIACION	0.575	0.580	0.833	0.368	0.171	0.203	0.432	0.522	0.515	0.173	0.305	0.596	0.140
COEF. ASIMETRIA	0.643	0.442	1.250	-0.196	-1.541	0.971	1.228	0.455	1.027	0.691	-0.902	0.657	-1.795

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350707	CHINAVITA	CHINAVITA	+05 09 00	+073 22 00	1680 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1955	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	91.5	47.0	-9.9
1956	50.0	43.0	77.0	83.0	137.0	256.0	163.0	243.0	178.0	155.0	52.0	61.0	1502.0
1957	1.0	13.0	61.0	101.0	183.0	161.0	194.0	196.0	130.0	162.0	92.0	32.0	1326.0
1958	3.0	18.0	82.0	-9.9	-9.9	60.0	194.0	166.0	59.0	-9.9	55.0	4.0	-9.9
1959	0.0	5.0	76.0	76.0	145.0	150.0	139.0	191.0	178.0	157.0	117.0	51.0	1285.0
1960	9.0	60.0	50.0	75.0	179.0	148.0	226.0	250.0	169.0	136.0	112.0	117.0	1531.0
1961	15.0	0.0	66.0	141.0	96.0	160.0	162.0	179.0	104.0	158.0	157.0	15.0	1253.0
1962	12.0	14.0	78.0	28.0	189.0	186.0	275.0	147.0	122.0	121.0	121.0	10.0	1303.0
1963	8.0	18.0	28.0	147.0	181.0	160.0	233.0	161.0	80.0	80.0	125.0	0.0	1221.0
1964	0.0	9.0	27.0	134.0	182.0	186.0	196.0	126.0	148.0	124.0	111.0	32.0	1275.0
1965	25.0	12.0	64.0	176.0	229.0	169.0	218.0	204.0	115.0	134.0	143.0	37.0	1526.0
1966	14.0	4.0	110.0	60.0	103.0	196.0	195.0	124.0	125.0	92.0	166.0	99.0	1288.0
1967	33.0	7.0	43.0	131.0	183.0	255.0	221.0	253.0	141.0	130.0	125.0	14.0	1536.0
1968	41.0	13.0	36.0	172.0	128.0	156.0	244.0	180.0	183.0	166.0	67.0	38.0	1464.0
1969	100.0	63.0	26.0	261.0	183.0	141.0	243.0	161.0	83.0	170.0	95.0	67.0	1593.0
1970	63.0	81.0	45.0	126.0	180.0	229.0	248.0	166.0	140.0	182.0	103.0	44.0	1607.0
1971	39.0	35.0	102.0	107.0	245.0	135.0	233.0	185.0	120.0	100.0	125.0	27.0	1453.0
1972	56.0	37.0	85.0	140.0	166.0	225.0	186.0	162.0	160.0	110.0	78.0	21.0	1426.0
1973	8.0	4.0	21.0	103.0	174.0	117.0	215.0	254.0	219.0	145.0	131.0	41.0	1432.0
1974	31.0	26.0	24.0	81.0	153.0	165.0	203.0	134.0	131.0	101.0	136.0	4.0	1189.0
1975	14.0	31.0	82.0	109.0	121.0	339.0	210.0	317.0	147.0	227.0	250.0	149.0	1996.0
1976	22.0	59.0	85.0	161.0	-9.9	345.0	318.0	206.0	212.0	233.0	170.0	89.0	-9.9
1977	-9.9	24.0	57.0	115.0	240.0	271.0	243.0	190.0	164.0	103.0	96.0	4.0	-9.9
1978	19.0	14.0	57.0	179.0	212.0	203.0	223.0	225.0	175.0	106.0	49.0	36.0	1498.0
1979	15.0	15.0	29.0	177.0	-9.9	-9.9	209.0	239.0	92.0	136.0	267.0	164.0	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANANA

ESTACION A CHINAVITA MUNICIPIO DE CHINAVITA PERIODO 1955 - 1979 COEF DE CORRECCION 1.000

N	AÑ	T A	CO	MCY	ECA	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1970	1498.0	1498.0	1498.0	0.341	0.044				+ .			
2	1975	1996.0	3494.0	1747.0	3.044	0.435				I +			.
3	1974	1189.0	4683.0	1561.0	-1.336	0.263			.	I +			
4	1973	1432.0	6115.0	1528.8	-0.017	0.261				. +			
5	1972	1426.0	7541.0	1508.2	-0.056	0.254				. +			
6	1971	1453.0	8994.0	1499.0	0.097	0.267				. +			
7	1970	1007.0	10001.0	1514.4	0.932	0.386				I +	.		
8	1969	1593.0	12194.0	1524.3	0.656	0.496				I +	.		
9	1968	1464.0	13658.0	1517.6	0.186	0.516				I. +			
10	1967	1536.0	15194.0	1519.4	0.547	0.557				I *			
11	1966	1288.0	16482.0	1498.4	-0.795	0.484			.	I +			
12	1965	1526.0	18008.0	1500.7	0.493	0.547				I .+			
13	1964	1278.0	19285.0	1483.2	-0.885	0.436			.	I +			
14	1963	1221.0	20506.0	1464.6	-1.163	0.287			.	I +			
15	1962	1303.0	21807.0	1453.8	-0.717	0.194			.	I+			
16	1961	1293.0	23000.0	1441.3	-0.585	0.067			.	+			
17	1960	1591.0	24591.0	1446.5	0.820	0.134				I+ .			
18	1959	1285.0	25876.0	1437.6	-0.815	0.030			.	+			
19	1957	1324.0	27202.0	1431.7	-0.553	-0.047			.	+			
20	1956	1502.0	28704.0	1435.2	0.362	0.0				+ .			

N	AÑ	T A	CO	MCY	ECA	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 20 AÑOS = 1435.2

DESVIACION ESTANDAR = 164.3

COEFICIENTE DE VARIACION = 0.128

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CRSTCN *** CALPC DE AGROCLIMATOLOGIA *** PROGRAMA CRSTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350707	CHINAVITA	CHINAVITA	+05 10 35	+073 22 13	1750 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1955	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	91.5	47.0	-9.9	1955
1956	50.0	43.0	77.0	83.0	137.0	256.0	163.0	243.0	178.0	159.0	92.0	61.0	1502.0	1956
1957	1.0	13.0	81.0	101.0	163.0	161.0	194.0	196.0	130.0	162.0	92.0	32.0	1326.0	1957
1958	3.0	18.0	82.0	-9.9	-9.9	60.0	194.0	166.0	59.0	-9.9	95.0	4.0	-9.9	1958
1959	0.0	5.0	76.0	76.0	145.0	150.0	139.0	191.0	178.0	157.0	117.0	51.0	1285.0	1959
1960	9.0	60.0	50.0	75.0	179.0	148.0	226.0	250.0	169.0	136.0	112.0	117.0	1531.0	1960
1961	15.0	0.0	66.0	141.0	96.0	160.0	162.0	179.0	104.0	158.0	157.0	15.0	1253.0	1961
1962	12.0	14.0	78.0	28.0	169.0	186.0	275.0	147.0	122.0	121.0	121.0	10.0	1303.0	1962
1963	8.0	16.0	28.0	147.0	181.0	160.0	233.0	161.0	80.0	80.0	125.0	0.0	1221.0	1963
1964	0.0	9.0	27.0	134.0	162.0	186.0	196.0	126.0	148.0	124.0	111.0	32.0	1275.0	1964
1965	25.0	12.0	64.0	176.0	229.0	169.0	218.0	204.0	115.0	134.0	143.0	37.0	1526.0	1965
1966	14.0	4.0	110.0	60.0	103.0	196.0	195.0	124.0	125.0	92.0	166.0	99.0	1288.0	1966
1967	33.0	7.0	43.0	131.0	183.0	255.0	221.0	253.0	141.0	130.0	125.0	14.0	1536.0	1967
1968	41.0	15.0	36.0	172.0	128.0	196.0	244.0	180.0	183.0	166.0	67.0	38.0	1464.0	1968
1969	100.0	63.0	26.0	261.0	183.0	141.0	243.0	161.0	83.0	170.0	95.0	67.0	1593.0	1969
1970	63.0	81.0	45.0	126.0	180.0	229.0	248.0	166.0	140.0	182.0	103.0	44.0	1607.0	1970
1971	39.0	35.0	102.0	107.0	245.0	135.0	233.0	185.0	120.0	100.0	125.0	27.0	1453.0	1971
1972	56.0	37.0	85.0	140.0	166.0	225.0	186.0	162.0	160.0	110.0	78.0	21.0	1426.0	1972
1973	8.0	4.0	21.0	103.0	174.0	117.0	215.0	254.0	219.0	145.0	131.0	41.0	1432.0	1973
1974	31.0	26.0	24.0	81.0	153.0	165.0	203.0	134.0	131.0	101.0	126.0	4.0	1189.0	1974
1975														1975
1976	22.0	59.0	85.0	161.0	-9.9	345.0	318.0	206.0	212.0	233.0	170.0	89.0	-9.9	1976
1977	-9.9	24.0	57.0	115.0	240.0	271.0	243.0	150.0	164.0	103.0	96.0	4.0	-9.9	1977
1978	19.0	14.0	57.0	179.0	212.0	203.0	223.0	225.0	175.0	106.0	49.0	36.0	1498.0	1978
1979	15.0	15.0	29.0	177.0	-9.9	-9.9	209.0	239.0	92.0	136.0	267.0	164.0	-9.9	1979

NUMERO DE ANOS	22	23	23	22	20	22	23	23	23	22	24	24	19
VALOR MAXIMO	100.0	81.0	110.0	261.0	245.0	345.0	318.0	254.0	219.0	233.0	267.0	164.0	1607.0
CUARTIL SUPERIOR	39.0	37.0	78.0	161.0	186.0	225.0	243.0	225.0	175.0	159.0	133.5	96.0	1526.0
MEDIANA	17.0	15.0	57.0	128.5	160.5	177.5	218.0	185.0	140.0	135.0	114.5	36.5	1432.0
CUARTIL INFERIOR	8.0	9.0	29.0	83.0	149.0	150.0	194.0	161.0	115.0	106.0	91.8	14.5	1285.0
VALOR MINIMO	0.0	0.0	21.0	28.0	96.0	60.0	139.0	124.0	59.0	80.0	49.0	0.0	1189.0
PROMEDIOS	25.6	25.0	57.8	126.1	174.4	187.0	216.6	188.8	140.3	136.6	116.0	43.9	1405.7
										TOTAL DE LOS PROMEDIOS MENSUALES =			1438.1
PORCENTAJES	1.8	1.7	4.0	8.8	12.1	13.0	15.1	13.1	9.8	9.5	8.1	3.1	

TRIMESTRE MAS LLUVIOSO JUN JUL AGO **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB
INDICE DE FOURNIER = 33. INDICE DE ARNOLDUS = 155.

DEV. ESTANDAR	24.8	22.3	26.2	51.2	40.0	60.4	38.4	40.4	41.6	35.5	46.6	39.9	132.1
COEF. VARIACION	0.966	0.893	0.453	0.406	0.230	0.323	0.177	0.214	0.296	0.260	0.401	0.908	0.094
COEF. ASIMETRIA	1.482	1.174	0.249	0.614	-0.162	0.593	0.425	0.203	-0.013	0.754	1.321	1.506	-0.125

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350707	CHINAVITA	CHINAVITA	+05 10 35	+073 22 13	1750 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	9.0	60.0	50.0	75.0	179.0	148.0	226.0	250.0	169.0	136.0	112.0	117.0	1531.0	1960
1961	15.0	0.0	66.0	141.0	96.0	160.0	162.0	179.0	104.0	158.0	157.0	15.0	1253.0	1961
1962	12.0	14.0	78.0	28.0	189.0	186.0	275.0	147.0	122.0	121.0	121.0	10.0	1303.0	1962
1963	8.0	18.0	28.0	147.0	181.0	160.0	233.0	161.0	80.0	80.0	125.0	0.0	1221.0	1963
1964	0.0	9.0	27.0	134.0	182.0	186.0	196.0	126.0	148.0	124.0	111.0	32.0	1275.0	1964
1965	23.0	12.0	64.0	176.0	229.0	169.0	218.0	204.0	115.0	134.0	143.0	37.0	1526.0	1965
1966	14.0	4.0	110.0	60.0	103.0	196.0	195.0	124.0	125.0	92.0	166.0	99.0	1288.0	1966
1967	33.0	7.0	43.0	131.0	183.0	255.0	221.0	253.0	141.0	130.0	125.0	14.0	1536.0	1967
1968	41.0	13.0	36.0	172.0	128.0	196.0	244.0	180.0	183.0	166.0	67.0	38.0	1464.0	1968
1969	100.0	63.0	26.0	261.0	183.0	141.0	243.0	161.0	83.0	170.0	95.0	67.0	1593.0	1969
1970	63.0	81.0	45.0	126.0	180.0	229.0	248.0	166.0	140.0	182.0	103.0	44.0	1607.0	1970
1971	39.0	35.0	102.0	107.0	245.0	135.0	233.0	185.0	120.0	100.0	125.0	27.0	1453.0	1971
1972	56.0	37.0	85.0	140.0	166.0	225.0	186.0	162.0	160.0	110.0	78.0	21.0	1426.0	1972
1973	8.0	4.0	21.0	103.0	174.0	117.0	215.0	254.0	219.0	145.0	131.0	41.0	1432.0	1973
1974	31.0	26.0	24.0	81.0	153.0	165.0	203.0	134.0	131.0	101.0	136.0	4.0	1189.0	1974
1975	9.7	21.4	56.8	75.5	83.8	234.9	145.5	219.6	101.8	157.2	173.2	103.2	1382.6	1975
1976	16.4	44.1	63.6	120.4	130.9	258.1	237.9	154.1	158.6	174.3	127.2	66.6	1552.2	1976
1977	26.0	24.0	57.0	115.0	240.0	271.0	243.0	190.0	164.0	103.0	96.0	4.0	1533.0	1977
1978	19.0	14.0	57.0	179.0	212.0	203.0	223.0	225.0	175.0	106.0	49.0	36.0	1498.0	1978
1979	15.0	15.0	29.0	177.0	170.8	174.2	209.0	239.0	92.0	136.0	267.0	164.0	1688.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	100.0	81.0	110.0	261.0	245.0	271.0	275.0	254.0	219.0	182.0	267.0	164.0	1688.0	
CUARTIL SUPERIOR	36.0	36.0	65.0	159.5	186.0	227.0	240.4	222.3	162.0	157.6	139.5	66.8	1534.5	
MEDIANA	17.7	16.5	53.4	128.5	179.5	186.0	222.0	179.5	135.5	132.0	125.0	36.5	1458.5	
CUARTIL INFERIOR	10.9	10.5	28.5	92.0	141.9	160.0	199.5	157.5	109.5	104.5	99.5	14.5	1295.5	
VALOR MINIMO	0.0	0.0	21.0	28.0	83.8	117.0	145.5	124.0	80.0	80.0	49.0	0.0	1189.0	
PROMEDIOS	27.0	25.1	53.4	127.4	170.4	190.5	217.8	185.7	136.6	131.3	125.4	47.0	1437.5	
PORCENTAJES	1.9	1.7	3.7	8.9	11.9	13.2	15.2	12.9	9.5	9.1	8.7	3.3		

TRIMESTRE MAS LLUVIOSO JUN JUL AGO **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 33. INDICE DE ARNOLDUS = 154.

INDICE DE IRREGULARIDAD INTERANUAL =1.29

DEV. ESTANDAR	23.8	22.0	25.8	52.0	44.7	43.6	30.6	42.3	36.2	29.8	45.7	43.7	141.7
COEF. VARIACION	0.883	0.879	0.484	0.408	0.262	0.229	0.140	0.228	0.265	0.227	0.364	0.930	0.099

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1671.	1619.	1557.	1438.	1318.	1256.	1204.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.768	1.252	0.712	0.481	-0.310	0.309	-0.679	0.325	0.343	0.101	1.372	1.307	-0.257

IMPRESO EN COLOMBIA POR DANARIA S.

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350706	LOS QUINCHOS	CHINAVITA	+05 10 00	+073 22 00	2150 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1971	-9.9	-9.9	-9.9	-9.9	277.0	84.0	-9.9	164.0	114.0	131.0	131.0	44.0	-9.9
1972	64.0	33.0	91.0	224.0	290.0	236.0	192.0	129.0	164.0	102.0	66.0	5.0	1596.0
1973	8.0	7.0	11.0	67.0	226.0	165.0	185.0	254.0	273.0	136.0	209.0	64.0	1625.0
1974	25.0	18.0	51.0	155.0	169.0	144.0	245.0	176.0	211.0	196.0	224.0	2.0	1616.0
1975	6.0	48.0	63.0	46.0	137.0	258.0	221.0	206.0	121.0	233.0	134.0	159.0	1632.0
1976	-9.9	26.0	120.0	218.0	277.0	323.0	266.0	117.0	116.0	177.0	124.0	53.0	-9.9
1977	0.0	8.0	32.0	144.0	186.0	260.0	230.0	178.0	182.0	165.0	81.0	18.0	1524.0
1978	25.0	31.0	51.0	438.0	275.0	323.0	221.0	224.0	184.0	223.0	82.0	23.0	2100.0
1979	0.0	7.0	62.0	227.0	190.0	314.0	236.0	222.0	100.0	255.0	222.0	108.0	1943.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMPIA POR DANARANJO

ESTACION X LOS GUIRIPOS MUNICIPIO DE CHINAVITA PERIODO COEF DE CORRECCION
1971 - 1979 1.000

ESTACION Y LA GRANJA MUNICIPIO DE CHIVATA PERIODO COEF DE CORRECCION
1971 - 1979 1.000

	F = -4,	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N AN CLX CUY RAN FCAN	I	I	I	I	I	I	I	I	I
	F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

N AN	CLX	CUY	RAN	FCAN
1 1978	1543.	1554.	1.006	0.000
2 1979	4645.	4648.	1.003	0.250
3 1977	5547.	5497.	0.997	0.267
4 1979	7155.	4779.	0.978	0.155
5 1974	8815.	8841.	1.049	0.155
6 1976	10440.	7019.	0.951	0.150
7 1972	12006.	8297.	0.861	0.0

N AN	CLX	CUY	RAN	FCAN
	F = -4,	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
	I	I	I	I	I	I	I	I	I
	F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 1715.4 1182.3

RAZONES PROMEDIOS Y/X = 0.689
X/Y = 1.451

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-CASTEM *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA ORSIOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
35070o	LOS QUINCHOS	CHINAVITA	+05 13 18	+073 21 21	1900 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1971	-9.9	-9.9	-9.9	-9.9	277.0	84.0	-9.9	164.0	114.0	131.0	131.0	44.0	-9.9	1971
1972	64.0	33.0	91.0	224.0	250.0	236.0	192.0	129.0	164.0	102.0	66.0	5.0	1596.0	1972
1973	8.0	7.0	11.0	87.0	226.0	185.0	185.0	254.0	273.0	136.0	209.0	64.0	1625.0	1973
1974	25.0	18.0	51.0	155.0	169.0	144.0	245.0	176.0	211.0	196.0	224.0	2.0	1616.0	1974
1975	6.0	48.0	63.0	46.0	137.0	258.0	221.0	206.0	121.0	233.0	134.0	159.0	1632.0	1975
1976	-9.9	26.0	120.0	218.0	277.0	323.0	266.0	117.0	116.0	177.0	124.0	53.0	-9.9	1976
1977	0.0	8.0	32.0	144.0	186.0	280.0	230.0	178.0	182.0	185.0	81.0	18.0	1524.0	1977
1978														1978
1979	0.0	7.0	62.0	227.0	190.0	314.0	236.0	222.0	100.0	255.0	222.0	108.0	1943.0	1979
NUMERO DE ANOS	6	7	7	7	8	8	7	8	8	8	8	8	6	
VALOR MAXIMO	64.0	48.0	120.0	227.0	250.0	323.0	266.0	254.0	273.0	255.0	224.0	159.0	1943.0	
MEDIANA	7.0	18.0	62.0	155.0	208.0	247.0	230.0	177.0	142.5	181.0	132.5	48.5	1620.5	
VALOR MINIMO	0.0	7.0	11.0	46.0	137.0	84.0	185.0	117.0	100.0	102.0	66.0	2.0	1524.0	
PROMEDIOS	17.2	21.0	61.4	154.4	219.0	228.0	225.0	180.8	160.1	176.5	148.9	56.6	1656.0	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1649.3	
PORCENTAJES	1.0	1.3	3.7	9.4	13.3	13.8	13.6	11.0	9.7	10.7	9.0	3.4		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 32. INDICE DE APARCLOUS = 176.

DEV. ESTANDAR	24.7	15.6	36.1	74.9	57.3	84.3	28.7	45.9	59.8	52.2	62.4	54.1	146.0
COEF. VARIACION	1.439	0.745	0.588	0.485	0.262	0.370	0.127	0.254	0.374	0.295	0.419	0.955	0.088
COEF. ASIMETRIA	1.808	0.843	0.356	-0.838	0.012	-0.635	-0.214	0.151	0.996	0.102	0.099	1.021	2.019

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO 241518 | ESTACION ESCLUSA TOLON | MUNICIPIO CHIQUINQUIRA | LATITUD +05 38 00 | LONGITUD +073 48 00 | ALTITUD 2545 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1945	32.0	61.0	102.0	202.0	151.0	58.0	46.0	42.0	57.0	167.0	103.0	120.0	1141.0
1946	42.0	39.0	87.0	168.0	139.0	2.0	3.0	24.0	5.0	171.0	137.0	97.0	914.0
1947													
1948	1.0	60.0	78.0	134.0	112.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1949													
1950	46.0	192.0	78.0	143.0	218.0	119.0	35.0	87.0	93.0	181.0	134.0	52.0	1378.0
1951	95.0	77.0	48.0	69.0	153.0	18.0	19.0	114.0	48.0	226.0	185.0	98.0	1150.0
1952	38.0	64.0	100.0	133.0	117.0	49.0	-9.9	18.0	53.0	51.0	151.0	102.0	-9.9
1953	66.0	66.0	88.0	77.0	250.0	63.0	31.0	9.0	188.0	245.0	144.0	25.0	1252.0
1954	63.0	24.0	81.0	147.0	117.0	85.0	56.0	14.0	8.0	223.0	126.0	93.0	1037.0
1955													
1956													
1957													
1958	45.0	133.0	117.0	8.0	55.0	99.0	13.0	105.0	55.0	92.0	148.0	34.0	904.0
1959	4.0	41.0	85.0	112.0	87.0	56.0	21.0	84.0	79.0	129.0	125.0	62.0	885.0
1960	63.2	26.8	82.3	202.6	144.5	73.7	90.9	84.8	48.2	130.1	89.4	89.2	1125.7
1961	60.2	24.5	84.5	125.5	38.8	47.6	23.1	6.5	60.4	184.2	127.9	61.6	844.8
1962	28.9	41.0	111.6	102.0	156.6	133.5	19.9	43.1	47.7	169.2	153.2	17.8	1024.5
1963	42.0	61.5	122.9	152.7	101.0	90.7	81.8	58.3	18.8	87.9	162.8	42.6	1062.6
1964	43.1	86.9	103.0	151.8	137.5	139.3	66.0	57.2	91.9	131.5	115.3	61.3	1184.8
1965	27.5	66.2	54.5	200.4	126.0	11.0	8.0	66.5	71.2	170.9	240.6	45.5	1088.3
1966	16.4	1.9	59.5	119.7	171.9	118.9	65.5	40.9	116.9	91.8	165.9	90.2	1059.5
1967	21.8	67.8	84.8	162.3	-9.9	75.7	35.7	22.4	71.4	103.7	90.9	65.4	-9.9
1968	46.8	46.1	68.8	263.1	124.1	133.8	17.0	26.7	129.0	131.0	94.7	13.1	1094.2
1969	38.9	59.5	92.2	191.1	96.2	63.5	34.3	9.0	161.0	211.3	143.6	82.2	1202.8
1970	26.1	14.9	86.2	136.7	164.6	84.3	61.8	34.4	57.8	130.3	100.2	120.7	988.0
1971	150.4	59.4	134.4	129.3	146.7	58.2	14.2	67.2	78.7	223.4	142.1	93.6	1297.6
1972	60.9	43.6	90.4	246.0	131.7	76.6	85.6	95.5	52.3	134.1	124.4	51.4	1192.5
1973	17.0	5.4	76.6	91.9	79.3	115.0	172.5	106.9	184.0	130.8	271.3	104.0	1354.7
1974	63.1	92.0	113.6	228.3	81.3	62.8	30.7	44.1	135.1	170.8	172.0	19.4	1233.2
1975	7.5	84.7	64.4	90.5	137.1	66.7	98.3	104.1	111.8	120.2	122.4	75.9	1085.6
1976	25.1	65.7	159.8	142.0	72.5	38.0	4.2	33.5	58.0	178.4	138.5	61.2	976.9
1977	17.9	16.8	113.3	44.6	57.9	100.3	62.1	31.1	133.0	151.3	192.0	38.8	959.1
1978	9.5	28.3	135.0	180.3	106.9	52.6	145.0	24.6	24.0	116.2	77.6	71.3	971.3
1979	24.9	89.8	103.3	149.6	146.9	76.7	60.3	95.6	72.8	193.0	138.1	42.9	1193.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

ESTACION X. ESCLUSA TCLCA MUNICIPIO DE CHICLANCLIRA PERIODO 1945 -1979 COEF DE CORRECCION 1.000

N	AN	T /	CU	MCY	ECR	FCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1979	1193.5	1193.5	1193.5	0.000	0.085	+
2	1978	571.3	2105.2	1082.6	-0.081	-0.025	+
3	1977	555.1	3124.3	1041.4	-0.067	-0.150	+
4	1976	576.5	4101.2	1025.3	-0.042	-0.255	+
5	1975	1085.6	5186.8	1037.4	-0.076	-0.265	+
6	1974	1233.2	6420.0	1070.0	0.565	-0.144	+
7	1973	1354.7	7774.7	1110.7	1.821	0.092	+
8	1972	1152.9	8907.6	1120.9	0.676	0.179	+
9	1971	1257.6	10264.8	1140.5	1.415	0.363	+
10	1970	988.0	11252.8	1125.3	-0.764	0.264	+
11	1969	1202.8	12455.6	1132.3	0.781	0.361	+
12	1968	1094.2	13549.8	1129.1	-0.015	0.355	+
13	1966	1059.8	14609.6	1123.8	-0.260	0.326	+
14	1965	1088.3	15697.8	1121.3	-0.097	0.315	+
15	1964	1184.8	16882.6	1125.5	0.624	0.355	+
16	1963	1062.8	17945.0	1121.6	-0.236	0.368	+
17	1962	1024.8	18969.8	1115.9	-0.506	0.303	+
18	1961	844.8	19814.3	1100.8	-1.173	0.073	+
19	1960	1125.7	20940.0	1102.1	0.207	0.100	+
20	1959	885.0	21825.0	1091.2	-1.450	-0.093	+
21	1958	804.0	22729.0	1082.3	-1.356	-0.268	+
22	1954	1037.0	23766.0	1080.3	-0.418	-0.322	+
23	1953	1252.0	25018.0	1087.7	1.057	-0.180	+
24	1951	1150.0	26168.0	1090.3	0.378	-0.131	+
25	1950	1378.0	27546.0	1101.8	1.586	0.126	+
26	1946	514.0	28060.0	1094.6	-1.285	-0.041	+
27	1945	1141.0	29201.0	1096.3	0.315	0.0	+

N	AN	T /	CU	MCY	ECR	FCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 27 ANOS = 1096.3
DESVIACION ESTANDAR = 141.5
COEFICIENTE DE VARIACION = 0.129

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTCN *** CALCO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
241518	ESCLUSA TOLON	CHIQUINQUIRA	+05 37 39	+073 47 44	2545 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1946	42.0	39.0	87.0	168.0	139.0	2.0	3.0	24.0	5.0	171.0	137.0	97.0	914.0	1946
1947														1947
1948	1.0	60.0	78.0	134.0	112.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1948
1949														1949
1950	46.0	192.0	78.0	143.0	218.0	119.0	35.0	87.0	93.0	181.0	134.0	52.0	1378.0	1950
1951	55.0	77.0	48.0	69.0	153.0	18.0	19.0	114.0	48.0	226.0	185.0	98.0	1150.0	1951
1952	38.0	64.0	100.0	133.0	117.0	49.0	-9.9	18.0	53.0	91.0	151.0	102.0	-9.9	1952
1953	66.0	66.0	88.0	77.0	250.0	63.0	31.0	9.0	188.0	245.0	144.0	25.0	1252.0	1953
1954	63.0	24.0	81.0	147.0	117.0	85.0	56.0	14.0	8.0	223.0	126.0	93.0	1037.0	1954
1955														1955
1956														1956
1957														1957
1958	45.0	133.0	117.0	8.0	55.0	99.0	13.0	105.0	55.0	92.0	146.0	34.0	904.0	1958
1959	4.0	41.0	85.0	112.0	87.0	56.0	21.0	84.0	79.0	129.0	125.0	62.0	885.0	1959
1960	63.2	26.8	82.3	202.6	144.5	73.7	90.9	84.8	48.2	130.1	85.4	89.2	1125.7	1960
1961	60.2	24.5	84.5	125.5	38.8	47.6	23.1	6.5	60.4	184.2	127.9	61.6	844.8	1961
1962	28.9	41.0	111.6	102.0	156.6	133.5	19.9	43.1	47.7	169.2	153.2	17.8	1024.5	1962
1963	42.0	61.5	122.9	192.7	101.0	90.7	81.8	58.3	18.8	87.5	162.8	42.6	1062.6	1963
1964	43.1	86.9	103.0	151.8	137.5	139.3	66.0	57.2	91.9	131.5	115.3	61.3	1184.8	1964
1965	27.5	66.2	54.5	200.4	126.0	11.0	8.0	66.5	71.2	170.9	240.6	45.5	1088.3	1965
1966	16.4	1.9	59.5	119.7	171.9	118.9	65.5	40.9	116.9	91.8	165.9	90.2	1059.5	1966
1967	21.8	67.8	84.8	162.3	-9.9	75.7	35.7	22.4	71.4	103.7	90.9	65.4	-9.9	1967
1968	40.8	40.1	68.8	263.1	124.1	133.8	17.0	26.7	129.0	131.0	94.7	13.1	1094.2	1968
1969	38.9	59.5	92.2	191.1	96.2	83.5	34.3	9.0	161.0	211.3	143.6	82.2	1202.8	1969
1970	20.1	14.9	86.2	136.7	164.6	54.3	61.8	34.4	57.8	130.3	100.2	120.7	988.0	1970
1971	150.4	59.4	134.4	129.3	146.7	58.2	14.2	67.2	78.7	223.4	148.1	93.6	1297.6	1971
1972	60.9	43.6	90.4	246.0	131.7	76.6	85.6	95.5	52.3	134.1	124.4	91.4	1192.5	1972
1973	17.0	5.4	76.6	91.9	79.3	115.0	172.5	106.9	164.0	130.8	271.3	104.0	1354.7	1973
1974	63.1	92.0	113.6	228.3	81.3	82.8	30.7	44.1	135.1	170.6	172.0	19.4	1233.2	1974
1975	7.5	84.7	64.4	90.5	137.1	68.7	98.3	104.1	111.6	120.2	122.4	75.9	1085.6	1975
1976	25.1	65.7	159.8	142.0	72.5	38.0	4.2	33.5	58.0	178.4	136.5	61.2	976.9	1976
1977	17.9	16.8	113.3	44.6	57.9	100.3	62.1	31.1	133.0	151.3	192.0	38.8	959.1	1977
1978	9.5	28.3	135.0	180.3	106.9	52.6	145.0	24.6	24.0	116.2	77.6	71.3	971.3	1978
1979	24.9	89.8	103.3	149.6	146.9	76.7	60.3	95.6	72.8	193.0	138.1	42.9	1193.9	1979

Ministerio de Hacienda

*** CARACTERISTICAS PLUVIOMETRICAS MENSUALES Y ANUALES DE LA PAGINA ANTERIOR ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
NUMERO DE ANOS	29	29	29	29	28	28	27	28	28	28	28	28	26	
VALOR MAXIMO	150.4	192.0	159.8	263.1	250.0	139.3	172.5	114.0	188.0	245.0	271.3	120.7	1378.0	
CUARTIL SUPERIOR	60.5	72.4	112.4	185.7	146.8	99.6	66.0	85.9	114.3	182.6	158.0	91.6	1193.9	
MEDIANA	38.9	59.5	87.0	142.0	125.0	76.1	35.0	43.6	71.3	142.7	136.3	61.8	1086.9	
CUARTIL INFERIOR	19.8	27.5	78.0	107.0	91.6	53.4	19.0	24.3	50.2	124.6	123.4	42.7	976.5	
VALOR MINIMO	1.0	1.9	48.0	8.0	38.8	2.0	3.0	6.5	5.0	87.5	77.6	13.1	844.8	
PROMEDIOS	41.1	57.5	93.2	142.8	123.9	75.8	80.2	53.8	80.5	154.2	143.3	64.7	1094.6	
										TOTAL DE LOS PROMEDIOS MENSUALES =			1081.4	
PORCENTAJES	3.8	5.4	8.6	13.2	11.5	7.0	4.6	5.0	7.4	14.3	13.3	6.0		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 22. INDICE DE ARNOLDUS = 107.

DEV. ESTANDAR	30.5	39.1	25.5	57.8	46.6	36.2	42.0	34.8	48.8	45.6	42.5	29.4	144.4	
COEF. VARIACION	0.743	0.676	0.273	0.405	0.376	0.478	0.837	0.646	0.607	0.296	0.296	0.455	0.132	
COEF. ASIMETRIA	1.725	1.457	0.000	-0.059	0.567	-0.086	1.350	0.323	0.671	0.317	1.259	-0.047	0.202	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
24151B	ESCLUSA TOLON	CHIQUINQUIRA	+05 37 39	+073 47 44	2545 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	63.2	20.8	82.3	202.6	144.5	73.7	90.9	84.8	48.2	130.1	89.4	89.2	1125.7	1960
1961	60.2	24.5	84.5	129.5	38.8	47.6	23.1	6.5	60.4	184.2	127.9	61.6	844.8	1961
1962	28.9	41.0	111.0	102.0	156.6	133.5	19.9	43.1	47.7	169.2	153.2	17.8	1024.5	1962
1963	42.0	61.5	122.9	192.7	101.0	90.7	81.8	58.3	18.8	87.5	162.8	42.6	1062.6	1963
1964	43.1	80.9	103.0	151.8	137.5	139.3	66.0	57.2	91.9	131.5	115.3	61.3	1184.8	1964
1965	27.5	60.2	54.5	200.4	126.0	11.0	8.0	66.5	71.2	170.9	240.6	45.5	1088.3	1965
1966	10.4	1.9	59.5	119.7	171.9	118.9	65.5	40.9	116.9	91.8	165.9	90.2	1059.5	1966
1967	21.8	67.8	84.8	162.3	148.9	75.7	35.7	22.4	71.4	103.7	90.9	65.4	950.8	1967
1968	40.8	40.1	68.8	203.1	124.1	133.8	17.0	26.7	129.0	131.0	94.7	13.1	1094.2	1968
1969	38.9	59.5	92.2	191.1	96.2	83.5	34.3	9.0	161.0	211.3	143.6	82.2	1202.8	1969
1970	20.1	14.9	80.2	136.7	164.6	54.3	61.8	34.4	57.8	130.3	100.2	120.7	988.0	1970
1971	150.4	59.4	134.4	129.3	146.7	58.2	14.2	67.2	78.7	223.4	142.1	93.6	1297.6	1971
1972	60.9	43.6	90.4	246.0	131.7	76.6	85.6	95.5	52.3	134.1	124.4	51.4	1192.5	1972
1973	17.0	5.4	76.6	91.9	79.3	115.0	172.5	106.9	184.0	130.8	271.3	104.0	1354.7	1973
1974	63.1	92.0	113.6	228.3	81.3	82.8	30.7	44.1	135.1	170.8	172.0	19.4	1233.2	1974
1975	7.5	84.7	64.4	90.5	137.1	68.7	98.3	104.1	111.8	120.2	122.4	75.9	1085.6	1975
1976	25.1	65.7	159.8	142.0	72.5	38.0	4.2	33.5	58.0	178.4	138.5	61.2	976.9	1976
1977	17.9	16.8	113.3	44.6	57.9	100.3	62.1	31.1	133.0	151.3	192.0	38.8	959.1	1977
1978	9.5	28.3	135.0	180.3	106.9	52.6	145.0	24.6	24.0	116.2	77.6	71.3	971.3	1978
1979	24.9	89.8	103.3	149.6	146.9	76.7	60.3	95.6	72.8	193.0	138.1	42.9	1193.9	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	150.4	92.0	159.8	246.0	171.9	139.3	172.5	106.9	184.0	223.4	271.3	120.7	1354.7	
CUARTIL SUPERIOR	53.5	67.0	113.4	196.5	146.8	107.6	83.7	76.0	122.9	174.6	164.3	85.7	1193.2	
MEDIANA	28.2	52.7	91.3	150.7	128.8	76.6	61.0	43.6	72.1	132.8	138.3	61.4	1086.9	
CUARTIL INFERIOR	19.8	25.6	79.4	122.6	88.7	56.2	21.5	28.9	55.0	125.1	107.7	42.7	982.4	
VALOR MINIMO	7.5	1.9	54.5	44.6	38.8	11.0	4.2	6.5	18.8	87.5	77.6	13.1	844.8	
PROMEDIOS	39.6	49.1	97.1	157.5	118.5	81.5	58.8	52.6	86.2	148.0	143.1	62.4	1094.5	
PORCENTAJES	3.6	4.5	8.9	14.4	10.8	7.5	5.4	4.8	7.9	13.5	13.1	5.7		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 23. INDICE DE ARNOLDUS = 109.

INDICE DE IRREGULARIDAD INTERANUAL =1.36

DEV. ESTANDAR	31.6	28.5	27.6	55.9	37.4	34.2	44.9	31.3	45.1	38.2	49.3	29.3	129.3
COEF. VARIACION	0.799	0.581	0.284	0.355	0.316	0.419	0.763	0.595	0.523	0.258	0.344	0.469	0.118

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1307.	1260.	1203.	1095.	986.	929.	882.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.400	-0.086	0.497	0.057	-0.608	0.058	1.048	0.418	0.592	0.332	1.164	0.069	0.176

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240335	DUITAMA	DUITAMA	+05 50 00	+073 02 00	2600 METROS

AÑO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1959	-9.9	46.5	47.0	49.6	168.2	54.0	66.9	85.0	35.5	153.0	81.5	3.0	-9.9
1960	13.0	30.5	66.0	169.0	125.0	44.2	72.0	90.0	60.0	152.0	17.0	69.0	907.7
1961	19.0	0.0	69.5	131.2	10.0	43.5	67.0	35.0	46.5	126.0	83.0	26.0	656.7
1962	30.0	44.0	95.0	81.0	156.0	141.0	60.0	64.0	62.0	115.0	128.0	5.0	985.0
1963	27.0	54.0	67.0	179.0	225.0	75.0	69.0	60.0	32.0	125.0	176.0	3.0	1092.0
1964	0.0	32.0	32.0	144.0	159.0	151.0	105.0	48.0	69.0	92.0	85.0	14.0	931.0
1965	21.0	17.0	44.0	113.0	148.0	17.0	19.0	85.0	39.0	105.0	118.0	43.0	769.0
1966	22.0	31.0	53.0	118.0	170.0	120.0	78.0	105.0	72.0	146.0	183.0	56.0	1154.0
1967	5.0	37.0	30.0	85.0	162.0	60.0	72.0	25.0	91.0	98.0	107.0	32.0	804.0
1968	16.0	41.0	27.0	224.0	139.0	116.0	27.0	45.0	91.0	188.0	55.0	4.0	973.0
1969	52.0	48.0	25.0	240.0	95.0	61.0	22.0	45.0	82.0	156.0	76.0	59.0	961.0
1970	13.0	32.0	17.0	74.0	88.0	51.0	98.0	31.5	180.5	172.0	59.0	53.0	869.0
1971	127.0	72.0	161.0	112.0	261.0	21.0	31.0	42.0	123.0	316.0	58.0	135.0	1459.0
1972	-9.9	146.0	237.0	392.0	327.0	161.0	66.0	73.0	93.0	85.0	119.0	49.0	-9.9
1973	-9.9	-9.9	-9.9	107.0	-9.9	-9.9	-9.9	-9.9	-9.9	110.0	148.0	33.0	-9.9
1974	130.0	95.0	99.0	76.0	-9.9	75.0	59.0	44.0	216.0	159.0	190.0	5.0	-9.9
1975	5.0	86.0	91.0	56.0	166.0	76.0	145.0	95.0	90.0	191.0	98.0	105.0	1204.0
1976	7.0	98.0	111.0	135.0	110.0	80.0	41.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1977	-9.9	4.0	130.0	125.0	139.0	172.0	66.0	89.0	116.0	171.0	173.0	40.0	-9.9
1978	0.0	9.0	80.0	117.0	167.0	106.0	85.0	32.0	117.0	120.0	53.0	65.0	951.0
1979	8.0	20.0	53.0	192.0	87.0	144.0	48.0	97.0	79.0	183.0	135.0	28.0	1074.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAF

ESTACION X CUITAMA MUNICIPIO DE CUITAMA PERIODO CCEF DE CORRECCION
1960 -- 1979 1.000

ESTACION Y SOTAQUIRA MUNICIPIO DE SOTAQUIRA PERIODO CCEF. DE CORRECCION
1960 - 1979 1.000

N	AN	CLX	CUY	RAN	FCAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
					F =	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	1074.	1299.	1.174	0.160					I+				
2	1978	2025.	2545.	1.083	0.234					I +				
3	1975	3225.	4467.	0.865	0.183				•	+				
4	1971	4665.	6113.	1.256	0.364					I +			•	
5	1970	5557.	7307.	1.033	0.412					I .+				
6	1969	6516.	8002.	1.001	0.415					. +				
7	1968	7451.	10114.	0.951	0.369				•	I +				
8	1967	8295.	11466.	0.832	0.285				•	I +				
9	1966	9445.	13251.	0.926	0.114				•	I+				
10	1965	10216.	14595.	0.810	-0.088			•		+				
11	1964	11145.	15965.	0.967	-0.100				•	+				
12	1963	12241.	17376.	1.097	-0.002					+	•			
13	1962	13226.	18786.	0.993	-0.005					*				
14	1961	13883.	19705.	1.014	0.0(					+.				
N	AN	CLX	CUY	RAN	FCAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
					F =	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 991.6 1407.5

RAZONES PROMEDIOS Y/X = 1.415
X/Y = 0.706

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240335	DUITAMA	DUITAMA	+05 50 06	+073 02 07	2540 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1959	-9.9	46.5	47.0	49.6	168.2	54.0	66.9	85.0	35.5	153.0	81.5	3.0	-9.9	1959
1960	13.0	30.5	66.0	169.0	125.0	44.2	72.0	90.0	60.0	152.0	17.0	69.0	907.7	1960
1961	19.0	0.0	69.5	131.2	10.0	43.5	67.0	35.0	46.5	126.0	83.0	26.0	656.7	1961
1962	30.0	44.0	95.0	81.0	156.0	141.0	60.0	64.0	62.0	115.0	126.0	9.0	985.0	1962
1963	27.0	54.0	67.0	179.0	225.0	75.0	69.0	60.0	32.0	125.0	176.0	3.0	1092.0	1963
1964	3.0	32.0	32.0	144.0	159.0	151.0	105.0	48.0	69.0	92.0	86.0	14.0	931.0	1964
1965	21.0	17.0	44.0	113.0	148.0	17.0	19.0	85.0	39.0	105.0	118.0	43.0	769.0	1965
1966	22.0	31.0	53.0	118.0	170.0	120.0	78.0	105.0	72.0	146.0	183.0	56.0	1154.0	1966
1967	5.0	37.0	30.0	85.0	162.0	60.0	72.0	25.0	91.0	98.0	107.0	32.0	804.0	1967
1968	16.0	41.0	27.0	224.0	139.0	116.0	27.0	45.0	91.0	188.0	55.0	4.0	973.0	1968
1969	52.0	48.0	25.0	240.0	95.0	61.0	22.0	45.0	82.0	156.0	76.0	59.0	961.0	1969
1970	13.0	32.0	17.0	74.0	88.0	51.0	98.0	31.5	180.5	172.0	89.0	53.0	869.0	1970
1971														1971
1972	-9.9	146.0	237.0	392.0	327.0	161.0	66.0	73.0	93.0	89.0	115.0	49.0	-9.9	1972
1973	-9.9	-9.9	-9.9	107.0	-9.9	-9.9	-9.9	-9.9	-9.9	110.0	148.0	33.0	-9.9	1973
1974	130.0	55.0	99.0	76.0	-9.9	75.0	59.0	44.0	216.0	159.0	190.0	5.0	-9.9	1974
1975	5.0	80.0	91.0	56.0	166.0	76.0	145.0	95.0	90.0	191.0	98.0	105.0	1204.0	1975
1976	7.0	98.0	111.0	135.0	110.0	50.0	41.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1976
1977	-9.9	4.0	130.0	125.0	139.0	172.0	66.0	89.0	116.0	171.0	173.0	40.0	-9.9	1977
1978	0.0	9.0	80.0	117.0	167.0	106.0	85.0	32.0	117.0	120.0	53.0	65.0	951.0	1978
1979	8.0	20.0	53.0	192.0	87.0	144.0	46.0	97.0	79.0	183.0	135.0	28.0	1074.0	1979
NUMERO DE ANOS	16	15	19	20	18	19	19	18	18	19	19	19	14	
VALOR MAXIMO	130.0	146.0	237.0	392.0	327.0	172.0	145.0	105.0	216.0	191.0	190.0	105.0	1204.0	
CUARTIL SUPERIOR	24.5	54.0	95.0	174.0	167.0	141.0	78.0	89.0	93.0	171.0	148.0	56.0	1074.0	
MEDIANA	14.5	37.0	66.0	121.5	152.0	75.0	66.9	62.0	80.5	146.0	107.0	33.0	956.0	
CUARTIL INFERIOR	6.0	20.0	32.0	83.0	110.0	51.0	48.0	44.0	60.0	110.0	76.0	9.0	869.0	
VALOR MINIMO	0.0	0.0	17.0	49.0	10.0	17.0	19.0	25.0	32.0	89.0	17.0	3.0	656.7	
PROMEDIOS	23.0	45.8	72.3	140.4	146.7	90.4	66.6	63.8	87.3	139.5	109.7	36.6	952.2	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1022.3	
PORCENTAJES	2.2	4.5	7.1	13.7	14.4	8.8	6.5	6.2	8.5	13.6	10.7	3.6		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB
INDICE DE FOURNIER = 21. INDICE DE ARNOLDUS = 104.

DEV. ESTANDAR	31.4	30.9	50.9	79.1	64.7	46.7	29.9	26.4	47.8	33.3	49.2	27.6	150.0
COEF. VARIACION	1.366	0.805	0.704	0.564	0.441	0.516	0.448	0.413	0.547	0.239	0.449	0.753	0.157
COEF. ASIMETRIA	2.956	1.306	1.976	1.811	0.784	0.373	0.684	0.062	1.489	0.020	0.086	0.663	-0.193

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA CHSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240335	DUITAMA	DUITAMA	+05 50 06	+073 02 07	2540 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	13.0	30.5	66.0	169.0	125.0	44.2	72.0	90.0	60.0	152.0	17.0	69.0	907.7	1960
1961	19.0	0.0	69.5	131.2	10.0	43.5	67.0	35.0	46.5	126.0	83.0	26.0	656.7	1961
1962	30.0	44.0	95.0	81.0	156.0	141.0	60.0	64.0	62.0	115.0	128.0	9.0	985.0	1962
1963	27.0	54.0	67.0	179.0	225.0	75.0	69.0	60.0	32.0	125.0	176.0	3.0	1092.0	1963
1964	0.0	32.0	32.0	144.0	159.0	151.0	105.0	48.0	69.0	92.0	85.0	14.0	931.0	1964
1965	21.0	17.0	44.0	113.0	148.0	17.0	19.0	85.0	39.0	105.0	118.0	43.0	769.0	1965
1966	22.0	31.0	53.0	118.0	170.0	120.0	78.0	105.0	72.0	146.0	183.0	56.0	1154.0	1966
1967	5.0	37.0	30.0	85.0	162.0	60.0	72.0	25.0	91.0	98.0	107.0	32.0	804.0	1967
1968	16.0	41.0	27.0	224.0	139.0	116.0	27.0	45.0	91.0	188.0	55.0	4.0	973.0	1968
1969	52.0	48.0	25.0	240.0	95.0	61.0	22.0	45.0	82.0	156.0	76.0	59.0	961.0	1969
1970	13.0	32.0	17.0	74.0	88.0	51.0	98.0	31.5	180.5	172.0	59.0	53.0	869.0	1970
1971	27.0	72.0	161.0	112.0	261.0	21.0	31.0	42.0	123.0	216.0	58.0	35.0	1159.0	1971
1972	13.3	84.8	137.7	227.8	150.1	93.5	36.3	42.4	54.0	51.7	69.1	28.4	1031.1	1972
1973	14.2	29.3	24.7	107.0	65.8	57.8	113.9	73.4	197.1	110.0	148.0	33.0	974.2	1973
1974	30.0	95.0	99.0	76.0	93.0	75.0	59.0	44.0	116.0	159.0	190.0	5.0	1041.0	1974
1975	5.0	86.0	91.0	56.0	166.0	76.0	145.0	95.0	90.0	191.0	98.0	105.0	1204.0	1975
1976	7.0	98.0	111.0	135.0	110.0	50.0	41.0	39.9	56.9	130.7	77.3	42.9	899.7	1976
1977	16.7	2.9	94.6	90.9	101.1	125.1	48.0	64.7	84.4	124.4	125.9	29.1	907.8	1977
1978	0.0	9.0	80.0	117.0	167.0	106.0	85.0	32.0	117.0	120.0	53.0	65.0	951.0	1978
1979	8.0	20.0	53.0	192.0	87.0	144.0	48.0	97.0	79.0	183.0	135.0	28.0	1074.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	52.0	98.0	161.0	240.0	261.0	151.0	145.0	105.0	197.1	216.0	190.0	105.0	1204.0	
CUARTIL SUPERIOR	24.5	63.0	94.8	174.0	160.5	118.0	81.5	79.2	103.5	165.5	131.5	54.5	1057.5	
MEDIANA	15.1	34.5	66.5	117.5	143.5	75.0	63.5	46.5	80.5	128.3	91.5	32.5	967.0	
CUARTIL INFERIOR	7.5	24.6	31.0	87.9	94.0	50.5	39.6	40.9	58.4	112.5	64.0	20.0	903.7	
VALOR MINIMO	0.0	0.0	17.0	56.0	10.0	17.0	19.0	25.0	32.0	51.7	17.0	3.0	656.7	
PROMEDIOS	17.0	43.2	68.9	133.6	135.9	81.4	64.9	58.2	87.1	138.0	102.1	37.0	967.2	
PORCENTAJES	1.8	4.5	7.1	13.8	14.1	8.4	6.7	6.0	9.0	14.3	10.6	3.8		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 99.

INDICE DE IRREGULARIDAD INTERANUAL =1.44

DEV. ESTANDAR	12.4	29.8	39.9	54.9	57.3	40.9	33.0	24.7	42.9	39.8	47.7	25.7	135.7
COEF. VARIACION	0.730	0.691	0.579	0.411	0.421	0.502	0.508	0.425	0.492	0.288	0.467	0.696	0.140

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1191.	1141.	1081.	967.	853.	793.	744.

PROYECTO IGAC-URSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA URSTOM

COEF. ASIMETRIA	1.068	0.561	0.684	0.060	0.058	0.264	0.704	0.608	1.326	0.006	0.377	0.848	-0.309

IMPRESO EN COLOMBIA POR DANAGRAFO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
241503	LA SIERRA	QUITAMA	+05 57 00	+073 06 00	2650 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1967	-9.9	-9.9	207.6	381.6	213.3	78.9	49.9	36.3	82.6	215.3	195.8	173.6	-9.9
1968	62.9	137.8	89.1	406.6	217.6	156.4	77.7	82.5	180.4	223.2	171.1	67.1	1874.4
1969	134.3	98.8	44.3	382.5	138.7	125.0	28.7	72.5	237.1	336.4	248.4	66.0	1914.7
1970	101.0	73.6	123.7	205.2	165.6	66.9	70.7	68.6	111.8	213.6	297.3	181.5	1675.5
1971	256.0	308.9	361.1	244.2	279.0	61.3	24.0	150.5	165.7	263.2	150.4	169.2	2453.5
1972	-9.9	104.9	262.8	343.6	214.6	105.6	34.3	75.9	55.9	145.1	183.7	166.7	-9.9
1973	45.8	37.8	276.5	303.7	150.1	120.0	106.4	108.6	186.6	273.3	316.2	191.1	2116.1
1974	171.2	209.5	241.0	296.7	174.2	52.1	55.8	56.2	242.7	293.6	221.4	21.0	2037.4
1975	46.4	231.7	303.8	120.0	312.5	66.6	155.5	115.7	158.9	280.3	265.8	190.0	2247.2
1976	61.0	122.4	284.8	319.5	266.6	62.4	11.1	56.1	53.0	302.3	120.1	94.7	1754.0
1977	34.5	36.3	185.6	201.7	191.9	101.1	51.9	94.8	152.6	285.8	-9.9	-9.9	-9.9
1978													
1979	55.9	77.8	217.5	327.1	246.2	127.1	111.4	163.8	178.9	288.2	279.3	115.8	2193.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR PANARAMA

ESTACION X LA SIERRA MUNICIPIO DE QUITANA PERIODO 1967 - 1979 COEF DE CORRECCION 1.000

N	AN	I /	CO	MCY	ECE	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	2193.0	2193.0	2193.0	0.000	0.000				+			
2	1978	1954.0	3947.0	1973.5	-1.102	-0.056				+			
3	1977	2247.2	6194.2	2064.7	0.871	0.052				+			
4	1974	2037.4	8231.6	2057.9	0.031	0.016				+			
5	1973	2116.1	10347.7	2069.5	0.346	0.095				+			
6	1971	2453.8	12801.6	2133.5	1.656	0.307				I +			
7	1970	1675.5	14476.7	2068.1	-1.416	0.133				I+			
8	1965	1914.7	16391.4	2046.5	-0.455	0.076				+			
9	1968	1874.4	18265.8	2029.5	-0.621	0.000				+			

N	AN	I /	CO	MCY	ECE	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 9 ANOS = 2029.5

DEVIACION ESTANDAR = 250.0

COEFICIENTE DE VARIACION = 0.123

***

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
24153	LA SIERRA	QUITAMA	+05 57 00	+073 06 00	2700 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1967	-9.9	-9.9	207.6	381.0	213.3	78.9	49.9	36.3	82.6	215.3	195.8	173.6	-9.9	1967
1968	62.9	137.8	89.1	406.6	217.6	158.4	77.7	82.5	160.4	223.2	171.1	67.1	1874.4	1968
1969	134.3	96.6	44.3	382.5	138.7	125.0	28.7	72.5	237.1	336.4	246.4	68.0	1914.7	1969
1970	101.0	73.6	123.7	205.2	169.6	58.9	70.7	68.6	111.6	213.6	297.3	181.5	1675.5	1970
1971	256.0	308.9	361.1	244.2	279.0	81.3	24.0	150.5	165.7	263.2	150.4	169.2	2453.5	1971
1972	-9.9	104.5	262.8	343.6	214.6	105.6	34.3	75.9	55.9	149.1	183.7	166.7	-9.9	1972
1973	45.8	37.8	276.5	303.7	180.1	120.0	106.4	108.6	166.6	273.3	316.2	191.1	2116.1	1973
1974	171.2	209.5	241.0	298.7	174.2	52.1	55.8	56.2	242.7	293.6	221.4	21.0	2037.4	1974
1975	40.4	231.7	303.8	120.0	312.5	66.6	155.5	115.7	158.9	280.3	265.8	190.0	2247.2	1975
1976	61.0	122.4	284.8	319.5	266.6	62.4	11.1	56.1	53.0	302.3	120.1	94.7	1754.0	1976
1977	34.5	36.3	165.6	201.7	191.9	101.1	51.9	94.8	152.6	285.8	-9.9	-9.9	-9.9	1977
1978														1978
1979	55.9	77.8	217.5	327.1	246.2	127.1	111.4	163.8	178.9	288.2	275.3	119.8	2193.0	1979
NUMERO DE ANOS	10	11	12	12	12	12	12	12	12	12	11	11	9	
VALOR MAXIMO	256.0	308.9	361.1	406.6	312.5	158.4	155.5	163.8	242.7	336.4	316.2	191.1	2453.5	
CUARTIL SUPERIOR	*****	*****	280.6	362.6	256.4	122.5	92.0	112.1	183.5	290.9	*****	*****	******	
MEDIANA	61.9	104.5	229.3	311.6	213.9	91.2	53.8	79.2	162.3	276.8	221.4	166.7	2037.4	
CUARTIL INFERIOR	*****	*****	154.6	224.7	171.9	64.5	31.5	62.4	97.2	219.2	*****	*****	******	
VALOR MINIMO	34.5	36.3	44.3	120.0	138.7	52.1	11.1	36.3	53.0	149.1	120.1	21.0	1675.5	
PROMEDIOS	90.9	130.9	216.5	294.5	214.5	94.6	64.8	90.1	150.5	260.4	222.7	131.2	2029.5	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1967.7	
PORCENTAJES	4.9	6.7	11.0	15.0	10.9	4.8	3.3	4.6	7.6	13.2	11.3	6.7		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 44. INDICE DE ARNOLDUS = 155.

DEV. ESTANDAR	71.0	65.8	93.0	86.2	53.5	33.3	42.2	38.5	63.2	51.0	62.8	59.8	250.0
COEF. VARIACION	0.733	0.658	0.429	0.293	0.250	0.351	0.651	0.428	0.420	0.196	0.286	0.456	0.123
COEF. ASIMETRIA	1.483	0.591	-0.497	-0.689	0.363	0.443	0.698	0.744	-0.265	-0.841	-0.076	-0.673	0.215

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
243512	SUBATA	DUITAMA	+05 49 00	+073 06 00	2532 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1942	52.0	80.0	57.0	124.0	94.0	65.0	28.0	66.0	21.0	199.0	167.0	28.0	981.0
1943	17.0	28.0	116.0	173.0	88.0	11.0	2.0	88.0	58.0	200.0	86.0	137.0	1004.0
1944	84.0	20.0	33.0	65.0	99.0	77.4	32.7	46.7	57.5	138.6	49.4	122.0	825.3
1945	5.0	27.0	173.0	279.0	136.0	25.0	6.0	5.6	143.0	89.0	210.0	86.0	1184.6
1946	28.1	30.3	111.9	179.0	84.5	9.1	12.2	26.7	10.2	81.2	52.0	32.4	657.6
1947	53.7	9.9	9.2	63.2	72.8	71.8	49.5	63.9	49.8	243.6	15.1	10.2	712.7
1948	2.1	10.0	69.6	106.0	90.1	75.0	63.9	35.6	41.8	61.7	119.0	25.5	700.3
1949	27.2	14.2	71.6	65.7	89.4	30.0	71.7	57.7	100.0	165.2	94.6	25.8	813.1
1950	28.1	79.5	80.6	158.0	161.0	65.2	38.3	59.8	64.1	150.7	79.8	36.5	1021.6
1951	19.7	24.3	27.6	62.7	118.2	47.2	18.8	67.6	46.8	153.9	77.1	25.5	699.4
1952	21.1	10.3	22.5	118.0	124.5	40.0	43.7	24.1	25.5	65.4	155.8	67.6	718.5
1953	12.0	29.0	65.4	59.1	88.2	22.0	36.0	15.0	33.8	154.0	103.0	0.0	617.5
1954	15.0	10.0	29.0	67.0	127.3	69.0	52.4	51.0	25.0	179.2	91.0	56.6	792.5
1955	10.0	41.8	77.6	119.0	86.2	70.0	68.6	29.0	55.6	51.8	87.2	56.4	753.2
1956	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	136.4	58.4	68.2	-9.9
1957	24.6	23.0	70.9	103.1	163.9	29.6	23.6	21.3	27.6	56.3	55.8	46.7	666.4
1958	12.0	19.3	41.5	112.3	67.0	47.2	10.4	42.3	19.4	114.4	104.4	17.2	607.4
1959	14.2	32.3	32.8	51.5	119.1	67.7	43.2	68.7	26.1	49.3	114.7	16.0	635.6
1960	9.6	0.3	46.7	102.9	49.8	25.0	-9.9	-9.9	66.3	58.5	11.0	42.1	-9.9
1961	15.9	6.2	113.8	67.3	11.5	30.4	36.1	12.4	48.3	112.7	77.2	7.3	559.1
1962	42.6	10.4	55.2	71.2	103.2	137.2	53.1	52.3	109.8	84.6	94.5	12.8	826.9
1963	16.5	46.2	58.8	77.1	143.2	28.7	39.0	26.5	13.0	64.0	155.1	-9.9	-9.9
1964	0.0	28.0	34.0	117.7	87.4	72.7	64.8	57.9	42.8	78.6	66.9	28.4	679.2
1965	16.9	17.5	0.6	-9.9	79.2	-9.9	22.4	48.2	32.8	115.6	126.4	40.2	-9.9
1966	0.0	0.9	41.9	77.6	109.1	65.4	37.3	50.0	53.4	164.4	222.2	56.0	878.2
1967	3.0	25.5	33.9	143.4	95.0	63.2	34.9	-9.9	41.4	45.7	56.8	41.8	-9.9
1968	9.3	38.5	36.5	140.4	107.8	82.9	9.0	47.1	121.1	105.2	57.8	9.6	765.2
1969	36.1	64.1	23.5	224.6	57.8	53.7	22.2	38.6	102.3	141.9	73.4	39.0	877.2
1970	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	86.0	62.1	24.8	-9.9
1971	93.3	79.6	128.1	125.8	154.0	17.3	28.3	66.2	77.7	145.0	45.9	61.8	1023.0
1972	101.3	58.3	56.6	157.9	109.4	51.4	13.7	13.6	23.7	-9.9	63.4	54.5	-9.9
1973	2.4	0.3	71.0	81.6	67.7	81.0	91.7	42.4	133.8	100.7	162.1	44.1	878.8
1974	26.1	67.4	97.6	133.5	73.8	46.6	43.9	16.6	148.9	100.8	158.3	8.6	922.1
1975	8.7	82.0	129.5	65.3	135.9	56.2	81.4	72.3	57.4	175.5	124.2	71.5	1060.3
1976	19.6	48.4	152.5	134.9	81.8	50.7	28.0	28.8	40.9	134.1	91.9	85.5	897.5
1977	16.4	7.5	67.9	66.5	147.9	95.3	-9.9	-9.9	122.4	-9.9	-9.9	-9.9	-9.9
1978	0.5	21.4	77.8	127.9	164.3	64.6	83.5	37.5	63.9	110.5	-9.9	70.3	-9.9
1979	8.2	19.5	105.9	192.8	87.9	161.0	27.0	139.5	58.7	155.5	110.6	17.8	1084.4

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANEBRANJO

ESTACION X SUBCUENCA MUNICIPIO DE CUENCA PERIODO COEF DE CORRECCION

1942 - 1979 1.000

N	AÑO	T /	CO	MCY	ECO	FCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1084.4	1084.4	1084.4	1.000	0.318				+	.	.	
2	1978	657.5	1961.5	990.5	0.455	0.405				*			
3	1977	1081.3	3042.2	1014.1	1.461	0.697				+	.	.	
4	1976	522.1	3564.3	891.1	0.611	0.818				. +			
5	1975	878.8	4443.1	888.6	0.344	0.888				. +			
6	1974	1025.0	5468.1	911.3	1.431	1.125				+ .			
7	1973	677.2	6743.3	963.3	0.334	1.199				. +			
8	1972	765.2	7508.5	938.6	-0.389	1.125				+			
9	1971	878.2	8386.7	931.9	0.341	1.192				. +			
10	1970	679.2	9065.9	906.6	-0.664	1.018				+			
11	1969	826.5	9892.4	899.3	0.429	1.023				+			
12	1968	559.1	10451.5	871.0	-1.622	0.702				+			
13	1967	635.6	11087.5	852.9	-1.152	0.475				+			
14	1966	607.4	11694.9	835.3	-1.329	0.213				+			
15	1965	686.4	12381.3	825.4	-0.435	0.047				+			
16	1964	753.2	13134.6	820.5	-0.426	-0.038				+			
17	1963	792.5	13927.0	819.2	-0.167	-0.079				+			
18	1962	617.5	14544.5	808.0	-1.263	-0.324			+				
19	1961	718.5	15263.0	803.3	-0.642	-0.451			+				
20	1960	695.4	15958.4	798.1	-0.755	-0.601			+				
21	1959	1021.6	16980.0	808.6	1.223	-0.355			+		.		
22	1958	813.1	17797.1	809.0	-0.660	-0.371			+		.		
23	1957	700.3	18497.4	804.2	-0.584	-0.620			+				
24	1956	712.7	19210.1	800.4	-0.478	-0.654			+				
25	1955	657.6	19867.7	794.7	-1.017	-0.658			+				
26	1954	1184.6	21052.3	809.7	2.225	-0.415				+	.		
27	1953	625.3	21677.6	802.3	-0.615	-0.412				+	.		
28	1952	1004.0	22681.6	809.2	1.114	-0.192				+	.		
29	1951	961.0	23642.6	815.3	0.973	0.000				+	.		

N	AÑO	T /	CO	MCY	ECO	FCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 29 AÑOS = 815.3

DESVIACION ESTANDAR = 166.6

COEFICIENTE DE VARIACION = 0.196

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CESTA *** CURSO DE HIDROCLIMATOLOGIA *** PROGRAMA CESTA

Universidad Nacional de Colombia
Credencial Plus

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
243512	SUREATA	GUITAMA	+05 48 06	+073 04 50	2510 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1969	30.1	64.1	23.5	224.6	57.8	53.7	22.2	38.6	102.3	141.9	73.4	39.0	877.2	1969
1970	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	86.0	62.1	24.8	-9.9	1970
1971	93.3	79.0	128.1	125.3	154.0	17.3	28.3	66.2	77.7	145.0	45.9	61.8	1023.0	1971
1972	101.3	58.3	56.6	157.9	109.4	51.4	13.7	13.6	23.7	-9.9	63.4	54.5	-9.9	1972
1973	2.4	0.3	71.0	81.6	67.7	81.0	51.7	42.4	133.8	100.7	162.1	44.1	678.8	1973
1974	26.1	67.4	97.6	133.9	73.8	46.6	43.9	16.6	148.9	100.8	158.3	8.6	922.1	1974
1975	8.7	82.0	129.5	65.3	135.9	56.2	81.4	72.3	57.4	175.5	124.2	71.9	1060.3	1975
1976	19.6	46.4	152.5	134.9	81.8	50.7	28.0	28.8	40.9	134.1	91.9	65.9	897.5	1976
1977	16.4	7.5	67.9	66.5	147.9	95.3	-9.9	-9.9	122.4	-9.9	-9.9	-9.9	-9.9	1977
1978	0.5	21.4	77.8	127.9	164.3	64.6	83.5	37.5	63.9	110.5	-9.9	70.3	-9.9	1978
1979	8.2	19.5	105.9	192.8	87.9	161.0	27.0	139.5	58.7	155.5	110.6	17.8	1084.4	1979
NUMERO DE ANOS	10	10	10	10	10	10	9	9	10	9	9	10	7	
VALOR MAXIMO	101.3	82.0	152.5	224.6	164.3	161.0	81.7	139.5	148.9	175.5	162.1	85.9	1084.4	
MEDIANA	18.0	53.3	87.7	130.7	98.6	54.9	28.3	38.6	70.8	134.1	91.9	49.3	922.1	
VALOR MINIMO	0.5	0.3	23.5	65.3	57.8	17.3	13.7	13.6	23.7	86.0	45.9	8.6	877.2	
PROMEDIOS	31.3	44.6	91.0	131.1	108.0	67.8	46.6	50.6	83.0	127.6	99.1	47.9	963.3	
											TOTAL DE LOS PROMEDIOS MENSUALES =		929.0	
PORCENTAJES	3.4	4.8	9.8	14.1	11.6	7.3	5.0	5.4	8.9	13.8	10.7	5.2		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 18. INDICE DE ARAOLOUS = 91.

DEV. ESTANDAR	36.5	30.2	39.1	51.9	39.5	38.8	30.3	38.7	41.9	29.8	42.5	25.5	89.7
COEF. VARIACION	1.167	0.674	0.429	0.396	0.366	0.572	0.650	0.765	0.505	0.233	0.428	0.532	0.093
COEF. ASIMETRIA	1.431	-0.278	-0.066	0.394	0.227	1.628	0.652	1.691	0.314	0.126	0.443	-0.148	0.414

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240354	PIRAVITOBA	PIRAVITOBA	+05 41 00	+072 59 00	2500 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1971	-9.9	-9.9	-9.9	-9.9	193.0	32.0	44.0	111.0	38.0	64.0	37.0	68.0	-9.9
1972	70.0	46.0	79.0	254.0	69.0	58.0	26.0	15.0	29.0	36.0	62.0	9.0	753.0
1973	1.0	3.0	37.0	53.0	25.0	20.0	55.0	66.0	110.0	131.0	55.0	83.0	639.0
1974	19.0	40.0	80.0	99.0	80.0	61.0	47.0	23.0	176.0	134.0	118.0	5.0	882.0
1975	3.0	49.0	20.0	127.0	129.0	67.0	52.0	38.0	20.0	113.0	61.0	78.0	757.0
1976	3.0	14.0	137.0	150.0	82.0	50.0	27.0	17.0	30.0	74.0	69.0	79.0	732.0
1977	0.0	0.0	46.0	101.0	144.0	67.0	31.0	69.0	30.0	86.0	122.0	8.0	706.0
1978	0.0	1.0	71.0	171.0	71.0	50.5	35.0	16.0	65.5	86.0	48.0	36.0	651.0
1979	5.0	19.0	90.0	150.0	79.0	150.0	48.0	100.0	57.0	122.0	147.0	34.0	1001.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR BAVARIA

ESTACION X FIRAVITOBA MUNICIPIO DE FIRAVITOBA PERIODO 1971 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CO	MCY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1001.0	1001.0	1001.0	1.644	0.308				I +		.	
2	1978	651.0	1652.0	826.0	-0.541	0.155			.	I+			
3	1977	700.0	2352.0	736.0	-0.487	0.082			.	+			
4	1976	752.0	3050.0	772.5	-0.273	0.039			.	+			
5	1975	757.0	3807.0	769.4	-0.067	0.028				*			
6	1974	682.0	4729.0	788.2	0.963	0.181				I+	.		
7	1973	639.0	5368.0	766.9	-1.040	0.016			.	+			
8	1972	753.0	6121.0	765.1	-0.100	0.0				*			

N	AN	T A	CO	MCY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 8 ANOS = 765.1

DESVIACION ESTANDAR = 121.3

COEFICIENTE DE VARIACION = 0.159

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IDAC-CRSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240354	PIRAVITOBA	PIRAVITOBA	+05 40 04	+072 55 54	2500 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1971	-9.9	-9.9	-9.9	-9.9	193.0	32.0	44.0	111.0	38.0	64.0	37.0	68.0	-9.9	1971
1972	70.0	46.0	79.0	254.0	69.0	58.0	26.0	15.0	29.0	36.0	62.0	9.0	753.0	1972
1973	1.0	3.0	37.0	53.0	25.0	20.0	55.0	66.0	110.0	131.0	55.0	83.0	639.0	1973
1974	19.0	40.0	80.0	99.0	80.0	61.0	47.0	23.0	176.0	134.0	118.0	5.0	882.0	1974
1975	3.0	49.0	20.0	127.0	129.0	67.0	52.0	38.0	20.0	113.0	61.0	78.0	757.0	1975
1976	3.0	14.0	137.0	150.0	82.0	50.0	27.0	17.0	30.0	74.0	69.0	79.0	732.0	1976
1977	0.0	0.0	46.0	101.0	144.0	67.0	31.0	69.0	30.0	88.0	122.0	8.0	706.0	1977
1978	0.0	1.0	71.0	171.0	71.0	50.5	35.0	16.0	65.5	86.0	46.0	36.0	651.0	1978
1979	5.0	19.0	90.0	150.0	79.0	150.0	48.0	100.0	57.0	122.0	147.0	34.0	1001.0	1979
NUMERO DE ANOS	8	8	8	8	9	9	9	9	9	9	9	9	8	
VALOR MAXIMO	70.0	49.0	137.0	254.0	193.0	150.0	55.0	111.0	176.0	134.0	147.0	83.0	1001.0	
MEDIANA	3.0	16.5	75.0	138.5	80.0	58.0	44.0	38.0	38.0	88.0	62.0	36.0	742.5	
VALOR MINIMO	0.0	0.0	20.0	53.0	25.0	20.0	26.0	15.0	20.0	36.0	37.0	5.0	639.0	
PROMEDIOS	12.6	21.5	70.0	138.1	96.9	61.7	40.6	50.6	61.7	94.2	79.9	44.4	765.1	
										TOTAL DE LOS PROMEDIOS MENSUALES =			772.2	
PORCENTAJES	1.6	2.8	9.1	17.9	12.5	8.0	5.3	6.5	8.0	12.2	10.3	5.8		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 25. INDICE DE ARNOLDUS = 82.

DEV. ESTANDAR	24.0	20.7	36.3	59.8	49.9	36.7	11.0	37.4	51.0	33.3	36.7	32.9	121.3	
COEF. VARIACION	1.900	0.961	0.519	0.433	0.515	0.594	0.271	0.739	0.826	0.354	0.485	0.741	0.159	
COEF. ASIMETRIA	2.500	0.357	0.539	0.769	0.777	1.913	-0.168	0.630	1.720	-0.406	0.807	-0.030	1.170	

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350708	GARAGOA	GARAGOA	+05 05 00	+073 21 00	1700 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1935	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	218.6	63.1	232.5	92.6	-9.9
1936	-9.9	87.6	241.4	290.1	424.0	233.5	270.0	222.2	82.1	36.3	41.8	15.5	-9.9
1937	110.1	35.4	42.0	0.0	110.6	484.0	578.1	434.8	118.9	279.4	136.6	-9.9	-9.9
1938	-9.9	-9.9	-9.9	-9.9	599.6	324.4	543.4	235.1	214.1	232.6	435.5	425.6	-9.9
1939													
1940	43.0	107.2	13.0	149.0	134.9	162.6	187.3	161.0	115.1	104.0	36.7	109.6	1323.4
1941	41.6	3.2	102.9	117.2	141.4	53.3	178.3	73.0	106.8	85.3	112.9	15.2	1075.1
1942	-9.9	-9.9	55.0	151.1	225.6	152.0	22.5	128.3	89.3	144.5	110.6	31.7	-9.9
1943	29.7	23.9	57.8	160.4	148.2	164.1	193.7	298.0	86.6	54.0	40.0	52.5	1308.9
1944	19.3	13.1	26.4	202.5	191.8	202.5	130.6	70.1	123.8	116.0	68.9	13.8	1178.8
1945	22.0	0.8	37.0	172.6	214.5	163.9	190.1	125.6	87.1	113.0	56.8	30.1	1213.5
1946	10.0	5.0	70.6	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	39.3	-9.9
1947	-9.9	-9.9	32.7	107.3	-9.9	222.3	318.0	184.4	147.3	64.3	43.9	3.0	-9.9
1948	-9.9	-9.9	54.8	106.2	128.1	137.0	79.0	59.2	83.4	89.6	47.3	-9.9	-9.9
1949	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	14.4	36.4	-9.9
1950	30.4	-9.9	-9.9	28.0	147.0	169.0	164.8	22.1	31.0	41.1	-9.9	-9.9	-9.9
1951	-9.9	74.2	55.0	279.0	-9.9	364.0	-9.9	-9.9	-9.9	69.0	198.5	37.0	-9.9
1952	11.0	-9.9	15.0	110.0	97.0	141.0	-9.9	-9.9	56.0	225.0	-9.9	-9.9	-9.9
1953	25.0	35.0	60.0	77.0	131.0	117.0	20.0	148.0	80.0	68.0	-9.9	-9.9	-9.9
1954	-9.9	-9.9	-9.9	-9.9	184.8	221.4	244.0	181.0	141.0	81.2	-9.9	-9.9	-9.9
1955	-9.9	-9.9	-9.9	-9.9	-9.9	160.9	218.8	219.0	79.8	185.3	69.8	20.0	-9.9
1956													
1957													
1958													
1959	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	4.0	77.5	27.0	-9.9
1960	8.0	0.0	34.5	58.5	43.0	114.5	189.0	137.5	59.0	36.5	30.0	51.0	761.5
1961	18.0	1.0	29.0	88.5	78.5	136.0	110.0	77.5	43.0	88.5	48.0	7.0	725.0
1962	2.0	7.0	96.0	19.0	156.0	177.0	236.0	148.0	101.0	33.0	90.0	20.0	1085.0
1963	5.0	33.0	2.0	103.0	112.0	177.0	180.0	129.0	70.0	54.0	58.0	8.0	931.0
1964	0.0	0.0	0.0	91.0	149.0	163.0	204.0	-9.9	-9.9	121.0	81.0	29.0	-9.9
1965	16.0	23.0	45.0	96.0	250.0	164.0	252.0	182.0	90.0	137.0	71.0	19.0	1345.0
1966	13.0	5.0	111.0	52.0	93.0	234.0	158.0	144.0	102.0	50.0	125.0	96.0	1183.0
1967	25.0	7.0	57.0	297.0	291.0	352.0	279.0	325.0	211.0	227.0	254.0	158.0	2523.0
1968	102.0	69.0	126.0	339.0	293.0	522.0	481.0	301.0	350.0	242.0	150.0	50.0	3025.0
1969	-9.9	55.0	79.0	242.0	325.0	245.0	379.0	285.0	71.0	236.0	150.0	85.0	-9.9
1970	105.0	68.0	111.0	209.0	383.0	269.0	374.0	370.0	302.0	253.0	124.0	154.0	2722.0
1971	74.0	105.0	184.0	232.0	467.0	278.0	422.0	351.0	222.0	210.0	195.0	104.0	2844.0
1972	124.0	59.0	170.0	285.0	425.0	440.0	356.0	274.0	330.0	194.0	167.0	35.0	2859.0
1973	33.0	19.0	84.0	158.0	344.0	204.0	187.0	241.0	198.0	131.0	138.0	70.0	1807.0
1974	26.0	40.0	45.0	164.0	214.0	157.0	249.0	164.0	149.0	129.0	74.0	4.0	1455.0
1975	6.0	42.0	112.0	166.0	226.0	272.0	224.0	348.0	188.0	351.0	-9.9	90.0	-9.9
1976	5.0	31.0	50.0	198.0	204.0	266.0	243.0	165.0	135.0	70.0	96.0	58.0	1521.0
1977	0.0	12.0	38.0	86.0	178.0	160.0	168.0	151.0	222.0	49.0	156.0	0.0	1220.0
1978	0.0	0.0	67.0	188.0	173.0	163.0	144.0	223.0	113.0	146.0	15.0	28.0	1260.0
1979	7.0	0.0	14.0	131.0	113.0	148.0	170.0	202.0	75.0	95.0	211.0	82.0	1252.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

Ministerio de Hacienda y Crédito Público

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

IMPRESO EN COLOMBIA POR DAVARANJO

ESTACION X CARAGUA MUNICIPIO DE CARAGUA PERIODO COEF DE CORRECCION

1935 - 1979 1.000

N	AN	T A	CO	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1492.0	1492.0	1492.0	-0.448	-0.204				. + I			
2	1978	1201.0	2693.0	1250.0	-0.435	-0.404				* I			
3	1977	1221.0	3914.0	1244.0	-0.491	-0.628				+ . I			
4	1976	1521.0	5435.0	1313.3	-0.473	-0.662				+ .			
5	1974	1455.0	6890.0	1341.6	-0.185	-0.737				+ .I			
6	1973	1107.0	8018.0	1419.2	0.324	-0.505				+ I .			
7	1972	2655.0	11574.0	1624.9	1.765	0.228				I +	.		
8	1971	2849.0	14216.0	1777.3	1.764	1.036				I	+ .		
9	1970	2722.0	16938.0	1882.2	1.555	1.765				I	. +		
10	1969	3021.0	19959.0	1996.5	2.015	2.686				I	.	+	
11	1967	2523.0	22482.0	2044.4	1.318	3.291				I	.		+
12	1966	1183.0	23671.0	1972.6	-0.542	3.043				. I			+
13	1965	1345.0	25016.0	1924.3	-0.317	2.696				. I			+
14	1963	931.0	25947.0	1853.4	-0.692	2.485				. I			+
15	1962	1085.0	27032.0	1802.1	-0.678	2.179				. I			+
16	1961	725.0	27757.0	1734.8	-1.178	1.640				. I		.	
17	1960	761.5	28518.5	1677.6	-1.127	1.124				. I	+		
18	1958	1213.5	29732.0	1651.8	-0.500	0.698				. I	+		
19	1944	1176.8	30910.8	1620.5	-0.548	0.644				. I	+		
20	1943	1308.5	32219.7	1611.0	-0.367	0.476				. I	+		
21	1941	1075.1	33294.8	1585.8	-0.652	0.155				. I+			
22	1940	1323.4	34618.2	1573.6	-0.347	0.0				. +			

N	AN	T A	CO	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 22 ANOS = 1573.6 *

DESVIACION ESTANDAR = 720.2

COEFICIENTE DE VARIACION = 0.458

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CRECTA *** CALCO DE AGROCLIMATOLOGIA *** PROGRAMA CRECTA

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350709	LAS JUNTAS	GARAGOA	+05 00 00	+073 23 00	1190 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1962	-9.9	-9.9	-9.9	36.0	239.0	154.0	374.0	203.0	131.0	119.0	91.0	46.0	-9.9
1963	10.0	63.0	34.0	218.0	272.0	248.0	188.0	197.0	100.0	45.0	62.0	23.0	1460.0
1964	1.0	8.0	0.0	110.0	203.0	285.0	181.0	90.0	144.0	105.0	102.0	25.0	1258.0
1965	9.0	30.0	38.0	92.0	262.0	220.0	248.0	175.0	113.0	46.0	86.0	0.0	1319.0
1966	3.0	15.0	96.0	65.0	92.0	164.0	174.0	109.0	114.0	68.0	137.0	40.0	1077.0
1967	16.0	3.0	53.0	126.0	161.0	248.0	220.0	201.0	165.0	102.0	32.0	4.0	1331.0
1968	7.0	8.0	25.0	92.0	105.0	174.0	219.0	109.0	109.0	96.0	43.0	16.0	1003.0
1969	75.0	44.0	37.0	34.0	176.0	157.0	251.0	266.0	76.0	168.0	81.0	34.0	1439.0
1970	18.0	36.0	66.0	121.0	230.0	256.0	371.0	244.0	206.0	120.0	17.0	66.0	1791.0
1971	28.0	45.0	86.0	108.0	258.0	154.0	245.0	185.0	148.0	74.0	116.0	14.0	1501.0
1972	69.0	19.0	101.0	150.0	200.0	272.0	219.0	137.0	146.0	115.0	83.0	14.0	1529.0
1973	2.0	22.0	47.0	66.0	156.0	174.0	147.0	241.0	161.0	132.0	93.0	16.0	1257.0
1974	16.0	19.0	91.0	148.0	243.0	233.0	329.9	235.0	66.0	83.0	46.0	0.0	1509.9
1975	12.0	18.0	89.0	121.0	155.0	239.0	130.0	131.0	83.0	158.0	103.0	79.0	1318.0
1976	-9.9	16.0	41.0	158.0	-9.9	184.0	-9.9	-9.9	-9.9	-9.9	8.0	33.0	-9.9
1977	2.0	42.0	35.0	71.0	-9.9	184.0	257.0	172.0	147.0	100.0	64.0	3.0	-9.9
1978	16.0	6.0	112.0	159.0	214.0	213.0	170.0	206.0	117.0	135.0	28.0	27.0	1403.0
1979	6.0	0.0	22.0	153.0	146.0	233.0	278.0	227.0	95.0	128.0	177.0	94.0	1559.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR CARVAJAL

ESTACION X LAS JUNTAS MUNICIPIO DE GARZON PERIODO 1962 - 1979 COEF DE CORRECCION 1.000

N	AÑO	T /	CO	MOV	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1555.0	1555.0	1509.0	0.094	0.127				I+	.		
2	1978	1462.0	2982.0	1461.0	0.055	0.141				.+			
3	1977	1518.0	4500.0	1426.7	-0.335	0.093			.	+			
4	1976	1565.5	6065.5	1447.5	0.044	0.184				I+	.		
5	1975	1297.0	7362.5	1409.4	-0.046	0.093			.	+			
6	1974	1525.0	8887.5	1429.3	0.041	0.196				I+	.		
7	1973	1801.0	10688.5	1459.0	0.056	0.283				I	+	.	
8	1972	1791.0	12479.5	1483.5	0.076	0.577				I	+	.	
9	1971	1455.0	13934.5	1478.5	0.282	0.617				I	. +		
10	1970	1163.0	15097.5	1451.0	-1.540	0.342			.	I	+		
11	1969	1351.0	16448.5	1421.9	-0.266	0.304				. I	+		
12	1968	1477.0	17925.5	1393.2	-1.563	0.082			.	+			
13	1967	1319.0	19244.5	1367.5	-0.330	0.036				. +			
14	1966	1256.0	20500.5	1378.2	-0.041	-0.095			.	+			
15	1965	1406.0	21906.5	1283.7	0.385	0.000				+	.		

N	AÑO	T /	CO	MOV	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 15 AÑOS = 1383.7

DESVIACION ESTANDAR = 196.2

COEFICIENTE DE VARIACION = 0.142

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTON *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CRSTON

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350709	LAS JUNTAS	CARAGGA	+05 01 30	+073 23 26	1260 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1962	-9.9	-9.9	-9.9	36.0	239.0	154.0	374.0	203.0	131.0	119.0	91.0	46.0	-9.9	1962
1963	10.0	63.0	34.0	218.0	272.0	248.0	188.0	197.0	100.0	45.0	62.0	23.0	1460.0	1963
1964	1.0	8.0	0.0	110.0	203.0	285.0	181.0	90.0	144.0	109.0	102.0	25.0	1258.0	1964
1965	9.0	30.0	38.0	92.0	262.0	220.0	248.0	175.0	113.0	46.0	66.0	0.0	1319.0	1965
1966	3.0	15.0	96.0	65.0	92.0	164.0	174.0	109.0	114.0	68.0	137.0	40.0	1077.0	1966
1967	10.0	3.0	53.0	126.0	161.0	248.0	220.0	201.0	165.0	102.0	36.0	4.0	1331.0	1967
1968														1968
1969	75.0	44.0	37.0	34.0	176.0	197.0	251.0	266.0	76.0	168.0	61.0	34.0	1439.0	1969
1970	18.0	30.0	66.0	121.0	230.0	296.0	371.0	244.0	206.0	120.0	17.0	66.0	1791.0	1970
1971	28.0	45.0	86.0	108.0	258.0	194.0	245.0	185.0	148.0	74.0	116.0	14.0	1501.0	1971
1972	69.0	19.0	101.0	150.0	200.0	272.0	219.0	137.0	146.0	119.0	83.0	14.0	1529.0	1972
1973	2.0	22.0	47.0	66.0	156.0	174.0	147.0	241.0	161.0	132.0	93.0	16.0	1257.0	1973
1974	16.0	19.0	91.0	148.0	243.0	233.0	329.9	235.0	66.0	83.0	46.0	0.0	1509.9	1974
1975	12.0	18.0	89.0	121.0	155.0	239.0	130.0	131.0	83.0	158.0	103.0	79.0	1318.0	1975
1976	-9.9	16.0	41.0	158.0	-9.9	184.0	-9.9	-9.9	-9.9	-9.9	8.0	33.0	-9.9	1976
1977	2.0	42.0	35.0	71.0	-9.9	184.0	257.0	172.0	147.0	100.0	64.0	3.0	-9.9	1977
1978	16.0	6.0	112.0	159.0	214.0	213.0	170.0	206.0	117.0	135.0	28.0	27.0	1403.0	1978
1979	0.0	0.0	22.0	153.0	146.0	233.0	278.0	227.0	95.0	128.0	177.0	94.0	1559.0	1979
NUMERO DE ANOS	15	16	16	17	15	17	16	16	16	16	17	17	14	
VALOR MAXIMO	75.0	63.0	112.0	218.0	272.0	296.0	374.0	266.0	206.0	168.0	177.0	94.0	1791.0	
CUARTIL SUPERIOR	18.0	39.0	90.0	151.5	243.0	248.0	267.5	231.0	147.5	130.0	102.5	43.0	1509.9	
MEDIANA	12.0	19.0	50.0	121.0	203.0	220.0	232.5	199.0	124.0	114.0	83.0	25.0	1421.0	
CUARTIL INFERIOR	3.0	11.5	36.0	68.5	156.0	184.0	177.5	154.5	97.5	78.5	39.0	9.0	1318.0	
VALOR MINIMO	1.0	0.0	0.0	34.0	92.0	154.0	130.0	90.0	66.0	45.0	8.0	0.0	1077.0	
PROMEDIOS	18.9	24.1	59.3	113.9	200.5	219.9	236.4	188.7	125.8	106.6	78.0	30.5	1410.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1402.4	
PORCENTAJES	1.3	1.7	4.2	8.1	14.3	15.7	16.9	13.5	9.0	7.6	5.6	2.2		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 40. INDICE DE ARNOLDUS = 169.

DEV. ESTANDAR	22.8	17.7	32.8	49.1	51.8	42.2	73.9	50.8	37.2	36.0	44.1	27.6	171.8
COEF. VARIACION	1.210	0.734	0.553	0.431	0.258	0.192	0.313	0.269	0.296	0.338	0.566	0.905	0.122
COEF. ASIMETRIA	1.939	0.658	0.061	0.094	-0.442	0.223	0.602	-0.502	0.282	-0.230	0.358	1.053	0.270

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350739	LAS JUNTAS	GARAGOA	+05 01 30	+073 23 26	1260 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	31.9	78.0	103.2	103.2	184.1	131.7	319.5	165.1	149.3	126.9	85.9	83.0	1561.8	1960
1961	12.8	0.2	56.9	131.9	91.5	257.5	257.2	139.6	98.7	176.3	78.5	4.0	1311.1	1961
1962	27.0	1.4	43.6	36.0	239.0	154.0	374.0	203.0	131.0	119.0	91.0	46.0	1465.0	1962
1963	10.0	63.0	34.0	218.0	272.0	248.0	188.0	197.0	100.0	45.0	62.0	23.0	1460.0	1963
1964	1.0	8.0	0.0	110.0	203.0	285.0	181.0	90.0	144.0	109.0	102.0	25.0	1258.0	1964
1965	9.0	30.0	38.0	92.0	262.0	220.0	248.0	175.0	113.0	46.0	86.0	0.0	1319.0	1965
1966	3.0	15.0	96.0	65.0	92.0	164.0	174.0	109.0	114.0	68.0	137.0	40.0	1077.0	1966
1967	16.0	3.0	53.0	126.0	161.0	248.0	220.0	201.0	165.0	102.0	32.0	4.0	1331.0	1967
1968	9.2	10.5	32.9	121.3	138.4	229.5	288.8	143.7	143.7	126.6	56.7	21.1	1322.4	1968
1969	75.0	44.0	37.0	34.0	176.0	197.0	251.0	266.0	76.0	168.0	81.0	34.0	1439.0	1969
1970	18.0	30.0	66.0	121.0	230.0	296.0	371.0	244.0	206.0	120.0	17.0	66.0	1791.0	1970
1971	28.0	45.0	86.0	108.0	258.0	194.0	245.0	185.0	148.0	74.0	116.0	14.0	1501.0	1971
1972	69.0	19.0	101.0	150.0	200.0	272.0	219.0	137.0	146.0	119.0	83.0	14.0	1529.0	1972
1973	2.0	22.0	47.0	66.0	156.0	174.0	147.0	241.0	161.0	132.0	93.0	16.0	1257.0	1973
1974	16.0	19.0	91.0	148.0	243.0	233.0	329.9	235.0	66.0	83.0	46.0	0.0	1509.9	1974
1975	12.0	18.0	89.0	121.0	155.0	239.0	130.0	131.0	83.0	158.0	103.0	79.0	1318.0	1975
1976	8.6	10.0	41.0	158.0	226.0	184.0	311.6	251.3	144.5	74.9	8.0	33.0	1457.1	1976
1977	2.0	42.0	35.0	71.0	226.0	184.0	257.0	172.0	147.0	100.0	64.0	3.0	1303.0	1977
1978	10.0	6.0	112.0	159.0	214.0	213.0	170.0	206.0	117.0	135.0	28.0	27.0	1403.0	1978
1979	6.0	0.0	22.0	153.0	146.0	233.0	276.0	227.0	95.0	128.0	177.0	94.0	1559.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	75.0	78.0	112.0	218.0	272.0	296.0	374.0	266.0	206.0	176.3	177.0	94.0	1791.0	
CUARTIL SUPERIOR	22.5	39.0	90.0	149.0	234.5	248.0	300.2	231.0	147.5	130.0	97.5	43.0	1505.4	
MEDIANA	12.4	18.5	50.0	121.0	201.5	224.8	249.5	191.0	137.3	119.0	82.0	24.0	1421.0	
CUARTIL INFERIOR	7.4	7.1	36.0	81.5	155.5	184.0	184.5	141.6	99.3	78.9	51.3	9.0	1314.5	
VALOR MINIMO	1.0	0.0	0.0	34.0	91.5	131.7	130.0	90.0	66.0	45.0	8.0	0.0	1077.0	
PROMEDIOS	18.6	24.1	59.2	114.6	193.6	217.8	248.0	185.9	127.4	110.5	77.4	31.3	1408.6	
PORCENTAJES	1.3	1.7	4.2	8.1	13.7	15.5	17.6	13.2	9.0	7.8	5.5	2.2		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 44. INDICE DE ARNOLDUS = 166.

INDICE DE IRREGULARIDAD INTERANUAL =1.32

DEV. ESTANDAR	20.2	21.3	31.6	45.3	53.2	44.5	70.7	50.0	34.6	36.9	40.8	28.7	152.3
COEF. VARIACION	1.085	0.884	0.534	0.396	0.275	0.204	0.285	0.269	0.271	0.334	0.528	0.918	0.108

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1659.	1604.	1537.	1409.	1280.	1213.	1158.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.024	1.117	0.170	0.048	-0.442	-0.110	0.168	-0.210	0.118	-0.143	0.419	0.980	0.314

IMPRESO EN COLOMBIA POR CARVAJAL

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350711	LA GRANJA	SUAYATA	+04 58 00	+073 29 00	1580 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1962	-9.9	-9.9	-9.9	86.0	265.0	302.0	393.0	125.0	103.0	96.0	57.0	43.0	-9.9
1963	6.0	49.0	22.0	178.0	254.0	116.0	152.0	130.0	45.0	25.0	70.0	6.0	1053.0
1964	0.0*	9.0	5.0	50.0	200.0	231.0	136.0	77.0	142.0	94.0	81.0	29.0	1054.0
1965	15.0	23.0	36.0	124.0	199.0	98.0	234.0	152.0	69.0	102.0	101.0	25.0	1175.0
1966	11.0	10.0	94.0	39.0	77.0	120.0	108.0	120.0	89.0	59.0	95.0	56.0	878.0
1967	12.0	7.0	39.0	168.0	129.0	208.0	159.0	179.0	108.0	76.0	47.0	5.0	1137.0
1968	11.0	31.0	24.0	151.0	101.0	211.0	192.0	104.0	95.0	90.0	44.0	27.0	1081.0
1969	57.0	26.0	28.0	116.0	172.0	110.0	115.0	167.0	55.0	149.0	38.0	28.0	1061.0
1970	29.0	20.0	52.0	108.0	163.0	148.0	221.0	108.0	117.0	113.0	25.0	36.0	1140.0
1971	7.0	32.0	126.0	110.0	191.0	162.0	223.0	167.0	108.0	81.0	61.0	22.0	1290.0
1972	33.0	29.0	83.0	192.0	203.0	198.0	160.0	122.0	121.0	95.0	37.0	5.0	1278.0
1973	7.0	17.0	19.0	80.0	164.0	137.0	159.0	188.0	178.0	92.0	127.0	10.0	1178.0
1974	21.0	24.0	51.0	98.0	171.0	122.0	218.0	134.0	97.0	78.0	48.0	0.0	1062.0
1975	10.0	15.0	50.0	137.0	151.0	251.0	185.0	167.0	96.0	126.0	50.0	44.0	1282.0
1976	17.0	21.0	73.0	150.0	165.0	254.0	172.0	132.0	60.0	56.0	99.0	19.0	1218.0
1977	0.0	17.0	18.0	126.0	121.0	169.0	231.0	119.0	131.0	55.0	59.0	4.0	1054.0
1978	16.0	16.0	49.0	140.0	133.0	210.0	139.0	161.0	102.1	98.0	27.0	20.0	1111.1
1979	6.0	0.0	24.0	151.0	130.0	162.0	188.0	180.0	71.0	169.0	164.0	87.0	1332.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAM

ESTACION X LA GRANJA MUNICIPIO DE COYATA PERIODO COEF DE CORRECCION
1962 - 1979 1.000

ESTACION Y ALMEIDA MUNICIPIO DE ALMEIDA PERIODO COEF DE CORRECCION
1962 - 1979 1.000

N	AÑO	CLX	COY	RAN	RCAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1975	13626.	10095.	1.005	0.000					*				
2	1976	24465.	20711.	1.005	0.000					+	.			
3	1977	34576.	42100.	0.956	0.000				.	+				
4	1978	47150.	55260.	1.126	0.144					I+	.			
5	1979	55570.	60804.	1.144	0.265					I +	.			
6	1974	70550.	84950.	0.826	0.000				.	+				
7	1975	82270.	90000.	1.045	0.138					I+	.			
8	1976	95150.	112700.	1.057	0.196					I+	.			
9	1977	106050.	127720.	1.046	0.246					I +	.			
10	1978	115450.	143050.	0.896	0.081				.	+				
11	1969	130000.	157450.	0.950	0.031				.	+				
12	1969	140670.	170300.	1.019	0.049					+.				
13	1967	152240.	184450.	1.141	0.171					I+	.			
14	1966	161120.	195000.	1.204	0.232					I +	.			
15	1965	172770.	207440.	0.800	0.108				.	I+				
16	1960	182300.	222520.	0.848	0.000				.	+				

N	AÑO	CLX	COY	RAN	RCAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 1145.6 1396.6

RAZONES PROMEDIOS Y/X = 1.214
X/Y = 10.824

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IDAC-GESTION *** CURSO DE HIDROCLIMATOLOGIA *** PROGRAMA GASTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350711	LA GRANJA	GUAYATA	+04 58 43	+073 29 12	1590 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1963	6.0	49.0	22.0	176.0	254.0	116.0	182.0	130.0	45.0	25.0	70.0	6.0	1053.0	1963
1964	0.0	9.0	5.0	50.0	200.0	231.0	136.0	77.0	142.0	94.0	81.0	29.0	1054.0	1964
1965	15.0	23.0	36.0	124.0	159.0	95.0	234.0	152.0	69.0	102.0	101.0	25.0	1175.0	1965
1966	11.0	10.0	54.0	39.0	77.0	120.0	108.0	120.0	89.0	59.0	55.0	56.0	878.0	1966
1967	12.0	7.0	39.0	168.0	129.0	208.0	159.0	179.0	108.0	76.0	47.0	5.0	1137.0	1967
1968	11.0	31.0	24.0	151.0	101.0	211.0	192.0	104.0	95.0	90.0	44.0	27.0	1081.0	1968
1969	57.0	26.0	28.0	116.0	172.0	110.0	115.0	167.0	55.0	149.0	36.0	28.0	1061.0	1969
1970	29.0	20.0	52.0	108.0	163.0	148.0	221.0	108.0	117.0	113.0	25.0	36.0	1140.0	1970
1971	7.0	32.0	126.0	110.0	151.0	162.0	223.0	167.0	108.0	81.0	61.0	22.0	1290.0	1971
1972	33.0	29.0	83.0	192.0	203.0	198.0	160.0	122.0	121.0	95.0	37.0	5.0	1278.0	1972
1973	7.0	17.0	19.0	80.0	164.0	137.0	159.0	188.0	178.0	92.0	127.0	10.0	1178.0	1973
1974	21.0	24.0	51.0	98.0	171.0	122.0	218.0	134.0	97.0	78.0	48.0	0.0	1062.0	1974
1975	10.0	15.0	50.0	137.0	151.0	251.0	185.0	167.0	96.0	126.0	80.0	44.0	1282.0	1975
1976	17.0	21.0	73.0	150.0	165.0	254.0	172.0	132.0	60.0	56.0	99.0	19.0	1218.0	1976
1977	0.0	17.0	18.0	120.0	121.0	169.0	231.0	119.0	131.0	59.0	55.0	4.0	1054.0	1977
1978	16.0	16.0	49.0	140.0	133.0	210.0	139.0	161.0	102.1	98.0	27.0	20.0	1111.1	1978
1979	6.0	0.0	24.0	151.0	130.0	162.0	188.0	180.0	71.0	169.0	164.0	87.0	1332.0	1979
NUMERO DE ANOS	17	17	17	17	17	17	17	17	17	17	17	17	17	
VALOR MAXIMO	57.0	49.0	126.0	192.0	254.0	254.0	234.0	188.0	178.0	169.0	164.0	87.0	1332.0	
CUARTIL SUPERIOR	19.0	27.5	62.5	151.0	195.0	210.5	219.5	167.0	119.0	107.5	97.0	32.5	1248.0	
MEDIANA	11.0	20.0	39.0	126.0	164.0	162.0	172.0	134.0	97.0	92.0	55.0	22.0	1137.0	
CUARTIL INFERIOR	6.5	12.5	23.0	103.0	129.5	121.0	145.5	119.5	70.0	67.5	41.0	5.5	1057.5	
VALOR MINIMO	0.0	0.0	5.0	39.0	77.0	95.0	108.0	77.0	45.0	25.0	25.0	0.0	878.0	
PROMEDIOS	15.2	20.4	46.6	124.6	160.2	170.8	176.0	141.6	99.1	91.9	69.0	24.9	1140.2	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1140.2	
PORCENTAJES	1.3	1.8	4.1	10.9	14.1	15.0	15.4	12.4	8.7	8.1	6.1	2.2		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 27. INDICE DE ARNOLDUS = 130.

DEV. ESTANDAR	14.0	11.4	31.7	41.7	43.0	50.5	40.0	31.4	33.8	34.9	37.8	22.1	115.9
COEF. VARIACION	0.922	0.562	0.680	0.335	0.269	0.298	0.227	0.222	0.341	0.380	0.548	0.890	0.102
COEF. ASIMETRIA	1.856	0.638	1.131	-0.544	0.117	0.204	-0.052	-0.287	0.491	0.452	1.133	1.488	-0.218

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350711	LA GRANJA	GUAYATA	+04 58 43	+073 29 12	1590 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	15.0	26.2	63.4	94.3	160.6	47.2	285.1	150.6	16.2	140.1	89.8	97.2	1185.7	1960
1961	21.0	31.5	73.6	113.0	73.1	175.1	220.5	122.5	74.9	142.8	110.7	11.0	1169.7	1961
1962	3.4	35.2	69.1	62.9	193.7	220.7	287.3	91.4	75.3	70.2	41.7	31.4	1182.3	1962
1963	6.0	49.0	22.0	178.0	254.0	116.0	152.0	130.0	45.0	25.0	70.0	6.0	1053.0	1963
1964	3.0	9.0	5.0	50.0	200.0	231.0	136.0	77.0	142.0	94.0	81.0	29.0	1054.0	1964
1965	13.0	23.0	36.0	124.0	199.0	95.0	234.0	152.0	69.0	102.0	101.0	25.0	1175.0	1965
1966	11.0	10.0	94.0	39.0	77.0	120.0	108.0	120.0	89.0	59.0	95.0	56.0	878.0	1966
1967	12.0	7.0	39.0	168.0	129.0	208.0	159.0	179.0	108.0	76.0	47.0	5.0	1137.0	1967
1968	11.0	31.0	24.0	151.0	101.0	211.0	192.0	104.0	95.0	90.0	44.0	27.0	1081.0	1968
1969	57.0	26.0	28.0	116.0	172.0	110.0	115.0	167.0	55.0	149.0	36.0	28.0	1061.0	1969
1970	29.0	20.0	52.0	108.0	163.0	148.0	221.0	108.0	117.0	113.0	25.0	36.0	1140.0	1970
1971	7.0	32.0	126.0	110.0	151.0	162.0	223.0	167.0	108.0	81.0	61.0	22.0	1290.0	1971
1972	33.0	29.0	83.0	192.0	203.0	198.0	160.0	122.0	121.0	95.0	37.0	5.0	1278.0	1972
1973	7.0	17.0	19.0	80.0	164.0	137.0	159.0	188.0	178.0	92.0	127.0	10.0	1178.0	1973
1974	21.0	24.0	51.0	98.0	171.0	122.0	218.0	134.0	97.0	78.0	48.0	0.0	1062.0	1974
1975	10.0	15.0	50.0	137.0	151.0	251.0	185.0	167.0	96.0	126.0	50.0	44.0	1282.0	1975
1976	17.0	21.0	73.0	150.0	165.0	254.0	172.0	132.0	60.0	56.0	99.0	19.0	1218.0	1976
1977	0.0	17.0	18.0	126.0	121.0	169.0	231.0	119.0	131.0	59.0	59.0	4.0	1054.0	1977
1978	16.0	16.0	49.0	140.0	133.0	210.0	139.0	161.0	102.1	98.0	27.0	20.0	1111.1	1978
1979	6.0	0.0	24.0	151.0	130.0	162.0	188.0	180.0	71.0	169.0	164.0	87.0	1332.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	57.0	49.0	126.0	192.0	254.0	254.0	287.3	188.0	178.0	169.0	164.0	97.2	1332.0	
CUARTIL SUPERIOR	19.0	30.0	71.0	150.5	192.3	210.5	222.0	167.0	112.5	119.5	97.0	33.7	1201.8	
MEDIANA	11.5	22.0	49.5	120.0	163.5	165.5	186.5	133.0	95.5	93.0	60.0	23.5	1154.8	
CUARTIL INFERIOR	6.5	15.5	24.0	96.1	129.5	121.0	155.5	119.5	70.0	73.1	42.8	8.0	1061.5	
VALOR MINIMO	0.0	0.0	5.0	39.0	73.1	47.2	108.0	77.0	16.2	25.0	25.0	0.0	878.0	
PROMEDIOS	14.9	21.9	50.0	119.4	157.6	167.3	189.2	138.6	92.5	95.8	70.8	28.1	1146.1	
PORCENTAJES	1.3	1.9	4.4	10.4	13.7	14.6	16.5	12.1	8.1	8.4	6.2	2.5		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 31. INDICE DE ARNOLDUS = 130.

INDICE DE IRREGULARIDAD INTERANUAL =1.27

DEV. ESTANDAR	13.2	11.3	30.2	41.2	44.8	55.7	50.5	31.3	36.6	35.9	36.8	26.2	107.4
COEF. VARIACION	0.886	0.515	0.606	0.345	0.285	0.333	0.267	0.226	0.395	0.375	0.520	0.933	0.094

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1323.	1284.	1237.	1146.	1056.	1008.	969.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.872	0.272	0.785	-0.208	-0.121	-0.260	0.342	-0.171	0.210	0.275	0.927	1.537	-0.400

IMPRESO EN COLOMBIA POR DANIPANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240323	IZA	IZA	+05 37 00	+072 59 00	2540 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1958	-9.9	14.0	15.0	37.0	45.0	62.0	10.0	65.0	8.0	112.0	63.0	44.0	-9.9
1959	0.0	15.0	17.0	38.0	138.0	37.0	69.0	60.0	44.0	134.0	40.0	24.0	616.0
1960	6.0	34.0	42.0	19.0	49.0	38.0	104.0	55.0	51.0	115.0	43.0	82.0	642.0
1961	8.0	0.0	88.0	132.0	35.0	106.0	119.0	64.0	16.0	486.0	111.0	0.0	1165.0
1962	105.0	0.0	195.0	153.0	216.0	106.0	136.0	134.0	162.0	74.0	229.0	92.0	1602.0
1963	0.0	54.0	125.0	209.0	223.0	61.0	0.0	104.0	22.0	71.0	212.0	0.0	1081.0
1964	0.0	0.0	0.0	221.0	107.0	155.0	167.0	35.0	74.0	65.0	108.0	51.0	983.0
1965	3.0	6.0	9.0	280.0	94.0	73.0	37.0	71.0	14.0	102.0	111.0	11.0	811.0
1966	0.0	7.0	74.0	29.0	95.0	70.0	60.0	49.0	146.0	146.0	244.0	91.0	1011.0
1967	0.0	0.0	176.0	144.0	94.0	84.0	63.0	28.0	56.0	153.0	120.0	22.0	940.0
1968	4.0	48.0	18.0	315.0	118.0	112.0	49.0	20.0	44.0	52.0	88.0	39.0	907.0
1969	71.0	14.0	53.0	199.0	125.0	52.0	69.0	73.0	65.0	293.0	129.0	3.0	1186.0
1970	26.0	77.0	13.0	52.5	406.0	87.0	135.0	120.0	237.0	143.0	130.0	7.0	1433.5
1971	43.0	62.0	167.0	113.0	186.0	44.0	73.0	115.0	90.0	79.0	85.0	71.0	1128.0
1972	49.0	68.0	210.0	329.0	103.0	69.0	47.0	39.0	152.0	178.0	74.0	0.0	1318.0
1973	0.0	0.0	39.0	52.0	28.0	45.0	30.0	67.0	72.0	60.0	80.0	32.0	505.0
1974	2.0	40.0	67.0	72.0	97.0	26.0	24.0	0.0	69.0	87.0	87.0	1.0	572.0
1975	0.0	49.0	41.0	76.0	109.0	43.0	39.0	39.0	32.0	113.0	81.0	61.0	703.0
1976	3.0	16.0	102.0	95.0	103.0	54.0	42.0	27.0	28.0	151.0	66.0	90.0	777.0
1977	0.0	0.0	35.0	147.0	116.0	75.0	38.0	62.0	63.0	56.0	128.0	23.0	743.0
1978	0.0	9.0	45.0	194.0	92.0	46.0	36.0	22.0	106.0	75.0	56.0	25.0	706.0
1979	5.0	7.0	60.0	117.0	46.0	125.0	71.0	78.0	44.0	182.0	250.0	49.0	1034.0

DATOS CRIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PRCYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLCGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DATAGEN

ESTACION X IZA MUNICIPIO DE IZA PERIODO 1956 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MUY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1034.0	1034.0	1034.0	C.361	0.093				+	.		
2	1978	706.0	1740.0	870.0	-C.818	-C.160			.	+I			
3	1977	743.0	2483.0	827.7	-C.692	-C.375			. +	I			
4	1976	777.0	3260.0	815.0	-C.676	-C.553			*	I			
5	1975	703.0	3963.0	792.6	-C.829	-C.810			*	I			
6	1974	572.0	4535.0	756.8	-1.279	-1.206		*		I			
7	1973	605.0	5140.0	720.0	-1.504	-1.672		+.		I			
8	1972	1318.0	6458.0	764.8	1.269	-1.278		+		I	.		
9	1971	1128.0	7586.0	631.8	C.621	-1.086		+		I	.		
10	1970	1433.5	9019.5	891.9	1.664	-C.570			+	I		.	
11	1969	1186.0	10205.5	918.7	C.819	-C.316			+	I	.		
12	1968	807.0	11012.5	917.7	-C.133	-C.357			+	.I			
13	1967	940.0	11952.5	919.4	-C.020	-C.364			+	.			
14	1966	1011.0	12963.5	926.0	C.222	-C.295			+	I .			
15	1965	811.0	13774.5	918.3	-C.460	-C.437			*	I			
16	1964	783.0	14557.5	922.3	C.127	-C.398			+	I.			
17	1963	1081.0	15638.5	931.7	C.461	-C.255			+	I .			
18	1962	1102.0	17440.5	968.9	2.238	C.458				I +		.	
19	1961	1165.0	18605.5	979.2	C.748	C.670				I +.			
20	1960	642.0	19247.5	962.4	-1.037	C.345			.	I +			
21	1959	816.0	19863.5	945.9	-1.125	C.C			.	+			

N	AN	T A	CU	MUY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 21 ANOS = 945.9

DESVIACION ESTANDAR = 293.1

COEFICIENTE DE VARIACION = 0.310

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRESTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240323	IZA	IZA	+05 36 49	+072 58 57	2540 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1973	0.0	0.0	39.0	52.0	28.0	45.0	30.0	67.0	72.0	60.0	60.0	32.0	505.0	1973
1974	2.0	40.0	67.0	72.0	97.0	26.0	24.0	0.0	69.0	87.0	67.0	1.0	572.0	1974
1975	0.0	49.0	41.0	76.0	109.0	43.0	39.0	39.0	32.0	113.0	61.0	81.0	703.0	1975
1976	3.0	16.0	102.0	95.0	103.0	54.0	42.0	27.0	28.0	151.0	66.0	90.0	777.0	1976
1977	0.0	0.0	35.0	147.0	116.0	75.0	38.0	62.0	63.0	56.0	128.0	23.0	743.0	1977
1978	0.0	9.0	45.0	194.0	92.0	46.0	36.0	22.0	106.0	75.0	56.0	25.0	706.0	1978
1979	5.0	7.0	60.0	117.0	46.0	125.0	71.0	78.0	44.0	182.0	250.0	49.0	1034.0	1979
NUMERO DE ANOS	7	7	7	7	7	7	7	7	7	7	7	7	7	
VALOR MAXIMO	5.0	49.0	102.0	194.0	116.0	125.0	71.0	78.0	106.0	182.0	250.0	90.0	1034.0	
MEDIANA	0.0	9.0	45.0	95.0	97.0	46.0	38.0	39.0	63.0	87.0	61.0	32.0	706.0	
VALOR MINIMO	0.0	0.0	35.0	52.0	28.0	26.0	24.0	0.0	28.0	56.0	56.0	1.0	505.0	
PROMEDIOS	1.4	17.3	55.6	107.6	84.4	59.1	40.0	42.1	59.1	103.4	106.9	43.0	720.0	
									TOTAL DE LOS PROMEDIOS MENSUALES =				720.0	
PORCENTAJES	0.2	2.4	7.7	14.9	11.7	8.2	5.6	5.9	8.2	14.4	14.8	6.0		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 78.

DEV. ESTANDAR	2.0	19.6	23.6	49.4	33.7	32.5	15.0	28.0	27.1	47.9	67.1	32.4	168.8
COEF. VARIACION	1.392	1.132	0.424	0.459	0.399	0.550	0.374	0.665	0.458	0.463	0.628	0.753	0.234
COEF. ASIMETRIA	1.127	0.986	1.503	0.888	-1.103	1.653	1.718	-0.182	0.613	0.804	2.088	0.478	0.871

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2403S8	JERICO	JERICO	+06 08 00	+072 35 00	2850 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1971	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	41.0	72.0	42.0	116.0	63.0	56.0	-9.9
1972	93.0	26.0	90.0	271.0	155.0	67.0	8.0	14.0	40.0	67.0	32.0	12.0	875.0
1973	3.0	0.0	45.0	52.0	35.0	44.0	45.0	42.0	148.0	-9.9	158.0	56.0	-9.9
1974	7.0	66.0	52.0	-9.9	40.0	44.0	42.0	4.0	168.0	59.0	198.0	10.0	-9.9
1975	0.0	67.0	41.0	129.0	102.0	60.0	91.0	42.0	90.0	326.0	163.0	64.0	1285.0
1976	3.0	34.0	168.0	119.0	95.0	45.0	50.0	26.0	92.0	261.0	81.0	22.0	1000.0
1977	2.0	0.0	35.0	126.0	70.0	67.0	32.0	73.0	44.0	169.0	181.0	28.0	827.0
1978	13.0	42.0	85.0	237.0	131.0	53.0	30.0	40.0	160.0	169.0	134.0	6.0	1100.0
1979	13.0	16.0	87.0	142.0	93.0	138.0	62.0	65.0	30.0	210.0	210.0	11.0	1077.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X JERICO MUNICIPIO DE JERICO PERIODO 1971 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CO	MOY	ECR	PCAN	F = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1973	1077.0	1077.0	1077.0	0.255	0.048				+ .			
2	1978	1100.0	2177.0	1088.5	0.437	0.115				I+ .			
3	1977	827.0	3004.0	1001.3	-1.205	-0.076			.	+			
4	1976	1000.0	4004.0	1001.0	-0.164	-0.103				*I			
5	1975	1265.0	5269.0	1057.8	1.550	0.148				I+			
6	1974	875.0	6144.0	1027.3	-0.516	0.0			.	+			

N	AN	T A	CO	MOY	ECR	PCAN	F = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 6 ANOS = 1027.3

DESVIACION ESTANDAR = 166.3

COEFICIENTE DE VARIACION = 0.162

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2403 38	JERICO	JERICO	+06 08 50	+072 38 50	2960 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1971	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	41.0	72.0	42.0	116.0	63.0	56.0	-9.9	1971
1972	93.0	20.0	90.0	271.0	165.0	67.0	8.0	14.0	40.0	67.0	32.0	12.0	875.0	1972
1973	3.0	0.0	45.0	52.0	35.0	44.0	45.0	42.0	148.0	-9.9	156.0	56.0	-9.9	1973
1974	7.0	66.0	52.0	-9.9	40.0	44.0	42.0	4.0	168.0	59.0	156.0	10.0	-9.9	1974
1975	0.0	67.0	41.0	129.0	192.0	80.0	91.0	42.0	90.0	326.0	163.0	64.0	1285.0	1975
1976	3.0	34.0	168.0	119.0	95.0	49.0	50.0	26.0	92.0	261.0	81.0	22.0	1000.0	1976
1977	2.0	0.0	35.0	126.0	70.0	67.0	32.0	73.0	44.0	169.0	181.0	28.0	827.0	1977
1978	13.0	42.0	85.0	237.0	131.0	53.0	30.0	40.0	160.0	169.0	134.0	6.0	1100.0	1978
1979	13.0	16.0	87.0	142.0	93.0	138.0	62.0	65.0	30.0	210.0	210.0	11.0	1077.0	1979
NUMERO DE ANOS	8	8	8	7	8	8	9	9	9	8	9	9	6	
VALOR MAXIMO	93.0	67.0	168.0	271.0	192.0	138.0	91.0	73.0	168.0	326.0	210.0	64.0	1285.0	
MEDIANA	5.0	30.0	68.5	129.0	94.0	60.0	42.0	42.0	90.0	169.0	156.0	22.0	1038.5	
VALOR MENINO	0.0	0.0	35.0	52.0	35.0	44.0	8.0	4.0	30.0	59.0	32.0	6.0	827.0	
PROMEDIOS	16.8	31.4	75.4	153.7	101.4	67.8	44.6	42.0	90.4	172.1	135.6	29.4	1027.3	
										TOTAL DE LOS PROMEDIOS MENSUALES =			960.5	
PORCENTAJES	1.7	3.3	7.8	16.0	10.6	7.1	4.6	4.4	9.4	17.9	14.1	3.1		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 31. INDICE DE ARNOLDUS = 111.

DEV. ESTANDAR	31.2	26.2	43.6	75.0	55.1	31.1	23.0	24.7	55.8	92.6	63.0	23.0	166.3
COEF. VARIACION	1.863	0.837	0.578	0.488	0.543	0.459	0.515	0.588	0.616	0.538	0.465	0.781	0.162
COEF. ASIMETRIA	2.692	0.236	1.502	0.585	0.421	1.969	0.666	-0.128	0.399	0.387	-0.562	0.613	0.391

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
900001	EL VOLADOR	MACANAL	+04 58 45	+073 20 40	1250 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1968	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	320.0	237.0	167.0	72.0	62.0	17.0	-9.9
1969	80.0	53.0	121.0	143.0	123.0	181.0	280.0	314.0	124.0	118.0	77.0	107.0	1721.0
1970	100.0	55.0	121.0	146.0	203.0	322.0	357.0	254.0	208.0	208.0	168.0	165.0	2307.0
1971	62.0	78.0	83.0	146.0	210.0	414.0	366.0	299.0	172.0	121.0	91.0	20.0	2062.0
1972	117.0	16.0	183.0	174.0	325.0	271.0	317.0	206.0	126.0	81.0	38.0	14.0	1868.0
1973	8.0	0.0	101.0	170.0	384.0	153.0	275.0	296.0	152.0	91.0	94.0	6.0	1770.0
1974	12.0	19.0	44.0	122.0	267.0	163.0	213.0	180.0	162.0	96.0	62.0	11.0	1371.0
1975	21.0	3.0	72.0	157.0	173.0	345.0	250.0	207.0	123.0	101.0	71.0	79.0	1602.0
1976	13.0	20.0	43.0	152.0	292.0	406.0	306.0	192.0	113.0	84.0	111.0	40.0	1772.0
1977	1.0	33.0	60.0	115.0	225.0	304.0	296.0	208.0	182.0	72.0	66.0	4.0	1566.0
1978	22.0	11.0	114.0	157.0	252.0	286.0	202.0	289.0	186.0	125.0	21.0	47.0	1752.0
1979	12.0	0.0	63.0	236.0	175.0	313.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR CENARGRAFO

ESTACION X EL VOLADOR MUNICIPIO DE MACANAL PERIODO COEF DE CORRECCION

1968 - 1979 1.000

ESTACION Y CACHIPAY MUNICIPIO DE SANTA MARIA PERIODO COEF DE CORRECCION

1968 - 1979 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1978	1752.	5700.	0.866	-0.152					+	I			
2	1977	3318.	10521.	0.916	-0.233					+	I			
3	1976	5090.	15975.	0.916	-0.324					+	I			
4	1975	6692.	20671.	0.962	-0.360					*	I			
5	1974	8063.	24928.	0.908	-0.439					+	I			
6	1973	9833.	29749.	1.035	-0.405					+	I			
7	1972	11701.	34877.	1.027	-0.378					+	I			
8	1971	13763.	39999.	1.135	-0.240					+	I			
9	1970	16070.	45127.	1.268	0.034					+				
10	1969	17791.	50150.	0.966	0.0					+				

N	AN	CUX	CUY	RAN	PCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 1779.1 5015.0

RAZONES PROMEDIOS Y/X = 2.819

X/Y = 0.355

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350712	MACANAL	MACANAL	+04 59 00	+073 19 00	1710 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	320.5	206.0	158.5	67.0	40.5	-9.9
1958	9.0	11.5	206.5	221.5	279.0	354.0	370.5	308.5	65.0	104.0	52.0	5.0	1986.5
1959	0.0	6.0	83.0	161.5	303.5	342.0	587.5	396.5	301.0	282.0	114.0	46.0	2623.0
1960	39.5	92.5	79.0	144.0	451.0	364.0	422.0	342.0	305.0	190.0	140.0	124.0	2693.0
1961	3.0	8.0	60.0	201.0	234.5	343.5	371.0	294.0	146.5	212.5	137.5	6.5	2018.0
1962	2.0	3.0	153.8	100.0	418.5	430.5	524.5	267.0	250.5	93.0	142.0	48.0	2432.8
1963	25.0	88.0	6.1	355.0	308.0	321.5	307.0	319.0	185.0	92.5	117.5	31.3	2155.9
1964	1.0	-9.9	20.0	232.0	466.0	384.0	330.0	265.0	311.0	212.0	166.5	34.0	-9.9
1965	25.0	84.0	82.0	166.0	489.0	406.0	536.0	339.0	270.0	172.0	154.0	70.0	2793.0
1966	39.0	20.0	185.0	78.0	151.0	211.0	303.0	250.0	208.0	129.0	169.0	75.0	1818.0
1967	50.0	16.0	56.0	237.0	239.0	436.0	331.0	554.0	251.0	136.0	63.0	27.0	2396.0
1968	38.0	29.0	61.0	298.0	218.0	367.0	439.0	272.0	231.0	191.0	101.0	27.0	2292.0
1969	101.0	85.0	68.0	144.0	401.0	256.0	331.5	336.0	129.0	232.0	116.0	53.0	2332.5
1970	70.0	55.0	118.0	295.0	322.0	402.5	549.0	220.0	211.0	179.0	93.0	140.0	2654.5
1971	27.0	67.0	102.0	190.5	442.0	355.0	468.0	345.0	213.5	138.0	86.0	46.0	2480.0
1972	68.5	39.5	151.0	191.0	464.0	357.0	385.0	253.0	240.0	139.5	62.0	32.5	2383.0
1973	14.0	0.0	89.0	142.5	343.0	311.0	292.5	306.0	211.0	182.0	98.0	29.0	2018.0
1974	18.0	27.0	62.0	159.0	390.0	260.0	459.0	270.0	194.5	173.0	76.0	5.0	2117.5
1975	20.0	7.0	108.0	156.0	232.5	410.0	312.5	305.0	180.0	172.0	121.0	64.0	2088.0
1976	22.0	24.0	67.0	248.0	442.0	456.0	437.5	338.0	201.0	124.0	164.0	59.0	2622.5
1977	2.0	36.0	67.0	137.0	288.0	357.0	415.0	331.0	247.0	132.0	79.0	15.0	2146.0
1978	39.0	15.0	163.0	284.0	315.0	405.0	341.0	366.0	261.5	173.5	39.0	76.0	2468.0
1979	30.0	1.0	95.0	289.0	222.0	418.0	410.0	322.0	141.0	160.0	219.0	126.0	2433.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION A MACANAL MUNICIPIO DE MACANAL PERIODO 1957 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CO	MCY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1979	2483.0	2483.0	2483.0	0.381	0.044	+ .
2	1978	2481.0	4964.0	2480.5	0.511	0.103	I+ .
3	1977	2141.0	7047.0	2349.0	-0.451	0.023	+
4	1976	2622.0	9669.0	2417.4	1.588	0.148	I+ .
5	1975	2088.0	11757.0	2351.5	-0.507	0.044	+
6	1974	2117.0	13873.0	2312.5	-0.797	-0.046	+
7	1973	2016.0	15889.0	2270.4	-1.188	-0.182	+I
8	1972	2363.0	18252.0	2281.5	0.194	-0.160	+I.
9	1971	2486.0	20738.0	2308.2	0.556	-0.096	+ .
10	1970	2659.0	23410.0	2341.0	1.207	0.043	+ .
11	1969	2332.0	25743.0	2340.3	0.000	0.044	+
12	1968	2292.0	28035.0	2336.3	-0.148	0.027	.+
13	1967	2595.0	30631.0	2340.6	0.242	0.058	+ .
14	1966	1811.0	32249.0	2303.5	-1.514	-0.105	+I
15	1965	2793.0	35042.0	2336.1	1.724	0.033	+ .
16	1964	2155.0	37197.0	2324.9	-0.653	-0.042	+
17	1963	2452.0	39650.0	2331.2	0.380	0.002	+ .
18	1961	2018.0	41668.0	2315.6	-1.168	-0.133	+I
19	1960	2693.0	44361.0	2333.8	1.381	0.023	+ .
20	1959	2622.0	46984.0	2348.2	1.065	0.148	I+ .
21	1958	1585.0	48569.0	2331.0	-1.285	0.0	+

F = -3. -2. -1. 0.0 +1. +2. +3.

N	AN	T A	CO	MCY	ECR	PCAN

PROMEDIO DE LOS 21 ANOS = 2331.0

DESVIACION ESTANDAR = 226.0

COEFICIENTE DE VARIACION = 0.115

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IDAC-CESTON *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CESTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350712	MACANAL	MACANAL	+04 58 55	+073 19 34	1720 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	320.5	206.0	158.5	67.0	40.5	-9.9	1957
1958	9.0	11.5	206.5	221.5	279.0	354.0	370.5	308.5	65.0	104.0	52.0	5.0	1986.5	1958
1959	0.0	6.0	83.0	161.5	303.5	342.0	587.5	396.5	301.0	282.0	114.0	46.0	2623.0	1959
1960	39.5	92.5	79.0	144.0	451.0	364.0	422.0	342.0	305.0	190.0	140.0	124.0	2693.0	1960
1961	3.0	6.0	60.0	201.0	234.5	343.5	371.0	294.0	146.5	212.5	137.5	6.5	2018.0	1961
1962	2.0	3.0	153.8	100.0	418.5	430.5	524.5	267.0	250.5	93.0	142.0	48.0	2432.8	1962
1963	25.0	88.0	6.1	355.0	308.0	321.5	307.0	319.0	185.0	92.5	117.5	31.3	2155.9	1963
1964	1.0	-9.9	20.0	232.0	466.0	384.0	330.0	265.0	311.0	212.0	166.5	34.0	-9.9	1964
1965	25.0	64.0	82.0	166.0	489.0	406.0	536.0	339.0	270.0	172.0	154.0	70.0	2793.0	1965
1966	39.0	20.0	185.0	78.0	151.0	211.0	303.0	250.0	208.0	129.0	169.0	75.0	1818.0	1966
1967	50.0	16.0	56.0	237.0	239.0	436.0	331.0	554.0	251.0	136.0	63.0	27.0	2396.0	1967
1968	38.0	29.0	61.0	298.0	218.0	387.0	439.0	272.0	231.0	191.0	101.0	27.0	2292.0	1968
1969	101.0	85.0	68.0	144.0	401.0	296.0	331.5	336.0	129.0	232.0	116.0	93.0	2332.5	1969
1970	70.0	55.0	118.0	295.0	322.0	402.5	549.0	220.0	211.0	179.0	93.0	140.0	2654.5	1970
1971	27.0	67.0	102.0	190.5	442.0	355.0	468.0	345.0	213.5	138.0	66.0	46.0	2480.0	1971
1972	66.5	39.5	151.0	191.0	464.0	357.0	385.0	253.0	240.0	139.5	62.0	32.5	2383.0	1972
1973	14.0	0.0	89.0	142.5	343.0	311.0	292.5	306.0	211.0	182.0	98.0	29.0	2018.0	1973
1974	18.0	27.0	62.0	159.0	350.0	280.0	459.0	270.0	194.5	173.0	76.0	9.0	2117.5	1974
1975	20.0	7.0	108.0	156.0	232.5	410.0	312.5	305.0	160.0	172.0	121.0	64.0	2088.0	1975
1976	22.0	24.0	67.0	248.0	442.0	496.0	437.5	336.0	201.0	124.0	164.0	59.0	2622.5	1976
1977	2.0	36.0	67.0	137.0	268.0	357.0	415.0	331.0	247.0	132.0	79.0	15.0	2146.0	1977
1978	39.0	15.0	163.0	284.0	315.0	405.0	341.0	366.0	251.5	173.5	39.0	76.0	2468.0	1978
1979	30.0	1.0	95.0	289.0	222.0	418.0	410.0	322.0	141.0	160.0	219.0	126.0	2433.0	1979
NUMERO DE ANOS	22	21	22	22	22	22	22	23	22	23	23	23	21	
VALOR MAXIMO	101.0	92.5	206.5	355.0	489.0	496.0	587.5	554.0	311.0	282.0	219.0	140.0	2793.0	
CUARTIL SUPERIOR	39.0	61.0	118.0	248.0	442.0	406.0	459.0	339.0	251.0	190.0	142.0	75.0	2551.3	
MEDIANA	25.0	24.0	82.5	190.8	318.5	374.0	357.5	319.0	211.0	172.0	114.0	46.0	2383.0	
CUARTIL INFERIOR	9.0	7.5	62.0	144.0	239.0	342.0	331.0	270.0	185.0	132.0	76.0	27.0	2102.8	
VALOR MINIMO	0.0	0.0	6.1	78.0	151.0	211.0	292.5	220.0	65.0	92.5	39.0	5.0	1818.0	
PROMEDIOS	29.2	34.0	94.7	201.4	337.2	368.5	405.6	318.2	215.2	164.2	112.0	53.2	2331.0	
												TOTAL DE LOS PROMEDIOS MENSUALES =	2333.5	
PORCENTAJES	1.3	1.5	4.1	8.6	14.5	15.8	17.4	13.6	9.2	7.0	4.8	2.3		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 7C. INDICE DE ARNOLDUS = 2E1.

DEV. ESTANDAR	25.8	31.6	50.7	71.6	99.0	61.5	87.2	66.1	59.0	45.3	44.8	38.3	268.0
COEF. VARIACION	0.881	0.929	0.535	0.356	0.294	0.167	0.215	0.208	0.274	0.276	0.400	0.720	0.115
COEF. ASIMETRIA	1.197	0.818	0.606	0.389	-0.047	-0.526	0.588	2.016	-0.548	0.570	0.443	0.929	-0.100

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350712	MACANAL	MACANAL	+04 58 55	+073 19 34	1720 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	39.5	92.5	79.0	144.0	451.0	364.0	422.0	342.0	305.0	190.0	140.0	124.0	2693.0	1960
1961	3.0	8.0	60.0	201.0	234.5	343.5	371.0	294.0	146.5	212.5	137.5	6.5	2018.0	1961
1962	2.0	3.0	153.8	100.0	418.5	430.5	524.5	267.0	250.5	93.0	142.0	48.0	2432.8	1962
1963	25.0	88.0	6.1	355.0	308.0	321.5	307.0	319.0	185.0	92.5	117.5	31.3	2155.9	1963
1964	1.0	56.0	20.0	232.0	466.0	384.0	330.0	265.0	311.0	212.0	166.5	34.0	2477.5	1964
1965	25.0	84.0	82.0	166.0	489.0	406.0	536.0	339.0	270.0	172.0	154.0	70.0	2793.0	1965
1966	39.0	20.0	185.0	78.0	151.0	211.0	303.0	250.0	208.0	129.0	169.0	75.0	1818.0	1966
1967	50.0	16.0	56.0	237.0	239.0	436.0	331.0	554.0	251.0	136.0	63.0	27.0	2396.0	1967
1968	38.0	29.0	61.0	298.0	218.0	387.0	439.0	272.0	231.0	191.0	101.0	27.0	2292.0	1968
1969	101.0	85.0	68.0	144.0	401.0	296.0	331.5	336.0	129.0	232.0	116.0	93.0	2332.5	1969
1970	70.0	55.0	118.0	295.0	322.0	402.5	549.0	220.0	211.0	179.0	93.0	140.0	2654.5	1970
1971	27.0	67.0	102.0	190.5	442.0	355.0	468.0	345.0	213.5	138.0	86.0	46.0	2480.0	1971
1972	68.5	39.5	151.0	191.0	464.0	357.0	385.0	253.0	240.0	139.5	62.0	32.5	2383.0	1972
1973	14.0	0.0	89.0	142.5	343.0	311.0	292.5	306.0	211.0	182.0	98.0	29.0	2018.0	1973
1974	18.0	27.0	62.0	159.0	390.0	280.0	459.0	270.0	194.5	173.0	76.0	9.0	2117.5	1974
1975	20.0	7.0	108.0	156.0	232.5	410.0	312.5	305.0	180.0	172.0	121.0	64.0	2088.0	1975
1976	22.0	24.0	67.0	248.0	442.0	496.0	437.5	338.0	201.0	124.0	164.0	59.0	2622.5	1976
1977	2.0	36.0	67.0	137.0	288.0	397.0	415.0	331.0	247.0	132.0	79.0	15.0	2146.0	1977
1978	39.0	15.0	163.0	284.0	315.0	405.0	341.0	366.0	251.5	173.5	39.0	76.0	2468.0	1978
1979	30.0	1.0	95.0	289.0	222.0	418.0	410.0	322.0	141.0	160.0	219.0	126.0	2433.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	101.0	92.5	185.0	355.0	489.0	496.0	549.0	554.0	311.0	232.0	219.0	140.0	2793.0	
CUARTIL SUPERIOR	39.3	61.5	113.0	266.0	442.0	408.0	449.0	338.5	250.8	186.0	148.0	75.5	2478.8	
MEDIANA	26.0	28.0	80.5	190.8	332.5	385.5	397.5	312.5	212.3	172.0	116.8	47.0	2389.5	
CUARTIL INFERIOR	16.0	11.5	61.5	144.0	236.8	332.5	330.5	268.5	189.8	134.0	82.5	28.0	2131.8	
VALOR MINIMO	1.0	0.0	6.1	78.0	151.0	211.0	292.5	220.0	129.0	92.5	39.0	6.5	1818.0	
PROMEDIOS	31.7	37.6	89.6	202.3	341.8	370.5	398.2	314.7	218.9	161.6	117.2	56.6	2341.0	
PORCENTAJES	1.4	1.6	3.8	8.6	14.6	15.8	17.0	13.4	9.3	6.9	5.0	2.4		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 68. INDICE DE ARNOLDUS = 279.

INDICE DE IRREGULARIDAD INTERANUAL =1.33

DEV. ESTANDAR	25.7	31.5	46.3	74.5	102.9	64.2	80.8	68.7	49.3	38.0	44.7	39.4	256.8
COEF. VARIACION	0.811	0.837	0.517	0.368	0.301	0.173	0.203	0.218	0.225	0.235	0.382	0.696	0.110

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	2764.	2670.	2557.	2341.	2125.	2012.	1918.

PROYECTO IGAC-URSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA URSTOM

COEF. ASIMETRIA	1.138	0.568	0.425	0.348	-0.184	-0.616	0.465	2.196	-0.006	-0.143	0.338	0.822	-0.185

IMPRESO EN COLOMBIA POR DAVARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350713	QUEBRADA HONDA	MACANAL	+04 57 00	+073 18 00	1130 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1955	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	83.0	24.0	-9.9
1956	59.0	24.0	83.0	184.0	247.0	463.0	317.0	483.0	351.0	206.0	68.0	111.0	2598.0
1957	26.0	74.0	160.0	176.0	475.0	321.0	409.0	423.0	267.0	158.0	72.0	42.0	2603.0
1958	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	93.6	59.8	6.6	-9.9
1959	8.8	6.8	104.2	165.6	58.8	312.8	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1960	-9.9	-9.9	141.6	225.2	376.5	334.8	307.8	320.7	358.6	202.6	214.4	55.8	-9.9
1961	4.5	4.1	85.2	-9.9	59.1	265.5	276.3	-9.9	-9.9	225.4	2.5	57.1	-9.9
1962	-9.9	-9.9	109.0	99.0	414.0	441.0	489.0	218.0	398.0	114.0	162.0	58.0	-9.9
1963	37.0	138.0	42.0	280.0	296.0	317.0	416.0	320.0	214.0	189.0	124.0	87.0	2460.0
1964	0.0	64.0	15.0	274.0	465.0	415.0	333.0	399.0	373.0	248.0	208.0	28.0	2822.0
1965	30.0	130.0	82.0	243.0	406.0	357.0	564.0	435.0	342.0	232.0	262.0	102.0	3185.0
1966	58.0	-9.9	182.0	-9.9	-9.9	223.0	280.0	258.0	177.0	127.0	215.0	61.0	-9.9
1967	82.0	11.0	60.0	209.0	220.0	349.0	339.0	476.0	200.0	146.0	76.0	17.0	2185.0
1968	40.0	7.0	58.0	285.0	187.0	364.0	434.0	262.0	209.0	186.0	97.0	25.0	2154.0
1969	88.0	89.0	77.0	183.0	383.0	321.0	342.0	355.0	115.0	224.0	114.0	64.0	2365.0
1970	77.0	65.0	127.0	270.0	309.0	455.0	502.0	249.0	253.0	200.0	90.0	149.0	2746.0
1971	40.0	71.0	110.0	178.0	484.0	562.0	561.0	447.0	217.0	213.0	114.0	64.0	3061.0
1972	71.0	62.0	220.0	264.0	558.0	524.0	505.0	279.0	290.0	164.0	83.0	54.0	3074.0
1973	23.0	5.0	130.0	181.0	322.0	325.0	273.0	408.0	257.0	244.0	109.0	32.0	2309.0
1974	18.0	45.0	82.0	184.0	352.0	339.0	462.0	271.0	226.0	165.0	76.0	2.0	2222.0
1975	24.0	6.0	129.0	149.0	265.0	412.0	305.7	326.0	211.0	220.0	122.0	62.0	2231.7
1976	24.0	24.0	41.0	237.0	-9.9	463.0	401.0	275.0	162.0	144.0	154.0	55.0	-9.9
1977	0.0	50.0	75.0	122.0	305.0	353.0	370.0	301.0	219.0	-9.9	84.0	-9.9	-9.9
1978	23.0	15.0	187.0	254.0	316.0	382.0	296.0	359.0	246.0	190.0	54.0	62.0	2384.0
1979	35.0	0.0	80.0	282.0	232.0	358.0	452.0	335.0	119.0	169.0	210.0	155.0	2427.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR BANARA

ESTACION X MACANAL MUNICIPIO DE MACANAL PERIODO 1957 - 1979 COEF DE CORRECCION 1.000

ESTACION Y CUERNAVACA PORLA MUNICIPIO DE MACANAL PERIODO 1957 - 1979 COEF DE CORRECCION 1.000

N	AÑ	CLX	CLY	RAN	FCAN	F = -4. I F : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1978	2433.	2427.	1.078	0.072					+	.			
2	1976	4501.	4311.	1.110	0.170					I+	.			
3	1975	6565.	7043.	1.003	0.179					.+				
4	1974	9107.	9205.	1.022	0.198					I+.				
5	1973	11125.	11974.	0.937	0.141				.	I+				
6	1972	13566.	14046.	0.831	-0.065			.		+				
7	1971	15966.	17709.	0.809	-0.224			.		+ I				
8	1970	18642.	20456.	1.037	-0.184					+I .				
9	1969	20978.	22640.	1.045	-0.138					+I .				
10	1968	23267.	24994.	1.141	-0.118					+	.			
11	1967	25663.	27179.	1.176	0.134					I+	.			
12	1965	28456.	30304.	0.940	0.055				.	+				
13	1963	30611.	32024.	0.940	0.0				.	+				

N	AÑ	CLX	CLY	RAN	FCAN	F = -4. I F : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 2254.7 2264.6

RAZONES PROMEDIOS Y/X = 1.072

X/Y = 0.933

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO,ICAL-CRSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCN

Secretaría de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
35071S	QUEBRADA HONDA	MACANAL	+04 57 08	+073 19 10	1160 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1955	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	83.0	24.0	-9.9	1955
1956	59.0	24.0	83.0	184.0	247.0	463.0	317.0	483.0	351.0	208.0	66.0	111.0	2598.0	1956
1957	26.0	74.0	160.0	176.0	475.0	321.0	409.0	423.0	267.0	158.0	72.0	42.0	2603.0	1957
1958	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	93.6	59.8	6.6	-9.9	1958
1959	8.8	6.8	104.2	105.6	58.8	312.8	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1959
1960	-9.9	-9.9	141.6	225.2	376.5	334.8	307.8	320.7	358.6	202.6	214.4	95.8	-9.9	1960
1961	4.5	4.1	85.2	-9.9	59.1	265.5	276.3	-9.9	-9.9	225.4	2.5	57.1	-9.9	1961
1962	-9.9	-9.9	109.0	99.0	414.0	441.0	489.0	218.0	398.0	114.0	162.0	58.0	-9.9	1962
1963	37.0	136.0	42.0	280.0	296.0	317.0	416.0	320.0	214.0	189.0	124.0	87.0	2460.0	1963
1964	0.0	64.0	15.0	274.0	465.0	415.0	333.0	399.0	373.0	248.0	208.0	28.0	2822.0	1964
1965	30.0	130.0	82.0	243.0	406.0	357.0	564.0	435.0	342.0	232.0	262.0	102.0	3185.0	1965
1966	58.0	-9.9	182.0	-9.9	-9.9	223.0	260.0	258.0	177.0	127.0	215.0	81.0	-9.9	1966
1967	82.0	11.0	60.0	209.0	220.0	349.0	339.0	476.0	200.0	146.0	76.0	17.0	2185.0	1967
1968	40.0	7.0	58.0	285.0	187.0	364.0	434.0	262.0	209.0	186.0	97.0	25.0	2154.0	1968
1969	88.0	69.0	77.0	183.0	363.0	331.0	342.0	355.0	115.0	224.0	114.0	84.0	2385.0	1969
1970	77.0	65.0	127.0	270.0	309.0	455.0	502.0	249.0	253.0	200.0	50.0	149.0	2746.0	1970
1971	40.0	71.0	110.0	178.0	464.0	562.0	561.0	447.0	217.0	213.0	114.0	64.0	3061.0	1971
1972	71.0	62.0	220.0	264.0	558.0	524.0	505.0	279.0	290.0	164.0	83.0	54.0	3074.0	1972
1973	23.0	5.0	130.0	181.0	322.0	325.0	273.0	408.0	257.0	244.0	109.0	32.0	2309.0	1973
1974	18.0	45.0	82.0	184.0	352.0	339.0	462.0	271.0	226.0	165.0	76.0	2.0	2222.0	1974
1975	24.0	6.0	129.0	149.0	265.0	412.0	305.7	326.0	211.0	220.0	122.0	62.0	2231.7	1975
1976	24.0	24.0	48.0	237.0	-9.9	483.0	401.0	275.0	162.0	144.0	154.0	55.0	-9.9	1976
1977	0.0	50.0	75.0	122.0	305.0	353.0	370.0	301.0	219.0	-9.9	84.0	-9.9	-9.9	1977
1978	23.0	15.0	167.0	254.0	316.0	362.0	296.0	359.0	246.0	190.0	84.0	62.0	2384.0	1978
1979	35.0	0.0	80.0	282.0	232.0	358.0	452.0	335.0	119.0	169.0	210.0	155.0	2427.0	1979
NUMERO DE ANOS	21	20	23	21	21	23	22	21	21	22	24	23	16	
VALOR MAXIMO	88.0	136.0	220.0	285.0	558.0	562.0	564.0	483.0	398.0	248.0	262.0	155.0	3185.0	
CUARTIL SUPERIOR	58.5	66.0	130.0	267.0	410.0	441.0	462.0	415.5	316.0	220.0	158.0	87.0	2784.0	
MEDIANA	30.0	34.5	85.2	209.0	316.0	357.0	385.5	326.0	226.0	189.5	103.0	58.0	2443.5	
CUARTIL INFERIOR	20.5	6.9	75.0	177.0	239.5	325.0	307.8	273.0	204.5	158.0	76.0	28.0	2270.3	
VALOR MINIMO	0.0	0.0	15.0	99.0	58.8	223.0	273.0	218.0	115.0	93.6	2.5	2.0	2154.0	
PROMEDIOS	30.6	44.5	103.5	211.7	320.5	377.7	392.5	342.8	247.8	184.7	116.9	63.2	2552.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		2444.4	
PORCENTAJES	1.5	1.8	4.2	8.7	13.1	15.5	16.1	14.0	10.1	7.6	4.9	2.6		

TRIMESTRE MAS LLUVIOSO JUN JUL AGO **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 63. INDICE DE ARNOLDUS = 262.

DEV. ESTANDAR	26.6	41.7	50.7	55.3	129.2	81.1	93.2	79.4	79.8	42.4	62.6	41.0	335.8
COEF. VARIACION	0.728	0.936	0.490	0.261	0.403	0.215	0.237	0.232	0.322	0.229	0.535	0.648	0.132
COEF. ASIMETRIA	0.551	0.912	0.573	-0.295	-0.361	0.536	0.408	0.336	0.318	-0.466	0.672	0.670	0.689

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
231215	MARIPI	MARIPI	+05 33 00	+074 01 00	1390 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1964	129.0	234.0	59.0	365.0	120.0	214.0	123.0	60.0	122.0	272.0	310.0	219.0	2227.0
1965	108.0	66.0	113.0	325.0	254.0	60.0	15.0	65.0	151.0	422.0	460.0	178.0	2216.0
1966	43.0	145.0	114.0	105.0	461.0	126.0	69.0	103.0	87.0	525.0	516.0	341.0	2643.0
1967	119.0	321.0	247.0	252.0	185.0	141.0	74.0	62.0	126.0	222.0	138.0	220.0	2167.0
1968	227.0	0.0	205.0	352.0	283.0	180.0	82.0	24.0	257.0	255.0	311.0	155.0	2415.0
1969	128.0	70.0	153.0	613.0	232.0	116.0	8.0	39.0	276.0	535.0	572.0	110.0	2856.0
1970	155.0	264.0	110.0	223.0	281.0	73.0	48.0	33.0	238.0	352.0	514.0	179.0	2570.0
1971	444.0	219.0	429.0	330.0	435.0	87.0	45.0	100.0	241.0	380.0	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X MARIFI MUNICIPIO DE MARIFI PERIODO 1964 - 1971 COEF DE CORRECCION 1.000

N	AÑO	I /	CO	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1970	2570.0	2570.0	2570.0	0.493	0.052				+	.		
2	1969	2856.0	5426.0	2713.0	1.557	0.222				I +		.	
3	1968	2419.0	7845.0	2615.0	-0.550	0.212				. +			
4	1967	2167.0	10012.0	2503.0	-1.662	0.095			.	+			
5	1966	2443.0	12455.0	2531.0	0.775	0.182				I+	.		
6	1965	2214.0	14669.0	2478.2	-0.881	0.086			.	+			
7	1964	2227.0	17896.0	2442.3	-0.831	0.0			.	+			
N	AÑO	I /	CO	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 7 AÑOS = 2442.3

DESVIACION ESTANDAR = 255.0

COEFICIENTE DE VARIACION = 0.104

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CESTA *** CURSO DE HIDROCLIMATOLOGIA *** PROGRAMA CESTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
231215	MARIPI	MARIPI	+05 33 08	+074 00 25	1280 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1964	129.0	234.0	59.0	365.0	120.0	214.0	123.0	60.0	122.0	272.0	310.0	219.0	2227.0	1964
1965	103.0	80.0	113.0	325.0	254.0	80.0	15.0	65.0	151.0	422.0	460.0	175.0	2214.0	1965
1966	43.0	145.0	114.0	109.0	461.0	126.0	69.0	103.0	87.0	529.0	516.0	341.0	2643.0	1966
1967	119.0	321.0	247.0	292.0	189.0	141.0	74.0	62.0	126.0	222.0	136.0	236.0	2167.0	1967
1968	227.0	0.0	205.0	392.0	263.0	180.0	82.0	24.0	257.0	299.0	311.0	159.0	2419.0	1968
1969	128.0	70.0	183.0	613.0	232.0	116.0	8.0	39.0	276.0	539.0	572.0	110.0	2856.0	1969
1970	195.0	264.0	110.0	223.0	261.0	73.0	48.0	33.0	238.0	392.0	514.0	179.0	2570.0	1970
1971	444.0	219.0	429.0	330.0	435.0	87.0	45.0	100.0	241.0	380.0	-9.9	-9.9	-9.9	1971
NUMERO DE ANOS	8	8	8	8	8	8	8	8	8	8	7	7	7	
VALOR MAXIMO	444.0	321.0	429.0	613.0	461.0	214.0	123.0	103.0	276.0	539.0	572.0	341.0	2856.0	
MEDIANA	128.5	182.0	133.5	327.5	267.5	121.0	58.5	61.0	194.5	386.0	460.0	179.0	2419.0	
VALOR MINIMO	43.0	0.0	59.0	109.0	120.0	60.0	8.0	24.0	87.0	222.0	136.0	110.0	2167.0	
PROMEDIOS	174.1	167.4	178.8	331.1	261.9	124.6	58.0	60.8	187.3	381.9	403.0	202.7	2442.3	
											TOTAL DE LOS PROMEDIOS MENSUALES =		2551.5	
PORCENTAJES	6.8	6.6	7.0	13.0	11.0	4.9	2.3	2.4	7.3	15.0	15.8	7.9		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 64. INDICE DE ARNOLDUS = 269.

DEV. ESTANDAR	122.4	115.0	117.2	144.9	115.7	53.0	37.4	29.1	73.3	115.0	155.0	73.4	259.0
COEF. VARIACION	0.703	0.687	0.656	0.438	0.410	0.425	0.645	0.479	0.391	0.301	0.385	0.362	0.106
COEF. ASIMETRIA	1.756	-0.128	1.583	0.650	0.511	0.546	0.313	0.421	-0.116	0.144	-0.774	1.044	0.513

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240356	MONGUA	MONGUA	+05 45 00	+072 48 00	2975 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1971	-9.9	-9.9	-9.9	-9.9	207.0	135.0	753.0	296.0	283.0	208.0	42.0	154.0	-9.9
1972	255.0	46.0	163.0	365.0	134.0	206.0	160.0	70.0	98.0	42.0	102.0	49.0	1690.0
1973	5.0	20.0	33.0	67.0	56.0	66.0	123.0	120.0	176.0	95.0	152.0	55.0	968.0
1974	45.0	23.0	91.0	102.0	110.0	53.0	152.0	72.0	-9.9	56.0	96.0	6.0	-9.9
1975	0.0	76.0	25.0	-9.9	113.0	-9.9	141.0	119.0	126.0	171.0	142.0	131.0	-9.9
1976	0.0	16.0	83.0	145.0	123.0	219.0	301.0	78.0	66.0	81.0	126.0	29.0	1267.0
1977	0.0	0.0	29.0	167.0	131.0	54.0	69.0	78.0	109.0	61.0	-9.9	6.0	-9.9
1978	0.0	40.0	67.0	211.0	43.0	50.0	81.0	112.0	92.0	62.0	25.0	9.0	832.0
1979	0.0	17.0	171.0	160.0	69.0	131.0	70.0	35.0	55.0	153.0	217.0	33.0	1111.0

DATOS CRIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PROYECTO IGAC-ORSTCM *** GRUPO DE HIDROCLIMATOLCGIA

Ministerio de Hacienda y Crédito Público

ESTACION A MENDOZA MUNICIPIL DE MENDOZA PERIODO 1971 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1111.0	1111.0	1111.0	-0.185	-0.055				.+			
2	1978	832.0	1943.0	971.5	-1.032	-0.344			.	+ I			
3	1976	1267.0	3210.0	1070.0	0.282	-0.205				+.I .			
4	1973	968.0	4178.0	1044.5	-0.021	-0.440			. +	I			
5	1972	1695.0	5873.0	1173.6	1.568	0.0				+	.		

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 5 ANOS = 1173.6
DEVIACION ESTANDAR = 331.0
COEFICIENTE DE VARIACION = 0.282

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240319	MONGUI	MONGUI	+05 44 00	+072 50 00	2970 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1958	-9.9	34.0	14.0	48.0	86.0	62.0	23.0	53.0	14.0	97.0	29.0	50.0	-9.9
1959	7.0	15.0	29.0	25.0	117.0	42.0	87.0	50.0	75.0	185.0	69.0	25.0	730.0
1960	36.0	25.0	116.0	34.0	97.0	44.0	130.0	71.0	41.0	126.0	0.0	139.5	859.5
1961	15.0	8.0	85.0	59.0	15.0	41.0	40.0	41.0	26.0	156.0	146.0	4.0	638.0
1962	58.0	18.0	110.0	34.0	178.0	106.0	128.0	22.0	28.0	94.0	114.0	36.0	926.0
1963	6.0	10.0	24.0	208.0	268.0	126.0	64.0	54.0	40.0	166.0	60.0	0.0	1026.0
1964	0.0	0.0	0.0	112.0	200.0	112.0	124.0	32.0	40.0	100.0	80.0	8.0	808.0
1965	0.0	0.0	8.0	252.0	140.0	0.0	16.0	48.0	0.0	74.0	188.0	78.0	804.0
1966	0.0	16.0	108.0	56.0	140.0	56.0	26.0	36.0	40.0	156.0	504.0	127.0	1267.0
1967	5.0	25.0	212.0	255.0	131.0	134.0	178.0	12.0	119.0	60.0	100.0	20.0	1251.0
1968	17.0	35.0	35.0	235.0	130.0	125.0	78.0	40.0	25.0	77.0	65.0	10.0	872.0
1969	90.0	10.0	5.0	221.0	187.0	256.0	61.0	133.0	51.0	207.0	112.0	5.0	1338.0
1970	30.5	59.0	29.0	8.0	71.0	93.0	83.0	78.0	82.5	108.5	118.0	29.0	789.5
1971	78.0	99.0	148.5	149.5	239.5	47.0	88.5	83.0	105.5	107.5	36.5	30.0	1212.5
1972	87.0	33.5	115.0	268.5	81.5	108.0	43.0	13.0	39.0	48.0	49.0	23.0	908.5
1973	10.0	0.0	49.0	50.0	36.0	50.0	36.0	57.0	74.0	106.0	113.0	57.0	638.0
1974	18.0	63.0	90.0	70.0	88.0	45.0	67.0	32.0	100.0	56.0	94.0	12.0	735.0
1975	0.0	47.0	23.0	82.0	73.0	73.0	70.0	32.0	80.0	125.0	72.0	92.0	769.0
1976	12.0	31.0	131.0	110.0	36.0	54.0	145.0	47.0	41.8	127.0	104.0	49.0	927.8
1977	0.0	0.0	60.0	102.0	108.0	76.0	40.0	82.0	90.0	115.0	201.0	23.0	897.0
1978	2.0	25.0	81.0	233.0	94.0	69.0	56.0	60.0	121.0	120.0	92.0	27.0	960.0
1979	0.0	13.0	134.0	162.0	108.0	167.0	82.0	51.0	51.0	239.0	187.0	29.0	1223.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DAVARANJO

ESTACION X MONGUI MUNICIPIO DE MONGUI PERIODO 1958 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CO	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1224.0	1224.0	1224.0	1.365	0.310				I +			
2	1978	978.0	2202.0	1101.0	0.221	0.360				I .+			
3	1977	897.0	3100.0	1033.3	-0.172	0.321				.I +			
4	1976	927.0	4027.0	1006.8	-0.020	0.316				. +			
5	1975	765.0	4792.0	958.4	-0.777	0.139			.	I+			
6	1974	735.0	5531.0	922.0	-0.937	-0.073			.	+			
7	1973	638.0	6169.0	881.4	-1.396	-0.385			.	+ I			
8	1972	908.0	7078.0	884.8	-0.117	-0.416			+	.I			
9	1971	1212.0	8290.0	921.2	1.320	-0.117				+I	.		
10	1970	735.0	9060.0	906.0	-0.680	-0.271			.	+ I			
11	1969	1356.0	10416.0	947.1	1.913	0.163				I+		.	
12	1968	872.0	11290.0	940.9	-0.250	0.097				. +			
13	1967	1251.0	12541.0	964.7	1.502	0.437				I +	.		
14	1966	1267.0	13808.0	986.3	1.577	0.795				I +	.		
15	1965	804.0	14612.0	974.2	-0.611	0.656			.	I +			
16	1964	808.0	15420.0	963.8	-0.592	0.522			.	I +			
17	1963	1026.0	16446.0	967.4	0.436	0.621				I . +			
18	1962	926.0	17372.0	965.1	-0.035	0.613				. +			
19	1961	638.0	18010.0	947.9	-1.356	0.297			.	I +			
20	1960	859.0	18869.0	943.5	-0.349	0.218			.	I +			
21	1959	730.0	19599.0	933.3	-0.961	0.0			.	+			

N	AN	T A	CO	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 21 ANOS = 933.3
DESVIACION ESTANDAR = 211.0
COEFICIENTE DE VARIACION = 0.227

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IDEAM-CRSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240319	MONGUI	MONGUI	+05 43 35	+072 51 05	2930 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	-9.9	34.0	14.0	48.0	66.0	62.0	23.0	53.0	14.0	97.0	29.0	50.0	-9.9	1958
1959	7.0	15.0	29.0	25.0	117.0	42.0	87.0	50.0	75.0	189.0	69.0	25.0	730.0	1959
1960	36.0	25.0	116.0	34.0	97.0	44.0	130.0	71.0	41.0	126.0	0.0	139.5	859.5	1960
1961	15.0	8.0	85.0	59.0	15.0	41.0	40.0	41.0	26.0	158.0	146.0	4.0	638.0	1961
1962	58.0	18.0	110.0	34.0	178.0	106.0	128.0	22.0	28.0	94.0	114.0	36.0	926.0	1962
1963	6.0	10.0	24.0	208.0	268.0	126.0	64.0	54.0	40.0	166.0	60.0	0.0	1026.0	1963
1964	0.0	0.0	0.0	112.0	200.0	112.0	124.0	32.0	40.0	100.0	80.0	8.0	808.0	1964
1965	0.0	0.0	8.0	252.0	140.0	0.0	16.0	48.0	0.0	74.0	188.0	78.0	804.0	1965
1966														1966
1967														1967
1968	17.0	35.0	35.0	235.0	130.0	125.0	76.0	40.0	25.0	77.0	65.0	10.0	872.0	1968
1969														1969
1970	30.5	59.0	29.0	8.0	71.0	93.0	83.0	78.0	82.5	108.5	118.0	29.0	789.5	1970
1971	78.0	99.0	148.5	149.5	239.5	47.0	88.5	83.0	105.5	107.5	36.5	30.0	1212.5	1971
1972	87.0	33.5	115.0	268.5	81.5	108.0	43.0	13.0	39.0	48.0	49.0	23.0	908.5	1972
1973	10.0	0.0	49.0	50.0	36.0	50.0	36.0	57.0	74.0	106.0	113.0	57.0	638.0	1973
1974	18.0	63.0	90.0	70.0	88.0	45.0	67.0	32.0	100.0	56.0	94.0	12.0	735.0	1974
1975	0.0	47.0	23.0	82.0	73.0	73.0	70.0	32.0	80.0	125.0	72.0	92.0	769.0	1975
1976	12.0	31.0	131.0	110.0	36.0	94.0	145.0	47.0	41.8	127.0	104.0	49.0	927.8	1976
1977	0.0	0.0	60.0	102.0	108.0	76.0	40.0	82.0	90.0	115.0	201.0	23.0	897.0	1977
1978	2.0	25.0	81.0	233.0	94.0	69.0	56.0	60.0	121.0	120.0	92.0	27.0	980.0	1978
1979	0.0	13.0	134.0	162.0	108.0	167.0	82.0	51.0	51.0	239.0	187.0	29.0	1223.0	1979
NUMERO DE ANOS	18	19	19	19	19	19	19	19	19	19	19	19	18	
VALOR MAXIMO	87.0	99.0	148.5	268.5	268.0	167.0	145.0	83.0	121.0	239.0	201.0	139.5	1223.0	
CUARTIL SUPERIOR	30.5	35.0	115.0	208.0	140.0	108.0	88.5	60.0	82.5	127.0	118.0	50.0	927.8	
MEDIANA	11.0	25.0	60.0	102.0	97.0	73.0	70.0	50.0	41.8	108.5	92.0	29.0	865.8	
CUARTIL INFERIOR	0.0	8.0	24.0	48.0	73.0	45.0	40.0	32.0	28.0	94.0	60.0	12.0	769.0	
VALOR MINIMO	0.0	0.0	0.0	8.0	15.0	0.0	16.0	13.0	0.0	48.0	0.0	0.0	638.0	
PROMEDIOS	20.9	27.1	67.4	116.0	114.0	77.9	73.7	49.8	56.5	117.5	95.7	38.0	874.7	
									TOTAL DE LOS PROMEDIOS MENSUALES =				856.6	
PORCENTAJES	2.4	3.2	7.9	13.8	13.3	9.1	8.6	5.8	6.6	13.7	11.2	4.4		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE APORCLOUS = 67.

DEV. ESTANDAR	27.2	25.9	48.1	85.1	66.9	40.0	37.5	19.5	33.8	45.8	55.1	34.5	164.0
COEF. VARIACION	1.298	0.954	0.713	0.721	0.587	0.514	0.509	0.391	0.597	0.390	0.576	0.907	0.187
COEF. ASIMETRIA	1.580	1.292	0.228	0.548	0.909	0.310	0.408	0.116	0.300	1.025	0.474	1.678	0.765

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240319	MONGUI	MONGUI	+05 43 35	+072 51 05	2930 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	36.0	25.0	116.0	34.0	97.0	44.0	130.0	71.0	41.0	126.0	0.0	139.5	859.5	1960
1961	15.0	8.0	85.0	59.0	15.0	41.0	40.0	41.0	26.0	158.0	146.0	4.0	638.0	1961
1962	58.0	18.0	110.0	34.0	178.0	106.0	128.0	22.0	28.0	94.0	114.0	36.0	926.0	1962
1963	6.0	10.0	24.0	203.0	268.0	126.0	64.0	54.0	40.0	166.0	60.0	0.0	1026.0	1963
1964	0.0	0.0	0.0	112.0	200.0	112.0	124.0	32.0	40.0	100.0	80.0	8.0	808.0	1964
1965	0.0	0.0	8.0	252.0	140.0	0.0	16.0	48.0	0.0	74.0	188.0	78.0	804.0	1965
1966	0.0	16.0	108.0	56.0	140.0	56.0	26.0	36.0	40.0	158.0	104.0	127.0	867.0	1966
1967	3.9	19.8	168.2	202.4	103.9	106.3	141.3	9.5	94.4	47.6	79.3	15.8	992.4	1967
1968	17.0	35.0	35.0	235.0	130.0	125.0	78.0	40.0	25.0	77.0	65.0	10.0	872.0	1968
1969	56.1	6.2	3.1	137.9	116.6	159.7	38.0	82.9	31.8	129.1	69.8	3.1	834.3	1969
1970	30.5	59.0	29.0	8.0	71.0	93.0	83.0	78.0	82.5	108.5	118.0	29.0	789.5	1970
1971	78.0	99.0	148.5	149.5	239.5	47.0	88.5	83.0	105.5	107.5	36.5	30.0	1212.5	1971
1972	87.0	33.5	115.0	208.5	81.5	108.0	43.0	13.0	39.0	48.0	49.0	23.0	908.5	1972
1973	10.0	0.0	49.0	50.0	36.0	50.0	36.0	57.0	74.0	106.0	113.0	57.0	638.0	1973
1974	18.0	63.0	90.0	70.0	88.0	45.0	67.0	32.0	100.0	56.0	94.0	12.0	735.0	1974
1975	0.0	47.0	23.0	82.0	73.0	73.0	70.0	32.0	80.0	125.0	72.0	92.0	769.0	1975
1976	12.0	31.0	131.0	110.0	36.0	94.0	145.0	47.0	41.8	127.0	104.0	49.0	927.8	1976
1977	0.0	0.0	60.0	102.0	108.0	76.0	40.0	82.0	90.0	115.0	201.0	23.0	897.0	1977
1978	2.0	25.0	81.0	233.0	94.0	69.0	56.0	60.0	121.0	120.0	92.0	27.0	980.0	1978
1979	0.0	13.0	134.0	162.0	108.0	167.0	82.0	51.0	51.0	239.0	187.0	29.0	1223.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	87.0	99.0	168.2	268.5	268.0	167.0	145.0	83.0	121.0	239.0	201.0	139.5	1223.0	
CUARTIL SUPERIOR	33.3	34.3	115.5	205.2	140.0	110.0	106.3	65.5	86.3	128.0	116.0	53.0	953.9	
MEDIANA	11.0	18.9	83.0	111.0	105.9	84.5	68.5	47.5	41.4	111.8	93.0	28.0	869.5	
CUARTIL INFERIOR	0.0	7.1	26.5	57.5	77.3	48.5	40.0	32.0	35.4	85.5	67.4	11.0	796.8	
VALOR MINIMO	0.0	0.0	0.0	8.0	15.0	0.0	16.0	9.5	0.0	47.6	0.0	0.0	638.0	
PROMEDIOS	21.5	25.4	75.9	128.3	116.2	84.9	74.8	48.6	57.5	114.1	98.6	39.6	885.4	
PORCENTAJES	2.4	2.9	8.6	14.5	13.1	9.6	8.4	5.5	6.5	12.9	11.1	4.5		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 19. INDICE DE ARNOLDUS = 90.

INDICE DE IRREGULARIDAD INTERANUAL =1.57

DEV. ESTANDAR	27.4	25.6	52.2	81.5	65.1	42.5	40.2	22.6	33.0	45.1	51.5	40.2	153.8
COEF. VARIACION	1.278	1.008	0.688	0.635	0.561	0.501	0.537	0.465	0.573	0.396	0.522	1.014	0.174

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1139.	1083.	1015.	885.	756.	688.	632.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.351	1.452	0.047	0.330	0.827	0.154	0.478	0.089	0.370	0.865	0.481	1.451	0.660

IMPRESO EN COLOMBIA POR DANAGRAN

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240152	EERTHA	MONIQUIRA	+05 53 00	+075 36 00	1764 METROS

AÑO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1952	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	129.6	115.0	131.1	-9.9
1953	66.3	62.6	245.5	205.8	292.1	166.7	85.3	105.0	227.0	235.2	243.2	35.4	1970.1
1954	65.9	94.4	130.2	186.6	352.0	230.8	227.9	163.8	213.2	238.6	123.1	79.5	2106.0
1955	42.0	101.3	216.7	293.2	199.4	180.6	203.4	181.6	234.1	284.7	127.0	139.1	2203.2
1956	85.3	155.0	125.2	213.1	329.1	152.2	158.9	189.7	195.0	356.2	116.6	81.6	2237.9
1957	52.1	113.6	102.6	241.1	357.0	304.3	172.5	104.6	182.6	257.4	122.8	93.8	2104.4
1958	28.1	66.0	214.6	329.6	280.5	109.2	101.2	208.6	136.1	163.1	170.6	72.7	1880.3
1959	15.5	24.8	260.2	312.4	155.1	382.8	241.6	182.7	146.2	262.7	161.2	116.3	2281.5
1960	29.1	61.7	150.3	307.5	315.7	185.3	154.5	166.5	143.8	206.4	185.0	190.5	2096.7
1961	47.0	30.9	272.5	189.0	191.9	158.7	196.3	122.1	154.1	310.8	241.7	75.8	1990.8
1962	89.0	22.2	140.3	243.6	244.4	226.2	138.3	190.1	150.3	319.7	207.0	31.9	2003.0
1963	59.2	96.4	265.3	312.0	203.2	227.4	152.3	106.6	102.9	256.9	199.1	71.0	2052.3
1964	12.3	90.0	121.0	351.6	212.2	266.6	188.8	123.2	124.8	160.0	150.5	24.5	1867.5
1965	107.1	60.3	113.0	163.2	206.6	100.9	45.1	167.1	238.0	230.2	323.9	73.9	1829.3
1966	79.5	6.3	153.8	165.5	318.1	156.2	176.1	140.8	159.5	256.0	160.6	83.5	1857.9
1967	48.1	86.0	67.0	319.9	285.6	139.6	73.7	126.7	159.6	165.2	103.1	105.0	1683.5
1968	30.9	50.9	105.9	335.3	323.8	302.8	176.9	113.1	189.1	260.3	192.1	16.7	2097.8
1969	65.2	68.9	80.1	360.1	311.0	132.1	46.3	131.1	178.1	254.7	205.9	91.7	1965.2
1970	27.5	30.3	90.5	272.1	207.1	142.5	194.6	206.3	190.3	263.7	115.6	230.8	1971.3
1971	118.7	192.0	198.5	241.5	491.8	226.6	163.0	243.4	235.1	269.1	181.9	92.5	2654.1
1972	197.8	59.1	97.7	312.3	290.8	151.9	103.2	177.6	164.6	124.3	176.1	87.6	1983.0
1973	16.7	3.3	230.1	236.9	242.9	176.0	114.4	208.3	-9.9	139.6	-9.9	-9.9	-9.9
1974	129.7	66.0	110.2	181.8	165.8	235.5	136.3	73.2	228.2	311.6	237.8	22.7	1858.8
1975	15.7	36.0	184.1	178.4	193.3	48.3	236.5	264.3	248.1	210.8	197.9	106.0	1916.4
1976	42.3	89.6	294.7	332.7	318.0	151.2	8.2	118.3	64.6	357.8	135.6	74.2	1987.2
1977	6.9	55.0	116.9	115.7	99.8	143.0	178.6	146.1	275.7	199.6	120.1	35.5	1492.9
1978	7.5	38.9	155.7	251.9	289.0	158.0	183.8	110.2	229.7	262.6	135.3	97.3	1959.9
1979	32.8	15.5	190.0	324.0	273.6	342.8	180.1	170.0	183.8	274.8	189.7	39.2	2216.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION A SERIPA MUNICIPIO DE MUNICIPIO PERIODO 1952 - 1979 COEF DE CORRECCION 1.000

N	AÑO	T /	CO	MCY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	2216.3	2216.3	2216.3	0.552	0.102				I+	•		
2	1978	1555.5	3770.2	2008.1	-0.242	0.076				•+			
3	1977	1492.5	5262.7	1889.7	-0.417	-0.182				+I			
4	1976	1967.2	7230.3	1914.1	-0.115	-0.194				+I			
5	1975	1514.4	9744.7	1914.3	-0.444	-0.242			•	+ I			
6	1974	1698.6	11471.3	1911.9	-0.526	-0.296			•	+ I			
7	1972	1963.8	13434.3	1922.1	-0.134	-0.312			+	.I			
8	1971	2634.1	16068.6	2010.8	2.551	0.007				+			•
9	1970	1971.3	18039.9	2008.9	-0.185	-0.013				•+			
10	1969	1961.2	20045.1	2004.5	-0.217	-0.036			•	+			
11	1968	2197.5	22142.9	2013.0	0.400	0.006				+	•		
12	1967	1883.8	23826.4	1985.5	-1.525	-0.157			•	+I			
13	1966	1857.5	25684.3	1970.7	-0.717	-0.233			•	+ I			
14	1965	1825.3	27510.0	1965.3	-0.850	-0.324			•	+ I			
15	1964	1807.5	29321.1	1958.7	-0.672	-0.396			•	+ I			
16	1963	2052.3	31373.4	1964.6	0.185	-0.376				+ I•			
17	1962	2102.6	33476.4	1968.8	0.041	-0.380				+ •			
18	1961	1951.6	35427.2	1968.2	-0.058	-0.390				+ •			
19	1960	2056.7	37483.9	1974.5	0.355	-0.348				+ I •			
20	1959	2281.6	39805.4	1990.3	1.288	-0.214				+ I		•	
21	1958	1801.3	41606.7	1983.0	-0.612	-0.280			•	+ I			
22	1957	2184.4	43790.1	1990.5	0.431	-0.234				+ I •			
23	1956	2257.5	46048.0	2001.2	1.053	-0.121				+I	•		
24	1955	2203.2	48251.2	2009.6	0.851	-0.026				+	•		
25	1954	2166.6	50337.2	2013.5	0.435	0.021				+ •			
26	1953	1970.1	52307.3	2011.8	-0.194	0.0				•+			

N	AÑO	T /	CO	MCY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 26 AÑOS = 2011.8
DESVIACION ESTANDAR = 214.7
COEFICIENTE DE VARIACION = 0.107

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IICA-CRSTCM *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240152	BERTHA	MONIGUIRA	+05 53 08	+073 34 41	1670 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1952	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	129.6	119.0	131.1	-9.9	1952
1953	66.3	62.6	245.5	205.8	292.1	166.7	85.3	105.0	227.0	235.2	243.2	35.4	1970.1	1953
1954	65.9	94.4	130.2	186.6	352.0	230.8	227.9	163.8	213.2	238.6	123.1	79.5	2106.0	1954
1955	42.0	101.3	216.7	293.3	199.4	180.6	203.4	181.6	234.1	284.7	127.0	139.1	2203.2	1955
1956	85.3	155.0	125.2	213.1	329.1	192.2	158.9	189.7	195.0	396.2	116.6	81.6	2237.9	1956
1957	52.1	113.6	102.6	241.1	357.0	304.3	172.5	104.6	182.6	257.4	122.8	93.8	2104.4	1957
1958	28.1	66.0	214.6	329.6	260.5	109.2	101.2	208.6	136.1	163.1	170.6	72.7	1880.3	1958
1959	15.5	24.8	260.2	312.4	155.1	382.6	241.6	182.7	166.2	262.7	161.2	116.3	2281.5	1959
1960	29.1	61.7	150.3	307.5	315.7	185.3	154.5	166.5	143.8	206.4	188.0	190.9	2096.7	1960
1961	47.0	30.9	272.5	189.0	191.9	158.7	196.3	122.1	154.1	310.8	241.7	75.8	1990.8	1961
1962	89.0	22.2	140.3	243.6	244.4	226.2	138.3	150.1	150.3	319.7	207.0	31.9	2003.0	1962
1963	59.2	96.4	265.3	312.0	203.2	227.4	152.3	106.6	102.9	256.9	199.1	71.0	2052.3	1963
1964	12.3	90.0	121.0	391.6	212.2	268.6	188.8	123.2	124.8	160.0	150.5	24.5	1867.5	1964
1965	107.1	60.3	113.0	183.2	206.6	100.9	45.1	167.1	238.0	230.2	323.9	73.9	1829.3	1965
1966	79.5	6.3	153.8	165.5	318.1	156.2	176.1	140.8	159.5	258.0	160.6	83.5	1657.9	1966
1967	48.1	86.0	67.0	319.9	285.6	139.6	73.7	126.7	159.6	169.2	103.1	105.0	1683.5	1967
1968	30.9	50.5	105.9	335.3	323.8	302.8	176.9	113.1	189.1	260.3	192.1	16.7	2097.6	1968
1969	65.2	64.9	80.1	360.1	311.0	132.1	46.3	131.1	178.1	294.7	205.9	91.7	1965.2	1969
1970	27.5	30.3	90.5	272.1	207.1	142.5	194.6	206.3	190.3	263.7	115.6	230.8	1971.3	1970
1971	116.7	192.0	198.5	241.5	491.8	226.6	163.0	243.4	235.1	269.1	181.9	92.5	2654.1	1971
1972	197.8	59.1	97.7	312.3	290.8	191.9	103.2	177.6	164.6	124.3	176.1	87.6	1983.0	1972
1973	16.7	3.3	230.1	236.9	242.9	176.0	114.4	208.3	-9.9	139.6	-9.9	-9.9	-9.9	1973
1974	129.7	66.0	110.2	181.8	165.8	235.5	136.3	73.2	228.2	311.6	237.8	22.7	1898.8	1974
1975	15.7	36.0	184.1	178.4	193.3	45.3	236.5	264.3	248.1	210.8	197.9	106.0	1916.4	1975
1976	42.3	89.0	294.7	332.7	318.0	151.2	8.2	118.3	64.6	357.8	135.6	74.2	1987.2	1976
1977	0.9	55.0	116.9	115.7	99.8	143.0	178.6	146.1	275.7	199.6	120.1	35.5	1492.9	1977
1978	7.5	38.9	155.7	251.9	269.0	198.0	183.8	110.2	229.7	262.6	135.3	97.3	1959.9	1978
1979	32.8	15.5	190.0	324.0	273.6	342.8	180.1	170.0	183.8	274.8	169.7	39.2	2216.3	1979
NUMERO DE ANOS	27	27	27	27	27	27	27	27	26	26	27	27	26	
VALOR MAXIMO	197.8	192.0	294.7	391.6	491.8	382.6	241.6	264.3	275.7	396.2	323.9	230.8	2654.1	
CUARTIL SUPERIOR	79.5	90.0	216.7	319.9	318.0	230.8	188.8	189.7	228.2	279.7	199.1	105.0	2104.4	
MEDIANA	47.0	61.7	150.3	281.9	260.5	185.3	163.0	163.8	183.2	257.7	170.6	81.6	1985.1	
CUARTIL INFERIOR	27.5	30.9	110.2	189.0	203.2	143.0	103.2	118.3	154.1	203.0	123.1	39.2	1698.8	
VALOR MINIMO	0.9	3.3	67.0	115.7	99.8	45.3	8.2	73.2	64.6	124.3	103.1	16.7	1492.9	
PROMEDIOS	56.2	65.8	164.2	259.9	264.8	196.9	149.5	157.1	183.6	244.6	171.8	85.2	2011.8	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1999.6	
PORCENTAJES	2.8	3.3	8.2	13.0	13.2	9.8	7.5	7.9	9.2	12.2	8.6	4.3		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB
INDICE DE FOURNIER = 35. INDICE DE ARNOLDUS = 154.

DEV. ESTANDAR	44.0	43.3	66.1	71.1	80.0	78.8	60.0	46.4	48.9	66.9	51.6	49.0	214.7
COEF. VARIACION	0.783	0.659	0.402	0.274	0.302	0.385	0.401	0.295	0.266	0.274	0.300	0.575	0.107
COEF. ASIMETRIA	1.493	1.065	0.482	-0.150	0.455	0.611	-0.663	0.416	-0.342	0.005	0.975	1.158	0.535

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240152	BERTHA	MONIQUIRA	+05 53 08	+073 34 41	1670 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	29.1	61.7	150.3	307.5	315.7	185.3	154.5	166.5	143.8	206.4	185.0	190.9	2096.7	1960
1961	47.0	30.9	272.5	189.0	191.9	158.7	196.3	122.1	154.1	310.8	241.7	75.8	1990.8	1961
1962	89.0	22.2	140.3	243.6	244.4	226.2	138.3	190.1	150.3	319.7	207.0	31.9	2003.0	1962
1963	59.2	96.4	265.3	312.0	203.2	227.4	152.3	106.6	102.9	256.9	199.1	71.0	2052.3	1963
1964	12.3	90.0	121.0	391.6	212.2	268.6	188.8	123.2	124.8	160.0	150.5	24.5	1867.5	1964
1965	107.1	60.3	113.0	163.2	206.6	100.9	45.1	167.1	238.0	230.2	323.9	73.9	1829.3	1965
1966	79.5	6.3	153.8	165.5	318.1	156.2	176.1	140.8	159.5	258.0	160.6	83.5	1857.9	1966
1967	48.1	80.0	67.0	319.9	285.6	139.6	73.7	126.7	159.6	169.2	103.1	105.0	1683.5	1967
1968	30.9	50.9	105.9	335.3	323.8	302.8	176.9	113.1	189.1	260.3	192.1	16.7	2097.8	1968
1969	65.2	68.9	80.1	360.1	311.0	132.1	46.3	131.1	178.1	294.7	205.9	91.7	1965.2	1969
1970	27.5	30.3	90.5	272.1	207.1	142.5	194.6	206.3	190.3	263.7	115.6	230.8	1971.3	1970
1971	118.7	192.0	198.5	241.5	491.8	226.6	163.0	243.4	235.1	269.1	181.9	92.5	2654.1	1971
1972	197.8	59.1	97.7	312.3	290.8	191.9	103.2	177.6	164.6	124.3	176.1	87.6	1983.0	1972
1973	16.7	3.3	230.1	236.9	242.9	176.0	114.4	208.3	258.1	139.6	188.6	124.7	1939.6	1973
1974	129.7	66.0	110.2	181.8	165.8	235.5	136.3	73.2	228.2	311.6	237.8	22.7	1898.8	1974
1975	15.7	36.0	184.1	178.4	193.3	45.3	236.5	264.3	248.1	210.8	197.9	106.0	1916.4	1975
1976	42.3	89.6	294.7	332.7	318.0	151.2	8.2	118.3	64.6	357.8	135.6	74.2	1987.2	1976
1977	6.9	55.0	116.9	115.7	99.8	143.0	178.6	146.1	275.7	199.6	120.1	35.5	1492.9	1977
1978	7.5	38.9	155.7	251.9	289.0	198.0	183.8	110.2	229.7	262.6	135.3	97.3	1959.9	1978
1979	32.8	15.5	190.0	324.0	273.6	342.8	180.1	170.0	163.8	274.8	189.7	39.2	2216.3	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	197.8	192.0	294.7	391.6	491.8	342.8	236.5	264.3	275.7	357.8	323.9	230.8	2654.1	
CUARTIL SUPERIOR	84.3	77.4	194.3	321.9	313.3	227.0	181.9	183.8	232.4	284.7	202.5	101.1	2027.6	
MEDIANA	44.6	57.0	145.3	262.0	259.0	180.6	158.8	143.4	180.9	259.1	186.8	79.6	1968.2	
CUARTIL INFERIOR	22.1	30.6	108.0	185.4	204.9	142.8	108.8	120.2	152.2	203.0	143.0	37.3	1883.1	
VALOR MINIMO	6.9	3.3	67.0	115.7	99.8	45.3	8.2	73.2	64.6	124.3	103.1	16.7	1492.9	
PROMEDIOS	58.1	58.0	156.9	261.8	259.2	187.5	142.3	155.3	183.9	244.0	182.4	83.8	1973.2	
PORCENTAJES	2.9	2.9	8.0	13.3	13.1	9.5	7.2	7.9	9.3	12.4	9.2	4.2		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 35. INDICE DE ARNOLDUS = 193.

INDICE DE IRREGULARIDAD INTERANUAL =1.34

DEV. ESTANDAR	49.5	42.1	66.8	76.7	82.1	69.4	59.8	48.9	54.9	63.2	50.8	53.9	221.4
COEF. VARIACION	0.852	0.726	0.426	0.293	0.317	0.370	0.420	0.315	0.298	0.259	0.279	0.644	0.112

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	2338.	2257.	2160.	1973.	1787.	1689.	1609.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.379	1.628	0.754	-0.231	0.804	0.352	-0.856	0.606	-0.241	-0.309	0.876	1.276	1.041

IMPRESO EN COLOMBIA POR DANAPAK-O

CODIGO 231205 | ESTACION MUZO | MUNICIPIO MUZO | LATITUD +05 31 00 | LONGITUD +074 08 00 | ALTITUD 550 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1933	-9.9	-9.9	157.3	169.0	346.5	260.5	147.6	207.0	336.8	390.0	462.0	596.5	-9.9
1934	370.0	-9.9	-9.9	-9.9	139.5	141.8	64.5	119.5	131.0	-9.9	-9.9	-9.9	-9.9
1935													
1936	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	364.7	189.4	56.9	-9.9
1937	184.1	163.6	160.7	160.3	283.2	149.2	17.7	36.3	45.4	215.1	228.0	116.6	1760.2
1938	52.9	179.5	347.1	316.2	177.6	57.8	68.3	144.0	110.9	169.7	-9.9	72.5	-9.9
1939													
1940													
1941													
1942													
1943													
1944													
1945													
1946													
1947	-9.9	-9.9	-9.9	-9.9	234.0	158.0	190.0	177.0	408.0	276.0	104.3	61.0	-9.9
1948	34.5	63.0	263.5	207.5	258.5	127.0	151.0	44.0	224.5	277.5	131.5	169.0	1951.5
1949	45.5	135.0	181.0	200.0	334.0	219.5	62.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1950													
1951													
1952													
1953													
1954													
1955													
1956													
1957													
1958	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	122.5	168.5	102.0	320.5	239.5	231.5	-9.9
1959	-9.9	57.5	144.5	-9.9	110.5	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1960	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	148.0	97.5	124.5	189.0	373.0	125.5	-9.9
1961	164.0	73.5	116.0	222.0	149.0	237.5	303.0	100.5	194.0	409.0	412.5	-9.9	-9.9
1962													
1963	-9.9	-9.9	166.0	221.5	-9.9	-9.9	-9.9	-9.9	125.5	-9.9	-9.9	-9.9	-9.9
1964	-9.9	216.0	188.0	277.0	246.0	224.0	245.0	95.0	102.5	255.0	194.0	198.0	-9.9
1965	99.0	87.0	159.0	314.0	261.0	184.0	92.0	97.0	257.0	283.0	448.0	184.0	2465.0
1966	150.0	85.0	371.0	266.0	393.0	300.0	155.0	225.0	130.0	405.0	331.0	166.0	2977.0
1967	95.0	107.0	141.0	434.0	470.0	209.0	264.0	73.0	207.0	353.0	203.0	137.0	2693.0
1968	77.0	225.0	236.0	446.0	626.0	162.0	84.0	163.0	225.0	336.0	370.0	119.0	3089.0
1969	229.0	170.0	155.0	643.0	646.0	442.0	417.0	229.0	441.0	376.0	270.0	156.0	4176.0
1970	65.0	80.0	131.0	127.1	303.7	264.6	222.5	252.0	133.0	383.0	191.0	266.0	2418.9
1971	703.0	51.0	348.0	236.0	328.0	123.0	66.0	191.0	145.0	350.0	177.0	29.0	2747.0
1972	145.0	60.0	266.0	445.0	459.0	243.0	106.0	222.0	107.0	300.0	216.0	237.0	2796.0
1973	65.0	46.0	192.0	279.0	194.0	200.0	158.0	99.0	222.0	240.0	479.0	240.0	2414.0
1974	102.0	215.0	205.0	301.0	375.0	314.0	21.0	131.0	266.0	392.0	428.0	69.0	2819.0
1975	129.0	232.0	-9.9	-9.9	-9.9	100.0	215.0	162.0	383.0	-9.9	191.0	359.0	-9.9
1976	172.0	259.0	312.0	315.0	353.0	135.0	5.0	47.0	115.0	356.0	120.0	41.0	2230.0
1977	41.0	94.0	111.0	-9.9	39.0	124.0	-9.9	16.5	223.0	430.5	230.0	93.5	-9.9
1978	99.0	71.0	276.0	453.0	253.0	175.0	82.0	78.0	153.0	479.0	303.0	196.0	2618.0
1979	126.0	157.0	279.0	-9.9	490.0	163.0	296.0	196.0	455.0	414.0	305.0	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA FEP DANARY. C

ESTACION X MOZC MUNICIPIO DE MOZC PERIODO 1933 - 1979 COEF DE CORRECCION 1.000

N	AÑO	T /	CO	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1978	2618.0	2618.0	2618.0	-0.062	-0.014				+			
2	1976	2230.0	4848.0	2424.0	-0.736	-0.173					+I		
3	1974	2819.0	7667.0	2555.7	-0.287	-0.111					+I		
4	1973	2414.0	10081.0	2520.3	-0.416	-0.201					+I		
5	1972	2756.0	12877.0	2575.4	0.247	-0.146					+I		
6	1971	2747.0	15624.0	2604.0	0.162	-0.113					+I		
7	1970	2418.0	18042.0	2577.4	-0.405	-0.201					+I		
8	1969	4176.0	22218.0	2777.4	2.650	0.372					I	+	
9	1968	3069.0	25307.0	2812.0	0.787	0.536					I	+	
10	1967	2693.0	28000.0	2800.1	0.668	0.551					I	+	
11	1966	2577.0	30577.0	2816.2	0.562	0.673					I	+	
12	1965	2466.0	33042.0	2786.5	-0.325	0.601					I	+	
13	1948	1551.0	35394.0	2722.6	-1.223	0.337					I	+	
14	1937	1760.2	37154.0	2653.5	-1.556	0.0					+		

N	AÑO	T /	CO	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 14 AÑOS = 2653.5

DESVIACION ESTANDAR = 574.4

COEFICIENTE DE VARIACION = 0.216

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CESTOA *** CALCO DE HIDROCLIMATOLOGIA *** PROGRAMA CESTOA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
243515	BELENCITO	NOBSA	+05 47 00	+072 53 00	2250 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1967	-9.9	-9.9	-9.9	87.0	89.3	57.6	58.4	24.9	64.8	64.0	84.9	33.5	-9.9
1968	-9.9	18.2	26.7	-9.9	85.0	55.1	31.0	-9.9	43.8	63.2	50.8	4.2	-9.9
1969	86.3	6.4	3.0	193.6	60.8	46.6	25.1	33.0	22.8	156.6	100.6	8.4	743.2
1970	21.1	59.1	11.0	37.5	98.7	39.3	79.4	47.2	63.7	130.8	83.6	26.5	697.9
1971	88.2	87.1	115.9	94.7	158.1	26.3	50.5	45.2	68.8	75.9	39.1	57.4	911.2
1972	71.9	25.1	110.5	439.3	60.5	64.7	-9.9	4.9	28.1	66.1	49.6	20.8	-9.9
1973	1.0	10.9	48.3	63.3	63.7	42.5	42.7	60.6	104.2	105.4	98.6	46.6	687.8
1974	24.0	36.1	116.9	70.7	112.2	30.5	41.4	15.3	88.6	77.4	106.0	7.1	726.2
1975	0.0	55.2	29.9	87.6	108.9	40.9	67.9	38.4	78.3	205.9	94.3	107.2	914.5
1976	-9.9	43.0	104.2	86.8	58.3	41.0	36.0	17.6	33.7	111.8	61.0	47.6	-9.9
1977	0.0	0.6	58.2	93.9	128.7	83.1	21.3	65.0	42.8	-9.9	171.2	-9.9	-9.9
1978	11.0	29.0	67.0	176.0	154.0	64.0	44.0	26.0	97.0	157.0	36.0	57.0	992.0
1979	4.0	13.0	99.0	149.0	91.0	170.0	57.0	91.0	47.0	155.0	167.0	54.0	1141.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARAJO

ESTACION X TASCO MUNICIPIO DE TASCO PERIODO COEF DE CORRECCION
1967 - 1979 1.000

ESTACION Y DELEGCITO MUNICIPIO DE NUBSA PERIODO COEF DE CORRECCION
1967 - 1979 1.000

N	AN	COX	COY	RAN	RCAN	F = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	1217.	1141.	1.056	0.076					+ .				
2	1978	2138.	2159.	0.920	-0.018				.	+				
3	1975	2972.	3048.	0.903	-0.122				.	+I				
4	1974	3699.	3779.	1.204	0.104					I+		.		
5	1973	4569.	4461.	0.965	0.075					. +				
6	1971	5323.	5373.	0.820	-0.118				.	+I				
7	1970	6149.	6071.	1.030	0.093					+ .				
8	1969	6879.	6814.	1.100	0.0					+ .				

N	AN	COX	COY	RAN	RCAN	F = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 859.9 851.7

RAZONES PROMEDIOS Y/X = 0.990
X/Y = 1.010

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
243515	BELENCITO	NOBSA	+05 46 57	+072 53 57	2545 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1967	-9.9	-9.9	-9.9	87.0	89.3	97.6	58.4	24.9	64.6	64.0	84.9	33.5	-9.9	1967
1968	-9.9	18.2	26.7	-9.9	85.0	95.1	31.0	-9.9	43.6	63.2	50.8	4.2	-9.9	1968
1969	86.3	6.4	3.0	193.6	60.8	46.6	25.1	33.0	22.8	156.6	100.6	8.4	743.2	1969
1970	21.1	59.1	11.0	37.5	98.7	39.3	79.4	47.2	63.7	130.8	83.6	26.5	697.9	1970
1971	88.2	87.1	115.9	94.7	158.1	26.3	50.5	45.2	68.8	79.9	39.1	57.4	911.2	1971
1972	71.9	25.1	110.5	439.3	60.5	64.7	-9.9	4.9	28.1	66.1	49.6	20.8	-9.9	1972
1973	1.0	10.9	48.3	63.3	63.7	42.9	42.7	60.6	104.2	105.4	98.6	46.6	687.8	1973
1974	24.0	30.1	116.9	70.7	112.2	30.5	41.4	15.3	88.6	77.4	106.0	7.1	726.2	1974
1975	0.0	55.2	29.9	87.0	108.9	40.9	67.9	38.4	78.3	205.9	94.3	107.2	914.5	1975
1976	-9.9	43.0	104.2	86.8	58.3	41.0	36.0	17.6	33.7	111.8	61.0	47.6	-9.9	1976
1977	0.0	0.6	58.2	93.9	128.7	53.1	21.3	65.0	42.8	-9.9	171.2	-9.9	-9.9	1977
1978	11.0	29.0	67.0	176.0	154.0	64.0	44.0	26.0	97.0	157.0	36.0	57.0	992.0	1978
1979	4.0	13.0	99.0	149.0	91.0	170.0	57.0	91.0	47.0	199.0	167.0	84.0	1141.0	1979
NUMERO DE ANOS	10	12	12	12	13	13	12	12	13	12	13	12	8	
VALOR MAXIMO	88.2	87.1	116.9	439.3	158.1	170.0	79.4	91.0	104.2	205.9	171.2	107.2	1141.0	
CUARTIL SUPERIOR	*****	49.1	107.3	162.5	120.4	79.9	57.7	53.9	83.4	156.8	103.3	55.5	******	
MEDIANA	16.0	27.0	62.6	90.7	91.0	46.6	43.3	35.7	63.7	108.6	84.9	40.0	827.2	
CUARTIL INFERIOR	*****	11.9	28.3	78.7	62.2	40.1	33.5	21.2	38.2	71.7	50.2	14.6	******	
VALOR MINIMO	0.0	0.6	3.0	37.5	58.3	26.3	21.3	4.9	22.8	63.2	36.0	4.2	687.8	
PROMEDIOS	30.8	32.0	65.9	131.6	97.6	62.4	46.2	39.1	60.3	118.1	87.9	39.2	851.7	
										TOTAL DE LOS PROMEDIOS MENSUALES =			811.1	
PORCENTAJES	3.8	3.9	8.1	16.2	12.0	7.7	5.7	4.8	7.4	14.6	10.8	4.8		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 21. INDICE DE ARNOLDUS = 83.

DEV. ESTANDAR	36.7	25.5	42.5	107.3	34.0	39.2	17.3	24.4	26.5	51.7	43.3	29.2	164.3	
COEF. VARIACION	1.192	0.797	0.644	0.816	0.348	0.627	0.375	0.624	0.439	0.438	0.493	0.744	0.193	
COEF. ASIMETRIA	0.896	0.888	-0.125	2.444	0.580	1.966	0.423	0.747	0.248	0.581	-0.848	0.955	0.692	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO 403051

ESTACION: EL CEREZO | MUNICIPIO: PAIPA | LATITUD: +05 42 00 | LONGITUD: +073 04 00 | ALTITUD: 2850 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1970	-9.9	63.0	25.0	133.0	334.0	103.0	265.0	173.0	226.0	273.0	90.0	25.0	-9.9
1971	29.0	37.0	153.0	155.0	654.0	49.0	172.0	111.0	178.0	171.0	62.0	66.0	1837.0
1972	113.0	103.0	70.0	466.0	74.0	52.0	42.0	24.0	51.0	37.0	114.0	28.0	1174.0
1973	5.0	0.0	20.0	78.0	41.0	34.0	11.0	60.0	74.0	142.0	92.0	69.0	627.0
1974	23.0	80.0	90.0	102.0	108.0	41.0	33.0	32.0	107.0	190.0	207.0	30.0	1043.0
1975													
1976													
1977													
1978	0.0	95.0	238.0	378.0	327.0	227.0	167.0	84.0	177.0	186.0	114.0	76.0	2071.0
1979	0.0	45.0	217.0	241.0	179.0	254.0	106.0	246.0	187.0	338.0	-9.9	385.0	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR FEDIAPAZ

ESTACION X EL CEREZO MUNICIPIO DE PAIPA PERIODO 1970 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1978	2071.0	2071.0	2071.0	1.216	0.534				I + .			
2	1974	1043.0	3114.0	1557.0	-0.519	0.206			.	I +			
3	1973	627.0	3741.0	1247.0	-1.221	-0.230			.	+ I			
4	1972	1174.0	4915.0	1228.8	-0.298	-0.360				+. I			
5	1971	1837.0	6752.0	1350.4	0.821	0.0				+ .			

N	AN	T A	CU	MCY	ECR	PCAN	C = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 5 ANOS = 1350.4
DEVIACION ESTANDAR = 592.7
COEFICIENTE DE VARIACION = 0.439

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCN

Contraloría de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240352	PALERMO	PAIPA	+05 50 00	+073 12 00	3000 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1971	172.7	183.7	177.5	151.3	240.0	44.0	16.3	97.0	143.0	362.0	83.0	156.0	1826.5
1972	243.0	111.0	200.0	312.0	214.0	70.0	26.0	41.0	46.0	111.0	126.0	135.0	1635.0
1973	22.0	27.0	177.0	90.0	72.0	120.0	101.0	73.0	113.0	165.0	329.0	137.0	1426.0
1974	178.0	81.0	88.0	142.0	69.0	53.0	9.0	47.0	195.0	226.0	123.0	6.0	1217.0
1975	37.0	149.0	203.0	124.0	145.0	116.0	175.0	61.0	91.0	217.0	193.0	135.0	1646.0
1976	70.0	115.0	236.0	203.0	158.0	62.0	2.0	20.0	55.0	201.0	71.0	-9.9	-9.9
1977	19.0	13.0	151.0	190.0	165.0	104.0	56.0	66.0	86.0	121.0	124.0	47.0	1142.0
1978	23.0	10.0	156.0	212.0	149.0	66.0	102.0	50.0	129.0	224.0	135.0	150.0	1426.0
1979	30.0	46.0	174.0	111.0	159.0	70.0	60.0	69.0	97.0	192.0	200.0	49.0	1257.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X FALLBAL MUNICIPIO DE PAIPA PERIODO COEF DE CORRECCION

1971 - 1975 1.000

N	AN	T /	CU	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1975	1287.0	1287.0	1287.0	-0.753	-0.131					+1		
2	1976	1426.0	2663.0	1341.5	-0.067	-0.146					+		
3	1977	1142.0	3825.0	1275.0	-1.273	-0.356				+	I		
4	1975	1646.0	5471.0	1367.8	0.831	-0.215				+	I		
5	1974	1217.0	6688.0	1337.6	-0.560	-0.378				+	I		
6	1973	1426.0	8114.0	1352.3	-0.067	-0.392				+			
7	1972	1635.0	9749.0	1392.7	0.785	-0.262				+	I		
8	1971	1826.5	11575.5	1446.9	1.584	0.0				+			

N	AN	T /	CU	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 8 ANOS = 1446.9

DESVIACION ESTANDAR = 225.6

COEFICIENTE DE VARIACION = 0.156

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRESTA *** CALCO DE HIDROCLIMATOLOGIA *** PROGRAMA CRESTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240352	PALERMO	PAIPA	+05 54 00	+073 11 48	3000 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1971	172.7	183.7	177.5	151.3	240.0	44.0	16.3	97.0	143.0	362.0	83.0	156.0	1826.5	1971
1972	243.0	111.0	200.0	312.0	214.0	70.0	26.0	41.0	46.0	111.0	126.0	135.0	1635.0	1972
1973	22.0	27.0	177.0	90.0	72.0	120.0	101.0	73.0	113.0	165.0	329.0	137.0	1426.0	1973
1974	178.0	81.0	88.0	142.0	69.0	53.0	9.0	47.0	195.0	226.0	123.0	6.0	1217.0	1974
1975	37.0	149.0	203.0	124.0	145.0	116.0	175.0	61.0	91.0	217.0	193.0	135.0	1646.0	1975
1976	73.0	115.0	236.0	203.0	158.0	62.0	2.0	20.0	55.0	201.0	71.0	-9.9	-9.9	1976
1977	19.0	13.0	151.0	190.0	165.0	104.0	56.0	66.0	86.0	121.0	124.0	47.0	1142.0	1977
1978	23.0	10.0	156.0	212.0	149.0	86.0	102.0	50.0	129.0	224.0	135.0	150.0	1426.0	1978
1979	30.0	46.0	174.0	111.0	159.0	70.0	60.0	69.0	97.0	192.0	200.0	49.0	1257.0	1979
NUMERO DE ANOS	9	9	9	9	9	9	9	9	9	9	9	8	8	
VALOR MAXIMO	243.0	183.7	236.0	312.0	240.0	120.0	175.0	97.0	195.0	362.0	329.0	156.0	1826.5	
MEDIANA	37.0	81.0	177.0	151.3	158.0	70.0	56.0	61.0	97.0	201.0	126.0	135.0	1426.0	
VALOR MINIMO	19.0	10.0	88.0	90.0	69.0	44.0	2.0	20.0	46.0	111.0	71.0	6.0	1142.0	
PROMEDIOS	88.3	81.7	173.6	170.6	152.3	80.6	60.8	58.2	106.1	202.1	153.8	101.9	1446.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1430.0	
PORCENTAJES	6.2	5.7	12.1	11.9	10.7	5.6	4.3	4.1	7.4	14.1	10.8	7.1		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 29. INDICE DE ARNOLDUS = 136.

DEV. ESTANDAR	85.8	62.3	41.3	67.6	56.1	27.5	56.7	22.0	45.8	73.5	78.4	58.2	239.6
COEF. VARIACION	0.972	0.762	0.238	0.396	0.368	0.342	0.932	0.377	0.432	0.364	0.510	0.571	0.166
COEF. ASIMETRIA	0.962	0.347	-0.818	1.079	-0.170	0.312	1.015	0.005	0.673	1.123	1.511	-0.783	0.302

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
243517	TUNGUAVITA	PAIPA	+05 45 00	+073 05 00	2550 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1968	-9.9	-9.9	-9.9	190.3	96.3	107.6	36.0	30.1	118.6	127.0	83.8	7.5	-9.9
1969	74.6	58.3	33.6	204.9	50.0	105.9	21.1	60.8	61.8	120.4	76.9	33.1	901.4
1970	25.2	27.6	22.8	129.4	112.0	48.7	74.8	47.7	68.8	191.4	67.9	26.1	842.4
1971	77.0	76.8	132.3	102.8	210.4	24.1	28.6	80.6	78.1	123.8	76.6	66.5	1077.6
1972	127.9	69.4	108.7	188.4	118.3	70.1	13.1	35.2	31.7	82.1	70.7	35.1	950.7
1973	0.8	7.9	67.1	51.1	74.3	71.1	83.7	47.0	158.4	96.9	177.7	41.4	877.4
1974	20.6	37.0	90.7	99.0	77.7	62.5	35.8	31.3	105.8	122.5	157.8	10.8	851.5
1975	0.6	90.8	79.8	69.7	183.6	67.0	99.1	103.7	67.6	137.1	122.5	91.0	1112.5
1976	6.4	54.7	214.5	150.0	111.9	34.0	27.0	32.3	86.3	155.8	75.2	37.7	985.8
1977	0.0	0.3	114.8	62.7	118.1	52.4	43.1	75.6	93.9	175.4	152.7	22.3	951.3
1978	0.1	56.8	112.5	152.9	151.9	66.2	75.8	20.5	87.1	139.3	34.4	67.5	971.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

ESTACION X TENGUAVITA MUNICIPIO DE PAIPA PERIODO 1968 -1978 COEF DE CORRECCION 1.000

N	AN	T /	CO	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1978	971.0	971.0	971.0	0.204	0.015				+			
2	1977	951.3	1962.3	961.1	-0.014	0.016				+			
3	1976	989.8	2912.1	970.7	0.412	0.057				+			
4	1975	1112.8	4024.8	1006.1	1.765	0.225				I +			
5	1974	851.5	4876.1	975.2	-1.116	0.115				I+			
6	1973	877.4	5753.5	958.9	-0.631	0.040				+			
7	1972	950.7	6704.2	957.7	-0.021	0.038				+			
8	1971	1077.6	7781.8	972.7	1.363	0.165				I+			
9	1970	842.4	8624.2	958.2	-1.218	0.054				+			
10	1969	901.4	9525.6	952.6	-0.566	0.000				+			

N	AN	T /	CO	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 10 ANOS = 952.6
DESVIACION ESTANDAR = 90.4
COEFICIENTE DE VARIACION = 0.095

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CESTON *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CESTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
243517	TUNGLAVITA	PAIPA	+05 45 04	+073 07 52	2540 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1968	-9.9	-9.9	-9.9	190.3	96.3	107.6	36.0	30.1	118.6	127.0	83.8	7.5	-9.9	1968
1969	74.6	58.3	33.6	204.9	80.0	105.9	21.1	60.8	61.8	120.4	76.9	33.1	901.4	1969
1970	25.2	27.6	22.8	129.4	112.0	48.7	74.8	47.7	68.8	191.4	67.9	26.1	842.4	1970
1971	77.0	76.8	132.3	102.8	210.4	24.1	28.6	80.6	78.1	123.8	76.6	66.5	1077.6	1971
1972	127.9	69.4	108.7	188.4	118.3	70.1	13.1	35.2	31.7	82.1	70.7	35.1	950.7	1972
1973	0.8	7.9	67.1	51.1	74.3	71.1	83.7	47.0	158.4	96.9	177.7	41.4	877.4	1973
1974	20.6	37.0	90.7	99.0	77.7	62.5	35.8	31.3	105.8	122.5	157.8	10.8	851.5	1974
1975	0.0	90.8	79.8	89.7	183.6	67.0	99.1	103.7	67.6	137.1	122.5	91.0	1112.5	1975
1976	0.4	54.7	214.5	150.0	111.9	34.0	27.0	32.3	86.3	159.8	75.2	37.7	989.8	1976
1977	0.0	0.3	114.8	82.7	118.1	92.4	43.1	75.6	93.9	175.4	152.7	22.3	951.3	1977
1978	0.1	56.8	112.5	152.9	151.9	66.2	75.8	26.5	87.1	139.3	34.4	67.5	971.0	1978
NUMERO DE ANOS	10	10	10	11	11	11	11	11	11	11	11	11	10	
VALOR MAXIMO	127.9	90.8	214.5	204.9	210.4	107.6	99.1	103.7	158.4	191.4	177.7	91.0	1112.5	
MEDIANA	13.5	55.7	99.7	129.4	112.0	67.0	36.0	47.0	86.3	127.0	76.9	35.1	951.0	
VALOR MINIMO	0.0	0.3	22.8	51.1	80.0	24.1	13.1	26.5	31.7	82.1	34.4	7.5	842.4	
PROMEDIOS	33.3	48.0	97.7	127.4	118.6	68.1	48.9	51.9	87.1	134.2	99.7	39.9	952.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		954.7	
PORCENTAJES	3.5	5.0	10.2	13.3	12.4	7.1	5.1	5.4	9.1	14.1	10.4	4.2		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 54.

DEV. ESTANDAR	44.5	29.4	54.3	54.4	47.6	26.7	29.1	25.3	33.1	32.0	45.6	25.6	90.4	
COEF. VARIACION	1.337	0.613	0.555	0.427	0.402	0.391	0.594	0.487	0.380	0.239	0.458	0.641	0.095	
COEF. ASIMETRIA	1.312	-0.371	0.807	0.020	0.674	-0.021	0.569	0.974	0.672	0.285	0.588	0.772	0.589	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
243517	JUNGUAVITA	PAIPA	+05 45 04	+073 07 52	2540 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	42.2	64.8	97.0	125.9	78.1	53.0	145.3	87.6	54.0	143.8	33.2	60.1	985.0	1960
1961	20.0	27.5	122.1	70.9	17.5	48.4	84.5	38.7	60.4	135.7	104.8	25.8	756.3	1961
1962	63.2	27.2	90.1	65.8	151.7	83.1	88.8	57.9	86.9	101.1	131.9	7.3	955.0	1962
1963	7.0	81.5	41.1	116.2	240.4	67.5	65.1	58.1	31.8	117.8	134.6	2.6	963.7	1963
1964	0.0	100.1	11.6	132.6	118.4	116.0	117.2	50.3	85.2	93.7	105.9	13.0	944.0	1964
1965	12.5	31.3	73.8	202.8	138.2	32.1	27.4	89.4	47.4	107.4	133.6	40.6	936.5	1965
1966	6.3	31.2	70.9	121.9	189.0	97.3	16.2	94.9	115.5	128.4	155.1	45.4	1072.1	1966
1967	23.6	34.9	84.6	103.5	163.7	156.4	20.2	24.9	101.5	95.1	97.9	40.3	946.6	1967
1968	15.5	52.4	115.0	190.3	96.3	107.6	36.0	30.1	118.6	127.0	83.8	7.5	980.1	1968
1969	74.6	58.3	33.6	204.9	50.0	105.9	21.1	60.8	61.8	120.4	76.9	33.1	901.4	1969
1970	25.2	27.6	22.8	129.4	112.0	48.7	74.8	47.7	68.8	191.4	67.9	26.1	842.4	1970
1971	77.0	76.8	132.3	132.8	210.4	24.1	28.6	80.6	78.1	123.8	76.6	66.5	1077.6	1971
1972	127.9	69.4	108.7	188.4	118.3	70.1	13.1	35.2	31.7	82.1	70.7	35.1	950.7	1972
1973	0.8	7.9	67.1	51.1	74.3	71.1	83.7	47.0	158.4	96.9	177.7	41.4	877.4	1973
1974	20.6	37.0	90.7	99.0	77.7	62.5	35.8	31.3	105.8	122.5	157.8	10.8	851.5	1974
1975	0.6	90.8	79.8	69.7	183.6	67.0	99.1	103.7	67.6	137.1	122.5	91.0	1112.5	1975
1976	6.4	54.7	214.5	150.0	111.9	34.0	27.0	32.3	86.3	159.8	75.2	37.7	989.8	1976
1977	0.0	0.3	114.8	62.7	118.1	92.4	43.1	75.6	93.9	175.4	152.7	22.3	951.3	1977
1978	0.1	56.8	112.5	152.9	151.9	60.2	75.8	26.5	87.1	139.3	34.4	67.5	971.0	1978
1979	12.3	19.1	64.3	111.7	125.1	99.5	46.6	171.8	125.1	150.0	97.5	54.8	1077.8	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	127.9	100.1	214.5	204.9	240.4	156.4	145.3	171.8	158.4	191.4	177.7	91.0	1112.5	
CUARTIL SUPERIOR	33.7	67.1	113.6	151.4	157.8	98.4	84.1	84.1	103.6	141.5	134.1	50.1	987.4	
MEDIANA	14.0	44.7	87.3	119.0	118.3	68.8	44.8	54.1	85.7	125.4	101.3	36.4	953.1	
CUARTIL INFERIOR	3.6	27.5	65.7	84.9	87.2	50.8	27.2	33.7	61.1	104.2	75.9	17.6	918.9	
VALOR MINIMO	0.0	0.3	11.6	51.1	17.5	24.1	13.1	24.9	31.7	82.1	33.2	2.6	756.3	
PROMEDIOS	26.8	47.5	87.4	122.6	126.3	75.1	57.5	62.2	83.3	127.4	104.5	36.4	957.1	
PORCENTAJES	2.8	5.0	9.1	12.8	13.2	7.9	6.0	6.5	8.7	13.3	10.9	3.8		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 54.

INDICE DE IRREGULARIDAD INTERANUAL =1.26

DEV. ESTANDAR	34.0	27.5	45.0	47.5	54.6	32.6	37.3	35.7	32.1	28.1	40.6	23.3	87.1
COEF. VARIACION	1.269	0.578	0.515	0.387	0.432	0.434	0.649	0.573	0.386	0.220	0.388	0.640	0.091

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1100.	1069.	1030.	957.	884.	846.	814.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.778	0.238	0.814	0.348	0.166	0.615	0.769	1.598	0.386	0.538	-0.010	0.539	-0.240

IMPRESO EN COLOMBIA POR DANARAVA

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
231214	PAUNA	PAUNA	+05 39 00	+073 59 00	1140 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1954	-9.9	-9.9	-9.9	-9.9	-9.9	211.7	175.6	57.4	52.4	353.6	213.2	88.6	-9.9
1955	57.9	147.2	316.4	341.6	248.2	142.6	132.6	90.0	252.2	264.6	168.0	124.6	2285.9
1956													
1957													
1958													
1959													
1960													
1961													
1962													
1963	-9.9	-9.9	-9.9	486.0	290.0	77.0	179.0	147.0	181.0	151.0	80.0	71.0	-9.9
1964	45.0	168.0	46.0	386.0	217.0	210.0	238.0	131.0	-9.9	255.0	223.0	172.0	-9.9
1965	145.0	90.0	166.0	386.0	136.0	45.0	17.0	60.0	207.0	267.0	452.0	200.0	2171.0
1966	31.0	71.0	154.0	247.0	636.0	358.0	46.0	386.0	125.0	542.0	736.0	476.0	3810.0
1967	20.0	220.0	177.0	331.0	200.0	141.0	103.0	110.0	202.0	930.0	701.0	541.0	3676.0
1968	234.0	152.0	271.0	745.0	-9.9	-9.9	50.0	30.0	303.0	561.0	270.0	229.0	-9.9
1969	100.0	111.0	245.0	220.0	155.0	40.0	8.0	179.0	100.0	566.0	-9.9	-9.9	-9.9
1970	-9.9	192.0	-9.9	258.0	80.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1971	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	241.0	481.0	413.0	65.0	-9.9
1972	157.0	158.0	801.0	405.0	352.0	69.0	101.0	98.0	163.0	245.0	322.0	111.0	2582.0
1973	50.0	140.0	523.0	658.0	222.0	97.0	39.0	151.0	382.0	517.0	782.0	565.0	4146.0
1974	154.0	371.0	282.0	473.0	408.0	287.0	47.0	40.0	515.0	455.0	693.0	135.0	3904.0
1975	106.0	250.0	225.0	154.0	-9.9	138.0	282.0	266.0	-9.9	-9.9	236.0	260.0	-9.9
1976	57.0	123.0	262.0	233.0	267.0	63.0	0.0	56.0	228.0	456.0	162.0	95.0	2002.0
1977	71.0	102.0	132.0	110.0	139.0	-9.9	165.0	31.0	-9.9	383.0	439.0	92.0	-9.9
1978	45.0	93.0	293.0	415.0	312.0	120.0	103.0	30.0	80.0	320.0	214.0	61.0	2106.0
1979	75.0	161.0	218.0	278.0	252.0	144.0	53.0	168.0	117.0	372.0	327.0	135.0	2340.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANABA

ESTACION X PAUNA MUNICIPIO DE PAUNA PERIODO 1954 - 1979 COEF DE CORRECCION 1.000

N	AÑO	T /	CO	MCY	ECR	RCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1975	2340.0	2340.0	2540.0	-0.701	-0.205	
2	1978	2100.0	4440.0	2223.0	-0.574	-0.485	
3	1976	2002.0	6442.0	2145.3	-1.095	-0.805	
4	1974	3504.0	10352.0	2588.0	1.120	-0.482	
5	1973	4144.0	14496.0	2899.6	1.402	-0.073	
6	1972	2562.0	17480.0	2913.3	0.646	-0.059	
7	1967	3676.0	21156.0	3022.3	1.054	0.190	
8	1966	3410.0	24566.0	3120.8	1.010	0.485	
9	1965	2171.0	27137.0	3015.2	-0.656	0.223	
10	1965	2285.5	29422.5	2542.3	-0.764	0.0	

N	AÑO	T /	CO	MCY	ECR	RCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 10 AÑOS = 2542.3
DESVIACION ESTANDAR = 856.5
COEFICIENTE DE VARIACION = 0.292

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CESTEA *** CALCO DE AGROCLIMATOLOGIA *** PROGRAMA CESTEA

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
231212	SANTA RITA	PAJNA	+05 36 00	+073 56 00	2800 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1961	-9.9	-9.9	-9.9	-9.9	34.1	40.5	63.0	28.5	73.5	187.0	188.3	35.0	-9.9
1962	52.0	71.5	126.0	105.0	127.0	155.0	19.5	86.5	81.0	126.5	249.5	63.0	1262.5
1963	38.0	68.5	99.0	264.5	261.0	102.5	90.0	70.5	23.5	146.0	224.0	54.0	1461.5
1964	5.5	39.6	63.5	145.5	154.5	154.0	139.5	76.5	88.5	252.5	147.5	115.5	1382.6
1965	42.0	49.0	36.5	180.5	143.5	15.0	10.5	91.0	81.5	238.5	319.0	37.0	1244.0
1966	34.5	6.0	62.0	134.5	262.0	141.5	60.5	49.5	115.0	261.0	300.5	124.0	1551.0
1967	49.0	90.0	130.0	168.4	201.2	60.1	69.2	19.8	30.0	66.0	115.0	28.3	1027.0
1968	27.5	51.0	45.0	157.0	107.5	126.5	19.5	46.5	136.0	135.5	108.2	70.5	1075.1
1969	48.0	43.0	68.5	214.0	95.0	74.5	3.0	30.0	131.0	291.5	148.5	25.0	1172.0
1970	67.5	43.5	47.0	123.0	156.0	48.0	63.5	47.5	80.0	179.0	180.0	32.0	1067.0
1971	77.5	71.5	154.0	157.5	156.0	62.5	6.0	70.8	61.5	85.0	99.0	23.0	1028.3
1972	59.5	52.0	50.0	358.5	158.5	66.0	76.5	69.5	24.5	127.0	148.5	128.0	1348.5
1973	27.5	32.5	40.5	23.8	55.0	50.0	92.0	55.0	133.0	108.0	293.0	95.0	1045.3
1974	60.0	73.0	177.0	105.0	220.0	60.0	75.6	63.0	410.0	304.0	224.5	10.0	1782.1
1975	41.0	172.0	112.0	114.5	192.0	105.0	139.0	108.0	126.0	170.0	103.0	261.0	1643.5
1976	54.0	89.0	151.5	144.0	116.0	46.0	4.0	25.0	70.0	208.0	138.0	62.0	1109.5
1977	8.0	6.0	85.0	118.0	77.0	59.0	82.0	56.0	135.0	192.5	220.0	27.0	1065.5
1978	8.0	42.5	160.5	204.5	149.0	87.0	66.5	49.0	30.0	117.0	48.5	56.0	1018.5
1979	40.5	49.0	140.5	123.0	131.0	126.5	78.0	97.0	119.5	345.5	251.5	90.0	1592.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAR

ESTACION X SANTA RITA MUNICIPIO DE PALMA PERIODO 1961 - 1979 COEF DE CORRECCION 1.000

ESTACION Y ESCLUSA TELLA MUNICIPIO DE CHICLANCILLA PERIODO 1961 - 1979 COEF DE CORRECCION 1.000

	F =	-4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
	FCAR	I	I	I	I	I	I	I	I	I
	F =	C.6	C.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

N	AN	CLX	COY	RAN	FCAR	
1	1979	1552.	1194.	1.156	C.165	
2	1978	2611.	2165.	C.916	C.051	
3	1977	3676.	3124.	C.9C5	C.CCC	
4	1976	4786.	4101.	C.966	C.046	
5	1975	6425.	5167.	1.314	C.254	
6	1974	8211.	6420.	1.265	C.235	
7	1973	9256.	7775.	C.67C	C.235	
8	1972	10605.	8907.	C.966	C.215	
9	1971	11633.	10205.	C.6C8	-C.148	
10	1970	12700.	11253.	C.936	-C.203	
11	1969	13632.	12456.	C.846	-C.265	
12	1968	14547.	13650.	C.853	-C.313	
13	1967	16456.	14609.	1.271	-C.256	
14	1966	17742.	15956.	C.992	-C.263	
15	1964	19129.	16662.	1.013	-C.245	
16	1963	20586.	17548.	1.194	-C.164	
17	1962	21845.	18965.	1.070	C.C	

	F =	-4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
	FCAR	I	I	I	I	I	I	I	I	I
	F =	C.6	C.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

N	AN	CLX	COY	RAN	FCAR

PROMEDIOS = 1289.2 1115.9

RAZONES PROMEDIOS X/X = 0.866

X/Y = 1.152

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-CNSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CNSTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
231212	SANTA RITA	PAUNA	+05 36 29	+073 55 54	2800 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1967	49.0	90.0	130.0	168.4	201.2	60.1	69.2	19.8	30.0	66.0	115.0	28.3	1027.0	1967
1968	27.5	51.0	45.0	197.0	107.5	126.5	19.5	46.5	136.0	139.5	108.2	70.9	1075.1	1968
1969	48.0	43.0	68.5	214.0	95.0	74.5	3.0	30.0	131.0	291.5	148.5	25.0	1172.0	1969
1970	67.5	43.5	47.0	123.0	156.0	48.0	63.5	47.5	80.0	179.0	160.0	32.0	1067.0	1970
1971	77.5	71.5	154.0	157.5	156.0	62.5	6.0	70.8	61.5	89.0	99.0	23.0	1028.3	1971
1972	59.5	52.0	50.0	356.5	158.5	66.0	76.5	69.5	24.5	127.0	146.5	138.0	1348.5	1972
1973	27.5	32.5	40.5	23.8	55.0	90.0	92.0	55.0	133.0	108.0	293.0	95.0	1045.3	1973
1974														1974
1975														1975
1976	54.0	89.0	151.5	144.0	116.0	48.0	4.0	25.0	70.0	208.0	138.0	62.0	1109.5	1976
1977	8.0	6.0	85.0	118.0	77.0	59.0	62.0	56.0	135.0	192.5	220.0	27.0	1065.5	1977
1978	8.0	42.5	160.5	204.5	149.0	87.0	66.5	49.0	30.0	117.0	46.5	56.0	1018.5	1978
1979	40.5	49.0	140.5	123.0	131.0	126.5	78.0	97.0	119.5	345.5	251.5	90.0	1592.0	1979
NUMERO DE ANOS	11	11	11	11	11	11	11	11	11	11	11	11	11	
VALOR MAXIMO	77.5	90.0	160.5	358.5	201.2	126.5	92.0	97.0	136.0	345.5	293.0	138.0	1592.0	
MEDIANA	48.0	49.0	85.0	157.5	131.0	74.5	66.5	49.0	80.0	139.5	146.5	56.0	1067.0	
VALOR MINIMO	8.0	6.0	40.5	23.8	55.0	48.0	3.0	19.8	24.5	66.0	46.5	23.0	1018.5	
PROMEDIOS	42.5	51.2	97.5	160.5	127.5	78.9	50.9	51.5	86.4	169.4	159.1	58.8	1140.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1140.8	
PORCENTAJES	3.7	4.5	8.5	14.0	11.2	6.9	4.5	4.5	7.6	14.8	13.9	5.2		
DEV. ESTANDAR	22.8	24.4	49.8	82.8	42.3	27.8	35.0	22.4	46.0	86.3	71.9	37.2	177.2	
COEF. VARIACION	0.536	0.470	0.511	0.497	0.332	0.352	0.688	0.435	0.533	0.509	0.452	0.631	0.155	
COEF. ASIMETRIA	-0.237	0.078	0.108	0.875	-0.106	0.795	-0.532	0.514	-0.192	1.001	0.534	0.978	2.067	

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 25. INDICE DE ARNOLDUS = 116.

PROYECTO IGAC-CRSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Biblioteca Universidad de Nariño

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240315	PAZ DE RIO	PAZ DE RIO	+05 59 00	+072 45 00	2790 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JJL	AGO	SEP	CCT	NCV	DIC	TCTAL
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	57.0	32.0	-9.9
1958	0.0	30.0	16.0	74.0	110.0	-9.9	15.0	32.0	0.0	54.0	89.0	48.0	-9.9
1959	20.0	16.0	38.0	57.0	82.0	60.0	71.0	52.0	27.0	157.0	52.0	80.0	732.0
1960	122.0	8.0	62.0	74.0	94.0	66.0	80.0	46.0	54.0	71.0	43.0	102.0	822.0
1961	46.0	-9.9	90.0	-9.9	51.0	54.0	34.0	18.0	95.0	194.0	61.0	6.0	-9.9
1962	-9.9	47.0	46.0	82.0	40.0	44.0	21.0	45.0	37.0	43.0	121.0	2.0	-9.9
1963	0.0	83.0	120.0	192.0	130.0	27.0	6.0	40.0	27.0	141.0	145.0	8.0	919.0
1964	0.0	20.0	19.0	48.0	78.0	105.0	66.0	41.0	96.0	58.0	-9.9	46.0	-9.9
1965	0.0	16.0	20.0	429.0	170.0	41.0	189.0	75.0	57.0	301.0	166.0	2.0	1466.0
1966	12.0	30.0	64.0	48.0	214.0	164.0	127.0	135.0	88.0	253.0	259.0	89.0	1483.0
1967	102.0	105.0	155.0	429.0	287.0	114.0	139.0	148.0	166.0	56.0	122.0	159.0	1982.0
1968	136.0	78.0	133.0	332.0	43.0	31.0	0.0	20.0	70.0	-9.9	-9.9	-9.9	-9.9
1969	-9.9	30.0	0.0	151.0	103.0	41.0	40.0	20.0	101.0	151.0	60.0	0.0	-9.9
1970	30.0	40.0	10.0	30.0	90.0	50.0	50.0	37.0	76.0	207.0	105.0	37.0	762.0
1971	115.0	67.0	151.0	187.0	229.0	22.0	52.0	68.0	46.0	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR BANANITO

ESTACION X PAZ DE RIO MUNICIPIO DE PAZ DE RIO PERIODO 1957 - 1971 COEF DE CORRECCION 1.000

F = -3. -2. -1. 0.0 +1. +2. +3.

N	AÑO	I /	CO	MOY	ECR	PCAN	I
1	1970	702.0	702.0	702.0	-0.841	-0.347	
2	1967	1586.0	2744.0	1372.0	1.696	0.352	
3	1968	1483.0	4227.0	1409.0	0.856	0.623	
4	1969	1466.0	5693.0	1423.3	0.823	0.880	
5	1963	919.0	6612.0	1322.4	-0.919	0.668	
6	1960	842.0	7454.0	1239.0	-0.717	0.373	
7	1959	736.0	8190.0	1170.0	-0.904	0.0	

F = -3. -2. -1. 0.0 +1. +2. +3.

N	AÑO	I /	CO	MOY	ECR	PCAN	I

PROMEDIO DE LOS 7 AÑOS = 1170.0

DESVIACION ESTANDAR = 460.0

COEFICIENTE DE VARIACION = 0.392

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRESTA *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRESTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240312	PESCA	PESCA	+05 34 00	+073 03 00	2678 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1957	-9.9	-9.9	49.5	75.0	166.0	76.0	78.0	43.5	70.0	111.0	42.5	28.0	-9.9
1958	15.0	1.0	21.0	88.5	49.0	53.0	37.5	83.5	10.5	82.0	57.0	-9.9	-9.9
1959	0.0	5.0	20.5	57.0	163.0	39.5	80.0	94.5	64.5	136.5	53.5	22.5	736.5
1960	5.5	37.0	47.0	96.0	90.5	46.0	133.0	87.0	24.5	133.0	24.0	86.0	809.5
1961	15.0	0.0	52.0	47.5	34.0	65.0	65.5	48.0	31.5	106.5	134.0	0.0	599.0
1962	25.0	16.0	47.0	54.0	194.0	83.0	57.0	51.0	109.0	74.0	87.0	12.0	809.0
1963	0.0	17.0	20.0	89.0	204.0	69.0	75.0	55.0	30.0	81.0	167.0	0.0	807.0
1964	0.0	2.0	0.0	94.0	86.0	118.0	47.0	66.0	-9.9	97.0	53.0	40.0	-9.9
1965	10.0	0.0	7.0	184.0	115.0	51.0	56.0	77.0	30.0	115.0	143.0	6.0	798.0
1966	0.0	12.0	37.0	18.0	119.0	77.0	61.0	85.0	44.0	78.0	140.0	81.0	752.0
1967	0.0	5.0	40.0	77.0	130.0	115.0	66.0	46.0	103.0	75.0	77.0	22.0	756.0
1968	2.0	14.0	10.0	221.0	98.0	177.0	66.0	65.0	63.0	124.0	74.0	9.0	923.0
1969	53.0	28.0	11.0	150.0	65.0	77.0	42.0	70.0	57.0	185.0	62.0	29.0	833.0
1970	32.0	7.0	14.0	55.0	87.0	42.0	92.0	107.0	74.0	115.0	80.0	12.0	721.0
1971	46.0	27.0	85.0	74.0	261.0	54.0	72.0	106.0	51.0	30.0	54.0	30.0	890.0
1972	53.0	66.0	69.0	177.0	83.0	81.0	55.0	24.0	53.0	52.0	83.0	1.0	797.0
1973	5.0	11.0	40.0	24.0	91.0	40.0	55.0	96.0	103.0	52.0	76.0	32.0	665.0
1974	1.0	27.0	44.0	48.0	82.0	49.0	41.0	15.0	86.0	83.0	91.0	1.0	568.0
1975	1.0	26.0	42.0	66.0	87.0	66.0	65.0	111.0	46.0	147.0	101.0	106.0	864.0
1976	4.0	31.0	98.0	118.0	76.0	67.0	72.0	30.0	54.0	110.0	101.0	69.0	830.0
1977	2.0	1.0	50.0	62.0	158.0	81.0	47.0	77.0	58.0	75.0	103.0	8.0	726.0
1978	0.0	4.5	56.5	155.0	141.0	71.0	43.0	24.0	73.0	111.0	23.0	39.0	741.0
1979	1.0	13.0	36.0	128.0	55.0	135.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR EANANAS

ESTACION X	PESCA	MUNICIPIO DE	PESCA	PERIODO	COEF DE CORRECCION
				1957 - 1979	1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1978	741.0	741.0	741.0	-0.317	-0.037				+			
2	1977	726.0	1467.0	733.5	-0.482	-0.094				+			
3	1976	830.0	2297.0	765.7	0.664	-0.016				+			
4	1975	864.0	3161.0	790.3	1.039	0.107				I+			
5	1974	568.0	3729.0	745.8	-2.224	-0.155				+I			
6	1973	665.0	4394.0	732.3	-1.155	-0.292				+ I			
7	1972	797.0	5191.0	741.6	0.301	-0.256				+ I			
8	1971	890.0	6081.0	760.1	1.326	-0.100				+			
9	1970	721.0	6802.0	755.8	-0.537	-0.163				+I			
10	1969	833.0	7635.0	763.5	0.698	-0.081				+			
11	1968	923.0	8558.0	778.0	1.690	0.118				I+			
12	1967	756.0	9314.0	776.2	-0.151	0.100				I+			
13	1966	752.0	10066.0	774.3	-0.196	0.077				+I			
14	1965	798.0	10864.0	776.0	0.312	0.114				I+			
15	1963	807.0	11671.0	778.1	0.411	0.162				I+			
16	1962	809.0	12480.0	780.0	0.433	0.213				I+			
17	1961	599.0	13079.0	769.4	-1.883	-0.008				+			
18	1960	809.5	13888.5	771.6	0.438	0.043				+			
19	1959	736.5	14625.0	769.7	-0.306	0.0				+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 19 ANOS = 769.7

DEVIACION ESTANDAR = 90.7

COEFICIENTE DE VARIACION = 0.118

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240312	PESCA	PESCA	+05 31 37	+073 04 58	2825 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	-9.9	-9.9	49.5	78.0	166.0	76.0	78.0	43.5	70.0	111.0	47.5	25.0	-9.9	1957
1958	15.0	1.0	21.0	88.5	49.0	53.0	37.5	83.5	10.5	82.0	57.0	-9.9	-9.9	1958
1959	0.0	5.0	20.5	57.0	163.0	39.5	80.0	54.5	64.5	136.5	83.5	22.5	736.5	1959
1960	5.5	37.0	47.0	96.0	90.5	46.0	133.0	87.0	24.5	133.0	24.0	66.0	809.5	1960
1961	15.0	0.0	52.0	47.5	34.0	65.0	65.5	48.0	31.5	106.5	134.0	0.0	599.0	1961
1962	25.0	10.0	47.0	54.0	194.0	83.0	57.0	51.0	109.0	74.0	87.0	12.0	809.0	1962
1963	0.0	17.0	20.0	89.0	204.0	69.0	75.0	55.0	30.0	81.0	167.0	0.0	807.0	1963
1964	0.0	2.0	0.0	94.0	86.0	118.0	47.0	66.0	-9.9	97.0	83.0	40.0	-9.9	1964
1965	10.0	0.0	7.0	184.0	115.0	51.0	56.0	77.0	30.0	119.0	143.0	6.0	798.0	1965
1966	0.0	12.0	37.0	18.0	119.0	77.0	61.0	85.0	44.0	78.0	140.0	81.0	752.0	1966
1967	0.0	5.0	40.0	77.0	130.0	115.0	66.0	46.0	103.0	75.0	77.0	22.0	756.0	1967
1968	2.0	14.0	10.0	221.0	98.0	177.0	66.0	65.0	63.0	124.0	74.0	9.0	923.0	1968
1969	53.0	28.0	11.0	150.0	65.0	77.0	42.0	70.0	57.0	189.0	62.0	29.0	833.0	1969
1970	32.0	7.0	14.0	55.0	87.0	42.0	92.0	107.0	74.0	119.0	80.0	12.0	721.0	1970
1971	46.0	27.0	85.0	74.0	261.0	54.0	72.0	106.0	51.0	30.0	84.0	30.0	890.0	1971
1972	53.0	66.0	69.0	177.0	83.0	81.0	55.0	24.0	53.0	52.0	83.0	1.0	797.0	1972
1973	5.0	11.0	40.0	24.0	91.0	40.0	55.0	96.0	103.0	92.0	76.0	32.0	665.0	1973
1974	1.0	27.0	44.0	48.0	82.0	49.0	41.0	15.0	66.0	83.0	91.0	1.0	568.0	1974
1975	1.0	20.0	42.0	66.0	87.0	66.0	65.0	111.0	46.0	147.0	101.0	106.0	864.0	1975
1976	4.0	31.0	98.0	118.0	76.0	67.0	72.0	30.0	54.0	110.0	101.0	69.0	830.0	1976
1977	2.0	1.0	50.0	62.0	158.0	81.0	47.0	77.0	58.0	79.0	103.0	8.0	726.0	1977
1978	0.0	4.5	56.5	155.0	141.0	71.0	43.0	24.0	73.0	111.0	83.0	39.0	741.0	1978
1979	1.0	13.0	36.0	128.0	85.0	139.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1979
NUMERO DE ANOS	22	22	23	23	23	23	22	22	21	22	22	21	19	
VALOR MAXIMO	53.0	66.0	98.0	221.0	261.0	177.0	133.0	111.0	109.0	189.0	167.0	106.0	923.0	
CUARTIL SUPERIOR	15.0	27.0	53.0	128.0	158.0	81.0	72.0	87.0	73.5	119.0	101.0	39.5	830.0	
MEDIANA	3.0	12.5	40.0	77.0	91.0	69.0	63.0	68.0	57.0	101.8	78.5	22.5	797.0	
CUARTIL INFERIOR	0.0	4.5	20.0	55.0	82.0	51.0	47.0	46.0	37.8	79.0	54.0	7.0	726.0	
VALOR MINIMO	0.0	0.0	0.0	18.0	34.0	39.5	37.5	15.0	10.5	30.0	23.0	0.0	568.0	
PROMEDIOS	12.3	15.9	39.0	93.8	114.5	75.5	63.9	66.4	58.8	101.3	83.0	30.0	769.7	
											TOTAL DE LOS PROMEDIOS MENSUALES =		754.6	
PORCENTAJES	1.6	2.1	5.2	12.4	15.2	10.0	8.5	8.8	7.8	13.4	11.0	4.0		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 75.

DEV. ESTANDAR	17.8	15.9	24.5	53.1	55.5	33.7	21.0	28.8	26.6	34.3	36.0	30.8	90.7
COEF. VARIACION	1.452	0.999	0.628	0.566	0.484	0.446	0.329	0.433	0.453	0.338	0.457	1.026	0.118
COEF. ASIMETRIA	1.511	1.576	0.571	0.867	0.980	1.599	1.669	-0.179	0.291	0.393	0.530	1.242	-0.651

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240312	PESCA	PESCA	+05 31 37	+073 04 58	2825 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	5.5	37.0	47.0	96.0	90.5	46.0	133.0	87.0	24.5	133.0	24.0	86.0	809.5	1960
1961	15.0	0.0	52.0	47.5	34.0	65.0	65.5	48.0	31.5	106.5	134.0	0.0	599.0	1961
1962	25.0	16.0	47.0	54.0	194.0	83.0	57.0	51.0	109.0	74.0	87.0	12.0	809.0	1962
1963	0.0	17.0	20.0	89.0	204.0	69.0	75.0	55.0	30.0	81.0	167.0	0.0	807.0	1963
1964	0.0	2.0	0.0	94.0	86.0	118.0	47.0	66.0	89.5	97.0	53.0	40.0	692.5	1964
1965	10.0	0.0	7.0	184.0	115.0	51.0	56.0	77.0	30.0	119.0	143.0	6.0	798.0	1965
1966	0.0	12.0	37.0	18.0	119.0	77.0	61.0	85.0	44.0	78.0	140.0	81.0	752.0	1966
1967	0.0	5.0	40.0	77.0	130.0	115.0	66.0	46.0	103.0	75.0	77.0	22.0	756.0	1967
1968	2.0	14.0	10.0	221.0	98.0	177.0	66.0	65.0	63.0	124.0	74.0	9.0	923.0	1968
1969	53.0	26.0	11.0	150.0	65.0	77.0	42.0	70.0	57.0	189.0	62.0	29.0	833.0	1969
1970	32.0	7.0	14.0	55.0	87.0	42.0	92.0	107.0	74.0	119.0	80.0	12.0	721.0	1970
1971	46.0	27.0	85.0	74.0	261.0	54.0	72.0	106.0	51.0	30.0	54.0	30.0	890.0	1971
1972	53.0	66.0	69.0	177.0	83.0	81.0	55.0	24.0	53.0	52.0	83.0	1.0	797.0	1972
1973	5.0	11.0	40.0	24.0	91.0	40.0	55.0	96.0	103.0	92.0	76.0	32.0	665.0	1973
1974	1.0	27.0	44.0	48.0	82.0	49.0	41.0	15.0	86.0	83.0	91.0	1.0	568.0	1974
1975	1.0	26.0	42.0	66.0	87.0	66.0	65.0	111.0	46.0	147.0	101.0	106.0	864.0	1975
1976	4.0	31.0	98.0	118.0	76.0	67.0	72.0	30.0	54.0	110.0	101.0	69.0	830.0	1976
1977	2.0	1.0	50.0	62.0	158.0	81.0	47.0	77.0	58.0	79.0	103.0	8.0	726.0	1977
1978	0.0	4.5	56.5	155.0	141.0	71.0	43.0	24.0	73.0	111.0	23.0	39.0	741.0	1978
1979	1.0	13.0	36.0	128.0	55.0	139.0	70.3	169.9	58.2	150.2	132.0	53.4	1006.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	53.0	66.0	98.0	221.0	261.0	177.0	133.0	169.9	109.0	189.0	167.0	106.0	1006.0	
CUARTIL SUPERIOR	20.0	27.0	51.0	139.0	135.5	82.0	71.1	91.5	80.0	121.5	117.5	46.7	831.5	
MEDIANA	3.0	13.5	41.0	83.0	90.8	70.0	63.0	68.0	57.5	101.8	85.0	25.5	797.5	
CUARTIL INFERIOR	0.5	4.8	17.0	54.5	82.5	52.5	51.0	47.0	45.0	78.5	68.0	7.0	723.5	
VALOR MINIMO	0.0	0.0	0.0	18.0	34.0	40.0	41.0	15.0	24.5	30.0	23.0	0.0	568.0	
PROMEDIOS	12.8	17.2	40.3	96.9	112.8	78.4	64.0	70.5	61.9	102.5	90.3	31.8	779.3	
PORCENTAJES	1.6	2.2	5.2	12.4	14.5	10.1	8.2	9.0	7.9	13.2	11.6	4.1		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 81.

INDICE DE IRREGULARIDAD INTERANUAL =1.41

DEV. ESTANDAR	18.5	16.1	25.5	56.3	55.4	34.8	20.7	37.1	25.6	36.5	38.7	32.0	104.4
COEF. VARIACION	1.451	0.937	0.634	0.581	0.491	0.444	0.324	0.526	0.414	0.356	0.429	1.004	0.134

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	951.	913.	867.	779.	691.	646.	608.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.437	1.487	0.461	0.694	1.269	1.507	2.023	0.791	0.433	0.352	0.157	1.015	-0.055

IMPRESO EN COLOMBIA POR LITOGRAFIA NARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350701	RAMIRIQUI	RAMIRIQUI	+05 24 00	+073 20 00	2500 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JJL	AGO	SEP	CCT	NCV	DIC	TCTAL
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	92.0	107.0	69.0	185.0	54.5	15.5	-9.9
1958	1.0	15.0	62.0	90.5	114.0	123.5	147.0	171.5	33.5	54.0	102.0	26.5	980.5
1959	3.0	22.5	36.5	95.1	106.8	93.3	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1960	0.4	14.5	47.9	72.1	-9.9	68.4	120.1	74.5	90.2	58.9	79.7	79.8	-9.9
1961	6.2	0.0	22.9	86.6	52.7	97.3	93.9	85.6	42.9	135.1	86.3	5.8	715.3
1962	-9.9	0.0	85.0	71.0	152.0	134.0	113.0	82.0	74.0	102.0	119.0	18.0	-9.9
1963	10.0	59.0	28.0	142.0	219.0	155.0	177.0	117.0	48.0	39.0	111.0	11.0	1116.0
1964	0.0	0.0	0.0	90.0	174.0	121.0	135.0	83.0	94.0	95.0	58.0	39.0	889.0
1965	11.0	23.0	18.0	148.0	286.0	151.0	167.0	153.0	91.0	171.0	151.0	43.0	1413.0
1966	7.0	5.0	73.0	54.0	99.0	116.0	141.0	147.0	108.0	53.0	174.0	75.0	1052.0
1967	63.0	1.0	79.0	157.0	184.0	181.0	177.0	211.0	119.0	109.0	160.0	45.0	1486.0
1968	12.0	32.0	16.0	267.0	125.0	158.0	234.0	157.0	153.0	138.0	151.0	27.0	1510.0
1969	115.0	36.0	14.0	191.0	179.0	163.0	249.0	193.0	104.0	-9.9	-9.9	-9.9	-9.9
1970	-9.9	-9.9	-9.9	-9.9	191.0	164.0	200.0	191.0	147.0	202.0	63.0	49.0	-9.9
1971	72.0	23.0	80.0	126.0	332.0	227.0	197.0	194.5	144.0	146.0	86.0	96.0	1723.5
1972	60.0	30.0	86.0	166.0	185.0	173.0	153.0	107.0	145.0	67.0	56.0	21.0	1249.0
1973	4.0	0.0	31.0	55.0	124.0	140.5	126.0	196.0	199.0	219.0	127.0	27.0	1248.5
1974	4.0	9.0	76.0	95.0	104.0	105.0	113.5	92.0	126.0	132.0	130.0	0.0	986.5
1975	11.0	60.0	49.0	68.0	79.0	143.0	126.0	146.0	93.0	161.0	167.0	148.0	1251.0
1976	33.0	15.0	86.0	194.0	254.0	281.0	241.0	148.0	119.0	153.0	91.0	90.0	1705.0
1977	0.0	5.0	32.0	178.5	154.5	107.5	140.0	131.0	105.0	74.0	103.0	18.0	1048.5
1978	7.0	15.0	58.0	211.0	137.0	160.0	85.0	121.0	32.0	48.0	49.0	40.0	957.0
1979	0.0	17.0	41.0	110.0	111.0	141.0	77.0	100.0	60.0	148.0	160.0	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANEFE

ESTACION X RAMIRIQUI MUNICIPIO DE RAMIRIQUI PERIODO 1957 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. -2. -1. 0.0 +1. +2. +3.
1	1978	957.0	957.0	957.0	-0.855	-0.208	
2	1977	1048.5	2005.5	1002.8	-0.543	-0.340	
3	1976	1705.0	3710.5	1236.8	1.691	0.071	
4	1975	1251.0	4961.5	1240.4	0.146	0.107	
5	1974	986.5	5948.0	1189.6	-0.754	-0.077	
6	1973	1248.5	7196.5	1199.4	0.137	-0.043	
7	1972	1249.0	8445.5	1206.5	0.135	-0.010	
8	1971	1723.5	10169.0	1271.1	1.754	0.417	
9	1968	1510.0	11679.0	1297.7	1.027	0.667	
10	1967	1486.0	13165.0	1316.5	0.546	0.897	
11	1966	1052.0	14217.0	1292.5	-0.532	0.767	
12	1965	1413.0	15630.0	1302.5	0.657	0.937	
13	1964	889.0	16519.0	1270.7	-1.066	0.673	
14	1963	1116.0	17635.0	1259.6	-0.314	0.596	
15	1961	715.3	18350.3	1223.4	-1.677	0.188	
16	1958	980.5	19330.8	1208.2	-0.775	0.0	

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 16 ANOS = 1208.2 *

DEVIACION ESTANDAR = 293.8

COEFICIENTE DE VARIACION = 0.243

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRESTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350701	RAMIRIQUI	RAMIRIQUI	+05 24 09	+073 20 12	2320 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1965	11.0	23.0	18.0	148.0	288.0	151.0	167.0	153.0	91.0	171.0	151.0	43.0	1413.0	1965
1966														1966
1967	63.0	1.0	79.0	157.0	184.0	181.0	177.0	211.0	119.0	109.0	160.0	45.0	1486.0	1967
1968	12.0	32.0	16.0	267.0	125.0	198.0	234.0	157.0	153.0	138.0	151.0	27.0	1510.0	1968
1969	116.0	36.0	14.0	191.0	179.0	183.0	249.0	193.0	104.0	-9.9	-9.9	-9.9	-9.9	1969
1970	-9.9	-9.9	-9.9	-9.9	191.0	164.0	200.0	191.0	147.0	202.0	63.0	49.0	-9.9	1970
1971	72.0	23.0	80.0	126.0	332.0	227.0	197.0	194.5	144.0	146.0	88.0	96.0	1723.5	1971
1972	60.0	30.0	86.0	166.0	165.0	173.0	153.0	107.0	145.0	67.0	56.0	21.0	1249.0	1972
1973	4.0	0.0	31.0	55.0	124.0	140.5	126.0	156.0	199.0	219.0	127.0	27.0	1248.5	1973
1974	4.0	9.0	76.0	95.0	104.0	105.0	113.5	92.0	126.0	132.0	130.0	0.0	986.5	1974
1975	11.0	60.0	49.0	68.0	79.0	143.0	126.0	146.0	93.0	161.0	167.0	148.0	1251.0	1975
1976	33.0	15.0	26.0	194.0	254.0	281.0	241.0	148.0	119.0	153.0	91.0	90.0	1705.0	1976
1977	0.0	5.0	32.0	178.5	154.5	107.5	140.0	131.0	105.0	74.0	103.0	18.0	1048.5	1977
1978	7.0	15.0	58.0	211.0	137.0	160.0	65.0	121.0	32.0	42.0	45.0	40.0	957.0	1978
1979	0.0	17.0	41.0	110.0	111.0	141.0	77.0	100.0	60.0	148.0	160.0	-9.9	-9.9	1979
NUMERO DE ANOS	13	13	13	13	14	14	14	14	14	13	13	12	11	
VALOR MAXIMO	116.0	60.0	86.0	267.0	332.0	281.0	249.0	211.0	199.0	219.0	167.0	148.0	1723.5	
CUARTIL SUPERIOR	61.5	31.0	79.5	192.5	191.0	183.0	200.0	193.0	145.0	166.0	155.5	69.5	******	
MEDIANA	11.0	17.0	49.0	157.0	166.8	162.0	160.0	150.5	119.0	146.0	127.0	41.5	1251.0	
CUARTIL INFERIOR	4.0	7.0	24.5	102.5	124.0	141.0	126.0	121.0	93.0	91.5	74.5	24.0	******	
VALOR MINIMO	0.0	0.0	14.0	55.0	79.0	105.0	77.0	92.0	32.0	42.0	45.0	0.0	957.0	
PROMEDIOS	30.2	20.5	51.2	151.3	174.7	168.2	163.3	152.9	116.9	135.5	114.9	50.3	1325.3	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1329.9	
PORCENTAJES	2.3	1.5	3.9	11.4	13.1	12.6	12.3	11.5	8.8	10.2	8.6	3.8		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 23. INDICE DE ARNOLDUS = 136.

DEV. ESTANDAR	36.2	18.5	27.8	59.9	72.8	46.1	55.9	39.4	41.7	51.5	42.6	41.5	267.3
COEF. VARIACION	1.200	0.898	0.543	0.396	0.417	0.274	0.342	0.258	0.356	0.380	0.371	0.824	0.202
COEF. ASIMETRIA	1.295	1.013	-0.017	0.088	0.923	1.033	0.095	-0.067	-0.202	-0.323	-0.314	1.339	0.113

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350701	RAMIRIQUI	RAMIRIQUI	+05 24 09	+073 20 12	2320 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	5.0	18.4	60.9	91.7	206.8	87.0	152.9	94.8	114.8	125.9	101.4	101.6	1161.2	1960
1961	8.3	0.0	31.0	117.3	71.3	131.7	127.1	115.9	58.1	182.9	116.8	7.8	968.2	1961
1962	46.1	0.0	122.4	102.2	218.9	193.0	162.7	118.1	106.6	146.9	171.4	25.9	1414.2	1962
1963	14.4	85.4	40.5	205.7	317.2	224.5	256.4	169.5	69.5	56.5	160.8	15.9	1616.3	1963
1964	0.0	0.0	0.0	129.2	249.9	173.7	193.8	119.2	135.0	136.4	83.3	56.0	1276.5	1964
1965	11.0	23.0	18.0	148.0	286.0	151.0	167.0	153.0	91.0	171.0	151.0	43.0	1413.0	1965
1966	9.0	0.4	94.7	70.1	128.5	150.6	183.0	190.8	140.2	68.8	225.9	97.3	1365.3	1966
1967	63.0	1.0	79.0	157.0	184.0	181.0	177.0	211.0	119.0	109.0	160.0	45.0	1486.0	1967
1968	12.0	32.0	16.0	267.0	125.0	198.0	234.0	157.0	153.0	138.0	151.0	27.0	1510.0	1968
1969	115.0	30.0	14.0	191.0	179.0	183.0	249.0	193.0	104.0	167.1	120.7	16.3	1568.1	1969
1970	32.5	70.7	23.1	82.7	191.0	164.0	200.0	191.0	147.0	202.0	63.0	49.0	1416.0	1970
1971	72.0	23.0	80.0	126.0	332.0	227.0	197.0	194.5	144.0	146.0	86.0	96.0	1723.5	1971
1972	60.0	30.0	86.0	166.0	185.0	173.0	153.0	107.0	145.0	67.0	56.0	21.0	1249.0	1972
1973	4.0	0.0	31.0	55.0	124.0	140.5	126.0	196.0	199.0	219.0	127.0	27.0	1248.5	1973
1974	4.0	9.0	76.0	95.0	104.0	105.0	113.5	92.0	126.0	132.0	130.0	0.0	986.5	1974
1975	11.0	60.0	49.0	68.0	79.0	143.0	126.0	146.0	93.0	161.0	167.0	148.0	1251.0	1975
1976	33.0	15.0	86.0	194.0	254.0	281.0	241.0	148.0	119.0	153.0	91.0	90.0	1705.0	1976
1977	0.0	5.0	32.0	178.5	154.5	107.5	140.0	131.0	105.0	74.0	103.0	18.0	1048.5	1977
1978	7.0	15.0	58.0	211.0	137.0	160.0	85.0	121.0	32.0	42.0	49.0	40.0	957.0	1978
1979	0.0	17.0	41.0	110.0	111.0	141.0	77.0	100.0	60.0	148.0	160.0	54.0	1019.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	115.0	85.4	122.4	267.0	332.0	281.0	256.4	211.0	199.0	219.0	225.9	148.0	1723.5	
CUARTIL SUPERIOR	39.5	31.0	79.5	184.8	234.4	188.0	198.5	190.9	142.1	164.0	160.0	73.0	1498.0	
MEDIANA	11.0	16.0	45.0	127.6	181.5	162.0	164.8	147.0	116.9	142.0	123.8	41.5	1320.9	
CUARTIL INFERIOR	4.5	3.0	27.0	93.3	124.5	140.8	126.5	117.0	92.0	91.5	88.5	19.5	1104.8	
VALOR MINIMO	0.0	0.0	0.0	55.0	71.3	87.0	77.0	92.0	32.0	42.0	49.0	0.0	957.0	
PROMEDIOS	25.4	22.3	51.9	138.3	181.9	165.8	168.1	147.4	113.1	132.3	123.7	48.9	1319.1	
PORCENTAJES	1.9	1.7	3.9	10.5	13.8	12.6	12.7	11.2	8.6	10.0	9.4	3.7		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 25. INDICE DE ARNOLDUS = 138.

INDICE DE IRREGULARIDAD INTERANUAL =1.62

DEV. ESTANDAR	31.0	24.5	32.7	56.9	76.0	45.7	52.1	38.7	39.0	49.1	45.4	38.7	243.4
COEF. VARIACION	1.221	1.097	0.629	0.412	0.418	0.275	0.310	0.262	0.345	0.371	0.367	0.791	0.185

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1720.	1631.	1524.	1319.	1114.	1007.	918.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.621	1.407	0.388	0.496	0.510	0.629	0.097	0.157	-0.116	-0.326	0.199	1.068	0.001

IMPRESO EN COLOMBIA POR DANAGRAFO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240151	EL ZARZAL	RAQUIRA	+05 28 00	+073 40 00	2900 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	141.4	275.4	183.7	-9.9
1967	49.0	120.5	106.5	158.0	153.6	88.6	36.6	24.1	40.5	200.1	195.5	93.7	1266.7
1968	50.0	75.8	119.6	229.8	82.0	103.4	21.1	14.9	73.2	140.6	189.0	15.4	1114.8
1969	65.3	91.0	66.7	285.8	95.8	99.4	15.5	10.6	55.4	145.8	123.6	59.1	1114.0
1970	82.5	143.6	15.5	106.2	124.3	33.1	55.1	22.6	83.3	262.5	161.1	118.6	1208.4
1971	156.5	77.1	222.2	226.7	148.3	30.2	28.2	43.8	132.6	119.3	175.2	95.9	1456.0
1972	94.2	77.4	131.5	239.5	111.6	53.3	29.6	63.5	24.9	67.7	200.9	40.5	1134.6
1973	3.3	21.2	158.9	127.8	91.5	65.7	65.1	99.7	159.5	154.7	207.4	135.9	1290.7
1974	74.6	109.4	248.2	153.4	133.7	38.3	15.0	29.5	81.2	120.6	170.9	72.7	1247.5
1975	7.6	153.8	140.2	111.8	55.2	63.4	64.0	50.2	85.5	213.5	103.4	195.0	1283.6
1976	36.1	87.8	128.9	152.4	106.6	53.4	17.2	16.3	92.2	303.2	202.0	69.1	1265.2
1977	4.7	6.4	61.2	208.2	46.6	45.6	33.3	38.1	118.1	101.6	266.2	120.6	1050.6
1978	3.2	91.0	113.6	216.2	96.6	24.5	39.9	42.0	80.1	136.3	89.8	108.5	1041.7
1979	25.7	57.1	147.5	190.6	145.6	82.4	68.2	120.8	61.4	246.4	295.2	84.1	1525.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA FUR DANARANJO

ESTACION X EL ZARZAL MUNICIPIO DE RAQUIRA PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1525.0	1525.0	1525.0	2.015	0.238				I +		•	
2	1978	1041.7	2566.7	1283.3	-1.311	0.083		•		+			
3	1977	1050.6	3617.3	1205.8	-1.250	-0.064		•		+			
4	1976	1285.2	4902.5	1225.6	0.365	-0.021				+ •			
5	1975	1283.6	6186.1	1237.2	0.394	0.020				+ •			
6	1974	1247.5	7433.6	1238.9	0.105	0.033				+•			
7	1973	1290.7	8724.3	1246.3	0.403	0.080				+ •			
8	1972	1134.6	9858.9	1232.4	-0.672	0.001			•	+			
9	1971	1456.0	11314.9	1257.2	1.540	0.183				I+	•		
10	1970	1208.4	12523.3	1252.3	-0.164	0.163				•I+			
11	1969	1114.0	13637.3	1239.8	-0.814	0.067			•	+			
12	1968	1114.8	14752.1	1229.3	-0.808	-0.028			•	+			
13	1967	1266.7	16018.8	1232.2	0.237	0.000				+ •			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 13 ANOS = 1232.2
DEVIACION ESTANDAR = 145.3
COEFICIENTE DE VARIACION = 0.118

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2401S1	EL ZARZAL	RAGUIRA	+05 27 55	+073 35 30	2900 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	141.4	275.4	183.7	-9.9	1966
1967	49.0	120.5	106.5	158.0	183.6	88.6	30.6	24.1	40.5	200.1	195.5	93.7	1266.7	1967
1968	50.0	75.8	119.6	229.8	82.0	103.4	21.1	14.9	73.2	140.6	169.0	15.4	1114.8	1968
1969	65.3	91.0	66.7	285.8	95.8	99.4	15.5	10.6	55.4	145.8	123.6	59.1	1114.0	1969
1970	82.5	143.6	15.5	106.2	124.3	33.1	55.1	22.6	83.3	262.5	161.1	118.6	1208.4	1970
1971	156.5	77.1	222.2	226.7	148.3	30.2	26.2	43.8	132.6	119.3	175.2	95.9	1456.0	1971
1972	94.2	77.4	131.5	239.5	111.6	53.3	29.6	63.5	24.9	67.7	200.9	40.5	1134.6	1972
1973	3.3	21.2	158.9	127.8	91.5	65.7	65.1	99.7	159.5	154.7	207.4	135.9	1290.7	1973
1974	74.6	109.4	248.2	153.4	133.7	38.3	15.0	29.5	61.2	120.6	170.9	72.7	1247.5	1974
1975	7.6	153.8	140.2	111.8	95.2	63.4	64.0	50.2	85.5	213.5	103.4	195.0	1283.6	1975
1976	36.1	87.8	128.9	152.4	106.6	53.4	17.2	16.3	92.2	303.2	202.0	89.1	1285.2	1976
1977	4.7	6.4	61.2	208.2	46.6	45.6	33.3	38.1	118.1	101.6	266.2	120.6	1050.6	1977
1978	3.2	91.0	113.6	216.2	56.6	24.5	39.9	42.0	80.1	136.3	65.8	108.5	1041.7	1978
1979	25.7	57.1	147.5	190.6	145.6	82.4	68.2	120.8	61.4	246.4	295.2	84.1	1525.0	1979
NUMERO DE ANOS	13	13	13	13	13	13	13	13	13	14	14	14	13	
VALOR MAXIMO	156.5	153.8	248.2	285.8	183.6	103.4	68.2	120.8	159.5	303.2	295.2	195.0	1525.0	
CUARTIL SUPERIOR	78.5	114.9	153.2	228.2	139.6	85.5	59.5	56.8	105.1	213.5	207.4	120.6	1287.9	
MEDIANA	49.0	87.8	128.9	190.6	106.6	53.4	33.3	38.1	81.2	143.6	192.3	94.8	1247.5	
CUARTIL INFERIOR	6.1	66.4	86.6	140.1	53.3	35.7	19.1	19.4	58.4	120.6	161.1	72.7	1114.4	
VALOR MENINO	3.2	6.4	15.5	106.2	46.6	24.5	15.0	10.6	24.9	67.7	65.8	15.4	1041.7	
PROMEDIOS	50.2	85.5	127.7	185.1	110.1	60.1	37.6	44.3	83.7	168.1	189.7	100.9	1232.2	
									TOTAL DE LOS PROMEDIOS MENSUALES =				1243.1	
PORCENTAJES	4.0	6.9	10.3	14.9	8.9	4.8	3.0	3.6	6.7	13.5	15.3	8.1		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 29. INDICE DE ARNOLDUS = 129.

DEV. ESTANDAR	44.9	42.2	62.2	54.8	30.5	26.5	19.5	33.2	36.7	67.2	60.8	49.4	145.3
COEF. VARIACION	0.894	0.493	0.487	0.296	0.277	0.441	0.518	0.750	0.438	0.400	0.321	0.489	0.116
COEF. ASIMETRIA	1.024	-0.285	0.279	0.135	-0.329	0.374	0.485	1.387	0.550	0.679	0.120	0.379	0.631

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2401 51	EL ZARZAL	RAQUIRA	+05 27 55	+073 39 30	2900 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	72.1	96.8	147.8	150.5	56.3	16.7	50.8	77.0	88.2	136.1	175.7	92.8	1160.8	1960
1961	77.3	12.5	94.1	126.9	39.9	73.9	33.7	27.7	49.1	266.5	249.8	42.6	1096.0	1961
1962	39.9	35.9	138.6	120.3	128.6	87.8	23.6	60.6	79.8	144.9	242.1	108.5	1216.6	1962
1963	45.6	128.1	196.8	173.9	130.8	36.8	40.2	20.9	53.7	125.3	176.5	60.5	1189.1	1963
1964	61.1	45.0	70.6	196.8	103.5	94.5	75.2	22.8	107.3	150.5	211.2	153.1	1291.6	1964
1965	38.3	54.0	65.3	305.6	146.4	15.8	16.7	20.0	49.2	167.3	230.8	97.1	1206.7	1965
1966	18.2	32.5	39.2	85.2	69.8	99.1	44.2	44.9	73.9	141.4	275.4	183.7	1107.5	1966
1967	49.0	120.5	106.5	158.0	153.6	88.6	36.6	24.1	40.5	200.1	195.5	93.7	1266.7	1967
1968	50.0	75.6	119.6	229.8	82.0	103.4	21.1	14.9	73.2	140.6	189.0	15.4	1114.8	1968
1969	65.3	91.0	66.7	285.8	95.8	99.4	15.5	10.6	55.4	145.8	123.6	59.1	1114.0	1969
1970	82.5	143.6	15.5	106.2	124.3	33.1	55.1	22.6	83.3	262.5	161.1	118.6	1208.4	1970
1971	156.5	77.1	222.2	226.7	148.3	30.2	28.2	43.8	132.6	119.3	175.2	95.9	1456.0	1971
1972	94.2	77.4	131.5	239.5	111.6	53.3	29.6	63.5	24.9	67.7	200.9	40.5	1134.6	1972
1973	3.3	21.2	158.9	127.8	91.5	65.7	65.1	99.7	159.5	154.7	207.4	135.9	1290.7	1973
1974	74.6	109.4	248.2	154.4	133.7	38.3	15.0	29.5	81.2	120.6	170.9	72.7	1247.5	1974
1975	7.6	153.8	140.2	111.8	95.2	63.4	64.0	50.2	85.5	213.5	103.4	195.0	1283.6	1975
1976	36.1	87.8	128.9	152.4	106.6	53.4	17.2	16.3	92.2	303.2	202.0	89.1	1285.2	1976
1977	4.7	6.4	61.2	208.2	46.6	45.6	33.3	38.1	118.1	101.6	266.2	120.6	1050.6	1977
1978	3.2	91.0	113.6	216.2	96.6	24.5	39.9	42.0	80.1	136.3	89.8	108.5	1041.7	1978
1979	25.7	57.1	147.8	190.6	145.6	82.4	68.2	120.8	61.4	246.4	295.2	84.1	1525.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	156.5	153.8	248.2	305.8	153.6	103.4	75.2	120.8	159.5	303.2	295.2	195.0	1525.0	
CUARTIL SUPERIOR	73.3	103.1	147.6	221.4	132.2	88.2	52.9	55.4	90.2	206.8	236.4	119.6	1284.4	
MEDIANA	47.3	77.2	124.2	165.9	105.0	58.4	35.1	33.8	79.9	145.3	198.2	94.8	1207.5	
CUARTIL INFERIOR	21.9	40.4	68.6	128.3	86.8	34.9	22.3	21.7	54.5	130.7	173.0	66.6	1114.4	
VALOR MINIMO	3.2	6.4	15.5	85.2	39.9	15.8	15.0	10.6	24.9	67.7	89.8	15.4	1041.7	
PROMEDIOS	50.3	75.8	120.6	178.7	105.3	60.3	38.7	42.5	79.5	167.2	197.1	98.4	1214.4	
PORCENTAJES	4.1	6.2	9.9	14.7	8.7	5.0	3.2	3.5	6.5	13.8	16.2	8.1		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 32. INDICE DE ARNOLDUS = 128.

INDICE DE IRREGULARIDAD INTERANUAL =1.30

DEV. ESTANDAR	37.6	42.7	59.3	59.8	34.2	29.5	19.0	29.4	32.3	61.6	54.3	45.6	124.0
COEF. VARIACION	0.748	0.563	0.492	0.334	0.325	0.489	0.490	0.691	0.406	0.368	0.275	0.463	0.102

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1419.	1373.	1319.	1214.	1110.	1055.	1010.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.029	0.096	0.361	0.514	-0.405	0.009	0.503	1.392	0.751	0.830	-0.188	0.425	0.947

IMPRESO EN COLOMBIA POR CAMARAZO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240126	LA CANDELARIA	RAQUIRA	+05 31 00	+073 36 00	2320 METROS

ANO	ENE	FEB	MAR	APR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	-9.9	87.1	163.0	71.7	4.8	41.0	15.7	4.8	154.4	55.3	128.6	-9.9
1961	105.8	17.8	92.9	118.5	30.3	43.0	3.1	5.0	19.8	130.9	164.6	8.1	739.8
1962	59.6	91.2	91.2	127.9	80.9	49.5	5.3	27.5	18.5	53.2	121.9	61.2	787.9
1963	31.3	59.1	105.7	130.2	165.9	46.5	15.7	5.7	-9.9	60.8	91.9	6.8	-9.9
1964	13.4	43.0	52.9	203.1	143.5	52.8	29.6	15.3	8.2	104.5	118.4	44.2	828.9
1965	30.8	36.5	10.7	255.2	143.2	4.8	6.0	18.7	5.5	154.1	213.7	80.5	959.7
1966	-9.9	11.6	60.0	71.1	138.2	48.9	9.2	1.8	-9.9	-9.9	161.9	66.0	-9.9
1967	68.1	26.9	79.5	53.1	43.7	49.5	18.1	6.1	29.1	79.9	148.5	70.0	674.5
1968	13.0	36.0	57.9	250.6	53.0	105.6	3.8	9.2	82.8	114.3	166.1	8.2	900.5
1969	54.2	71.9	29.3	245.2	101.2	75.8	3.7	32.6	73.5	191.4	81.2	26.6	986.6
1970	11.9	85.8	31.9	92.7	103.0	22.7	66.7	24.8	91.9	148.4	99.9	47.9	827.6
1971	-9.9	84.3	166.0	118.3	166.9	0.5	18.3	25.5	45.5	153.0	174.3	55.9	-9.9
1972	108.3	23.2	63.7	253.7	14.4	27.6	9.4	36.8	16.2	63.2	45.8	8.6	670.9
1973	10.1	6.5	79.8	93.9	81.2	47.2	98.8	27.3	145.1	154.5	206.8	115.3	1066.5
1974	27.9	146.6	125.1	138.8	74.7	43.5	10.1	12.0	91.6	183.9	197.5	51.0	1102.7
1975	2.5	143.3	98.4	106.8	41.0	36.1	42.9	64.7	59.0	135.1	81.8	83.4	895.0
1976	10.7	96.3	177.1	90.2	82.4	21.5	1.0	2.6	68.2	106.2	133.4	40.7	830.3
1977	7.0	5.5	119.5	109.3	34.0	21.6	16.9	19.3	46.8	100.3	138.6	34.8	653.6
1978	0.0	47.4	101.3	186.2	68.4	15.7	19.3	-9.9	59.9	132.5	-9.9	63.8	-9.9
1979	29.8	29.0	197.7	94.9	80.1	21.3	4.4	44.6	25.9	125.3	103.1	40.0	796.1

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAPAPEL

ESTACION 4 LA CANDELARIA MUNICIPIO DE RAQUIRA PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	796.1	796.1	796.1	-0.376	-0.061	I	I	I	I	I	I	I
2	1977	653.6	1449.7	724.8	-1.406	-0.291							
3	1978	830.3	2280.0	760.0	-0.128	-0.311							
4	1975	895.0	3175.0	793.7	0.340	-0.256							
5	1974	1102.7	4277.7	855.5	1.842	0.044							
6	1973	1066.5	5344.2	890.7	1.580	0.302							
7	1972	670.9	6015.1	859.3	-1.281	0.093							
8	1970	827.6	6842.7	855.3	-0.148	0.069							
9	1969	986.6	7829.3	869.9	1.002	0.232							
10	1968	900.5	8729.8	873.0	0.379	0.294							
11	1967	674.5	9404.3	854.9	-1.255	0.089							
12	1965	959.7	10364.0	863.7	0.808	0.221							
13	1964	828.9	11192.9	861.0	-0.138	0.199							
14	1962	787.9	11980.8	855.8	-0.435	0.128							
15	1961	739.8	12720.6	848.0	-0.784	0.0							

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I

PROMEDIO DE LOS 15 ANOS = 848.0

DEVIACION ESTANDAR = 138.3

COEFICIENTE DE VARIACION = 0.163

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240120	LA CANDELARIA	RAQUIRA	+05 31 18	+073 36 29	2300 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	-9.9	87.1	163.0	71.7	4.8	41.0	15.7	4.8	154.4	55.3	128.6	-9.9	1960
1961	105.8	17.8	92.9	118.5	30.3	43.0	3.1	5.0	19.8	130.9	164.6	8.1	739.8	1961
1962	59.6	51.2	91.2	127.9	80.9	49.5	5.3	27.5	18.5	53.2	121.9	61.2	787.9	1962
1963	31.3	59.1	105.7	130.2	165.9	46.5	15.7	5.7	-9.9	60.8	91.9	6.8	-9.9	1963
1964	13.4	43.0	52.9	203.1	143.5	52.8	29.6	15.3	8.2	104.5	118.4	44.2	828.9	1964
1965	30.8	36.5	10.7	255.2	143.2	4.8	6.0	16.7	5.5	154.1	213.7	60.5	959.7	1965
1966	-9.9	11.8	66.0	71.1	132.2	48.9	9.2	1.8	-9.9	-9.9	161.9	86.0	-9.9	1966
1967	68.1	26.5	79.5	53.1	43.7	49.5	18.1	6.1	29.1	79.9	146.5	70.0	674.5	1967
1968	13.0	36.0	57.9	250.6	53.0	105.6	3.8	9.2	62.8	114.3	166.1	8.2	900.5	1968
1969	54.2	71.9	29.3	245.2	101.2	75.8	3.7	32.6	73.5	191.4	81.2	26.6	986.6	1969
1970	11.9	65.8	31.9	92.7	103.0	22.7	66.7	24.8	91.9	148.4	55.9	47.9	827.6	1970
1971	-9.9	84.3	166.0	118.3	166.9	0.5	18.3	25.5	45.5	153.0	174.3	55.9	-9.9	1971
1972	108.3	23.2	63.7	253.7	14.4	27.6	9.4	36.8	16.2	63.2	45.8	8.6	670.9	1972
1973	10.1	6.5	79.8	93.9	81.2	47.2	98.8	27.3	145.1	154.5	206.8	115.3	1066.5	1973
1974	27.9	140.6	125.1	138.8	74.7	43.5	10.1	12.0	91.6	183.9	197.5	51.0	1102.7	1974
1975	2.5	143.3	98.4	106.8	41.0	36.1	42.9	64.7	59.0	135.1	81.8	83.4	895.0	1975
1976	10.7	96.3	177.1	90.2	82.4	21.5	1.0	2.6	68.2	106.2	133.4	40.7	830.3	1976
1977	7.0	5.5	119.5	109.3	34.0	21.6	16.9	19.3	46.8	100.3	136.6	34.8	653.6	1977
1978	0.0	47.4	101.3	186.2	68.4	15.7	19.3	-9.9	59.9	132.5	-9.9	63.8	-9.9	1978
1979	29.6	29.0	197.7	94.9	80.1	21.3	4.4	44.6	25.9	125.3	103.1	40.0	796.1	1979
NUMERO DE ANOS	17	19	20	20	20	20	20	19	18	19	19	20	19	
VALOR MAXIMO	108.3	146.6	197.7	255.2	166.9	105.6	98.8	64.7	145.1	191.4	213.7	128.6	1102.7	
CUARTIL SUPERIOR	56.9	65.8	112.6	194.6	120.6	49.2	24.4	27.5	73.5	154.1	166.1	81.9	959.7	
MEDIANA	27.9	43.0	89.1	123.2	81.0	39.5	12.9	18.7	46.1	130.9	133.4	49.4	828.9	
CUARTIL INFERIOR	10.4	23.2	60.8	94.4	48.3	21.4	4.8	6.1	18.5	100.3	91.9	30.7	739.8	
VALOR MINIMO	0.0	5.5	10.7	53.1	14.4	0.5	1.0	1.8	4.8	53.2	45.8	6.8	653.6	
PROMEDIOS	34.4	58.0	91.7	145.1	86.9	36.9	21.2	20.8	49.6	123.5	131.8	55.1	848.0	
												TOTAL DE LOS PROMEDIOS MENSUALES =	852.9	
PORCENTAJES	4.0	6.8	10.7	17.0	10.2	4.3	2.5	2.4	5.8	14.5	15.5	6.5		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 25. INDICE DE ARNOLDUS = 56.

DEV. ESTANDAR	33.8	42.6	48.5	64.9	45.3	25.2	24.7	16.1	38.0	39.8	49.4	35.7	138.3
COEF. VARIACION	0.984	0.760	0.529	0.447	0.521	0.682	1.168	0.775	0.766	0.323	0.375	0.648	0.163
COEF. ASIMETRIA	1.241	0.873	0.595	0.674	0.362	0.932	2.087	1.165	0.866	-0.249	-0.013	0.383	0.356

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240126	LA CANDELARIA	RAQUIRA	+05 31 18	+073 36 29	2300 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	58.4	90.1	87.1	163.0	71.7	4.8	41.0	15.7	4.8	154.4	55.3	128.6	874.9	1960
1961	105.8	17.8	92.9	118.5	30.3	43.0	3.1	5.0	19.8	130.9	164.6	8.1	739.8	1961
1962	59.6	91.2	91.2	127.9	80.9	49.5	5.3	27.5	18.5	53.2	121.9	61.2	787.9	1962
1963	31.3	59.1	105.7	130.2	165.9	46.5	15.7	5.7	117.3	60.8	91.9	6.8	836.9	1963
1964	13.4	43.0	52.9	203.1	143.5	52.8	29.6	15.3	8.2	104.5	118.4	44.2	828.9	1964
1965	30.8	36.5	10.7	255.2	143.2	4.8	6.0	18.7	5.5	154.1	213.7	80.5	959.7	1965
1966	3.5	11.6	66.0	71.1	138.2	48.9	9.2	1.8	65.1	171.7	161.9	86.0	835.0	1966
1967	68.1	28.9	79.5	53.1	43.7	49.5	18.1	6.1	29.1	79.9	146.5	70.0	674.5	1967
1968	13.0	36.0	57.9	250.6	53.0	105.6	3.8	9.2	62.8	114.3	166.1	8.2	900.5	1968
1969	54.2	71.9	29.3	245.2	101.2	75.8	3.7	32.6	73.5	191.4	81.2	26.6	986.6	1969
1970	11.9	85.8	31.9	92.7	103.0	22.7	66.7	24.8	91.9	148.4	99.9	47.9	827.6	1970
1971	40.6	84.3	106.0	118.3	166.9	0.5	18.3	25.5	45.5	153.0	174.3	95.9	1089.1	1971
1972	108.3	23.2	63.7	253.7	14.4	27.6	9.4	36.8	16.2	63.2	45.8	8.6	670.9	1972
1973	10.1	6.5	79.8	93.9	81.2	47.2	98.8	27.3	145.1	154.5	206.8	115.3	1066.5	1973
1974	27.9	146.6	125.1	138.8	74.7	43.5	10.1	12.0	91.6	183.9	197.5	51.0	1102.7	1974
1975	2.5	143.3	98.4	100.8	41.0	36.1	42.9	64.7	59.0	135.1	81.8	83.4	895.0	1975
1976	10.7	90.3	177.1	90.2	82.4	21.5	1.0	2.6	68.2	106.2	133.4	40.7	830.3	1976
1977	7.0	5.5	119.5	109.3	34.0	21.6	16.9	19.3	46.8	100.3	138.6	34.8	653.6	1977
1978	0.0	47.4	101.3	180.2	88.4	15.7	19.3	13.2	59.9	132.5	94.2	63.8	821.9	1978
1979	29.8	29.0	197.7	94.9	80.1	21.3	4.4	44.6	25.9	125.3	103.1	40.0	796.1	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	108.3	146.6	197.7	255.2	166.9	105.6	98.8	64.7	145.1	191.4	213.7	128.6	1102.7	
CUARTIL SUPERIOR	56.3	87.9	112.6	194.6	120.6	49.2	24.4	27.4	78.1	154.2	165.3	81.9	930.1	
MEDIANA	28.8	45.2	89.1	123.2	81.0	39.5	12.9	17.2	52.9	131.7	127.6	49.4	832.6	
CUARTIL INFERIOR	10.4	26.0	60.8	94.4	48.3	21.4	4.8	7.6	19.1	102.4	93.0	30.7	792.0	
VALOR MINIMO	0.0	5.5	10.7	53.1	14.4	0.5	1.0	1.8	4.8	53.2	45.8	6.8	653.6	
PROMEDIOS	34.3	57.7	91.7	145.1	86.9	36.9	21.2	20.4	53.7	125.9	129.9	55.1	858.9	
PORCENTAJES	4.0	6.7	10.7	16.9	10.1	4.3	2.5	2.4	6.3	14.7	15.1	6.4		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 25. INDICE DE ARNOLDUS = 96.

INDICE DE IRREGULARIDAD INTERANUAL =1.49

DEV. ESTANDAR	32.4	42.1	48.5	64.9	45.3	25.2	24.7	15.8	39.1	40.2	48.8	35.7	130.8
COEF. VARIACION	0.942	0.730	0.529	0.447	0.521	0.682	1.168	0.773	0.727	0.320	0.376	0.648	0.152

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1074.	1027.	969.	859.	749.	691.	644.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.149	0.744	0.595	0.674	0.362	0.932	2.087	1.243	0.656	-0.327	0.089	0.383	0.385

IMPRENTA POR DANERANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240118	RAQUIRA	RAQUIRA	+05 32 00	+073 38 00	2200 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TOTAL
1958	-9.9	50.0	57.0	190.0	36.0	90.0	20.0	57.0	16.0	181.0	178.0	142.0	-9.9
1959	30.0	46.0	123.0	71.0	129.0	56.0	11.0	16.0	11.0	276.0	114.0	65.0	969.0
1960	90.0	14.0	114.0	194.0	85.0	9.0	60.0	0.0	35.0	328.0	146.0	174.0	1249.0
1961	97.0	20.0	158.0	134.0	15.0	43.0	10.0	0.0	41.0	270.0	252.0	20.0	1060.0
1962	112.0	61.0	206.0	130.0	159.0	56.0	5.0	22.0	10.0	56.0	160.0	56.0	1073.0
1963	65.0	125.0	167.0	145.0	208.0	38.0	0.0	0.0	0.0	102.0	196.0	10.0	1056.0
1964	20.0	53.0	60.0	213.0	136.0	50.0	55.0	20.0	19.0	108.0	139.0	41.0	954.0
1965	35.0	84.0	15.0	287.0	123.0	10.0	20.0	20.0	0.0	303.0	296.0	173.0	1366.0
1966	0.0	15.0	114.0	298.0	195.0	55.0	0.0	25.0	67.0	283.0	227.0	188.0	1511.0
1967	77.0	77.0	232.0	177.0	143.0	70.0	20.0	0.0	30.0	105.0	189.0	170.0	1290.0
1968	40.0	89.0	43.0	356.0	105.0	305.0	0.0	10.0	74.0	232.0	227.0	0.0	1485.0
1969	52.0	107.0	36.0	266.0	117.0	75.0	0.0	10.0	118.0	373.0	172.0	55.0	1385.0
1970	0.0	39.0	20.0	111.0	140.0	32.0	96.0	27.0	143.0	239.0	216.0	100.0	1163.0
1971	179.0	97.0	210.0	257.0	234.0	22.0	83.0	20.0	93.0	127.0	214.0	83.0	1629.0
1972	93.0	38.0	116.0	339.0	63.0	37.0	0.0	55.0	18.0	74.0	92.0	56.0	981.0
1973	10.0	0.0	57.0	153.0	64.0	53.0	96.0	29.0	220.0	122.0	302.0	140.0	1246.0
1974	3.0	185.0	254.0	150.9	101.0	23.0	27.0	25.0	116.0	253.0	215.0	63.0	1415.9
1975	0.0	150.0	93.0	109.0	103.0	43.0	62.0	55.0	55.0	275.0	126.0	173.0	1248.0
1976	10.0	102.0	298.0	155.0	99.0	32.0	0.0	7.0	95.0	233.0	110.0	58.0	1199.0
1977	28.0	0.0	170.0	157.0	59.0	63.0	16.0	23.0	78.0	115.0	174.0	30.0	917.0
1978	5.0	65.0	158.0	369.0	140.0	46.0	38.0	18.0	85.0	135.0	52.0	77.0	1188.0
1979	78.0	37.0	221.0	223.0	158.0	136.0	55.0	185.0	42.0	365.0	256.0	97.0	1857.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X RAQUIRA MUNICIPIO DE RAQUIRA PERIODO COEF DE CORRECCION

1961 - 1979 1.000

ESTACION Y SUTAMARCHAN MUNICIPIO DE SUTAMARCHAN PERIODO COEF DE CORRECCION

1961 - 1979 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	1857.	1184.	1.017	0.025					+				
2	1978	3045.	1875.	1.115	0.122					I+	.			
3	1977	3962.	2500.	0.943	0.078				.	+				
4	1976	5161.	3351.	0.921	-0.003				.	+				
5	1975	6409.	4238.	0.913	-0.098				.	+				
6	1974	7925.	5204.	0.951	-0.156				.	+I				
7	1973	9071.	5989.	1.030	-0.127					+I .				
8	1972	10052.	6748.	0.838	-0.277				.	+I				
9	1971	11681.	7692.	1.119	-0.139					+I	.			
10	1970	12844.	8403.	1.061	-0.086					+	.			
11	1969	14229.	9195.	1.135	0.044					+	.			
12	1968	15714.	10047.	1.130	0.179					I+	.			
13	1967	17004.	10769.	1.159	0.319					I +	.			
14	1966	18515.	11494.	1.352	0.630					I +				.
15	1965	19881.	12244.	1.182	0.796					I +	.			
16	1964	20835.	13080.	0.740	0.532			.		I +				
17	1963	21891.	14085.	0.682	0.142		.			I+				
18	1962	22964.	14886.	0.870	0.014				.	+				
19	1961	24024.	15585.	0.983	0.0					.+				
N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 1264.4 820.3

RAZONES PROMEDIOS Y/X = 0.649

X/Y = 1.541

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240118	RAGUIRA	RAGUIRA	+05 32 25	+073 37 50	2230 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1970	0.0	39.0	20.0	111.0	140.0	32.0	96.0	27.0	143.0	239.0	216.0	100.0	1163.0	1970
1971	179.0	97.0	210.0	257.0	234.0	32.0	83.0	20.0	93.0	127.0	214.0	83.0	1629.0	1971
1972	93.0	36.0	116.0	339.0	63.0	37.0	0.0	55.0	18.0	74.0	92.0	56.0	981.0	1972
1973	10.0	0.0	57.0	153.0	64.0	53.0	96.0	25.0	220.0	122.0	302.0	140.0	1246.0	1973
1974	3.0	185.0	254.0	150.9	101.0	23.0	27.0	25.0	116.0	253.0	215.0	63.0	1415.9	1974
1975	0.0	150.0	93.0	109.0	103.0	43.0	62.0	55.0	55.0	279.0	126.0	173.0	1248.0	1975
1976	10.0	102.0	298.0	155.0	99.0	32.0	0.0	7.0	95.0	233.0	110.0	58.0	1199.0	1976
1977	28.0	0.0	170.0	157.0	89.0	63.0	16.0	23.0	78.0	119.0	174.0	20.0	917.0	1977
1978	5.0	65.0	158.0	369.0	140.0	46.0	38.0	18.0	85.0	135.0	52.0	77.0	1188.0	1978
1979	78.0	37.0	221.0	223.0	158.0	136.0	55.0	185.0	42.0	369.0	256.0	97.0	1857.0	1979
NUMERO DE ANOS	10	10	10	10	10	10	10	10	10	10	10	10	10	
VALOR MAXIMO	179.0	185.0	298.0	369.0	234.0	136.0	96.0	185.0	220.0	369.0	302.0	173.0	1857.0	
MEDIANA	10.0	52.0	164.0	156.0	102.0	40.0	46.5	26.0	89.0	184.0	194.0	80.0	1222.5	
VALOR MINIMO	0.0	0.0	20.0	109.0	89.0	23.0	0.0	7.0	18.0	74.0	52.0	30.0	917.0	
PROMEDIOS	40.6	71.3	159.7	202.4	116.1	49.7	47.3	44.4	94.5	195.0	175.7	87.7	1284.4	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1284.4	
PORCENTAJES	3.2	5.6	12.4	15.8	9.0	3.9	3.7	3.5	7.4	15.2	13.7	6.8		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 32. INDICE DE ARNOLDUS = 139.

DEV. ESTANDAR	59.0	61.7	88.7	92.1	54.0	32.5	36.9	51.7	56.9	93.1	79.0	42.4	283.8
COEF. VARIACION	1.453	0.865	0.556	0.455	0.465	0.654	0.780	1.164	0.602	0.478	0.449	0.484	0.221
COEF. ASIMETRIA	1.730	0.690	-0.069	0.945	1.102	2.455	0.079	2.684	1.089	0.527	-0.048	0.908	0.911

*PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
241520	ALTO SABOYA	SABOYA	+05 43 00	+073 49 00	3366 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	22.5	3.7	95.4	139.5	208.1	159.5	89.2	59.8	71.8	247.8	147.3	79.8	1324.4
1967	45.1	102.8	68.8	-9.9	-9.9	-9.9	-9.9	-9.9	87.4	195.9	100.0	-9.9	-9.9
1968	32.3	50.5	63.8	313.0	127.5	122.4	-9.9	-9.9	157.6	155.1	105.1	21.5	-9.9
1969	76.3	64.6	124.1	233.7	112.0	107.6	28.5	49.0	154.8	147.3	124.6	76.1	1298.6
1970	15.6	-9.9	-9.9	-9.9	-9.9	-9.9	84.6	83.6	129.7	204.8	188.9	143.3	-9.9
1971	237.9	95.6	310.8	245.8	268.3	105.4	45.4	121.6	158.8	241.3	126.2	103.9	2061.0
1972	85.4	37.5	174.5	323.6	296.9	98.7	60.0	145.2	69.0	111.0	185.2	123.3	1710.3
1973	24.4	8.6	105.2	246.9	157.6	184.7	213.0	133.9	198.6	155.9	543.1	236.0	2207.9
1974	75.9	86.7	156.2	265.5	146.2	142.6	51.5	75.9	178.2	387.0	240.3	31.8	1837.8
1975	32.4	119.0	102.8	97.8	54.0	77.3	209.1	51.2	178.4	281.2	286.4	167.5	1657.1
1976	39.0	94.0	244.5	229.0	132.0	66.2	3.0	19.0	95.0	208.5	227.5	84.0	1441.7
1977	10.0	21.0	86.7	145.0	128.0	234.0	116.0	80.0	207.0	154.0	260.5	42.0	1484.2
1978	14.0	39.0	141.0	141.2	176.0	128.0	117.0	43.0	53.0	187.0	79.0	76.0	1194.2
1979	25.0	74.0	172.0	236.0	143.0	115.0	34.0	162.0	109.0	192.0	181.0	74.0	1517.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANANE

ESTACION X ESCLUSA MANCHAN MUNICIPIO DE SAECYA PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

ESTACION Y ALTI SAECYA MUNICIPIO DE SAECYA PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AÑ	CLI	COY	RAN	FCAN	F = -4. I F = C.6	-3. I C.7	-2. I 0.8	-1. I 0.9	0.C I 1.C	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1975	1565.	1517.	1.307	C.765					I +			•	
2	1976	2705.	2711.	1.203	C.835					I +		•		
3	1977	3661.	4165.	C.631	C.764				•	I +				
4	1978	4767.	5067.	0.953	C.842				•	I +				
5	1975	6166.	7264.	1.023	C.765					I +				
6	1974	7564.	9132.	1.002	C.787					• +				
7	1973	9166.	11340.	C.827	C.C3C				•	+				
8	1972	10166.	13090.	C.872	-C.106				•	+I				
9	1971	11617.	15111.	C.595	-C.1C7					+•				
10	1969	12526.	16410.	1.074	-C.C47					+ •				
11	1966	14026.	17734.	1.05E	C.CCC					+ •				

N	AÑ	CLI	COY	RAN	FCAN	F = -4. I F = C.6	-3. I C.7	-2. I 0.8	-1. I 0.9	0.C I 1.C	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 1275.3 1612.2

RAZONES PROMEDIOS Y/X = 1.264

X/Y = C.791

****
* PRUEBAS DE FCELE MASA *
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PROYECTO IGAC-CASTOR *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CASTOR

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
241520	ALTO SABOYA	SAEGYA	+05 42 00	+073 45 00	3366 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	22.5	3.7	95.4	139.5	208.1	159.5	89.2	59.8	71.8	247.6	147.3	79.8	1324.4	1966
1967	45.1	102.8	68.8	-9.9	-9.9	-9.9	-9.9	-9.9	87.4	195.9	100.0	-9.9	-9.9	1967
1968	32.3	50.5	63.8	313.0	127.5	122.4	-9.9	-9.9	157.6	155.1	105.1	21.5	-9.9	1968
1969	76.3	64.0	124.1	233.7	112.0	107.6	28.5	49.0	154.8	147.3	124.6	76.1	1298.6	1969
1970	15.0	-9.9	-9.9	-9.9	-9.9	-9.9	84.6	83.6	129.7	204.8	188.9	143.3	-9.9	1970
1971	237.9	95.0	310.8	245.8	268.3	105.4	48.4	121.6	158.8	241.3	126.2	103.9	2061.0	1971
1972	89.4	37.5	174.5	323.6	296.9	98.7	60.0	145.2	69.0	111.0	185.2	123.3	1710.3	1972
1973	24.4	8.0	105.2	240.9	197.6	184.7	213.0	133.9	198.6	155.9	543.1	236.0	2207.9	1973
1974	75.9	80.7	150.2	265.5	146.2	142.6	51.5	75.9	178.2	387.0	240.3	31.8	1837.8	1974
1975	32.4	119.0	102.8	97.8	84.0	77.3	209.1	51.2	178.4	281.2	286.4	167.5	1657.1	1975
1976	39.0	94.0	244.5	229.0	132.0	66.2	3.0	19.0	95.0	208.5	227.5	84.0	1441.7	1976
1977	10.0	21.0	86.7	145.0	128.0	234.0	116.0	80.0	207.0	154.0	260.5	42.0	1484.2	1977
1978	14.0	39.0	141.0	141.2	176.0	128.0	117.0	43.0	53.0	187.0	79.0	76.0	1194.2	1978
1979	25.0	74.0	172.0	236.0	143.0	115.0	34.0	162.0	109.0	192.0	181.0	74.0	1517.0	1979
NUMERO DE ANOS	14	13	13	12	12	12	12	12	14	14	14	13	11	
VALOR MAXIMO	237.9	119.0	310.8	323.6	296.9	234.0	213.0	162.0	207.0	387.0	543.1	236.0	2207.9	
CUARTIL SUPERIOR	75.9	94.8	173.3	250.2	192.0	151.0	116.5	127.7	178.2	241.3	240.3	133.3	******	
MEDIANA	32.3	64.0	124.1	234.8	144.6	118.7	72.3	77.9	142.2	193.9	183.1	79.8	1517.0	
CUARTIL INFERIOR	22.5	29.3	91.0	143.1	127.8	102.0	39.7	50.1	87.4	155.1	124.6	58.0	******	
VALOR MINIMO	10.0	3.7	63.8	97.8	84.0	66.2	3.0	19.0	53.0	111.0	79.0	21.5	1194.2	
PROMEDIOS	52.6	61.3	142.0	218.1	162.5	128.4	87.6	85.3	132.0	204.9	199.6	96.9	1612.2	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1571.3	
PORCENTAJES	3.3	3.9	9.0	13.9	10.3	8.2	5.6	5.4	8.4	13.0	12.7	6.2		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 30. INDICE DE ARNOLDUS = 153.

DEV. ESTANDAR	58.6	37.7	71.3	71.7	67.3	46.7	67.1	45.3	51.1	69.2	117.5	59.2	320.8
COEF. VARIACION	1.110	0.614	0.502	0.329	0.414	0.364	0.766	0.531	0.387	0.338	0.589	0.611	0.199
COEF. ASIMETRIA	2.738	-0.132	1.274	-0.260	0.781	1.027	0.976	0.414	-0.102	1.407	2.042	1.074	0.661

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240143	ESCLUSA MERCHAN	SABOYA	+05 42 00	+073 46 00	2550 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	17.0	9.0	97.0	73.0	139.0	102.0	74.0	55.0	141.0	191.0	154.0	56.0	1108.0
1967	26.6	93.2	57.7	212.1	85.5	-9.9	30.0	41.8	40.7	103.8	115.6	78.1	-9.9
1968	32.5	64.8	51.3	223.4	150.7	133.4	20.7	28.5	144.5	211.3	106.1	21.3	1188.5
1969	30.5	59.6	72.5	208.2	80.1	87.9	14.5	18.9	133.7	151.7	183.2	52.6	1103.4
1970	30.9	12.2	53.4	185.6	158.5	64.5	41.7	64.1	90.2	134.0	139.6	108.9	1083.6
1971	124.1	87.8	247.5	176.8	226.8	87.6	17.1	68.6	130.8	213.3	114.8	133.5	1628.7
1972	73.6	46.1	151.3	266.1	129.2	73.1	51.4	117.9	39.3	99.0	49.9	83.2	1180.1
1973	15.5	9.0	115.3	135.5	57.7	114.0	118.4	86.9	180.8	155.1	320.4	135.1	1443.7
1974	44.9	99.4	136.9	190.8	134.6	96.3	45.4	28.9	151.9	261.5	234.7	31.2	1456.5
1975	23.5	100.8	101.8	94.5	150.4	64.9	149.6	95.7	98.3	212.0	159.1	85.8	1340.4
1976	34.4	118.2	170.0	104.2	110.4	41.8	4.2	41.6	81.7	201.2	99.1	60.0	1066.8
1977	11.3	19.7	82.2	61.1	73.6	90.7	57.3	46.5	167.5	220.2	106.7	28.9	975.7
1978	6.0	53.2	201.6	176.7	121.4	62.5	66.9	46.9	43.9	116.9	116.5	123.7	1136.2
1979	48.5	111.8	159.5	208.1	176.0	131.8	61.2	116.7	102.0	252.4	157.5	43.3	1568.8

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X ESCLUSA MERCHAN MUNICIPIO DE SAECYA PERIODO COEF DE CORRECCION

1966 - 1979 1.000

ESTACION Y ESCLUSA TOLEN MUNICIPIO DE CHICLANCUIRA PERIODO COEF DE CORRECCION

1966 - 1979 1.000

N	AN	CLX	CUY	RAN	FCAN	F = -4. I	-3. I	-2. I	-1. I	0.C I	+1. I	+2. I	+3. I	+4. I
						F : C.6	C.7	0.8	0.9	1.C	1.1	1.2	1.3	1.4
1	1975	1565.	1194.	1.176	C.165					I+				
2	1976	2705.	2165.	1.048	C.231					I +				
3	1977	3661.	3124.	C.912	C.166					I+				
4	1978	4767.	4101.	C.997	C.153					+I				
5	1975	6106.	5107.	1.107	C.286					I +				
6	1974	7564.	6460.	1.055	C.320					I +				
7	1973	9006.	7775.	C.955	C.266					I +				
8	1972	10166.	8567.	C.887	C.146					I+				
9	1971	11617.	10205.	1.125	C.251					I +				
10	1970	12900.	11258.	C.983	C.275					+I +				
11	1969	14004.	12456.	C.822	C.165					+				
12	1968	15152.	13550.	C.973	C.165					+				
13	1966	16300.	14005.	C.937	-C.000					+				

N	AN	CLX	CUY	RAN	FCAN	F = -4. I	-3. I	-2. I	-1. I	0.C I	+1. I	+2. I	+3. I	+4. I
						F : C.6	C.7	0.8	0.9	1.C	1.1	1.2	1.3	1.4

PROMEDIOS = 1253.9 1124.8

RAZONES PROMEDIOS Y/X = C.896

X/Y = 1.116

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-CASTOR *** CURSO DE AGROCLIMATOLOGIA *** PROGRAMA CASTOR

Ministerio de Agricultura y Ganadería

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
24J143	ESCUELA MERCHAN	SABOYA	+05 41 40	+073 45 32	2550 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	17.0	9.0	97.0	73.0	139.0	102.0	74.0	55.0	141.0	191.0	154.0	56.0	1108.0	1966
1967	26.6	93.2	57.7	212.1	85.5	-9.9	30.0	41.8	40.7	103.8	115.6	78.1	-9.9	1967
1968	32.5	64.6	51.3	223.4	150.7	133.4	20.7	28.5	144.5	211.3	106.1	21.3	1188.5	1968
1969	30.5	59.6	72.5	208.2	60.1	57.9	14.5	18.9	133.7	151.7	163.2	92.6	1103.4	1969
1970	30.9	12.2	53.4	185.6	158.5	64.5	41.7	64.1	90.2	134.0	139.6	108.9	1083.6	1970
1971	124.1	87.6	247.5	170.8	226.8	87.6	17.1	68.6	130.8	213.3	114.8	133.5	1628.7	1971
1972	73.6	46.1	151.3	266.1	129.2	73.1	51.4	117.9	39.3	99.0	49.9	83.2	1180.1	1972
1973	15.5	9.0	115.3	139.5	57.7	114.0	118.4	86.9	180.6	155.1	320.4	135.1	1443.7	1973
1974	44.9	99.4	136.9	190.8	134.6	96.3	45.4	28.9	151.9	261.5	234.7	31.2	1456.5	1974
1975	23.5	100.8	101.8	94.5	150.4	64.9	149.6	95.7	98.3	212.0	159.1	89.8	1340.4	1975
1976	34.4	118.2	170.0	104.2	110.4	41.8	4.2	41.6	81.7	201.2	99.1	80.0	1086.8	1976
1977	11.3	19.7	82.2	61.1	73.6	90.7	57.3	46.5	167.5	230.2	106.7	28.9	975.7	1977
1978	6.0	53.2	201.6	170.7	121.4	62.5	66.9	46.9	43.9	116.9	116.5	123.7	1136.2	1978
1979	48.5	111.6	159.5	208.1	176.0	131.8	61.2	116.7	102.0	252.4	157.5	43.3	1568.8	1979
NUMERO DE ANOS	14	14	14	14	14	13	14	14	14	14	14	14	13	
VALOR MAXIMO	124.1	118.2	247.5	266.1	226.8	133.4	149.6	117.9	180.8	261.5	320.4	135.1	1628.7	
CUARTIL SUPERIOR	44.9	99.4	159.5	208.2	150.7	108.0	66.9	86.9	144.5	213.3	159.1	108.9	1450.1	
MEDIANA	30.7	62.2	108.5	181.2	121.9	87.6	48.4	50.9	116.4	196.1	128.0	81.6	1180.1	
CUARTIL INFERIOR	17.0	19.7	72.5	104.2	85.5	63.5	20.7	41.6	81.7	134.0	106.7	43.3	1095.1	
VALOR MINIMO	6.0	9.0	51.3	61.1	57.7	41.8	4.2	18.9	39.3	99.0	49.9	21.3	975.7	
PROMEDIOS	37.1	63.2	121.3	168.4	128.1	86.2	53.7	61.3	110.4	181.0	146.9	79.0	1253.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1233.7	
PORCENTAJES	3.0	5.1	9.8	13.4	10.4	7.0	4.4	5.0	9.0	14.7	11.9	6.4		
DEV. ESTANDAR	30.4	39.6	59.4	61.9	45.2	28.7	40.4	32.0	47.1	54.0	66.4	38.5	209.4	
COEF. VARIACION	0.819	0.627	0.489	0.374	0.353	0.333	0.752	0.523	0.426	0.299	0.452	0.487	0.167	
COEF. ASIMETRIA	2.046	-0.167	0.695	-0.394	0.405	0.338	1.195	0.663	-0.288	-0.177	1.436	-0.039	0.642	

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 27. INDICE DE ARNOLDUS = 122.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240143	ESCLUSA MERCHAN	SABOYA	+05 41 40	+073 45 32	2550 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	57.1	32.1	81.9	197.4	82.7	43.6	111.1	90.5	95.5	194.7	89.3	114.1	1190.0	1960
1961	56.9	30.8	86.4	126.1	23.0	61.6	35.6	7.3	67.2	180.8	127.9	96.2	901.8	1961
1962	30.1	56.7	118.5	114.7	160.8	159.5	14.3	53.0	110.3	183.0	169.9	25.3	1202.1	1962
1963	38.3	74.5	185.1	189.9	111.3	85.1	35.0	62.9	107.0	85.0	136.5	53.3	1163.9	1963
1964	45.9	123.0	71.3	174.6	152.8	141.1	116.6	72.1	115.7	122.5	92.0	78.9	1306.5	1964
1965	27.9	89.1	62.5	219.4	110.3	22.4	9.7	79.7	94.1	241.7	176.2	55.5	1188.5	1965
1966	17.0	9.0	97.0	73.0	139.0	102.0	74.0	55.0	141.0	191.0	154.0	56.0	1108.0	1966
1967	26.6	93.2	57.7	212.1	85.5	180.4	30.0	41.8	40.7	103.8	115.6	78.1	1065.5	1967
1968	32.5	64.8	51.3	223.4	150.7	133.4	20.7	28.5	144.5	211.3	106.1	21.3	1188.5	1968
1969	30.5	59.6	72.5	208.2	80.1	57.9	14.5	18.9	133.7	151.7	183.2	92.6	1103.4	1969
1970	30.9	12.2	53.4	185.6	158.5	64.5	41.7	64.1	90.2	134.0	139.6	108.9	1083.6	1970
1971	124.1	87.8	247.5	176.8	226.8	87.6	17.1	68.6	130.8	213.3	114.8	133.5	1628.7	1971
1972	73.6	46.1	151.3	266.1	129.2	73.1	51.4	117.9	39.3	99.0	49.9	83.2	1180.1	1972
1973	15.5	9.0	115.3	135.5	57.7	114.0	118.4	86.9	180.8	155.1	320.4	135.1	1443.7	1973
1974	44.9	99.4	136.9	190.8	134.6	96.3	45.4	28.9	151.9	261.5	234.7	31.2	1456.5	1974
1975	23.5	100.8	101.8	94.5	150.4	64.9	149.6	95.7	98.3	212.0	159.1	89.8	1340.4	1975
1976	34.4	118.2	170.0	104.2	110.4	41.8	4.2	41.6	81.7	201.2	99.1	80.0	1086.8	1976
1977	11.3	19.7	82.2	61.1	73.6	90.7	57.3	46.5	167.5	230.2	106.7	28.9	975.7	1977
1978	6.0	53.2	201.6	176.7	121.4	62.5	66.9	46.9	43.9	116.9	116.5	123.7	1136.2	1978
1979	48.5	111.8	159.5	208.1	176.0	131.8	61.2	116.7	102.0	252.4	157.5	43.3	1568.8	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	124.1	123.0	247.5	266.1	226.8	180.4	149.6	117.9	180.8	261.5	320.4	135.1	1628.7	
CUARTIL SUPERIOR	47.2	96.3	155.4	208.1	151.7	122.9	70.4	83.3	137.3	212.6	164.5	102.5	1323.4	
MEDIANA	31.7	62.2	99.4	181.2	125.3	86.3	43.5	58.9	104.5	187.0	132.2	79.4	1184.3	
CUARTIL INFERIOR	25.0	31.4	71.9	121.4	84.1	62.0	18.9	41.7	85.9	128.3	106.4	48.3	1095.1	
VALOR MINIMO	6.0	9.0	51.3	61.1	23.0	22.4	4.2	7.3	39.3	85.0	49.9	21.3	901.8	
PROMEDIOS	38.8	64.5	115.2	167.0	122.0	90.7	53.7	61.2	106.8	177.1	142.4	76.4	1215.9	
PORCENTAJES	3.2	5.3	9.5	13.7	10.0	7.5	4.4	5.0	8.8	14.6	11.7	6.3		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 26. INDICE DE ARNOLDUS = 120.

INDICE DE IRREGULARIDAD INTERANUAL =1.50

DEV. ESTANDAR	20.1	37.0	55.2	55.4	46.8	41.8	41.5	30.5	40.3	53.4	58.6	36.1	189.0
COEF. VARIACION	0.673	0.582	0.479	0.332	0.383	0.461	0.771	0.498	0.378	0.302	0.411	0.472	0.155

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1527.	1458.	1375.	1216.	1057.	974.	905.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.937	-0.062	0.874	-0.445	-0.007	0.538	0.950	0.255	-0.075	-0.204	1.527	0.034	0.752

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240145	LA GACHA	SABOYA	+05 40 00	+073 42 00	3170 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	8.0	3.0	119.0	184.9	237.5	117.0	66.0	53.0	145.0	251.0	205.5	110.5	1540.4
1967	52.0	87.0	100.0	235.0	135.0	76.0	72.0	42.0	75.0	98.0	72.0	49.0	1093.0
1968	9.0	47.0	49.0	211.0	56.0	65.0	2.0	10.0	55.0	124.0	85.0	23.0	756.0
1969	20.0	12.0	34.0	134.0	52.0	26.0	4.0	17.0	54.0	123.0	131.0	107.0	714.0
1970	19.0	14.0	24.0	140.0	158.0	16.0	88.0	69.0	143.0	232.0	176.0	107.0	1186.0
1971	323.0	92.0	228.0	266.0	314.0	52.0	56.0	122.0	111.0	282.0	285.0	185.0	2356.0
1972	121.0	90.0	145.0	315.0	160.0	57.0	50.0	172.0	82.0	155.0	284.0	135.0	1766.0
1973	28.0	18.0	114.0	181.0	106.0	110.0	138.0	103.0	203.0	202.0	324.0	178.0	1705.0
1974	48.0	168.0	225.0	262.0	100.0	135.0	40.0	100.0	160.0	282.0	332.0	40.0	1892.0
1975	10.0	160.0	206.0	150.0	177.0	85.0	263.0	170.0	75.0	358.0	195.0	200.0	2089.0
1976													
1977	20.0	30.0	41.0	100.0	93.0	129.0	48.0	74.0	130.0	229.0	370.0	46.0	1310.0
1978	6.0	65.0	220.0	400.0	195.0	72.0	-9.9	60.0	30.0	215.0	110.0	60.0	-9.9
1979	46.0	99.0	170.0	282.0	318.0	155.0	72.0	140.0	95.0	430.0	390.0	25.0	2222.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARAVIO

ESTACION : LA GACHA MUNICIPIO DE SABOYA PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	2223.0	2222.0	2222.0	1.221	0.431				I + .			
2	1977	1310.0	3532.0	1766.0	-0.442	0.275			.	I +			
3	1975	2089.0	5621.0	1873.7	0.978	0.621				I + .			
4	1974	1892.0	7513.0	1878.3	0.619	0.839				I . +			
5	1973	1705.0	9218.0	1843.6	0.278	0.938				I . +			
6	1972	1766.0	10984.0	1830.7	0.369	1.075				I . +			
7	1971	2356.0	13340.0	1905.7	1.495	1.593				I . +			
8	1970	1186.0	14526.0	1815.8	-0.668	1.357			.	I +			
9	1969	714.0	15240.0	1693.3	-1.529	0.817		.		I +			
10	1968	756.0	15996.0	1599.6	-1.452	0.304		.		I +			
11	1967	1093.0	17089.0	1553.5	-0.838	0.008			.	+			
12	1965	1540.4	18629.4	1552.4	-0.022	0.000				*			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 12 ANOS = 1552.4
DEVIACION ESTANDAR = 548.4
COEFICIENTE DE VARIACION = 0.353

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240150	EL MERC	SAMACA	+05 26 00	+073 36 00	3410 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	83.6	157.5	117.3	-9.9
1967	11.2	5.7	120.8	166.3	53.9	34.7	52.8	-9.9	32.5	64.4	51.9	35.1	-9.9
1968	17.2	30.1	20.7	68.3	99.5	135.5	270.4	92.9	79.7	78.3	162.2	19.4	1044.6
1969	113.6	66.7	9.6	146.4	134.6	138.2	184.6	48.7	29.8	88.5	17.9	64.6	1020.2
1970	95.6	98.2	87.5	53.1	167.2	104.7	156.6	118.4	56.2	216.9	144.1	32.3	1312.8
1971	71.5	60.2	165.5	90.7	216.4	97.6	130.3	108.5	120.4	97.2	167.8	98.2	1443.3
1972	120.4	-9.9	-9.9	118.2	69.0	90.1	58.9	61.4	42.9	14.0	52.2	20.9	-9.9
1973	0.3	5.0	56.8	73.3	79.9	102.6	88.7	93.1	103.0	69.8	33.6	92.0	807.3
1974	34.7	41.0	87.5	76.7	61.4	62.4	71.2	56.8	84.1	98.1	112.9	26.4	811.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-CRESTA 444 GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR CARVAJAL

ESTACION X EL FUENTE MUNICIPIO DE CUACHETA PERIODO 1966 - 1974 COEF DE CORRECCION 1.000

ESTACION Y EL ACEFE MUNICIPIO DE SAMACA PERIODO 1966 - 1974 COEF. DE CORRECCION 1.000

N	AN	CLX	CUY	RAN	RCAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
					F =	C.6	C.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1974	835.	811.	1.162	C.123					I+				
2	1973	1357.	1015.	1.384	C.411					I +				
3	1971	2213.	3062.	C.834	C.1EE					I+				
4	1970	2550.	4375.	C.837	-C.111					+				
5	1969	3624.	5395.	C.963	-C.147					+				
6	1968	4366.	6445.	1.046	C.C					+				

N	AN	CLX	CUY	RAN	RCAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
					F =	C.6	C.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 727.7 1075.2

RAZONES PROMEDIOS Y/X = 1.475

X/Y = C.678

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240150	EL MORRO	SAMACA	+05 25 25	-073 36 00	3410 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	83.6	157.5	117.3	-9.9	1966
1967	11.2	5.7	120.8	166.3	93.9	34.7	52.8	-9.9	32.5	24.4	51.9	35.1	-9.9	1967
1968	17.2	36.1	20.7	68.3	59.5	139.9	270.4	92.9	79.7	78.3	162.2	19.4	1044.6	1968
1969	113.6	66.7	9.6	146.4	134.6	175.2	164.6	48.7	29.8	28.5	17.9	64.6	1020.2	1969
1970	95.6	98.2	27.5	53.1	167.2	104.7	156.6	118.4	96.2	218.9	144.1	32.3	1312.8	1970
1971	71.5	60.2	185.5	90.7	215.4	97.6	130.3	108.5	120.4	97.2	167.8	98.2	1443.3	1971
1972	120.4	-9.9	-9.9	112.2	89.0	90.1	58.9	61.4	42.9	14.0	52.2	20.9	-9.9	1972
1973														1973
1974	34.7	41.0	87.5	78.7	61.4	62.4	71.2	56.8	64.1	92.2	112.9	28.4	811.3	1974
NUMERO DE ANOS	7	6	6	7	7	7	7	6	7	8	8	8	5	
VALOR MAXIMO	120.4	98.2	185.5	166.3	215.4	175.2	270.4	118.4	120.4	218.9	167.8	117.3	1443.3	
MEDIANA	71.5	50.6	57.5	90.7	93.9	97.6	130.3	77.1	79.7	80.9	128.5	33.7	1044.6	
VALOR MINIMO	11.2	5.7	9.6	53.1	59.5	34.7	52.8	48.7	29.8	14.0	17.9	19.4	811.3	
PROMEDIOS	66.3	51.3	75.3	102.2	117.3	100.7	132.1	81.1	69.4	79.6	108.3	52.0	1126.4	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1035.7	
PORCENTAJES	6.4	5.0	7.3	9.9	11.3	9.7	12.8	7.8	6.7	7.7	10.5	5.0		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 93.

DEV. ESTANDAR	45.6	31.4	69.2	41.6	58.1	46.6	79.4	29.4	34.8	65.3	59.4	37.5	251.2	
COEF. VARIACION	0.688	0.612	0.919	0.407	0.495	0.463	0.601	0.362	0.502	0.820	0.548	0.720	0.223	
COEF. ASIMETRIA	-0.069	0.076	0.798	0.574	0.800	0.300	0.786	0.212	0.143	1.452	-0.513	1.044	0.137	

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240522	VILLA DEL CARMEN	SAMACA	+05 31 00	+073 29 00	2620 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1968	-9.9	-9.9	132.2	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	51.2	-9.9
1969	74.5	30.6	35.5	137.2	67.4	20.8	24.5	11.7	38.4	142.4	72.0	29.3	684.3
1970	26.6	10.6	8.5	41.0	104.3	20.8	39.8	30.2	50.2	103.4	118.4	15.0	568.8
1971	48.2	76.8	99.7	78.1	162.4	27.7	27.0	19.4	41.3	95.4	115.9	78.0	869.9
1972	49.0	36.7	81.6	226.2	59.4	26.1	40.5	28.4	19.6	47.5	84.5	32.2	731.7
1973	0.0	0.0	64.5	66.0	50.6	66.6	69.1	57.9	111.2	84.6	123.0	61.1	756.8
1974	31.1	70.6	99.0	154.5	47.9	38.5	9.3	35.8	77.6	84.7	111.3	30.0	790.3
1975	0.4	72.4	29.5	67.8	55.9	44.6	47.9	59.6	40.1	72.5	26.8	155.7	673.2
1976	42.5	60.5	144.6	141.1	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1977	8.0	4.7	107.0	77.6	28.5	-9.9	-9.9	32.8	-9.9	106.0	118.0	-9.9	-9.9
1978	0.2	32.7	71.2	173.1	90.9	19.2	56.2	30.0	58.5	109.2	46.9	31.9	720.0
1979	31.0	9.2	92.2	130.5	84.5	66.9	26.4	74.1	39.6	156.1	169.5	57.9	939.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAN

ESTACION X VILLA DEL CARMEN MUNICIPIO DE SAMACA PERIODO COEF DE CORRECCION

1968 - 1979 1.000

ESTACION Y SUTAMARCHAN MUNICIPIO DE SUTAMARCHAN PERIODO COEF DE CORRECCION

1968 - 1979 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	940.	1184.	0.910	-0.125					.	+I			
2	1978	1660.	1875.	1.194	0.032						+	.		
3	1975	2333.	2702.	0.870	-0.103					.	+I			
4	1974	3123.	3728.	0.938	-0.173					.	+I			
5	1973	3830.	4513.	1.105	-0.077						+	.		
6	1972	4612.	5272.	1.105	0.010						+	.		
7	1971	5482.	6216.	1.056	0.077						+	.		
8	1970	6051.	6927.	0.917	0.008					.	+			
9	1969	6735.	7719.	0.991	-0.000						*			
						P = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
N	AN	CUX	CUY	RAN	PCAN	R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 748.3 857.6

RAZONES PROMEDIOS Y/X = 1.146

X/Y = 0.873

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* PRUEBAS DE DOBLE MASA *

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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240522	VILLA DEL CARMEN	SAMACA	+05 31 23	+073 29 46	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1968	-9.9	-9.9	132.2	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	51.2	-9.9	1968
1969	74.5	30.6	35.5	137.2	67.4	20.8	24.5	11.7	38.4	142.4	72.0	29.3	684.3	1969
1970	26.6	10.6	8.5	41.0	104.3	20.8	39.8	30.2	50.2	103.4	116.4	15.0	568.8	1970
1971	48.2	76.6	99.7	78.1	162.4	27.7	27.0	19.4	41.3	95.4	118.9	78.0	869.9	1971
1972	49.0	36.7	81.6	226.2	89.4	26.1	40.5	28.4	19.6	47.5	84.5	32.2	731.7	1972
1973	0.0	0.0	64.5	66.0	80.6	68.8	69.1	57.9	111.2	84.6	123.0	61.1	756.8	1973
1974	31.1	70.6	99.0	154.5	47.9	38.5	9.3	35.8	77.6	84.7	111.3	30.0	790.3	1974
1975	0.4	72.4	29.5	67.8	85.9	44.6	47.9	59.6	40.1	72.5	26.8	155.7	673.2	1975
1976	42.5	60.5	144.6	141.1	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1976
1977	8.0	4.7	107.0	77.6	28.5	-9.9	-9.9	32.8	-9.9	106.0	118.0	-9.9	-9.9	1977
1978	0.2	32.7	71.2	173.1	80.9	19.2	56.2	30.0	58.5	109.2	46.9	31.9	720.0	1978
1979	31.0	9.2	92.2	130.5	84.5	66.9	26.4	74.1	39.6	158.1	169.5	57.9	939.9	1979
NUMERO DE ANOS	11	11	12	11	10	9	9	10	9	10	10	10	9	
VALOR MAXIMO	74.5	76.6	144.6	226.2	162.4	68.8	69.1	74.1	111.2	158.1	169.5	155.7	939.9	
CUARTIL SUPERIOR	*****	*****	103.3	*****	*****	*****	*****	*****	*****	*****	*****	*****	******	
MEDIANA	31.0	32.7	86.9	130.5	83.4	27.7	39.8	31.5	41.3	99.4	113.6	41.7	731.7	
CUARTIL INFERIOR	*****	*****	50.0	*****	*****	*****	*****	*****	*****	*****	*****	*****	******	
VALOR MINIMO	0.0	0.0	8.5	41.0	28.5	19.2	9.3	11.7	19.6	47.5	26.8	15.0	568.8	
PROMEDIOS	28.3	30.6	80.5	117.6	75.2	37.0	37.9	38.0	52.9	100.4	98.6	54.2	748.3	
											TOTAL DE LOS PROMEDIOS MENSUALES =		757.4	
PORCENTAJES	3.7	4.9	10.6	15.5	9.9	4.9	5.0	5.0	7.0	13.3	13.0	7.2		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 18. INDICE DE ARNOLDUS = 76.

DEV. ESTANDAR	24.4	29.1	41.0	56.1	38.0	19.4	18.3	19.6	27.0	32.2	41.6	40.4	109.8
COEF. VARIACION	0.862	0.790	0.510	0.478	0.505	0.524	0.482	0.516	0.510	0.320	0.422	0.744	0.147
COEF. ASIMETRIA	0.361	0.193	-0.260	0.479	1.378	0.939	0.245	0.711	1.357	0.375	-0.266	1.999	0.291

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
900002	SAN LUIS DE GACENO	S.LUIS DE GACENO	+04 49 25	+073 10 30	0400 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1970	118.0	42.0	192.0	725.0	690.0	909.0	788.0	723.0	346.0	354.0	249.0	158.0	5294.0
1971	22.0	82.0	91.0	426.0	774.0	421.0	619.0	693.0	550.0	355.0	331.0	159.0	4523.0
1972	113.0	72.0	206.0	423.0	768.0	435.0	491.0	532.0	277.0	416.0	235.0	117.0	4145.0
1973	36.0	21.0	108.0	357.0	549.0	529.0	585.0	663.0	703.0	537.0	340.0	126.0	4554.0
1974	10.0	29.0	120.0	480.0	914.0	357.0	644.0	522.0	587.0	336.0	262.0	12.0	4313.0
1975	13.0	20.0	169.0	264.0	516.0	658.0	541.0	400.0	322.0	525.0	350.0	247.0	4025.0
1976	49.0	56.0	255.0	351.0	526.0	670.0	635.0	383.0	263.0	381.0	256.0	118.0	3943.0
1977	0.0	21.0	148.0	298.0	723.0	934.0	985.0	329.0	447.0	347.0	236.0	43.0	4511.0
1978	54.0	37.0	303.0	444.0	568.0	758.0	442.0	462.0	334.0	393.0	144.0	44.0	3983.0
1979	20.0	0.0	145.0	488.0	447.0	633.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR FANAL A O

ESTACION X SAN LUIS DE GACENO MUNICIPIO DE S.LUIS DE GACENO PERIODO COEF DE CORRECCION

1970 - 1978 1.000

ESTACION Y LENGUPA MUNICIPIO DE SANTA MARIA PERIODO COEF DE CORRECCION

1970 - 1978 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1978	3983.	4647.	0.909	-0.091					+				
2	1977	8494.	8811.	1.149	0.042					+				
3	1976	12437.	13087.	0.978	0.022					+				
4	1975	16462.	17685.	0.928	-0.049					+				
5	1974	20775.	22150.	1.024	-0.026					+				
6	1973	25329.	26569.	1.093	0.063					+				
7	1972	29474.	31541.	0.884	-0.062					+				
8	1971	33997.	36692.	0.931	-0.138					+I				
9	1970	39291.	41665.	1.129	-0.000					+				
N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 4365.7 4629.4

RAZONES PROMEDIOS Y/X = 1.060

X/Y = 0.943

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
900002	SAN LUIS DE CACENO	S.LUIS DE GACENO	+04 49 22	+073 IC 14	0375 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1970	118.0	42.0	192.0	725.0	690.0	909.0	768.0	723.0	346.0	354.0	245.0	158.0	5294.0	1970
1971	22.0	82.0	91.0	426.0	774.0	421.0	619.0	693.0	550.0	365.0	331.0	159.0	4523.0	1971
1972	113.0	72.0	266.0	423.0	768.0	435.0	491.0	532.0	277.0	416.0	235.0	117.0	4145.0	1972
1973	36.0	21.0	108.0	357.0	549.0	529.0	585.0	663.0	703.0	537.0	340.0	126.0	4554.0	1973
1974	10.0	29.0	120.0	480.0	914.0	397.0	644.0	522.0	567.0	336.0	262.0	12.0	4313.0	1974
1975	13.0	20.0	169.0	264.0	516.0	658.0	541.0	400.0	322.0	525.0	350.0	247.0	4025.0	1975
1976	49.0	56.0	255.0	351.0	526.0	670.0	635.0	383.0	263.0	381.0	256.0	118.0	3943.0	1976
1977	0.0	21.0	148.0	298.0	723.0	934.0	985.0	329.0	447.0	347.0	236.0	43.0	4511.0	1977
1978	54.0	37.0	303.0	444.0	568.0	758.0	442.0	462.0	334.0	393.0	144.0	44.0	3983.0	1978
1979	20.0	0.0	145.0	486.0	447.0	633.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1979
NUMERO DE ANOS	10	10	10	10	10	10	9	9	9	9	9	9	9	
VALOR MAXIMO	118.0	82.0	303.0	725.0	914.0	934.0	985.0	723.0	703.0	537.0	350.0	247.0	5294.0	
MEDIANA	29.0	33.0	158.5	424.5	629.0	645.5	619.0	522.0	346.0	381.0	256.0	118.0	4313.0	
VALOR MINIMO	0.0	0.0	91.0	264.0	447.0	397.0	442.0	329.0	263.0	336.0	144.0	12.0	3943.0	
PROMEDIOS	43.5	38.0	179.7	425.6	647.5	634.4	636.7	523.0	425.4	404.5	267.0	113.8	4365.7	
												TOTAL DE LOS PROMEDIOS MENSUALES =	4339.5	
PORCENTAJES	1.0	0.9	4.1	9.8	14.9	14.6	14.7	12.1	9.8	9.3	6.2	2.6		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 97. INDICE DE ARNOLDUS = 455.

DEV. ESTANDAR	41.5	25.5	72.5	128.9	148.1	192.9	164.1	143.5	155.3	75.7	65.1	72.6	423.7
COEF. VARIACION	0.955	0.672	0.404	0.303	0.229	0.304	0.258	0.274	0.365	0.187	0.244	0.638	0.097
COEF. ASIMETRIA	1.121	0.494	0.579	1.311	0.411	0.335	1.244	0.192	0.756	1.203	-0.412	0.335	1.336

*PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240132	SAN MIGUEL DE SEMA	SAN MIGUELDESEMA	+05 31 25	+073 43 24	2600 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1961	-9.9	-9.9	-9.9	-9.9	15.2	39.0	31.0	9.0	32.5	152.5	194.5	65.5	-9.9
1962	77.0	76.5	135.0	144.5	138.0	105.5	19.0	68.5	34.0	210.0	245.0	75.5	1332.5
1963	48.0	75.0	294.5	230.5	133.5	65.0	48.5	58.0	8.0	171.5	265.6	46.0	1464.1
1964	40.0	161.0	62.5	277.5	203.0	101.0	27.5	98.5	110.0	183.0	226.0	93.0	1523.0
1965	84.5	85.0	57.5	253.5	162.5	12.5	13.5	34.0	34.5	131.0	228.5	75.5	1142.5
1966	7.0	7.0	90.0	103.5	260.0	156.0	27.5	83.0	140.0	163.5	251.5	120.5	1415.5
1967	47.0	177.0	72.0	174.5	74.0	67.5	36.0	30.0	84.0	138.5	130.0	89.5	1120.0
1968	40.0	81.5	113.0	306.0	133.0	142.0	6.5	9.5	134.0	214.5	117.5	31.5	1329.0
1969	47.5	111.5	78.5	231.5	104.0	62.0	22.0	9.0	118.0	154.0	116.5	175.5	1270.0
1970	62.0	90.0	55.5	152.0	146.0	60.5	60.5	20.5	82.0	245.5	208.0	139.5	1326.0
1971	225.5	220.0	239.5	446.5	209.5	83.5	19.0	74.5	69.0	261.5	226.0	109.0	2183.5
1972	123.0	84.0	126.5	342.0	152.0	95.5	53.5	68.0	70.0	235.5	151.5	81.5	1623.0
1973	3.5	5.0	188.0	135.5	74.7	157.0	149.5	97.0	314.0	265.0	252.0	237.0	1878.2
1974	32.0	151.0	161.5	272.5	157.0	85.0	18.0	38.5	152.5	228.0	278.5	69.0	1643.5
1975	10.0	136.5	157.5	266.5	242.5	95.0	153.0	75.5	106.0	214.5	278.5	209.0	1944.5
1976	34.5	73.0	248.5	261.5	161.0	65.0	0.0	24.0	53.5	444.5	143.0	80.5	1589.0
1977	48.5	20.0	99.5	120.5	101.0	78.0	49.0	22.5	176.0	225.5	248.0	110.0	1302.5
1978	20.5	108.5	173.0	321.0	138.5	18.0	81.0	59.5	108.5	152.5	73.0	98.0	1393.4
1979	62.0	63.5	202.0	317.5	203.0	126.0	74.0	107.0	83.5	232.5	226.5	92.0	1769.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM ### GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

ESTACION X SAN MIGUEL DE SEMA MUNICIPIO DE SAN MIGUELDESEMA PERIODO COEF DE CORRECCION

1961 - 1979 1.000

ESTACION Y EL SANTUARIO MUNICIPIO DE FUQUENE PERIODO COEF DE CORRECCION

1961 - 1979 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	1790.	1288.	0.959	-0.049					+				
2	1978	3183.	2324.	0.929	-0.119					+I				
3	1977	4485.	3162.	1.073	-0.062					+	•			
4	1976	6074.	4171.	1.087	0.021					+	•			
5	1975	8019.	5346.	1.143	0.179					I+	•			
6	1974	9662.	6587.	0.914	0.078				•	+				
7	1973	11541.	7875.	1.007	0.087					*				
8	1972	13164.	8889.	1.105	0.187					I+	•			
9	1971	15347.	10300.	1.068	0.277					I +	•			
10	1970	16673.	11196.	1.022	0.296					I *				
11	1969	17943.	12194.	0.879	0.182				•	I+				
12	1968	19272.	13051.	1.070	0.239					I +	•			
13	1966	20688.	14057.	0.971	0.211				•	I +				
14	1965	21830.	14914.	0.921	0.147				•	I+				
15	1964	23353.	15968.	0.998	0.145					•+				
16	1963	24817.	17065.	0.921	0.063				•	+				
17	1962	26150.	18052.	0.932	0.0				•	+				
						P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CUX	CUY	RAN	PCAN	I	I	I	I	I	I	I	I	I
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 1538.2 1061.9

RAZONES PROMEDIOS Y/X = 0.690

X/Y = 1.449

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* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240132	SAN MIGUEL DE SEMA	SAN MIGUELDESEMA	+05 31 25	+073 43 24	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1961	-9.9	-9.9	-9.9	-9.9	15.2	39.0	31.0	9.0	32.5	192.5	194.5	65.5	-9.9	1961
1962	77.0	76.5	135.0	144.5	138.0	109.5	19.0	68.5	34.0	210.0	248.0	75.5	1332.5	1962
1963	48.0	75.0	294.5	230.5	133.5	85.0	48.5	58.0	8.0	171.5	265.6	46.0	1464.1	1963
1964	40.0	101.0	62.5	277.5	203.0	101.0	27.5	98.5	110.0	183.0	226.0	93.0	1523.0	1964
1965	54.5	85.0	57.5	253.5	162.5	12.5	13.5	34.0	34.5	131.0	226.5	75.5	1142.5	1965
1966	7.0	7.0	96.0	103.5	260.0	156.0	27.5	83.0	140.0	163.5	251.5	120.5	1415.5	1966
1967	47.0	177.0	72.0	174.5	74.0	67.5	36.0	30.0	84.0	138.5	130.0	89.5	1120.0	1967
1968	40.0	81.5	113.0	306.0	133.0	142.0	6.5	9.5	134.0	214.5	117.5	31.5	1329.0	1968
1969	47.5	111.5	78.5	231.5	104.0	62.0	22.0	9.0	118.0	194.0	116.5	175.5	1270.0	1969
1970	62.0	90.0	55.5	152.0	146.0	60.5	60.5	20.5	82.0	249.5	208.0	139.5	1326.0	1970
NUMERO DE ANOS	9	9	9	9	10	10	10	10	10	10	10	10	9	
VALOR MAXIMO	77.0	177.0	294.5	306.0	260.0	156.0	60.5	98.5	140.0	249.5	265.6	175.5	1523.0	
MEDIANA	47.5	85.0	78.5	230.5	135.8	76.3	27.5	32.0	83.0	187.8	217.0	82.5	1329.0	
VALOR MINIMO	7.0	7.0	55.5	103.5	15.2	12.5	6.5	9.0	8.0	131.0	116.5	31.5	1120.0	
PROMEDIOS	47.0	89.4	107.2	208.2	136.9	83.5	29.2	42.0	77.7	184.6	198.3	91.2	1324.7	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1295.4	
PORCENTAJES	3.6	6.9	8.3	16.1	10.6	6.4	2.3	3.2	6.0	14.3	15.3	7.0		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 33. INDICE DE ARNOLDUS = 140.

DEV. ESTANDAR	19.0	44.1	75.2	67.8	66.8	44.6	16.1	32.9	47.7	35.8	57.0	43.5	134.7
COEF. VARIACION	0.404	0.493	0.702	0.326	0.488	0.535	0.550	0.783	0.614	0.194	0.287	0.477	0.102
COEF. ASIMETRIA	-0.797	0.225	2.337	-0.120	0.038	0.206	0.708	0.600	-0.097	0.143	-0.591	0.685	-0.240

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2401111	LA COMODA	SANTA ANA	+06 05 00	+073 28 00	870 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1954	-9.9	65.8	379.4	698.0	825.6	525.6	934.5	599.3	318.5	890.7	663.8	-9.9	-9.9
1955													
1956													
1957													
1958													
1959	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	147.0	278.0	257.5	321.5	127.0	122.0	-9.9
1960	21.5	64.0	127.5	310.5	267.0	267.5	211.0	156.0	250.5	200.5	-9.9	-9.9	-9.9
1961	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	352.5	98.5	17.0	-9.9
1962	43.0	45.0	202.0	227.0	243.0	226.0	215.0	205.0	258.0	218.0	323.0	60.0	2265.0
1963	72.0	76.0	191.0	335.0	291.0	138.0	321.0	196.0	338.0	462.0	209.0	70.0	2699.0
1964	62.0	199.0	120.0	364.0	560.0	247.0	174.0	-9.9	-9.9	269.0	305.0	55.0	-9.9
1965	98.0	53.0	126.0	158.0	359.0	100.0	103.0	191.0	255.0	173.0	338.0	82.0	2036.0
1966	327.0	55.0	184.0	334.0	364.0	201.0	145.0	167.0	185.0	400.0	145.0	112.0	2619.0
1967	110.0	152.0	31.0	278.0	272.0	215.0	257.0	141.0	296.0	341.0	147.0	66.0	2326.0
1968	83.0	96.0	167.0	254.0	333.0	244.0	221.0	-9.9	280.0	379.0	152.0	56.0	-9.9
1969	114.0	70.0	143.0	181.0	308.0	176.0	106.0	180.5	225.5	301.5	182.5	115.0	2103.0
1970	71.5	42.2	64.0	354.5	247.2	262.0	184.0	269.0	196.0	254.0	172.0	197.5	2313.9
1971	169.0	136.0	247.0	251.0	388.0	130.0	215.0	189.0	151.0	345.0	146.0	205.0	2572.0
1972	161.0	112.0	121.0	315.0	350.0	266.0	174.0	135.0	281.0	-9.9	162.0	41.0	-9.9
1973	-9.9	-9.9	200.0	182.0	184.0	182.0	167.0	243.0	238.0	231.0	350.0	68.0	-9.9
1974	129.0	59.0	149.0	266.0	409.0	226.0	188.0	227.0	433.0	389.0	429.0	19.0	2923.0
1975	36.0	77.0	182.0	206.0	381.0	205.0	295.0	155.0	247.0	269.0	226.0	110.0	2389.0
1976	56.0	117.0	199.0	177.0	308.0	166.0	292.0	206.0	163.0	218.0	76.0	122.0	2100.0
1977	48.0	122.0	141.0	64.0	231.0	153.0	193.0	225.0	257.0	288.0	158.0	61.0	1941.0
1978	76.0	-9.9	-9.9	-9.9	347.0	158.0	-9.9	-9.9	-9.9	181.0	130.0	153.0	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

IMPRESO EN COLOMBIA POR DATASEL C.

ESTACION X LA CEIBA MUNICIPIO DE SANTA ANA PERIODO 1954 - 1978 COEF DE CORRECCION 1.000

N	AÑO	I A	CO	MLY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I
1	1977	1941.0	1941.0	1941.0	-1.401	-0.177				+I			
2	1976	2104.0	4045.0	2020.5	-0.666	-0.286				+ I			
3	1975	2385.0	6430.0	2143.3	0.107	-0.272				+ I.			
4	1974	2563.0	8993.0	2248.2	1.504	-0.032				+		•	
5	1971	2572.0	11565.0	2365.0	0.723	0.055				+	•		
6	1970	2813.0	14378.0	2473.1	-0.146	0.040				.+			
7	1969	2102.0	16541.0	2334.6	-0.696	-0.067				+			
8	1967	2226.0	18807.0	2353.5	-0.105	-0.081				.+			
9	1966	2615.0	21206.0	2356.2	0.881	0.030				+	•		
10	1965	2036.0	23242.0	2332.3	-1.081	-0.106				+I			
11	1963	2699.0	25941.0	2359.0	1.150	0.035				+	•		
12	1962	2665.0	28606.0	2384.2	-0.310	0.0				• +			

N	AÑO	I A	CO	MLY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I

PROMEDIO DE LOS 12 AÑOS = 2384.2
DESVIACION ESTANDAR = 297.1
COEFICIENTE DE VARIACION = 0.126

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CRSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240111	LA CONCHA	SANTA ANA	+06 05 00	+073 26 00	870 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1954	-9.9	65.6	379.4	698.0	625.6	929.6	934.5	599.3	316.5	690.7	663.8	-9.9	-9.9	1954
1955														1955
1956														1956
1957														1957
1958														1958
1959	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	147.0	278.0	257.5	321.5	127.0	122.0	-9.9	1959
1960	21.5	64.0	127.5	310.5	267.0	267.5	211.0	156.0	250.5	200.5	-9.9	-9.9	-9.9	1960
1961	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	392.5	96.5	17.0	-9.9	1961
1962	43.0	49.0	202.0	227.0	243.0	226.0	215.0	205.0	258.0	218.0	323.0	60.0	2265.0	1962
1963	72.0	76.0	191.0	335.0	251.0	138.0	321.0	196.0	338.0	462.0	209.0	70.0	2699.0	1963
1964	62.0	199.0	120.0	364.0	260.0	247.0	174.0	-9.9	-9.9	269.0	305.0	55.0	-9.9	1964
1965	98.0	53.0	126.0	153.0	359.0	100.0	103.0	191.0	255.0	173.0	338.0	82.0	2036.0	1965
1966	327.0	55.0	184.0	334.0	364.0	201.0	145.0	167.0	185.0	400.0	145.0	112.0	2619.0	1966
1967	110.0	152.0	31.0	278.0	272.0	215.0	257.0	141.0	296.0	341.0	147.0	86.0	2326.0	1967
1968	83.0	93.0	167.0	254.0	333.0	244.0	221.0	-9.9	280.0	379.0	152.0	56.0	-9.9	1968
1969	114.0	70.0	143.0	181.0	308.0	176.0	106.0	180.5	225.5	301.5	182.5	115.0	2103.0	1969
1970	71.5	42.2	64.0	354.5	247.2	262.0	164.0	269.0	196.0	254.0	172.0	197.5	2313.9	1970
1971	169.0	136.0	247.0	251.0	368.0	130.0	215.0	189.0	151.0	345.0	146.0	205.0	2572.0	1971
1972	161.0	112.0	121.0	315.0	350.0	286.0	174.0	135.0	281.0	-9.9	162.0	41.0	-9.9	1972
1973	-9.9	-9.9	200.0	162.0	164.0	182.0	167.0	243.0	238.0	231.0	350.0	68.0	-9.9	1973
1974	129.0	59.0	149.0	266.0	409.0	226.0	188.0	227.0	433.0	389.0	429.0	19.0	2923.0	1974
1975	36.0	77.0	182.0	206.0	381.0	205.0	295.0	155.0	247.0	269.0	226.0	110.0	2389.0	1975
1976	56.0	117.0	199.0	177.0	308.0	166.0	252.0	206.0	163.0	218.0	76.0	122.0	2100.0	1976
1977	48.0	122.0	141.0	64.0	231.0	153.0	193.0	225.0	257.0	288.0	156.0	61.0	1941.0	1977
1978	76.0	-9.9	-9.9	-9.9	347.0	158.0	-9.9	-9.9	-9.9	181.0	130.0	153.0	-9.9	1978
NUMERO DE ANOS	17	17	18	18	19	19	19	17	18	20	20	19	12	
VALOR MAXIMO	327.0	199.0	379.4	698.0	625.6	929.6	934.5	599.3	433.0	890.7	663.8	205.0	2923.0	
CUARTIL SUPERIOR	121.5	119.5	199.0	334.0	361.0	247.0	257.0	235.0	281.0	384.0	314.0	122.0	2595.5	
MEDIANA	76.0	76.0	156.0	260.0	333.0	205.0	193.0	196.0	256.0	294.5	167.0	86.0	2319.9	
CUARTIL INFERIOR	52.0	57.0	126.0	182.0	267.0	158.0	167.0	161.5	225.5	224.5	145.5	56.0	2101.5	
VALOR MINIMO	21.5	42.2	31.0	64.0	164.0	100.0	103.0	135.0	151.0	173.0	76.0	17.0	1941.0	
PROMEDIOS	98.6	90.6	165.2	275.3	350.9	237.5	239.1	221.3	257.2	326.2	227.0	93.2	2357.2	
												TOTAL DE LOS PROMEDIOS MENSUALES =	2582.3	
PORCENTAJES	3.8	3.5	6.4	10.7	13.6	9.2	9.3	8.6	10.0	12.6	8.8	3.6		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 48. INDICE DE ARNOLDUS = 248.

DEV. ESTANDAR	72.1	43.3	74.4	132.1	141.5	175.1	178.5	105.8	66.2	155.8	140.1	52.4	297.1
COEF. VARIACION	0.731	0.478	0.450	0.480	0.403	0.737	0.747	0.478	0.257	0.478	0.617	0.562	0.126
COEF. ASIMETRIA	2.144	1.106	1.085	1.813	2.326	3.757	3.593	3.123	0.820	2.641	1.827	0.700	0.453

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
900004	CACHIPAY	SANTA MARIA	+04 53 00	+073 12 00	0850 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1968	-9.9	-9.9	-9.9	624.0	444.0	627.0	732.0	510.0	348.0	315.0	217.0	76.0	-9.9
1969	171.0	317.0	275.0	595.0	684.0	627.0	629.0	573.0	275.0	357.0	295.0	185.0	5023.0
1970	159.0	41.0	274.0	404.0	497.0	750.0	772.0	402.0	544.0	443.0	539.0	263.0	5128.0
1971	112.0	151.0	118.0	307.0	726.0	731.0	722.0	640.0	522.0	376.0	399.0	316.0	5122.0
1972	201.0	112.0	285.0	487.0	775.0	711.0	714.0	552.0	393.0	356.0	334.0	168.0	5128.0
1973	56.0	11.0	273.0	411.0	604.0	852.0	628.0	493.0	501.0	447.0	367.0	178.0	4821.0
1974	53.0	62.0	79.0	386.0	805.0	479.0	807.0	534.0	377.0	366.0	269.0	40.0	4257.0
1975	61.0	8.0	281.0	302.0	648.0	809.0	539.0	527.0	360.0	469.0	347.0	345.0	4696.0
1976	48.0	43.0	249.0	586.0	865.0	911.0	827.0	484.0	435.0	465.0	308.0	213.0	5454.0
1977	3.0	152.0	183.0	313.0	683.0	766.0	795.0	447.0	551.0	456.0	395.0	77.0	4821.0
1978	74.0	46.0	402.0	702.0	716.0	791.0	733.0	611.0	554.0	566.0	369.0	136.0	5700.0
1979	55.0	0.0	279.0	635.0	624.0	1006.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR FANAL

ESTACION A CACHIPAY MUNICIPIO DE SANTA MARIA PERIODO 1968 - 1979 COEF DE CORRECCION 1.000

N	AN	T.A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1978	5700.0	5700.0	5700.0	1.706	0.137				I+			
2	1977	4821.0	10521.0	5260.5	-0.483	0.098				+			
3	1976	5454.0	15975.0	5325.0	1.093	0.185				I+			
4	1975	4696.0	20671.0	5167.8	-0.795	0.122				I+			
5	1974	4257.0	24928.0	4985.6	-1.888	-0.029				+			
6	1973	4821.0	29749.0	4958.2	-0.483	-0.068				+			
7	1972	5129.0	34877.0	4982.4	0.281	-0.045				+			
8	1971	5122.0	39999.0	4999.9	0.267	-0.024				+			
9	1970	5128.0	45127.0	5014.1	0.281	-0.002				+			
10	1969	5023.0	50150.0	5015.0	0.020	0.0				*			

N	AN	T.A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 10 ANOS = 5015.0

DEVIACION ESTANDAR = 401.5

COEFICIENTE DE VARIACION = 0.080

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
500004	CACHIPAY	SANTA MARIA	+04 52 58	+073 14 39	0850 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1968	-9.9	-9.9	-9.9	624.0	444.0	627.0	732.0	510.0	348.0	319.0	217.0	76.0	-9.9	1968
1969	171.0	317.0	275.0	595.0	664.0	627.0	629.0	573.0	275.0	397.0	295.0	185.0	5023.0	1969
1970	159.0	41.0	274.0	404.0	497.0	790.0	772.0	402.0	544.0	443.0	539.0	263.0	5128.0	1970
1971	112.0	151.0	118.0	307.0	726.0	731.0	722.0	640.0	522.0	376.0	395.0	318.0	5122.0	1971
1972	201.0	112.0	265.0	467.0	775.0	711.0	714.0	552.0	393.0	396.0	334.0	168.0	5128.0	1972
1973	56.0	11.0	273.0	411.0	604.0	852.0	628.0	493.0	501.0	447.0	367.0	178.0	4821.0	1973
1974	53.0	62.0	79.0	386.0	805.0	479.0	807.0	534.0	377.0	366.0	269.0	40.0	4257.0	1974
1975	61.0	8.0	281.0	302.0	648.0	809.0	539.0	527.0	360.0	469.0	347.0	345.0	4696.0	1975
1976	46.0	43.0	249.0	586.0	665.0	911.0	827.0	464.0	435.0	485.0	308.0	213.0	5454.0	1976
1977	3.0	152.0	183.0	313.0	663.0	766.0	795.0	447.0	551.0	456.0	395.0	77.0	4821.0	1977
1978	74.0	46.0	402.0	702.0	716.0	791.0	733.0	611.0	554.0	566.0	365.0	136.0	5700.0	1978
1979	55.0	0.0	279.0	635.0	624.0	1006.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1979
NUMERO DE ANOS	11	11	11	12	12	12	11	11	11	11	11	11	10	
VALOR MAXIMO	201.0	317.0	402.0	702.0	865.0	1006.0	827.0	640.0	554.0	566.0	539.0	345.0	5700.0	
CUARTIL SUPERIOR	*****	*****	*****	609.5	750.5	830.5	*****	*****	*****	*****	*****	*****	******	
MEDIANA	61.0	46.0	274.0	449.0	663.5	778.0	732.0	527.0	435.0	443.0	347.0	178.0	5072.5	
CUARTIL INFERIOR	*****	*****	*****	349.5	614.0	669.0	*****	*****	*****	*****	*****	*****	******	
VALOR MINIMO	3.0	0.0	79.0	302.0	444.0	479.0	539.0	402.0	275.0	319.0	217.0	40.0	4257.0	
PROMEDIOS	90.3	85.7	245.3	479.3	672.6	758.3	718.0	524.8	441.8	429.1	345.0	181.7	5015.0	
											TOTAL DE LOS PROMEDIOS MENSUALES =		4976.0	
PORCENTAJES	1.8	1.7	4.9	9.6	13.5	15.2	14.4	10.5	8.9	8.6	7.0	3.7		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 116. INDICE DE ARNOLDUS = 534.

DEV. ESTANDAR	61.9	93.7	88.8	143.8	120.9	139.4	87.9	69.2	97.4	67.6	83.7	98.7	401.5
COEF. VARIACION	0.686	1.093	0.362	0.300	0.180	0.184	0.122	0.132	0.220	0.158	0.240	0.543	0.080
COEF. ASIMETRIA	0.677	1.664	-0.495	0.137	-0.436	-0.271	-0.624	-0.048	-0.251	0.407	0.645	0.277	-0.151

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Biblioteca Hacienda

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
900005	LENGUPA	SANTA MARIA	+04 51 40	+073 14 20	0460 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1963	34.0	92.0	18.0	663.0	602.0	657.0	513.0	363.0	365.0	217.0	252.0	116.0	3894.0
1964	0.0	69.0	64.0	356.0	798.0	728.0	530.0	405.0	657.0	448.0	483.0	157.0	4695.0
1965	69.0	77.0	105.0	495.0	652.0	470.0	718.0	484.0	349.0	391.0	395.0	129.0	4334.0
1966	69.0	17.0	199.0	245.0	770.0	421.0	587.0	394.0	368.0	375.0	531.0	181.0	4165.0
1967	109.0	51.0	47.0	451.0	372.0	456.0	400.0	665.0	454.0	376.0	155.0	59.0	3675.0
1968	13.0	13.0	45.0	702.0	342.0	724.0	893.0	574.0	451.0	500.0	312.0	108.0	4677.0
1969	161.0	390.0	302.0	538.0	769.0	635.0	595.0	617.0	218.0	488.0	400.0	283.0	5396.0
1970	131.0	73.0	233.0	434.0	570.0	750.0	803.0	372.0	431.0	411.0	410.0	315.0	4973.0
1971	67.0	139.0	143.0	440.0	669.0	675.0	775.0	573.0	458.0	436.0	448.0	304.0	5151.0
1972	249.0	146.0	322.0	472.0	852.0	542.0	571.0	587.0	289.0	508.0	323.0	111.0	4972.0
1973	15.0	23.0	219.0	394.0	535.0	675.0	568.0	556.0	519.0	416.0	383.0	112.0	4419.0
1974	41.0	90.0	70.0	496.0	755.0	428.0	796.0	591.0	441.0	334.0	376.0	47.0	4465.0
1975	59.0	5.0	297.0	288.0	652.0	724.0	566.0	490.0	248.0	531.0	419.0	319.0	4598.0
1976	35.0	53.0	260.0	499.0	736.0	563.0	588.0	289.0	347.0	503.0	253.0	150.0	4276.0
1977	5.0	63.0	140.0	270.0	611.0	568.0	687.0	350.0	530.0	483.0	384.0	53.0	4164.0
1978	59.0	74.0	492.0	511.0	671.0	742.0	470.0	500.0	402.0	366.0	225.0	115.0	4647.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARAVO

ESTACION X LENGUPA MUNICIPIO DE SANTA MARIA PERIODO 1963 - 1978 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1978	4647.0	4647.0	4647.0	0.254	0.026				+ .			
2	1977	4164.0	8811.0	4405.5	-0.806	-0.056			.	+			
3	1976	4276.0	13087.0	4362.3	-0.560	-0.112			.	+I			
4	1975	4598.0	17685.0	4421.3	0.140	-0.097				+.			
5	1974	4465.0	22150.0	4430.0	-0.145	-0.112				*I			
6	1973	4419.0	26569.0	4428.2	-0.246	-0.137				.+I			
7	1972	4972.0	31541.0	4505.9	0.967	-0.039				+	.		
8	1971	5151.0	36692.0	4586.5	1.360	0.097				+	.		
9	1970	4973.0	41665.0	4629.4	0.969	0.195				I+	.		
10	1969	5396.0	47061.0	4706.1	1.897	0.386				I +		.	
11	1968	4677.0	51738.0	4703.5	0.320	0.418				I .+			
12	1967	3675.0	55413.0	4617.8	-1.879	0.229			.	I +			
13	1966	4165.0	59578.0	4582.9	-0.804	0.148			.	I+			
14	1965	4334.0	63912.0	4565.1	-0.433	0.105			.	I+			
15	1964	4695.0	68607.0	4573.8	0.359	0.141				I+ .			
16	1963	3894.0	72501.0	4531.3	-1.398	0.0			.	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 16 ANOS = 4531.3

DEVIACION ESTANDAR = 455.8

COEFICIENTE DE VARIACION = 0.101

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
900005	LENGUPA	SANTA MARIA	+04 51 42	+073 14 20	0460 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1963	34.0	92.0	18.0	663.0	602.0	697.0	513.0	363.0	365.0	217.0	252.0	118.0	3894.0	1963
1964	0.0	69.0	64.0	356.0	798.0	728.0	530.0	405.0	657.0	448.0	463.0	157.0	4695.0	1964
1965	69.0	77.0	105.0	495.0	652.0	470.0	716.0	484.0	349.0	391.0	395.0	129.0	4334.0	1965
1966	69.0	17.0	199.0	249.0	770.0	421.0	567.0	394.0	368.0	379.0	531.0	181.0	4165.0	1966
1967	109.0	51.0	47.0	451.0	372.0	496.0	400.0	665.0	454.0	376.0	155.0	99.0	3675.0	1967
1968	13.0	13.0	45.0	702.0	342.0	724.0	893.0	574.0	451.0	500.0	312.0	108.0	4677.0	1968
1969	161.0	350.0	302.0	536.0	769.0	635.0	595.0	617.0	218.0	488.0	400.0	283.0	5396.0	1969
1970	131.0	73.0	233.0	434.0	570.0	790.0	803.0	372.0	431.0	411.0	410.0	315.0	4973.0	1970
1971	87.0	139.0	143.0	440.0	669.0	679.0	775.0	573.0	458.0	436.0	448.0	304.0	5151.0	1971
1972	249.0	146.0	322.0	472.0	652.0	542.0	571.0	587.0	269.0	508.0	323.0	111.0	4972.0	1972
1973	15.0	23.0	219.0	394.0	535.0	679.0	568.0	556.0	519.0	416.0	383.0	112.0	4419.0	1973
1974	41.0	90.0	70.0	496.0	755.0	428.0	796.0	591.0	441.0	334.0	376.0	47.0	4465.0	1974
1975	59.0	5.0	297.0	288.0	652.0	724.0	566.0	490.0	248.0	531.0	419.0	319.0	4598.0	1975
1976	35.0	53.0	260.0	499.0	736.0	563.0	588.0	289.0	347.0	503.0	253.0	150.0	4276.0	1976
1977	5.0	63.0	140.0	270.0	611.0	568.0	687.0	350.0	530.0	483.0	384.0	53.0	4164.0	1977
1978	59.0	74.0	492.0	511.0	671.0	742.0	470.0	500.0	402.0	386.0	225.0	115.0	4647.0	1978
NUMERO DE ANOS	16	16	16	16	16	16	16	16	16	16	16	16	16	
VALOR MAXIMO	249.0	350.0	492.0	702.0	652.0	790.0	893.0	665.0	657.0	531.0	531.0	319.0	5396.0	
CUARTIL SUPERIOR	98.0	91.0	278.5	505.0	762.0	724.0	746.5	580.5	456.0	494.0	414.5	232.0	4833.5	
MEDIANA	59.0	71.0	171.0	461.5	660.5	646.0	587.5	495.0	416.5	426.0	383.5	123.5	4531.5	
CUARTIL INFERIOR	24.5	37.0	67.0	375.0	566.0	519.0	548.0	383.0	348.0	382.5	282.5	109.5	4220.5	
VALOR MINIMO	0.0	5.0	18.0	249.0	342.0	421.0	400.0	289.0	218.0	217.0	155.0	47.0	3675.0	
PROMEDIOS	71.0	85.5	184.8	493.6	647.3	616.6	628.8	488.1	407.9	425.4	359.3	162.6	4531.3	
										TOTAL DE LOS PROMEDIOS MENSUALES =			4531.3	
PORCENTAJES	1.6	1.9	4.1	10.9	14.3	13.6	13.9	10.8	9.0	9.4	7.9	3.6		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 92. INDICE DE ARNOLDUS = 483.

DEV. ESTANDAR	65.7	90.6	129.9	126.1	142.8	118.4	135.9	112.9	110.7	80.4	99.8	91.5	455.8
COEF. VARIACION	0.926	1.064	0.703	0.278	0.221	0.192	0.216	0.231	0.271	0.189	0.278	0.563	0.101
COEF. ASIMETRIA	1.474	2.756	0.740	0.193	-0.881	-0.373	0.358	-0.221	0.325	-1.040	-0.415	0.812	0.046

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350715	PIEDRA CAMPANA	SANTA MARIA	+04 51 00	+073 15 00	0460 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1962	-9.9	-9.9	-9.9	361.0	907.0	818.0	841.0	670.0	576.0	861.0	617.0	585.0	-9.9
1963	34.0	92.0	18.0	663.0	602.0	657.0	513.0	363.0	365.0	217.0	297.0	118.0	3939.0
1964	0.0	69.0	64.0	356.0	807.0	736.0	546.0	563.0	657.0	448.0	483.0	165.0	4894.0
1965	69.0	77.0	105.0	495.0	652.0	470.0	718.0	494.0	349.0	391.0	395.0	132.0	4347.0
1966	69.0	17.0	170.0	249.0	859.0	421.0	587.0	396.0	368.0	237.0	274.0	181.0	3828.0
1967	109.0	51.0	46.0	363.0	353.0	456.0	400.0	648.0	454.0	376.0	155.0	102.0	3553.0
1968	29.0	13.0	41.0	702.0	342.0	665.0	935.0	648.0	401.0	500.0	312.0	84.0	4672.0
1969	117.0	267.0	332.0	607.0	673.0	597.0	552.0	619.0	221.0	488.0	392.0	283.0	5148.0
1970	131.0	73.0	233.0	434.0	520.0	719.0	803.0	373.0	431.0	411.0	410.0	313.0	4851.0
1971	88.0	133.0	142.0	440.0	597.0	624.0	692.0	478.0	458.0	413.0	449.0	304.0	4818.0
1972	249.0	146.0	326.0	472.0	848.0	540.0	571.0	577.0	278.0	508.0	323.0	111.0	4949.0
1973	15.0	23.0	138.0	388.0	482.0	679.0	568.0	537.0	519.0	423.0	381.0	112.0	4265.0
1974	43.0	90.0	69.0	490.0	755.0	428.0	796.0	590.0	440.0	328.0	376.0	47.0	4452.0
1975	59.0	5.0	297.0	303.0	652.0	724.0	566.0	490.0	248.0	531.0	419.0	319.0	4613.0
1976	35.0	53.0	260.0	496.0	736.0	563.0	580.0	312.0	353.0	503.0	253.0	150.0	4294.0
1977	5.0	63.0	147.0	273.0	610.0	572.0	693.0	350.0	530.0	476.0	323.0	53.0	4095.0
1978	49.0	74.0	502.0	505.0	711.0	752.0	440.0	500.0	367.0	460.0	174.0	85.0	4619.0
1979	28.0	-9.9	230.0	426.0	448.0	717.0	755.0	683.0	340.0	312.0	593.0	223.0	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR CAMACOL

ESTACION X PILERA CAMPANA MUNICIPAL DE SANTA MARIA PERIODO COEF DE CORRECCION

1962 - 1979 1.000

N	AÑO	T/A	CO	MOV	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1978	4615.0	4615.0	4615.0	0.000	0.036				+ .			
2	1977	4595.0	9210.0	4597.0	-0.116	-0.046			.	+			
3	1976	4624.0	13834.0	4611.3	-0.305	-0.082				+			
4	1975	4612.0	18021.0	4605.3	0.340	-0.048				+ .			
5	1974	4452.0	22473.0	4494.6	-0.015	-0.045				+			
6	1973	4405.0	26878.0	4479.7	-0.434	-0.093			.	+			
7	1972	4545.0	31423.0	4489.0	1.100	0.017				+	.		
8	1971	4615.0	36103.0	4513.1	0.806	0.098				+	.		
9	1970	4851.0	40950.0	4550.7	0.000	0.186				I+	.		
10	1969	5148.0	46104.0	4610.4	1.547	0.341				I +		.	
11	1968	4674.0	50778.0	4616.2	0.475	0.388				I +.			
12	1967	3553.0	54329.0	4527.4	-2.032	0.185			.	I+			
13	1966	3622.0	57951.0	4473.8	-1.415	0.044			.	+			
14	1965	4347.0	62304.0	4404.8	-0.250	0.015				. +			
15	1964	4854.0	67590.0	4493.2	0.577	0.117				I+	.		
16	1963	3555.0	71337.0	4458.6	-1.166	0.0			.	+			

N	AÑO	T/A	CO	MOV	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 16 AÑOS = 4458.6

DESVIACION ESTANDAR = 445.7

COEFICIENTE DE VARIACION = 0.100

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CASTEN *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CASTEN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
35071b	PIEDRA CAMPANA	SANTA MARIA	+04 51 42	+073 14 10	0450 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1962	-9.9	-9.9	-9.9	361.0	907.0	818.0	841.0	670.0	576.0	861.0	617.0	585.0	-9.9	1962
1963	34.0	92.0	18.0	663.0	602.0	657.0	513.0	363.0	365.0	217.0	297.0	118.0	3939.0	1963
1964	0.0	69.0	64.0	356.0	807.0	736.0	546.0	563.0	657.0	448.0	463.0	165.0	4894.0	1964
1965	89.0	77.0	105.0	495.0	652.0	470.0	718.0	494.0	349.0	391.0	395.0	132.0	4347.0	1965
1966	69.0	17.0	170.0	249.0	859.0	421.0	567.0	396.0	368.0	237.0	274.0	181.0	3828.0	1966
1967	109.0	51.0	46.0	303.0	353.0	496.0	400.0	648.0	454.0	376.0	199.0	102.0	3553.0	1967
1968	29.0	13.0	41.0	702.0	342.0	665.0	935.0	648.0	401.0	500.0	312.0	84.0	4672.0	1968
1969														1969
1970	131.0	73.0	233.0	434.0	520.0	719.0	803.0	373.0	431.0	411.0	416.0	313.0	4851.0	1970
1971	88.0	133.0	142.0	440.0	557.0	624.0	692.0	478.0	458.0	413.0	449.0	304.0	4818.0	1971
1972	249.0	146.0	326.0	472.0	848.0	540.0	571.0	577.0	278.0	508.0	323.0	111.0	4949.0	1972
1973	15.0	23.0	138.0	388.0	482.0	679.0	568.0	537.0	519.0	423.0	381.0	112.0	4265.0	1973
1974	43.0	90.0	69.0	490.0	755.0	428.0	796.0	590.0	440.0	328.0	376.0	47.0	4452.0	1974
1975	55.0	5.0	297.0	303.0	652.0	724.0	566.0	490.0	248.0	531.0	419.0	319.0	4613.0	1975
1976	35.0	53.0	260.0	496.0	736.0	563.0	560.0	312.0	353.0	503.0	253.0	150.0	4294.0	1976
1977	5.0	63.0	147.0	273.0	610.0	572.0	693.0	350.0	530.0	476.0	323.0	53.0	4095.0	1977
1978	45.0	74.0	502.0	505.0	711.0	752.0	440.0	500.0	367.0	460.0	174.0	85.0	4619.0	1978
1979	28.0	-9.9	230.0	426.0	448.0	717.0	755.0	683.0	340.0	312.0	593.0	223.0	-9.9	1979
NUMERO DE ANOS	16	15	16	17	17	17	17	17	17	17	17	17	15	
VALOR MAXIMO	249.0	146.0	502.0	702.0	907.0	818.0	935.0	683.0	657.0	861.0	617.0	585.0	4949.0	
CUARTIL SUPERIOR	78.5	90.0	246.5	495.5	781.0	721.5	775.5	619.0	468.5	501.5	434.0	263.5	4818.0	
MEDIANA	46.0	69.0	144.5	434.0	652.0	657.0	587.0	500.0	401.0	423.0	376.0	132.0	4452.0	
CUARTIL INFERIOR	28.5	23.0	66.5	358.5	501.0	518.0	556.0	384.5	351.0	352.0	285.5	93.5	4095.0	
VALOR MINIMO	0.0	5.0	18.0	249.0	342.0	421.0	400.0	312.0	248.0	217.0	156.0	47.0	3553.0	
PROMEDIOS	63.3	65.3	174.3	436.2	640.1	622.4	647.3	510.1	419.6	435.0	366.7	181.4	4412.6	
												TOTAL DE LOS PROMEDIOS MENSUALES =	4561.6	
PORCENTAJES	1.4	1.4	3.8	9.6	14.0	13.6	14.2	11.2	9.2	9.5	8.0	4.0		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO ENE FEB MAR

INDICE DE FOURNIER = 92. INDICE DE ARNOLDUS = 491.

	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	
DEV. ESTANDAR	61.3	41.0	128.9	121.8	171.4	120.7	147.2	119.4	106.1	143.0	126.2	135.3	420.4	
COEF. VARIACION	0.968	0.629	0.740	0.279	0.268	0.194	0.227	0.234	0.253	0.329	0.344	0.746	0.095	
COEF. ASIMETRIA	2.030	0.382	1.079	0.653	-0.242	-0.313	0.231	-0.155	0.600	1.396	0.354	1.845	-0.587	

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350804	SANTA MARIA	SANTA MARIA	+04 55 00	+073 15 00	0970 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1957	17.0	142.0	346.0	232.0	888.0	1054.0	1006.0	650.0	586.0	457.0	171.0	100.0	5649.0
1958	67.0	55.0	286.0	604.0	427.0	732.0	714.0	584.0	151.0	630.0	342.0	58.0	4650.0
1959	6.0	50.0	316.0	378.0	618.0	575.0	881.0	483.0	792.0	825.0	306.0	248.0	5475.0
1960	87.0	72.0	117.0	634.0	633.0	875.0	866.0	1038.0	567.0	330.0	805.0	167.0	6191.0
1961	22.0	0.0	274.0	732.0	977.2	-9.9	638.0	353.0	225.0	510.0	454.0	48.0	-9.9
1962	37.0	4.0	456.0	254.0	857.0	540.0	658.0	450.0	444.0	352.0	306.0	160.0	4918.0
1963	66.0	187.0	88.0	516.0	804.0	456.0	482.0	544.0	318.0	274.0	300.0	165.0	4260.0
1964	2.0	66.0	86.0	493.0	1100.0	663.0	699.0	520.0	555.0	530.0	-9.9	172.0	-9.9
1965	104.0	162.0	104.0	395.0	939.0	484.0	811.0	659.0	485.0	622.0	359.0	223.0	5347.0
1966	103.0	44.0	267.0	316.0	624.0	464.0	660.0	489.0	443.0	360.0	427.0	281.0	4478.0
1967	144.0	49.0	112.0	569.0	419.0	585.0	491.0	723.0	492.0	413.0	238.0	126.0	4365.0
1968	36.0	19.0	60.0	717.0	572.0	645.0	771.0	449.0	504.0	357.0	295.0	61.0	4526.0
1969	143.0	294.0	281.0	-9.9	-9.9	-9.9	596.0	608.0	307.0	502.0	387.0	271.0	-9.9
1970	170.0	96.0	280.0	491.0	602.0	874.0	758.0	486.0	448.0	528.0	520.0	-9.9	-9.9
1971	114.0	189.0	183.0	465.0	898.5	824.0	864.0	636.0	382.0	350.0	301.0	310.0	5556.5
1972	191.0	105.0	303.0	527.0	943.0	740.0	647.0	654.0	291.0	-9.9	-9.9	-9.9	-9.9
1973	19.0	10.0	244.0	387.0	534.0	672.0	640.0	547.0	520.0	517.0	-9.9	-9.9	-9.9
1974													
1975	59.0	12.0	302.0	256.0	534.0	722.0	555.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1976	72.5	60.0	278.0	623.0	736.0	750.0	763.0	435.0	453.0	467.0	298.0	137.0	5072.5
1977	3.0	111.0	197.0	269.0	629.0	680.0	719.0	438.0	549.0	470.0	274.0	58.0	4397.0
1978	54.7	44.0	392.0	480.0	662.0	722.0	526.0	519.0	442.0	470.0	222.0	168.0	4701.7
1979	41.0	0.0	169.0	561.0	519.0	703.0	855.0	656.0	423.0	619.0	743.0	481.0	5770.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAF

ESTACION X SANTA MARIA MUNICIPIO DE SANTA MARIA PERIODO 1957 - 1979 COEF DE CORRECCION 1.000

N	AN	T /	CO	MCY	ECR	PCAN	F = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	5771.0	5770.0	5770.0	1.235	0.145				I+	.		
2	1978	4701.7	10471.7	5235.8	-0.533	0.064			.	+			
3	1977	4997.0	14800.7	4936.2	-1.037	-0.040			.	+			
4	1976	5072.3	19941.2	4985.3	0.081	-0.031				+			
5	1971	5556.5	25497.7	5099.5	1.881	0.075				+	.		
6	1968	4526.0	30023.7	5003.9	-0.824	-0.024			.	+			
7	1967	4305.0	34328.7	4912.7	-1.090	-0.186			.	+I			
8	1966	4478.0	38806.7	4850.8	-0.503	-0.263			.	+ I			
9	1965	5347.0	44213.7	4912.6	0.535	-0.195				+I	.		
10	1963	4260.0	48473.7	4847.4	-1.264	-0.351			.	+ I			
11	1962	4918.0	53391.7	4853.8	-0.175	-0.372				+ .I			
12	1960	6151.0	59582.7	4965.2	1.531	-0.140				+I		.	
13	1959	5475.0	65057.7	5004.4	0.747	-0.050				+	.		
14	1958	4650.0	69707.7	4979.1	-0.818	-0.124			.	+I			
15	1957	5649.0	75356.7	5023.8	1.034	0.000				+	.		
N	AN	T /	CO	MCY	ECR	PCAN	F = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 15 ANOS = 5023.8

DESVIACION ESTANDAR = 604.4 "

COEFICIENTE DE VARIACION = 0.120

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO ICAC-CRSTCN *** GRUPO DE MICROCLIMATOLOGIA *** PROGRAMA CRSICN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350604	SANTA MARIA	SANTA MARIA	+04 51 49	+073 16 07	0810 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	17.0	142.0	346.0	232.0	668.0	1054.0	1006.0	650.0	586.0	457.0	171.0	100.0	5649.0	1957
1958	67.0	53.0	286.0	604.0	427.0	732.0	714.0	564.0	151.0	630.0	342.0	58.0	4650.0	1958
1959	6.0	50.0	316.0	375.0	618.0	575.0	861.0	463.0	792.0	825.0	306.0	248.0	5475.0	1959
1960	87.0	72.0	117.0	634.0	633.0	875.0	866.0	1038.0	567.0	330.0	605.0	167.0	6191.0	1960
1961	22.0	0.0	274.0	732.0	977.2	-9.9	638.0	353.0	225.0	510.0	454.0	48.0	-9.9	1961
1962	37.0	4.0	456.0	254.0	657.0	940.0	658.0	450.0	444.0	352.0	306.0	160.0	4918.0	1962
1963	66.0	167.0	83.0	516.0	604.0	496.0	462.0	544.0	318.0	274.0	300.0	185.0	4260.0	1963
1964	2.0	66.0	86.0	493.0	1100.0	663.0	699.0	520.0	555.0	530.0	-9.9	172.0	-9.9	1964
1965	104.0	162.0	104.0	395.0	939.0	484.0	811.0	659.0	465.0	622.0	355.0	223.0	5347.0	1965
1966	103.0	44.0	267.0	316.0	624.0	464.0	660.0	489.0	443.0	360.0	427.0	281.0	4478.0	1966
1967	144.0	49.0	112.0	569.0	419.0	569.0	491.0	723.0	492.0	413.0	236.0	126.0	4365.0	1967
1968	36.0	19.0	60.0	717.0	572.0	645.0	771.0	449.0	504.0	397.0	295.0	61.0	4526.0	1968
1969	143.0	294.0	281.0	-9.9	-9.9	-9.9	556.0	608.0	307.0	502.0	367.0	271.0	-9.9	1969
1970	170.0	90.0	280.0	491.0	602.0	874.0	758.0	486.0	448.0	528.0	520.0	-9.9	-9.9	1970
1971	114.0	189.0	183.0	465.0	698.5	824.0	864.0	636.0	382.0	390.0	301.0	310.0	5556.5	1971
1972	191.0	105.0	303.0	527.0	943.0	740.0	647.0	654.0	291.0	-9.9	-9.9	-9.9	-9.9	1972
1973	19.0	10.0	244.0	387.0	534.0	672.0	640.0	547.0	520.0	517.0	-9.9	-9.9	-9.9	1973
1974														1974
1975	59.0	12.0	302.0	256.0	534.0	722.0	555.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1975
1976	72.5	60.0	278.0	623.0	736.0	750.0	763.0	438.0	453.0	467.0	298.0	137.0	5072.5	1976
1977	3.0	111.0	197.0	209.0	629.0	680.0	719.0	438.0	549.0	470.0	274.0	58.0	4397.0	1977
1978	54.7	44.0	392.0	480.0	662.0	722.0	526.0	519.0	442.0	470.0	222.0	168.0	4701.7	1978
1979	41.0	0.0	169.0	561.0	519.0	703.0	655.0	656.0	423.0	619.0	743.0	481.0	5770.0	1979

NUMERO DE ANOS	22	22	22	21	21	20	22	21	21	20	18	18	15
VALOR MAXIMO	191.0	294.0	456.0	732.0	1100.0	1054.0	1006.0	1038.0	792.0	825.0	605.0	481.0	6191.0
CUARTIL SUPERIOR	104.0	111.0	302.0	566.5	693.3	767.0	811.0	652.0	534.5	529.0	427.0	248.0	5556.5
MEDIANA	62.5	57.5	270.5	491.0	633.0	712.5	706.5	544.0	448.0	470.0	306.0	167.5	4918.0
CUARTIL INFERIOR	22.0	19.0	117.0	345.5	593.0	617.0	638.0	466.5	350.0	393.5	295.0	100.0	4478.0
VALOR MINIMO	2.0	0.0	60.0	232.0	419.0	464.0	462.0	353.0	151.0	274.0	171.0	48.0	4260.0
PROMEDIOS	70.8	80.5	233.7	471.2	710.3	710.2	709.1	567.7	446.5	483.1	374.9	180.8	5023.8

TOTAL DE LOS PROMEDIOS MENSUALES = 5038.8

PORCENTAJES	1.4	1.6	4.6	9.4	14.1	14.1	14.1	11.3	8.9	9.6	7.4	3.6	

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 100. INDICE DE ARNOLDUS = 541.

DEV. ESTANDAR	56.3	75.3	107.3	151.2	194.1	152.3	137.2	144.3	139.5	126.6	167.8	110.0	604.5
COEF. VARIACION	0.781	0.935	0.459	0.321	0.273	0.214	0.193	0.254	0.312	0.262	0.448	0.609	0.120
COEF. ASIMETRIA	0.679	1.283	0.023	-0.051	0.356	0.366	0.180	1.678	0.065	0.861	1.611	1.132	0.439

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350804	SANTA MARIA	SANTA MARIA	+04 51 49	+073 16 07	0810 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	87.0	72.0	117.0	634.0	633.0	875.0	866.0	1038.0	567.0	330.0	805.0	167.0	6191.0	1960
1961	22.0	0.0	274.0	732.0	977.2	710.0	638.0	353.0	225.0	510.0	454.0	48.0	4943.2	1961
1962	37.0	4.0	456.0	254.0	857.0	940.0	658.0	450.0	444.0	352.0	306.0	160.0	4918.0	1962
1963	66.0	187.0	88.0	516.0	804.0	496.0	482.0	544.0	318.0	274.0	300.0	185.0	4260.0	1963
1964	2.0	60.0	86.0	493.0	1100.0	663.0	699.0	520.0	555.0	530.0	375.0	172.0	5261.0	1964
1965	104.0	162.0	104.0	395.0	939.0	484.0	811.0	659.0	485.0	622.0	359.0	223.0	5347.0	1965
1966	103.0	44.0	267.0	316.0	624.0	464.0	660.0	489.0	443.0	360.0	427.0	281.0	4478.0	1966
1967	144.0	49.0	112.0	569.0	419.0	589.0	491.0	723.0	492.0	413.0	238.0	126.0	4365.0	1967
1968	36.0	19.0	60.0	717.0	572.0	645.0	771.0	449.0	504.0	397.0	295.0	61.0	4526.0	1968
1969	143.0	294.0	281.0	619.0	643.3	618.9	596.0	608.0	307.0	502.0	387.0	271.0	5270.8	1969
1970	170.0	96.0	280.0	491.0	602.0	874.0	758.0	486.0	448.0	528.0	520.0	181.0	5434.0	1970
1971	114.0	189.0	183.0	465.0	898.5	824.0	864.0	636.0	382.0	390.0	301.0	310.0	5556.5	1971
1972	191.0	105.0	303.0	527.0	943.0	740.0	647.0	654.0	291.0	394.0	389.8	161.3	5346.1	1972
1973	19.0	10.0	244.0	387.0	534.0	672.0	640.0	547.0	520.0	517.0	490.2	140.8	4721.0	1973
1974	51.4	68.1	81.8	544.7	537.8	436.6	901.3	711.3	491.3	478.4	484.7	58.0	4845.4	1974
1975	59.0	12.0	302.0	256.0	534.0	722.0	555.0	672.4	554.6	727.1	552.6	413.3	5360.0	1975
1976	72.5	60.0	278.0	623.0	736.0	750.0	763.0	435.0	453.0	467.0	298.0	137.0	5072.5	1976
1977	3.0	111.0	197.0	269.0	629.0	680.0	719.0	438.0	549.0	470.0	274.0	58.0	4397.0	1977
1978	54.7	44.0	392.0	480.0	662.0	722.0	526.0	519.0	442.0	470.0	222.0	168.0	4701.7	1978
1979	41.0	0.0	169.0	561.0	519.0	703.0	855.0	656.0	423.0	619.0	743.0	481.0	5770.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	191.0	294.0	456.0	732.0	1100.0	940.0	901.3	1038.0	567.0	727.1	805.0	481.0	6191.0	
CUARTIL SUPERIOR	109.0	108.0	280.5	594.3	877.8	745.0	791.0	657.5	512.0	522.5	487.4	247.0	5353.5	
MEDIANA	62.5	63.0	220.5	504.5	638.1	691.5	679.5	545.5	450.5	470.0	381.0	167.5	5007.8	
CUARTIL INFERIOR	36.5	15.5	108.0	391.0	554.9	603.9	617.0	468.0	402.5	392.0	299.0	131.5	4613.8	
VALOR MINIMO	2.0	0.0	60.0	254.0	419.0	436.6	482.0	353.0	225.0	274.0	222.0	48.0	4260.0	
PROMEDIOS	76.0	79.6	213.7	492.5	708.2	680.4	695.0	579.4	444.7	467.5	411.1	190.1	5038.2	
PORCENTAJES	1.5	1.6	4.2	9.8	14.1	13.5	13.8	11.5	8.8	9.3	8.2	3.8		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 100. INDICE DE ARNOLDUS = 537.

INDICE DE IRREGULARIDAD INTERANUAL =1.30

DEV. ESTANDAR	54.8	77.4	111.2	143.5	187.4	139.4	127.8	150.6	96.4	109.5	156.0	114.5	513.6
COEF. VARIACION	0.721	0.972	0.520	0.291	0.265	0.205	0.184	0.260	0.217	0.234	0.379	0.602	0.102

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	5884.	5697.	5471.	5038.	4606.	4380.	4193.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.617	1.333	0.389	-0.246	0.567	-0.082	-0.058	1.372	-0.821	0.505	1.251	1.111	0.344

IMPRESO EN COLOMBIA POR DANARVIO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600121	SANTA ROSA	STA.ROSA VITERBO	+05 53 00	+072 59 00	2740 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1932	-9.9	38.0	58.0	105.0	172.0	26.0	27.0	35.0	55.0	231.0	137.0	39.0	-9.9
1933	30.0	21.0	24.0	162.0	133.0	60.0	91.0	107.0	144.0	188.0	243.0	97.0	1300.0
1934	31.0	44.0	55.0	104.0	116.0	55.0	55.0	27.0	94.0	163.0	-9.9	16.0	-9.9
1935	45.0	69.0	90.0	180.0	197.0	34.0	87.0	81.0	136.0	147.0	155.0	69.0	1290.0
1936	13.0	12.0	83.0	47.0	151.0	107.0	52.0	61.0	69.0	171.0	95.0	37.0	858.0
1937	63.0	39.0	63.0	50.0	142.0	62.0	42.0	60.0	144.0	92.0	115.0	50.0	923.0
1938	93.0	42.0	143.0	38.0	-9.9	122.0	-9.9	38.0	34.0	120.0	264.0	198.0	-9.9
1939	-9.9	0.0	45.0	118.0	48.0	33.0	82.0	24.0	38.0	249.0	369.0	250.0	-9.9
1940	15.0	39.0	1.0	15.0	9.0	32.0	1.0	-9.9	-9.9	125.0	33.0	14.0	-9.9
1941	20.0	39.0	33.0	112.0	77.0	53.0	20.0	35.0	48.0	117.0	81.0	86.0	721.0
1942	26.0	28.0	27.0	143.0	118.0	33.0	24.0	23.0	36.0	179.0	150.0	31.0	818.0
1943	37.0	24.0	66.0	169.0	122.0	51.0	20.0	84.0	53.0	220.0	90.0	45.0	981.0
1944	12.0	56.0	46.0	125.0	130.0	103.0	56.0	90.0	64.0	-9.9	64.0	57.0	-9.9
1945	17.0	27.0	15.0	160.0	191.0	81.0	45.0	56.0	19.0	137.0	85.0	34.0	867.0
1946	24.0	31.0	35.0	168.0	80.0	38.0	25.0	60.0	22.0	51.0	80.0	-9.9	-9.9
1947	-9.9	-9.9	-9.9	7.0	34.0	24.0	11.0	18.0	12.0	213.0	29.0	2.0	-9.9
1948	18.0	32.0	91.0	153.0	128.0	41.0	65.0	26.0	69.0	58.0	193.0	64.0	938.0
1949	14.0	63.0	63.0	86.0	162.0	63.0	120.0	134.0	148.0	236.0	107.0	35.0	1231.0
1950	55.0	65.0	171.0	165.0	160.0	52.0	-9.9	75.0	75.0	-9.9	-9.9	-9.9	-9.9
1951	29.0	74.0	61.0	150.0	116.0	74.0	39.0	30.0	54.0	166.0	73.0	78.0	944.0
1952	26.0	73.0	119.0	311.0	128.0	151.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1953	-9.9	86.0	85.0	121.0	111.0	101.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1954													
1955													
1956													
1957	23.0	15.0	33.0	51.0	169.0	51.0	27.0	19.0	46.0	184.0	101.0	27.0	746.0
1958	-9.9	42.0	21.0	-9.9	103.0	-9.9	16.0	113.0	62.0	151.0	104.0	57.0	-9.9
1959	29.0	16.0	-9.9	41.0	120.0	40.0	106.0	62.0	27.0	-9.9	-9.9	-9.9	-9.9
1960													
1961													
1962													
1963													
1964	-9.9	-9.9	-9.9	178.0	134.0	50.5	101.0	-9.9	53.0	69.5	121.5	23.0	-9.9
1965	8.0	20.0	-9.9	240.0	108.0	15.0	23.0	47.0	37.5	202.3	161.0	24.5	-9.9
1966	0.0	23.2	86.0	93.2	119.5	106.3	26.5	80.5	90.0	142.0	295.0	47.5	1111.7
1967	9.0	23.5	111.0	85.0	97.0	89.5	35.0	18.5	71.0	74.0	92.0	28.0	733.5
1968	12.0	39.0	19.0	228.5	173.0	56.5	15.0	14.0	108.0	113.5	94.5	2.5	915.5
1969	64.0	28.0	30.0	346.0	82.0	30.0	6.0	31.0	42.0	226.0	121.0	62.0	1068.0
1970	24.0	34.0	4.0	60.0	58.0	36.0	52.0	38.0	68.0	172.0	57.0	25.0	628.0
1971	50.0	55.0	197.0	208.0	264.0	17.0	22.0	58.0	84.0	81.0	16.0	48.0	1100.0
1972	83.0	51.0	132.0	480.0	81.0	66.0	14.0	12.0	46.0	30.0	48.0	13.0	1078.0
1973	0.0	0.0	56.0	41.0	32.0	63.0	70.0	67.0	163.0	128.0	130.0	27.0	777.0
1974	11.0	48.0	54.0	103.0	111.0	5.0	25.0	37.0	112.0	105.0	167.0	14.0	796.0
1975													
1976													
1977													
1978	11.0	32.4	101.3	171.0	88.0	131.0	92.0	43.0	123.0	136.0	52.0	57.0	1037.7
1979	3.0	19.0	83.0	207.0	70.0	104.0	70.0	111.0	84.0	143.0	225.0	31.0	1150.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAPANJO

ESTACION X SANTA ROSA MUNICIPIO DE STA.ROSA VITERBO PERIODO 1956 - 1975 COEF DE CORRECCION 1.000

N	AN	I A	CO	MGY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1977	1150.0	1150.0	1150.0	1.022	0.199	I+
2	1976	1037.7	2187.7	1093.8	0.422	0.282	I +
3	1974	796.0	2983.7	994.6	-0.670	0.112	I+
4	1973	777.0	3760.7	940.2	-0.572	-0.078	+
5	1972	1076.0	4836.7	967.7	0.637	0.047	+
6	1971	1102.0	5938.7	989.8	0.755	0.194	I+
7	1970	828.0	6766.7	966.1	-1.766	-0.151	+I
8	1969	1068.0	7834.7	954.3	0.584	-0.037	+
9	1968	515.5	8350.2	950.6	-0.231	-0.082	+
10	1967	733.5	9083.7	928.4	-1.204	-0.317	+ I
11	1966	1111.7	10395.4	945.0	0.817	-0.158	+I
12	1965	746.0	11141.4	928.4	-1.137	-0.380	+ I
13	1964	544.6	12086.4	929.6	-0.075	-0.395	+
14	1963	1231.0	13316.4	951.2	1.455	-0.111	+I
15	1962	938.0	14254.4	950.3	-0.111	-0.133	*I
16	1961	867.0	15121.4	945.1	-0.491	-0.225	+ I
17	1960	981.0	16102.4	947.2	0.115	-0.206	+ I.
18	1959	818.0	16920.4	940.0	-0.752	-0.353	+ I
19	1958	721.0	17641.4	928.5	-1.271	-0.601	+ I
20	1957	823.0	18464.4	923.2	-0.191	-0.638	+ .I
21	1956	896.0	19402.4	926.8	-0.325	-0.701	+ . I
22	1955	1290.0	20792.4	945.3	1.770	-0.356	+ I
23	1955	1300.0	22092.4	960.8	1.823	0.0	+

N	AN	I A	CO	MGY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 23 ANOS = 960.8
DESVIACION ESTANDAR = 187.1
COEFICIENTE DE VARIACION = 0.195

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CRECION *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CRECION

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600121	SANTA ROSA	STA.ROSA VITERBO	+05 52 33	+072 55 12	2760 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1942	26.0	28.0	27.0	143.0	118.0	33.0	24.0	23.0	56.0	179.0	150.0	31.0	818.0	1942
1943	37.0	24.0	66.0	169.0	122.0	51.0	20.0	84.0	53.0	220.0	90.0	45.0	981.0	1943
1944	12.0	56.0	46.0	125.0	130.0	103.0	56.0	90.0	64.0	-9.9	64.0	57.0	-9.9	1944
1945	17.0	27.0	15.0	160.0	191.0	81.0	45.0	56.0	19.0	137.0	65.0	34.0	867.0	1945
1946	24.0	31.0	35.0	168.0	80.0	38.0	25.0	60.0	22.0	91.0	80.0	-9.9	-9.9	1946
1947	-9.9	-9.9	-9.9	7.0	34.0	24.0	11.0	18.0	12.0	213.0	25.0	2.0	-9.9	1947
1948	18.0	32.0	91.0	153.0	128.0	41.0	65.0	26.0	69.0	58.0	193.0	64.0	938.0	1948
1949	14.0	63.0	63.0	86.0	162.0	63.0	120.0	134.0	148.0	236.0	107.0	35.0	1231.0	1949
1950	55.0	65.0	171.0	165.0	160.0	92.0	-9.9	75.0	75.0	-9.9	-9.9	-9.9	-9.9	1950
1951	29.0	74.0	61.0	150.0	116.0	74.0	39.0	30.0	54.0	166.0	73.0	78.0	944.0	1951
1952	26.0	73.0	119.0	311.0	128.0	151.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1952
1953	-9.9	60.0	85.0	121.0	111.0	101.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1953
1954														1954
1955														1955
1956														1956
1957	23.0	15.0	33.0	51.0	169.0	51.0	27.0	19.0	46.0	184.0	101.0	27.0	746.0	1957
1958	-9.9	42.0	21.0	-9.9	103.0	-9.9	16.0	113.0	62.0	151.0	104.0	57.0	-9.9	1958
1959	29.0	10.0	-9.9	41.0	120.0	40.0	106.0	62.0	27.0	-9.9	-9.9	-9.9	-9.9	1959
1960														1960
1961														1961
1962														1962
1963														1963
1964	-9.9	-9.9	-9.9	178.0	134.0	90.5	101.0	-9.9	53.0	69.5	121.5	23.0	-9.9	1964
1965	8.0	20.0	-9.9	240.0	108.0	15.0	23.0	47.0	37.5	202.3	161.0	24.5	-9.9	1965
1966	0.0	23.2	86.0	93.2	119.5	108.3	26.5	80.5	90.0	142.0	295.0	47.5	1111.7	1966
1967	9.0	23.5	111.0	85.0	97.0	89.5	35.0	18.5	71.0	74.0	92.0	28.0	733.5	1967
1968	12.0	39.0	19.0	228.5	173.0	96.5	15.0	14.0	108.0	113.5	94.5	2.5	915.5	1968
1969	64.0	28.0	30.0	346.0	82.0	30.0	6.0	31.0	42.0	226.0	121.0	62.0	1068.0	1969
1970	24.0	34.0	4.0	60.0	58.0	36.0	52.0	38.0	68.0	172.0	57.0	25.0	628.0	1970
1971	50.0	55.0	197.0	208.0	264.0	17.0	22.0	58.0	84.0	81.0	16.0	48.0	1100.0	1971
1972	83.0	51.0	132.0	480.0	81.0	88.0	14.0	12.0	46.0	30.0	48.0	13.0	1078.0	1972
1973	0.0	0.0	56.0	41.0	32.0	63.0	70.0	67.0	163.0	128.0	130.0	27.0	777.0	1973
1974	11.0	48.0	54.0	103.0	111.0	9.0	25.0	37.0	112.0	105.0	167.0	14.0	796.0	1974
1975														1975
1976														1976
1977														1977
1978	11.0	32.4	101.3	171.0	88.0	131.0	92.0	43.0	123.0	136.0	52.0	57.0	1037.7	1978
1979	3.0	19.0	83.0	207.0	70.0	104.0	70.0	111.0	84.0	143.0	225.0	31.0	1150.0	1979

*** CARACTERISTICAS PLUVIOMETRICAS MENSUALES Y ANUALES DE LA PAGINA ANTERIOR ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
NUMERO DE ANOS	24	26	24	27	28	27	25	25	26	23	24	23	18	
VALOR MAXIMO	83.0	66.0	197.0	480.0	264.0	191.0	120.0	134.0	163.0	236.0	295.0	78.0	1231.0	
CUARTIL SUPERIOR	29.0	55.0	96.1	207.0	132.0	96.5	67.5	77.8	84.0	184.0	140.0	57.0	1078.0	
MEDIANA	20.5	32.2	62.0	153.0	117.0	63.0	27.0	47.0	63.0	142.0	97.8	31.0	941.0	
CUARTIL INFERIOR	11.0	23.5	31.5	86.0	85.0	36.0	21.0	24.5	42.0	91.0	66.5	24.5	796.0	
VALOR MINIMO	0.0	0.0	4.0	7.0	32.0	9.0	6.0	12.0	12.0	30.0	16.0	2.0	628.0	
PROMEDIOS	24.4	38.7	71.1	158.9	117.5	68.9	44.2	53.9	68.0	141.6	110.7	36.2	940.0	
											TOTAL DE LOS PROMEDIOS MENSUALES =		934.0	
PORCENTAJES	2.6	4.1	7.6	17.0	12.6	7.4	4.7	5.8	7.3	15.2	11.8	3.9		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 27. INDICE DE ARNOLDUS = 101.

DEV. ESTANDAR	20.7	21.2	49.3	102.2	48.2	41.5	32.6	33.8	38.3	57.8	63.9	20.1	167.4	
COEF. VARIACION	0.848	0.550	0.693	0.643	0.411	0.603	0.738	0.628	0.563	0.408	0.578	0.556	0.178	
COEF. ASIMETRIA	1.366	0.556	0.953	1.320	0.823	0.850	1.006	0.768	0.874	-0.104	1.177	0.203	-0.104	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600121	SANTA ROSA	STA.ROSA VITERBO	+05 52 33	+072 59 12	2760 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	31.5	47.0	80.5	188.4	86.6	18.3	87.8	79.9	56.3	121.2	40.7	52.5	891.3	1960
1961	12.3	28.3	82.9	130.2	30.3	83.6	72.7	28.5	61.9	109.3	65.2	18.5	729.7	1961
1962	55.4	28.3	87.6	98.2	177.0	105.2	34.4	56.4	47.8	148.0	100.3	32.4	971.0	1962
1963	5.8	41.6	37.4	217.7	212.9	51.5	25.6	52.6	76.0	188.3	188.8	22.8	1121.0	1963
1964	0.0	33.8	40.9	178.0	134.0	90.5	101.0	50.1	53.0	69.5	121.5	23.0	895.3	1964
1965	8.0	20.0	56.5	240.0	108.0	15.0	23.0	47.0	37.5	202.3	161.0	24.5	942.8	1965
1966	0.0	23.2	86.0	93.2	119.5	108.3	26.5	80.5	90.0	142.0	295.0	47.5	1111.7	1966
1967	9.0	23.5	111.0	85.0	97.0	89.5	35.0	18.5	71.0	74.0	92.0	28.0	733.5	1967
1968	12.0	39.0	19.0	228.5	173.0	96.5	15.0	14.0	108.0	113.5	94.5	2.5	915.5	1968
1969	64.0	28.0	30.0	340.0	82.0	30.0	6.0	31.0	42.0	226.0	121.0	62.0	1068.0	1969
1970	24.0	34.0	4.0	60.0	58.0	36.0	52.0	38.0	68.0	172.0	57.0	25.0	628.0	1970
1971	50.0	55.0	197.0	208.0	264.0	17.0	22.0	58.0	84.0	81.0	16.0	48.0	1100.0	1971
1972	83.0	51.0	132.0	480.0	81.0	88.0	14.0	12.0	46.0	30.0	48.0	13.0	1078.0	1972
1973	0.0	0.0	56.0	41.0	32.0	63.0	70.0	67.0	163.0	128.0	130.0	27.0	777.0	1973
1974	11.0	48.0	54.0	103.0	111.0	9.0	25.0	37.0	112.0	105.0	167.0	14.0	796.0	1974
1975	2.2	65.8	81.0	186.8	113.9	80.4	33.3	95.4	83.2	173.2	132.1	29.1	1076.4	1975
1976	14.9	33.8	164.4	191.9	78.5	87.5	10.1	20.1	29.8	190.4	84.0	72.8	978.2	1976
1977	8.1	4.0	74.4	114.6	97.3	67.2	37.2	42.3	67.9	112.7	78.2	22.9	727.4	1977
1978	11.0	32.4	101.3	171.0	88.0	131.0	92.0	43.0	123.0	136.0	52.0	57.0	1037.7	1978
1979	3.0	19.0	83.0	207.0	70.0	104.0	70.0	111.0	84.0	143.0	225.0	31.0	1150.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	83.0	65.8	197.0	480.0	264.0	131.0	101.0	111.0	163.0	226.0	295.0	72.8	1150.0	
CUARTIL SUPERIOR	27.8	44.6	94.4	212.8	126.8	93.5	70.0	62.5	87.0	172.6	146.5	47.8	1077.2	
MEDIANA	11.0	33.1	80.8	182.4	97.1	82.0	33.8	45.0	69.5	132.0	97.4	27.5	956.9	
CUARTIL INFERIOR	4.4	23.3	47.4	100.6	79.8	33.0	22.5	29.8	50.4	107.1	61.1	22.8	786.5	
VALOR MINIMO	0.0	0.0	4.0	41.0	30.3	9.0	6.0	12.0	29.8	30.0	16.0	2.5	628.0	
PROMEDIOS	20.3	32.8	78.9	178.7	110.7	68.6	42.6	49.1	75.2	133.3	113.5	32.7	936.4	
PORCENTAJES	2.2	3.5	8.4	19.1	11.8	7.3	4.6	5.2	8.0	14.2	12.1	3.5		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 34. INDICE DE ARNOLDUS = 105.

INDICE DE IRREGULARIDAD INTERANUAL =1.56

DEV. ESTANDAR	24.0	16.1	47.1	101.5	58.1	36.5	29.3	27.0	32.6	49.5	68.2	18.1	158.9
COEF. VARIACION	1.184	0.491	0.597	0.568	0.525	0.533	0.686	0.550	0.433	0.371	0.601	0.555	0.170

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1198.	1140.	1070.	936.	803.	733.	675.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.504	-0.063	0.863	1.423	1.157	-0.320	0.745	0.703	1.054	-0.077	1.080	0.691	-0.407

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240146	SANTA SOFIA	SANTA SOFIA	+05 43 00	+073 36 00	2370 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	23.5	6.0	112.5	65.0	118.0	50.5	70.5	52.5	59.0	193.0	112.0	64.0	966.5
1967	57.5	38.0	116.0	189.0	184.5	80.5	33.0	50.0	55.0	85.0	78.5	52.0	1059.0
1968	34.5	28.0	110.0	298.0	58.0	185.0	12.0	18.0	108.0	218.0	147.0	40.0	1256.5
1969	28.0	87.0	50.0	168.0	127.0	99.5	2.0	42.0	64.0	360.0	255.5	66.0	1349.0
1970	58.0	23.0	40.0	97.5	120.0	69.0	53.0	72.0	105.0	142.0	195.0	97.0	1071.5
1971	133.0	85.0	177.0	110.0	191.0	101.0	34.0	86.0	152.1	133.0	118.0	80.0	1400.1
1972	120.0	58.0	92.0	284.0	68.0	87.0	53.0	94.0	32.0	77.0	179.0	95.0	1239.0
1973	31.0	0.0	65.0	106.0	93.0	107.0	67.0	62.0	140.0	150.0	194.0	106.0	1121.0
1974	20.0	73.0	109.5	133.5	105.0	106.5	33.0	31.0	131.0	166.0	172.0	8.0	1090.5
1975	5.0	75.0	89.0	87.0	192.0	64.0	95.0	77.0	92.0	205.0	62.0	119.0	1162.0
1976	23.0	69.0	102.0	170.0	57.0	49.0	3.0	12.0	40.0	180.0	94.0	59.0	858.0
1977	9.0	69.0	63.0	52.0	72.0	44.0	96.0	45.0	95.0	109.0	119.0	27.0	800.0
1978	5.0	51.0	142.5	208.0	93.0	103.0	70.0	26.0	83.0	178.0	88.0	60.0	1107.5
1979	23.0	90.0	98.0	139.0	202.0	66.0	81.0	96.0	91.0	204.0	266.0	33.0	1409.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR LITOGRAFIA

ESTACION K SANTA SOFIA MUNICIPIO DE SANTA SOFIA PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	1409.0	1409.0	1409.0	1.477	0.241				I +			
2	1978	1107.5	2516.5	1258.3	-0.148	0.217				.I- +			
3	1977	800.0	3316.5	1105.5	-1.805	-0.078			.	+			
4	1976	858.0	4174.5	1043.6	-1.493	-0.322			.	+ I			
5	1975	1162.0	5336.5	1067.3	0.140	-0.298				+ I.			
6	1974	1090.5	6427.0	1071.2	-0.240	-0.337				+. I			
7	1973	1121.0	7548.0	1078.3	-0.075	-0.350				+ .			
8	1972	1239.0	8787.0	1098.4	0.591	-0.258				+ I .			
9	1971	1400.1	10187.1	1131.9	1.429	-0.024				+ .			
10	1970	1071.5	11258.6	1125.9	-0.342	-0.080				. +			
11	1969	1349.0	12607.6	1146.1	1.154	0.108				I+ .			
12	1968	1256.5	13864.1	1155.3	0.655	0.215				I + .			
13	1967	1059.0	14923.1	1147.9	-0.409	0.148				. I+			
14	1965	966.5	15889.6	1135.0	-0.908	0.0				. +			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 14 ANOS = 1135.0

DEVIACION ESTANDAR = 185.5

COEFICIENTE DE VARIACION = 0.163

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240146	SANTA SOFIA	SANTA SOFIA	+05 42 57	+073 36 27	2370 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	23.5	6.0	112.5	65.0	118.0	90.5	70.5	52.5	59.0	193.0	112.0	64.0	966.5	1966
1967	57.5	38.0	116.0	189.0	184.5	80.5	33.0	50.0	55.0	85.0	78.5	92.0	1059.0	1967
1968	34.5	28.0	110.0	298.0	58.0	185.0	12.0	18.0	108.0	218.0	147.0	40.0	1256.5	1968
1969	28.0	67.0	50.0	168.0	127.0	99.5	2.0	42.0	64.0	360.0	255.5	66.0	1349.0	1969
1970	58.0	23.0	40.0	97.5	120.0	69.0	53.0	72.0	105.0	142.0	195.0	97.0	1071.5	1970
1971	133.0	85.0	177.0	110.0	191.0	101.0	34.0	66.0	152.1	133.0	118.0	80.0	1400.1	1971
1972	120.0	58.0	92.0	284.0	68.0	87.0	53.0	94.0	32.0	77.0	179.0	95.0	1239.0	1972
1973	31.0	0.0	65.0	106.0	93.0	107.0	67.0	62.0	140.0	150.0	194.0	106.0	1121.0	1973
1974	20.0	73.0	109.5	133.5	165.0	106.5	33.0	31.0	131.0	168.0	172.0	8.0	1090.5	1974
1975	5.0	75.0	89.0	87.0	192.0	64.0	95.0	77.0	92.0	205.0	62.0	119.0	1162.0	1975
1976	23.0	69.0	102.0	170.0	57.0	49.0	3.0	12.0	40.0	180.0	94.0	59.0	858.0	1976
1977	9.0	69.0	63.0	52.0	72.0	44.0	96.0	45.0	95.0	109.0	119.0	27.0	800.0	1977
1978	5.0	51.0	142.5	208.0	93.0	103.0	70.0	26.0	83.0	178.0	88.0	60.0	1107.5	1978
1979	23.0	90.0	98.0	139.0	202.0	86.0	81.0	96.0	91.0	204.0	266.0	33.0	1409.0	1979
NUMERO DE ANOS	14	14	14	14	14	14	14	14	14	14	14	14	14	
VALOR MAXIMO	133.0	90.0	177.0	298.0	202.0	185.0	96.0	96.0	152.1	360.0	266.0	119.0	1409.0	
CUARTIL SUPERIOR	57.5	75.0	112.5	189.0	184.5	103.0	70.5	77.0	108.0	204.0	194.0	95.0	1256.5	
MEDIANA	25.5	63.5	100.0	136.3	111.5	88.8	53.0	51.3	91.5	173.0	133.0	65.0	1114.3	
CUARTIL INFERIOR	20.0	28.0	65.0	97.5	72.0	69.0	33.0	31.0	59.0	133.0	94.0	40.0	1059.0	
VALOR MINIMO	5.0	0.0	40.0	52.0	57.0	44.0	2.0	12.0	32.0	77.0	62.0	8.0	800.0	
PROMEDIOS	40.8	53.7	97.6	150.5	120.0	90.9	50.2	54.5	89.1	171.6	148.6	67.6	1135.0	
										TOTAL DE LOS PROMEDIOS MENSUALES =			1135.0	
PORCENTAJES	3.6	4.7	8.6	13.3	10.6	8.0	4.4	4.8	7.8	15.1	13.1	6.0		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 26. INDICE DE ARREDONDAS = 114.

DEV. ESTANDAR	39.8	30.0	36.3	74.9	52.4	34.0	31.6	27.6	36.6	69.9	63.9	32.6	185.6
COEF. VARIACION	0.977	0.559	0.372	0.498	0.436	0.374	0.631	0.506	0.410	0.408	0.430	0.482	0.163
COEF. ASIMETRIA	1.624	-0.576	0.428	0.790	0.478	1.464	-0.143	0.068	0.147	1.322	0.548	-0.224	-0.177

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240146	SANTA SOFIA	SANTA SOFIA	+05 42 57	+073 36 27	2370 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	36.9	30.3	54.3	169.6	76.1	72.4	33.2	60.4	86.7	170.1	86.9	106.7	983.6	1960
1961	78.4	17.4	139.2	64.2	45.1	47.0	58.1	27.2	82.8	210.4	265.5	109.6	1144.9	1961
1962	90.6	41.1	108.8	94.7	126.9	86.5	53.9	76.7	82.2	168.1	99.7	17.1	1049.5	1962
1963	28.1	81.8	143.3	125.0	127.2	88.8	25.6	31.0	84.0	144.8	107.4	44.1	1031.1	1963
1964	13.7	87.3	56.5	174.3	131.5	161.8	59.1	33.9	75.9	93.9	175.2	55.3	1118.4	1964
1965	22.8	9.9	64.8	99.2	184.7	40.9	53.2	49.5	88.7	252.1	135.6	43.1	1044.5	1965
1966	23.5	6.0	112.5	65.0	118.0	90.5	70.5	52.5	59.0	193.0	112.0	64.0	966.5	1966
1967	57.5	38.0	116.0	189.0	184.5	80.5	33.0	50.0	55.0	85.0	78.5	92.0	1059.0	1967
1968	34.5	28.0	110.0	298.0	58.0	185.0	12.0	18.0	108.0	218.0	147.0	40.0	1256.5	1968
1969	28.0	87.0	50.0	168.0	127.0	99.5	2.0	42.0	64.0	360.0	255.5	66.0	1349.0	1969
1970	58.0	23.0	40.0	97.5	120.0	69.0	53.0	72.0	105.0	142.0	195.0	97.0	1071.5	1970
1971	133.0	85.0	177.0	110.0	191.0	101.0	34.0	86.0	152.1	133.0	118.0	80.0	1400.1	1971
1972	120.0	58.0	92.0	284.0	68.0	87.0	53.0	94.0	32.0	77.0	179.0	95.0	1239.0	1972
1973	31.0	0.0	65.0	106.0	93.0	107.0	67.0	62.0	140.0	150.0	194.0	106.0	1121.0	1973
1974	20.0	73.0	109.5	133.5	105.0	106.5	33.0	31.0	131.0	168.0	172.0	8.0	1090.5	1974
1975	5.0	75.0	89.0	87.0	192.0	64.0	95.0	77.0	92.0	205.0	62.0	119.0	1162.0	1975
1976	23.0	69.0	102.0	170.0	57.0	49.0	3.0	12.0	40.0	180.0	94.0	59.0	858.0	1976
1977	9.0	69.0	63.0	52.0	72.0	44.0	96.0	45.0	95.0	109.0	119.0	27.0	800.0	1977
1978	5.0	51.0	142.5	208.0	93.0	103.0	70.0	26.0	83.0	178.0	88.0	60.0	1107.5	1978
1979	23.0	90.0	98.0	139.0	202.0	86.0	81.0	96.0	91.0	204.0	266.0	33.0	1409.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	133.0	90.0	177.0	298.0	202.0	185.0	96.0	96.0	152.1	360.0	266.0	119.0	1409.0	
CUARTIL SUPERIOR	57.8	78.4	114.3	172.1	158.0	102.0	68.5	74.3	100.0	204.5	186.5	96.0	1200.5	
MEDIANA	28.0	54.5	100.0	129.3	119.0	86.8	53.1	49.8	85.3	169.1	127.3	62.0	1099.0	
CUARTIL INFERIOR	21.4	25.5	63.9	96.1	74.0	66.5	33.0	31.0	69.9	137.5	96.8	41.5	1037.8	
VALOR MINIMO	5.0	0.0	40.0	52.0	45.1	40.9	2.0	12.0	32.0	77.0	62.0	8.0	800.0	
PROMEDIOS	42.2	51.0	96.7	141.7	118.6	88.5	49.3	52.1	87.4	172.1	147.5	66.1	1113.1	
PORCENTAJES	3.8	4.6	8.7	12.7	10.7	7.9	4.4	4.7	7.8	15.5	13.3	5.9		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 27. INDICE DE ARNOLDUS = 112.

INDICE DE IRREGULARIDAD INTERANUAL =1.45

	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
DEV. ESTANDAR	37.0	30.3	36.8	67.3	50.0	36.0	27.2	25.2	30.4	64.2	63.1	33.2	160.2
COEF. VARIACION	0.876	0.594	0.381	0.475	0.422	0.407	0.552	0.484	0.348	0.373	0.427	0.502	0.144

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1377.	1318.	1248.	1113.	978.	908.	849.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
COEF. ASIMETRIA	1.388	-0.248	0.333	0.965	0.344	1.195	-0.090	0.266	0.347	1.108	0.707	-0.028	0.196

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240318	SATIVA NORTE	SATIVA NORTE	+06 08 00	+072 42 00	2560 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	CCT	NOV	DIC	TCTAL
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	90.0	54.0	-9.9
1958	0.0	6.5	23.5	118.0	133.0	68.0	18.0	44.5	5.0	160.5	144.0	110.0	831.0
1959	4.0	56.0	57.0	58.0	288.0	43.0	51.0	49.0	54.5	203.0	152.0	75.0	1090.5
1960	62.0	24.0	53.0	186.0	64.0	44.0	89.0	62.0	49.0	110.0	55.0	171.0	969.0
1961	16.0	19.0	125.0	76.0	90.0	54.0	35.0	40.0	62.0	228.0	223.0	10.0	978.0
1962	50.0	59.0	85.0	92.0	194.0	66.0	50.0	33.0	75.0	202.0	149.0	24.0	1081.0
1963	7.0	38.0	114.0	303.0	196.0	63.0	41.0	75.0	16.0	186.0	190.0	38.0	1267.0
1964	27.0	30.0	15.0	45.0	117.0	167.0	-9.9	40.0	-9.9	96.0	88.0	52.0	-9.9
1965	23.0	8.0	25.0	315.0	199.0	50.0	61.0	57.0	25.0	309.0	265.0	45.0	1382.0
1966	10.0	34.0	33.0	106.0	159.0	125.0	30.0	37.0	69.0	219.0	353.0	111.0	1286.0
1967	14.0	99.0	150.0	190.0	142.0	69.0	43.0	49.0	81.0	88.0	118.0	121.0	1164.0
1968	21.0	14.0	89.0	273.0	148.0	161.0	28.0	24.0	101.0	195.0	193.0	14.0	1261.0
1969	62.0	41.0	15.0	254.0	80.0	63.0	28.0	44.0	49.0	289.0	192.0	32.0	1149.0
1970	16.0	39.0	42.0	82.0	109.0	56.0	46.0	17.0	168.0	278.0	201.0	73.0	1127.0
1971	156.0	159.0	176.0	218.0	178.0	19.0	33.0	75.0	55.0	124.0	113.0	71.0	1377.0
1972	158.0	88.0	95.0	303.0	75.0	96.0	18.0	15.0	65.0	58.0	143.0	52.0	1166.0
1973	3.0	2.0	104.0	129.0	79.0	31.0	30.0	41.0	195.0	98.0	169.0	75.0	956.0
1974	79.0	159.0	157.0	133.0	167.0	31.1	36.4	23.5	150.6	135.8	164.6	28.2	1265.2
1975	0.1	73.9	103.9	174.2	151.5	68.7	96.7	-9.9	-9.9	226.2	126.3	154.4	-9.9
1976	3.5	66.2	231.0	176.6	88.4	36.7	31.7	17.0	71.0	361.5	63.1	53.3	1200.0
1977	18.0	0.4	67.3	197.0	114.0	58.6	18.4	-9.9	63.9	192.7	241.0	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PROYECTO IGAC-ORSTCM *** GRUPO DE HIDROCLIMATOLCGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR BANARA

ESTACION A SATIVA NORTE MUNICIPIO DE SATIVA NORTE PERIODO 1957 - 1977 COEF DE CORRECCION 1.000

N	AN	T A	CU	MUY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1976	1201.0	1200.0	1200.0	0.326	0.043				+ .			
2	1974	1205.2	2405.2	1202.6	0.751	0.144				I+ .			
3	1973	961.0	3421.2	1140.4	-1.264	-0.025			.	+			
4	1972	1106.0	4527.2	1140.6	0.104	-0.011				+.			
5	1971	1377.0	5904.2	1152.8	1.460	0.166				I+ .			
6	1970	1127.0	7031.2	1181.9	-0.150	0.166				.I+			
7	1969	1145.0	8240.2	1177.2	-0.006	0.166				.+			
8	1968	1201.0	9501.2	1187.6	0.724	0.262				I + .			
9	1967	1104.0	10605.2	1185.0	0.091	0.274				. +			
10	1966	1286.0	11951.2	1195.1	0.867	0.393				I + .			
11	1965	1382.0	13333.2	1212.1	1.512	0.594				I + .			
12	1963	1267.0	14600.2	1216.7	0.763	0.696				I +.			
13	1962	1061.0	15661.2	1206.2	-0.450	0.636			.	I +			
14	1961	576.0	16239.2	1159.9	-1.121	0.480			.	I +			
15	1960	969.0	17208.2	1175.2	-1.180	0.329			.	I +			
16	1959	1090.5	18716.7	1169.9	-0.388	0.277				I +			
17	1953	831.0	19549.7	1150.0	-2.079	0.0		.		+			
N	AN	T A	CU	MUY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 17 AÑOS = 1150.0
DESVIACION ESTANDAR = 153.4
COEFICIENTE DE VARIACION = 0.133

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240318	SATIVA NORTE	SATIVA NORTE	+06 08 00	+072 42 00	2420 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1962	50.0	59.0	85.0	92.0	154.0	68.0	50.0	33.0	75.0	202.0	149.0	24.0	1081.0	1962
1963	7.0	38.0	114.0	303.0	196.0	63.0	41.0	75.0	16.0	186.0	190.0	38.0	1267.0	1963
1964	27.0	30.0	15.0	45.0	117.0	167.0	-9.9	40.0	-9.9	96.0	66.0	52.0	-9.9	1964
1965	23.0	8.0	25.0	315.0	199.0	50.0	61.0	57.0	25.0	309.0	265.0	45.0	1382.0	1965
1966	10.0	34.0	33.0	106.0	159.0	125.0	30.0	37.0	69.0	219.0	353.0	111.0	1286.0	1966
1967	14.0	99.0	150.0	190.0	142.0	69.0	43.0	49.0	61.0	88.0	118.0	121.0	1164.0	1967
1968	21.0	14.0	89.0	273.0	148.0	161.0	28.0	24.0	101.0	195.0	193.0	14.0	1261.0	1968
1969	62.0	41.0	15.0	254.0	80.0	63.0	28.0	44.0	49.0	289.0	192.0	32.0	1149.0	1969
1970	16.0	39.0	42.0	62.0	109.0	56.0	46.0	17.0	168.0	278.0	201.0	73.0	1127.0	1970
1971	156.0	159.0	176.0	218.0	178.0	19.0	33.0	75.0	55.0	124.0	113.0	71.0	1377.0	1971
1972	158.0	88.0	95.0	303.0	75.0	96.0	18.0	15.0	65.0	58.0	143.0	52.0	1166.0	1972
1973	3.0	2.0	104.0	129.0	79.0	31.0	30.0	41.0	195.0	98.0	165.0	75.0	956.0	1973
1974	79.0	159.0	157.0	133.0	167.0	31.1	36.4	23.5	150.6	135.8	164.6	28.2	1265.2	1974
1975	0.1	73.9	103.9	174.2	151.5	68.7	96.7	-9.9	-9.9	228.2	126.3	154.4	-9.9	1975
1976	3.5	66.2	231.0	176.6	88.4	36.7	31.7	17.0	71.0	361.5	63.1	53.3	1200.0	1976
1977	18.0	0.4	67.3	197.0	114.0	58.6	18.4	-9.9	63.9	192.7	241.0	-9.9	-9.9	1977
NUMERO DE ANOS	16	16	16	16	16	16	15	14	14	16	16	15	13	
VALOR MAXIMO	158.0	159.0	231.0	315.0	199.0	167.0	96.7	75.0	195.0	361.5	353.0	154.4	1382.0	
CUARTIL SUPERIOR	56.0	80.9	132.0	263.5	172.5	82.5	46.0	49.0	101.0	253.1	197.0	75.0	1276.5	
MEDIANA	19.5	40.0	92.0	183.3	145.0	63.0	33.0	38.5	70.0	193.8	166.8	52.0	1200.0	
CUARTIL INFERIOR	8.5	22.0	37.5	117.5	98.7	43.3	28.0	23.5	55.0	111.0	122.1	32.0	1138.0	
VALOR MINIMO	0.1	0.4	15.0	45.0	75.0	19.0	18.0	15.0	16.0	58.0	63.1	14.0	956.0	
PROMEDIOS	40.5	56.9	93.9	186.9	137.3	72.7	39.4	39.1	84.6	191.3	173.1	62.9	1206.2	
										TOTAL DE LOS PROMEDIOS MENSUALES =			1178.6	
PORCENTAJES	3.4	4.8	8.0	15.9	11.7	6.2	3.3	3.3	7.2	16.2	14.7	5.3		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 31. INDICE DE ARNOLDUS = 130.

DEV. ESTANDAR	50.5	49.4	62.0	85.5	43.6	43.9	19.6	19.8	52.3	87.9	71.6	39.4	118.3
COEF. VARIACION	1.249	0.868	0.661	0.457	0.318	0.603	0.497	0.506	0.618	0.460	0.414	0.626	0.098
COEF. ASIMETRIA	1.734	1.043	0.599	0.054	-0.057	1.189	1.923	0.650	0.998	0.292	0.529	1.084	-0.416

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO			ESTACION		MUNICIPIO		LATITUD	LONGITUD	ALTITUD
240314			SIACHOQUE		SIACHOQUE		+05 31 00	+073 14 00	2750 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	46.0	24.8	70.8	117.0	21.0	8.4	-9.9
1958	1.2	22.0	14.8	6.4	100.4	16.8	17.4	-9.9	9.2	25.C	-9.9	-9.9	-9.9
1959	-9.9	-9.9	6.2	43.2	137.0	79.0	67.5	92.0	28.0	116.5	65.0	20.0	-9.9
1960	8.0	57.0	81.0	70.0	57.0	46.0	89.0	178.0	71.0	75.0	88.0	88.0	910.0
1961	25.0	5.0	59.0	101.0	40.0	104.0	62.0	68.0	17.0	61.0	137.0	6.0	685.0
1962	3.0	5.0	108.0	49.0	247.0	153.0	152.0	63.0	92.0	195.0	242.0	31.0	1380.0
1963	11.0	20.0	23.0	96.0	171.0	104.0	87.0	99.0	58.0	123.0	189.0	5.0	986.0
1964	0.0	0.0	5.0	98.0	98.0	232.0	104.0	63.0	31.0	32.0	31.0	16.0	710.0
1965	0.0	18.0	14.0	115.0	90.0	62.0	61.0	66.0	17.0	115.0	123.0	17.0	698.0
1966	13.0	5.0	31.0	45.0	64.0	47.0	39.0	47.0	65.0	64.0	173.0	72.0	665.0
1967	4.0	14.0	34.0	65.0	96.0	127.0	59.0	56.0	49.0	72.0	85.0	47.0	708.0
1968	11.0	67.0	30.0	143.0	50.0	118.0	54.0	43.0	70.0	103.0	48.0	20.0	757.0
1969	56.0	9.0	8.0	125.0	71.0	155.0	49.0	105.0	35.0	107.0	86.0	22.0	828.0
1970	99.0	36.0	3.0	38.0	107.0	51.0	90.0	61.0	68.0	92.0	71.0	5.0	721.0
1971	50.0	20.0	55.0	81.0	274.0	65.0	74.0	70.0	75.0	83.0	38.0	38.0	923.0
1972	55.0	39.0	77.0	190.0	116.0	79.0	81.0	57.0	38.0	57.0	62.0	6.0	857.0
1973	0.0	2.0	49.0	36.0	86.0	63.0	43.0	92.0	122.0	93.0	85.0	46.0	717.0
1974	21.0	44.0	57.0	81.0	67.0	72.0	29.0	24.0	65.0	87.0	114.0	0.0	661.0
1975	0.0	34.0	42.0	72.0	82.0	65.0	64.0	77.0	70.0	148.0	89.0	106.0	849.0
1976	12.0	24.0	89.0	145.0	111.0	91.0	71.0	34.0	48.0	93.0	64.0	54.0	836.0
1977	0.0	0.0	65.0	-9.9	118.0	75.0	39.0	65.0	54.0	95.0	112.0	1.0	-9.9
1978	0.0	15.0	70.0	119.0	119.0	65.0	41.0	27.0	45.0	80.0	33.0	33.0	647.0
1979	2.0	0.0	66.0	121.0	58.0	154.0	67.0	86.0	28.0	177.0	-9.9	56.0	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARAMA

ESTACION : SIACHOQUE MUNICIPIO DE SIACHOQUE PERIODO 1957 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1978	647.0	647.0	647.0	-0.918	-0.199				+I			
2	1976	836.0	1483.0	741.5	0.162	-0.164				+I			
3	1975	849.0	2332.0	777.3	0.236	-0.113				+I			
4	1974	661.0	2993.0	748.3	-0.838	-0.294				+I			
5	1973	717.0	3710.0	742.0	-0.518	-0.407				+I			
6	1972	857.0	4567.0	761.2	0.282	-0.345				+I			
7	1971	923.0	5490.0	784.3	0.659	-0.203				+I			
8	1970	721.0	6211.0	776.4	-0.495	-0.310				+I			
9	1969	828.0	7039.0	782.1	0.116	-0.285				+I			
10	1968	757.0	7796.0	779.6	-0.289	-0.348				+I			
11	1967	708.0	8504.0	773.1	-0.569	-0.471				+I			
12	1966	665.0	9169.0	764.1	-0.815	-0.648				+I			
13	1965	698.0	9867.0	759.0	-0.626	-0.783				+I			
14	1964	710.0	10577.0	755.5	-0.558	-0.904				+I			
15	1963	986.0	11563.0	770.9	1.019	-0.683				+I			
16	1962	1380.0	12943.0	808.9	3.209	0.025				+I			
17	1961	685.0	13628.0	801.6	-0.701	-0.127				+I			
18	1960	910.0	14538.0	807.7	0.585	0.0				+I			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 18 ANOS = 807.7

DEVIACION ESTANDAR = 175.1

COEFICIENTE DE VARIACION = 0.217

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240314	SIACHOQUE	SIACHOQUE	405 31 02	4073 14 59	2750 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1965	0.0	16.0	14.0	115.0	50.0	62.0	61.0	66.0	17.0	115.0	123.0	17.0	698.0	1965
1966	13.0	3.0	31.0	49.0	64.0	47.0	39.0	47.0	65.0	64.0	173.0	72.0	665.0	1966
1967	4.0	14.0	34.0	65.0	56.0	127.0	59.0	56.0	49.0	72.0	65.0	47.0	708.0	1967
1968	11.0	67.0	30.0	143.0	60.0	118.0	54.0	43.0	70.0	103.0	48.0	20.0	757.0	1968
1969	56.0	9.0	8.0	125.0	71.0	155.0	49.0	105.0	35.0	107.0	66.0	22.0	828.0	1969
1970	99.0	36.0	3.0	38.0	107.0	51.0	50.0	61.0	68.0	92.0	71.0	5.0	721.0	1970
1971	50.0	20.0	55.0	81.0	274.0	65.0	74.0	70.0	75.0	83.0	38.0	38.0	823.0	1971
1972	55.0	39.0	77.0	190.0	116.0	79.0	61.0	57.0	38.0	57.0	62.0	6.0	857.0	1972
1973	0.0	2.0	49.0	36.0	66.0	63.0	43.0	92.0	122.0	93.0	65.0	46.0	717.0	1973
1974	21.0	44.0	57.0	81.0	67.0	72.0	29.0	24.0	65.0	87.0	114.0	0.0	661.0	1974
1975	0.0	34.0	42.0	72.0	62.0	65.0	64.0	77.0	70.0	148.0	65.0	106.0	849.0	1975
1976	12.0	24.0	89.0	145.0	111.0	91.0	71.0	34.0	48.0	93.0	64.0	54.0	836.0	1976
1977	0.0	0.0	65.0	-9.9	118.0	75.0	39.0	65.0	54.0	95.0	112.0	1.0	-9.9	1977
1978	0.0	15.0	70.0	119.0	119.0	65.0	41.0	27.0	45.0	80.0	33.0	33.0	647.0	1978
1979	2.0	0.0	66.0	121.0	68.0	154.0	67.0	66.0	26.0	177.0	-9.9	56.0	-9.9	1979
NUMERO DE ANOS	15	15	15	14	15	15	15	15	15	15	14	15	13	
VALOR MAXIMO	99.0	67.0	89.0	190.0	274.0	155.0	90.0	105.0	122.0	177.0	173.0	106.0	823.0	
CUARTIL SUPERIOR	50.0	36.0	66.0	125.0	116.0	118.0	71.0	77.0	70.0	107.0	112.0	54.0	842.5	
MEDIANA	11.0	18.0	49.0	98.0	90.0	72.0	59.0	61.0	54.0	93.0	65.0	33.0	721.0	
CUARTIL INFERIOR	0.0	5.0	30.0	65.0	67.0	63.0	41.0	43.0	38.0	80.0	62.0	6.0	681.5	
VALOR MINIMO	0.0	0.0	3.0	36.0	60.0	47.0	29.0	24.0	17.0	57.0	33.0	0.0	647.0	
PROMEDIOS	21.5	21.8	46.0	98.3	100.6	85.9	57.4	60.7	56.6	97.7	84.5	34.9	759.0	
												TOTAL DE LOS PROMEDIOS MENSUALES =	765.9	
PORCENTAJES	2.8	2.8	6.0	12.8	13.1	11.2	7.5	7.9	7.4	12.8	11.0	4.6		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 13. INDICE DE ARNOLDUS = 76.

DEV. ESTANDAR	29.8	19.1	25.8	45.8	53.1	35.5	17.5	23.5	25.0	31.0	37.4	29.7	89.4
COEF. VARIACION	1.382	0.876	0.561	0.466	0.528	0.413	0.304	0.387	0.441	0.317	0.443	0.851	0.116
COEF. ASIMETRIA	1.566	0.911	-0.175	0.308	2.694	1.082	0.196	0.159	1.001	1.383	0.636	0.907	0.437

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240314	SIACHOQUE	SIACHOQUE	+05 31 02	+073 14 59	2750 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	6.4	45.9	65.2	56.3	45.9	38.6	71.6	143.3	57.1	60.3	70.8	70.8	732.2	1960
1961	25.0	5.0	59.0	101.0	40.0	104.0	62.0	68.0	17.0	61.0	137.0	6.0	685.0	1961
1962	1.7	2.8	62.6	28.4	143.2	111.9	88.1	36.5	53.3	113.0	140.3	17.9	799.7	1962
1963	7.6	14.2	16.4	68.5	122.1	74.2	62.1	70.7	41.4	87.8	134.9	3.5	703.6	1963
1964	0.0	0.0	4.6	90.7	90.7	214.8	96.3	58.3	28.7	29.6	28.7	14.8	657.2	1964
1965	0.0	16.0	14.0	115.0	90.0	62.0	61.0	66.0	17.0	115.0	123.0	17.0	698.0	1965
1966	13.0	5.0	31.0	45.0	64.0	47.0	39.0	47.0	65.0	64.0	173.0	72.0	665.0	1966
1967	4.0	14.0	34.0	65.0	96.0	127.0	59.0	56.0	49.0	72.0	85.0	47.0	708.0	1967
1968	11.0	67.0	30.0	143.0	50.0	118.0	54.0	43.0	70.0	103.0	48.0	20.0	757.0	1968
1969	56.0	9.0	8.0	125.0	71.0	155.0	49.0	105.0	35.0	107.0	86.0	22.0	828.0	1969
1970	99.0	36.0	3.0	38.0	107.0	51.0	90.0	61.0	68.0	92.0	71.0	5.0	721.0	1970
1971	50.0	20.0	55.0	81.0	274.0	65.0	74.0	70.0	75.0	83.0	38.0	38.0	923.0	1971
1972	55.0	39.0	77.0	190.0	116.0	79.0	81.0	57.0	38.0	57.0	62.0	6.0	857.0	1972
1973	0.0	2.0	49.0	36.0	86.0	63.0	43.0	92.0	122.0	93.0	85.0	46.0	717.0	1973
1974	21.0	44.0	57.0	81.0	67.0	72.0	29.0	24.0	65.0	87.0	114.0	0.0	661.0	1974
1975	0.0	34.0	42.0	72.0	82.0	65.0	64.0	77.0	70.0	148.0	89.0	106.0	849.0	1975
1976	12.0	24.0	89.0	145.0	111.0	91.0	71.0	34.0	48.0	93.0	64.0	54.0	836.0	1976
1977	0.0	0.0	65.0	65.0	118.0	75.0	39.0	65.0	54.0	95.0	112.0	1.0	689.0	1977
1978	0.0	15.0	70.0	119.0	119.0	65.0	41.0	27.0	45.0	80.0	33.0	33.0	647.0	1978
1979	2.0	0.0	66.0	121.0	58.0	154.0	67.0	86.0	28.0	177.0	243.0	56.0	1058.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	99.0	67.0	89.0	190.0	274.0	214.8	96.3	143.3	122.0	177.0	243.0	106.0	1058.0	
CUARTIL SUPERIOR	23.0	35.0	65.1	120.0	117.0	114.9	72.8	73.8	66.5	105.0	128.9	50.5	832.0	
MEDIANA	7.1	14.6	52.0	81.0	90.3	74.6	62.0	63.0	51.1	89.9	85.5	21.0	719.0	
CUARTIL INFERIOR	0.0	3.9	23.2	60.6	65.5	64.0	46.0	45.0	36.5	68.0	63.0	6.0	687.0	
VALOR MINIMO	0.0	0.0	3.0	28.4	40.0	38.6	29.0	24.0	17.0	29.6	28.7	0.0	647.0	
PROMEDIOS	18.2	19.7	44.9	89.3	97.5	91.6	62.1	64.3	52.3	90.9	96.9	31.8	759.6	
PORCENTAJES	2.4	2.6	5.9	11.8	12.8	12.1	8.2	8.5	6.9	12.0	12.8	4.2		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 13. INDICE DE ARNOLDUS = 76.

INDICE DE IRREGULARIDAD INTERANUAL =1.43

DEV. ESTANDAR	26.6	18.9	25.8	42.5	50.5	44.1	18.6	28.1	24.0	32.6	52.3	29.0	105.5
COEF. VARIACION	1.463	0.956	0.576	0.476	0.517	0.482	0.299	0.437	0.459	0.359	0.540	0.911	0.139

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	933.	895.	848.	760.	671.	624.	586.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.899	0.959	-0.261	0.602	2.297	1.367	0.094	1.079	1.030	0.849	1.132	0.995	1.372

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240317	SOCOTA	SOCOTA	+06 02 00	+072 38 00	2446 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	92.0	33.5	-9.9
1958	1.5	11.5	19.5	89.0	84.5	25.5	12.0	36.0	22.5	151.5	107.5	114.0	679.0
1959	16.0	5.0	30.5	51.0	161.0	29.0	68.5	36.0	38.0	166.5	119.5	48.5	779.5
1960	3.0	23.0	87.5	149.0	36.0	15.5	51.0	46.0	39.5	93.5	35.5	148.0	727.5
1961	13.0	0.0	106.0	82.0	29.0	60.0	22.0	27.5	38.0	133.5	127.5	4.0	642.5
1962	69.0	20.0	73.0	71.0	174.0	52.0	33.0	30.0	32.0	291.0	171.0	5.0	1021.0
1963	38.0	32.0	101.0	154.0	159.0	20.0	32.0	40.0	5.0	133.0	158.0	7.0	879.0
1964	1.0	15.0	12.0	88.0	113.0	35.0	25.0	31.0	33.0	72.0	51.0	40.0	516.0
1965	7.0	4.0	24.0	208.0	66.0	25.0	20.0	37.0	7.0	201.0	88.0	70.0	757.0
1966	0.0	23.0	40.0	51.0	133.0	90.0	30.0	47.0	40.0	92.0	203.0	117.0	866.0
1967	16.0	5.0	89.0	190.0	65.0	68.0	67.0	24.0	57.0	16.0	91.0	98.0	786.0
1968	16.0	36.0	64.0	281.0	99.0	119.0	18.0	12.0	89.0	120.0	107.0	0.0	961.0
1969	89.0	16.0	5.0	287.0	81.0	50.0	46.0	36.0	46.0	178.5	155.0	4.0	993.5
1970	12.5	15.0	1.0	34.0	85.5	68.0	63.5	24.0	154.0	204.0	101.0	60.0	822.5
1971	89.0	123.0	137.0	132.0	186.0	23.0	44.0	53.0	39.0	124.0	82.0	49.0	1081.0
1972	117.0	35.0	153.0	230.0	95.5	59.0	5.5	6.0	45.0	50.0	60.0	53.0	909.0
1973	0.0	0.0	38.0	49.0	49.0	12.0	19.0	30.0	73.0	54.0	164.0	58.0	546.0
1974	22.0	50.0	35.0	87.0	142.0	26.0	22.0	0.0	65.0	92.0	92.0	6.0	639.0
1975	0.0	63.0	70.0	154.0	137.0	58.0	53.0	21.0	85.0	216.0	127.0	103.0	1087.0
1976	0.0	42.0	110.0	161.0	31.0	19.0	36.0	14.0	79.0	200.0	53.0	27.0	772.0
1977	0.0	0.0	36.0	146.7	108.0	53.0	6.0	66.0	79.0	152.0	186.0	18.0	850.7
1978	8.0	50.0	129.0	173.0	83.0	44.0	31.0	27.0	149.0	185.0	86.0	24.0	993.0
1979	4.0	70.0	78.0	154.0	92.0	152.0	56.0	78.0	39.0	288.0	196.0	10.0	1217.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X SECCTA MUNICIPIO DE SOCCTA PERIODO COEF DE CORRECCION

1957 - 1979 1.000

N	AN	T A	CO	MOY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1217.0	1217.0	1217.0	2.066	C.445				I +		•	
2	1978	993.0	2210.0	1105.0	C.833	C.625				I + •			
3	1977	830.7	3040.7	1020.2	C.048	C.635				• +			
4	1976	772.0	3812.7	958.2	-C.386	C.552			•	I +			
5	1975	1087.0	4919.7	983.9	1.351	C.642				I + •			
6	1974	635.0	5554.7	926.4	-1.120	C.601			•	I +			
7	1973	540.0	6104.7	872.1	-1.033	C.250				I +			
8	1972	909.0	7013.7	876.7	C.365	C.329				I *			
9	1971	1081.0	8094.7	899.4	1.218	C.613				I + •			
10	1970	822.5	8917.2	891.7	-C.108	C.590				•I +			
11	1969	993.5	9910.7	901.0	C.835	C.770				I +•			
12	1968	961.0	10871.7	906.0	C.656	C.511				I • +			
13	1967	786.0	11657.7	896.7	-C.309	C.644			•	I +			
14	1966	806.0	12523.7	894.5	C.132	C.873				I• +			
15	1965	757.0	13280.7	885.4	-C.426	C.772			•	I +			
16	1964	516.0	13796.7	862.3	-1.998	C.386				I +			
17	1963	879.0	14675.7	863.3	C.204	C.428				I • +			
18	1962	1021.0	15696.7	872.0	C.587	C.641				I + •			
19	1961	842.5	16539.2	870.0	-1.101	C.404			•	I +			
20	1960	727.5	17266.7	863.3	-C.632	C.268			•	I +			
21	1959	779.5	17846.2	849.8	-C.345	C.194			•	I+			
22	1958	679.0	18525.2	842.1	-C.899	C.0			•	+			

N	AN	T A	CO	MOY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 22 ANOS = 842.1

DESVIACION ESTANDAR = 181.3

COEFICIENTE DE VARIACION = 0.215

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CASTEN *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CASTEN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
351901	LAS CINTAS	SOGAMOSO	+05 37 00	+072 53 00	3400 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1971	-9.9	-9.9	122.0	107.0	199.0	82.0	190.0	138.0	103.0	76.0	55.0	40.0	-9.9
1972	100.0	13.5	81.0	248.5	108.5	168.0	126.0	48.0	115.0	38.0	63.0	9.0	1118.5
1973	11.0	4.0	40.0	39.0	52.0	42.0	83.0	111.0	133.0	137.0	107.0	48.0	807.0
1974	10.0	48.0	74.0	86.0	116.0	95.0	130.0	82.0	107.0	-9.9	115.0	3.0	-9.9
1975	2.0	71.0	11.0	37.0	111.0	147.0	116.0	101.0	101.0	142.0	92.0	136.0	1067.0
1976	12.0	13.5	101.0	164.0	88.0	166.0	300.0	151.0	57.0	117.0	79.0	30.0	1278.5
1977	0.0	4.0	25.0	79.0	123.0	97.0	112.0	161.0	92.0	72.0	154.0	13.0	932.0
1978	2.4	12.8	55.4	201.0	123.7	102.1	88.3	153.8	143.8	145.0	44.7	37.6	1110.6
1979	106.0	22.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PROYECTO IGAC-ORSTCM *** GRUPO DE HIDROCLIMATOLCGIA

IMPRESO EN COLOMBIA POR DANSA

ESTACION X LAS CINTAS MUNICIPIO DE SUGAMOSO PERIODO 1971 - 1975 COEF DE CORRECCION 1.000

N	AN	T A	CO	MOY	ECR	PCAN	F = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1976	1110.6	1110.6	1110.6	0.387	0.055				+ .			
2	1977	932.0	2042.6	1021.3	-0.735	-0.059			.	+			
3	1978	1278.5	3321.1	1107.0	1.383	0.156				I+	.		
4	1975	1067.0	4388.1	1097.0	0.090	0.170				.+			
5	1973	807.0	5195.1	1039.0	-1.495	-0.063			.	+			
6	1972	1118.5	5313.6	1052.3	0.405	0.0				+ .			

N	AN	T A	CO	MOY	ECR	PCAN	F = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 6 ANOS = 1052.3
DESVIACION ESTANDAR = 103.6
COEFICIENTE DE VARIACION = 0.155

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO IDEAM-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
351901	LAS CINTAS	SEGARCSO	+05 37 01	+072 52 14	3400 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1971	-9.9	-9.9	122.0	107.0	159.0	82.0	190.0	138.0	103.0	76.0	55.0	40.0	-9.9	1971
1972	100.0	13.5	81.0	248.5	108.5	168.0	126.0	48.0	115.0	38.0	63.0	9.0	1118.5	1972
1973	11.0	4.0	40.0	39.0	52.0	42.0	83.0	111.0	133.0	137.0	107.0	48.0	807.0	1973
1974	10.0	46.0	74.0	86.0	116.0	99.0	130.0	82.0	107.0	-9.9	115.0	3.0	-9.9	1974
1975	2.0	71.0	11.0	37.0	111.0	147.0	116.0	101.0	101.0	142.0	92.0	136.0	1067.0	1975
1976	12.0	13.5	101.0	164.0	88.0	166.0	300.0	151.0	57.0	117.0	79.0	30.0	1278.5	1976
1977	0.0	4.0	25.0	79.0	123.0	97.0	112.0	161.0	92.0	72.0	154.0	13.0	932.0	1977
1978	2.4	12.8	55.4	201.0	123.7	102.1	88.3	153.8	143.8	145.0	44.7	37.6	1110.6	1978
1979	106.0	22.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1979
NUMERO DE ANOS	8	8	8	8	8	8	8	8	8	7	8	8	6	
VALOR MAXIMO	106.0	71.0	122.0	248.5	159.0	168.0	300.0	161.0	143.8	145.0	154.0	136.0	1278.5	
MEDIANA	10.5	13.5	64.7	96.5	113.5	100.5	121.0	124.5	105.0	117.0	85.5	33.8	1088.8	
VALOR MINIMO	0.0	4.0	11.0	37.0	52.0	42.0	83.0	48.0	57.0	38.0	44.7	3.0	807.0	
PROMEDIOS	30.4	23.6	63.7	120.2	115.1	112.9	143.2	118.2	106.5	103.9	88.7	39.6	1052.3	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1065.9	
PORCENTAJES	2.9	2.2	6.0	11.3	10.8	10.6	13.4	11.1	10.0	9.7	8.3	3.7		

TRIMESTRE MAS LLUVIOSO JUN JUL AGO **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 15. INDICE DE ARREDONDO = 105.

DEV. ESTANDAR	45.0	23.7	38.0	77.0	41.3	44.0	71.3	39.9	26.4	41.9	36.1	42.2	163.6
COEF. VARIACION	1.481	1.004	0.597	0.640	0.359	0.390	0.498	0.338	0.248	0.404	0.407	1.065	0.155
COEF. ASIMETRIA	1.403	1.408	0.135	0.627	0.860	-0.082	1.849	-0.698	-0.551	-0.557	0.652	2.033	-0.305

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
243520	SENA	SOGAMOSO	+05 46 00	+072 53 00	2500 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1968	11.7	39.9	31.9	229.0	126.0	100.0	23.5	25.3	51.7	75.8	59.7	2.5	777.0
1969	79.9	16.1	21.5	191.8	78.9	47.7	19.5	45.0	27.1	190.1	106.1	8.9	832.6
1970	25.3	42.5	12.1	33.2	100.5	46.8	93.9	43.9	74.4	99.8	81.8	14.2	668.4
1971	96.0	101.2	97.2	98.2	186.2	36.0	49.8	59.3	89.5	91.2	44.1	42.6	991.3
1972	146.8	50.8	57.2	246.8	69.1	58.7	6.0	5.2	33.1	46.2	58.1	7.0	787.0
1973	2.5	0.0	68.0	240.0	71.5	31.4	56.8	33.6	114.0	144.1	121.0	46.6	929.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X SENA MUNICIPIO DE SOGAMOSO PERIODO 1968 - 1973 COEF DE CORRECCION 1.000

N	AN	T A	CU	MUY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1973	929.5	929.5	929.5	0.853	0.119				I+	.		
2	1972	787.0	1716.5	858.3	-0.381	0.066				. +			
3	1971	991.3	2707.8	902.6	1.388	0.259				I +	.		
4	1970	668.4	3376.2	844.0	-1.408	0.063			.	+			
5	1969	832.6	4208.8	841.8	0.014	0.065				*			
6	1968	777.0	4985.8	831.0	-0.467	0.0				. +			

N	AN	T A	CU	MUY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I

PROMEDIO DE LOS 6 ANOS = 831.0

DESVIACION ESTANDAR = 119.5

COEFICIENTE DE VARIACION = 0.144

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO IDAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
243520	SENA	SOGAMOSO	+05 45 32	+072 54 33	2490 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1968	11.7	35.9	31.9	229.0	126.0	100.0	23.5	25.3	51.7	75.6	59.7	2.5	777.0	1968
1969	79.9	16.1	21.5	191.8	78.9	47.7	19.5	45.0	27.1	190.1	106.1	8.9	832.6	1969
1970	25.3	42.5	12.1	33.2	100.5	46.8	93.9	43.9	74.4	99.6	81.8	14.2	668.4	1970
1971	96.0	101.2	57.2	98.2	166.2	36.0	49.8	59.3	89.5	91.2	44.1	42.6	991.3	1971
1972	146.8	50.8	57.2	246.8	69.1	58.7	6.0	5.2	33.1	48.2	58.1	7.0	787.0	1972
1973	2.5	0.0	66.0	240.0	71.5	31.4	56.8	33.6	114.0	144.1	121.0	46.6	929.5	1973
NUMERO DE ANOS	6	6	6	6	6	6	6	6	6	6	6	6	6	
VALOR MAXIMO	146.8	101.2	97.2	246.8	166.2	100.0	93.9	59.3	114.0	190.1	121.0	46.6	991.3	
MEDIANA	52.6	41.2	44.5	210.4	69.7	47.2	36.6	38.7	63.0	95.5	70.7	11.5	809.8	
VALOR MINIMO	2.5	0.0	12.1	33.2	69.1	31.4	6.0	5.2	27.1	48.2	44.1	2.5	668.4	
PROMEDIOS	60.4	41.8	48.0	173.2	105.4	53.4	41.6	35.4	65.0	108.2	76.5	20.3	831.0	
												TOTAL DE LOS PROMEDIOS MENSUALES =	831.0	
PORCENTAJES	7.3	5.0	5.8	20.8	12.7	6.4	5.0	4.3	7.8	13.0	9.4	2.4		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 36. INDICE DE ARNOLDUS = 53.

DEV. ESTANDAR	56.7	34.7	32.1	87.8	45.0	24.7	32.0	18.7	33.8	51.0	30.1	19.2	115.5
COEF. VARIACION	0.939	0.831	0.669	0.507	0.428	0.463	0.769	0.529	0.521	0.471	0.384	0.948	0.139
COEF. ASIMETRIA	0.570	0.870	0.535	-1.012	1.417	1.675	0.784	-0.610	0.345	0.769	0.466	0.825	0.105

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Biblioteca de Ciencias

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350710	SOMONDOCO	SOMONDOCO	+04 59 00	+073 27 00	1600 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1962	-9.9	-9.9	-9.9	53.0	229.0	263.0	220.0	128.0	124.0	41.0	44.0	30.0	-9.9
1963	19.0	63.0	16.0	168.0	217.0	142.0	178.0	176.0	153.0	37.0	90.0	23.0	1282.0
1964	0.0	0.0	0.0	113.0	232.0	227.0	172.0	102.0	164.0	145.0	83.0	40.0	1278.0
1965	14.0	35.0	44.0	124.0	284.0	246.0	291.0	198.0	114.0	119.0	-9.9	22.0	-9.9
1966	11.0	15.0	97.0	65.0	104.0	138.0	154.0	145.0	78.0	52.0	119.0	40.0	1018.0
1967	18.0	12.0	65.0	155.0	148.0	240.0	226.0	202.0	175.0	91.0	39.0	0.0	1371.0
1968	5.0	23.0	13.0	176.0	110.0	202.0	257.0	111.0	103.0	102.0	56.0	10.0	1168.0
1969	74.0	25.0	43.0	123.0	193.0	134.0	179.0	186.0	75.0	197.0	55.0	55.0	1339.0
1970	36.0	40.0	65.0	170.0	305.0	228.0	309.0	140.0	90.0	121.0	33.0	79.0	1616.0
1971	24.0	36.0	107.0	106.0	239.0	166.0	257.0	177.0	115.0	76.0	60.0	28.0	1391.0
1972	38.0	29.0	83.0	192.0	246.0	243.0	215.0	-9.9	152.0	112.0	-9.9	-9.9	-9.9
1973	-9.9	11.0	43.0	108.0	183.0	170.0	175.0	239.0	157.0	110.0	114.0	24.0	-9.9
1974	10.0	21.0	44.0	113.0	192.0	163.0	245.0	152.0	92.0	75.0	68.0	4.0	1183.0
1975	9.0	12.0	49.0	106.0	118.0	226.0	186.0	144.0	103.0	117.0	63.0	52.0	1185.0
1976	13.0	13.0	42.0	136.0	136.0	254.0	230.0	183.0	95.0	42.0	117.0	31.0	1332.0
1977	0.0	31.0	43.0	102.0	167.0	214.0	216.0	148.0	126.0	51.0	30.0	16.0	1144.0
1978	7.0	16.0	97.0	170.0	115.0	209.0	118.0	155.0	84.0	50.0	19.0	25.0	1065.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION A SCHENDUCO MUNICIPIO DE SUMONDUCO PERIODO 1962 - 1978 COEF DE CORRECCION 1.000

N	AÑO	I /	CO	MCY	ECM	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1970	1105.0	1005.0	1065.0	-1.233	-0.154				+I			
2	1977	1144.0	2209.0	1104.5	-0.732	-0.246				+ I			
3	1978	1352.0	3561.0	1180.3	0.460	-0.188				+I			
4	1975	1165.0	4726.0	1181.5	-0.472	-0.247				+ I			
5	1974	1184.0	5909.0	1181.8	-0.464	-0.306				+ I			
6	1971	1391.0	7300.0	1216.7	0.635	-0.204				+ I			
7	1970	1416.0	8716.0	1273.7	2.261	0.080				+			
8	1969	1539.0	10255.0	1281.9	0.505	0.143				I+			
9	1968	1168.0	11423.0	1269.2	-0.875	0.070				+			
10	1967	1371.0	12794.0	1279.4	0.708	0.159				I+			
11	1966	1418.0	13212.0	1265.6	-1.531	-0.033				+			
12	1964	1478.0	15090.0	1257.5	0.118	-0.018				+.			
13	1963	1282.0	16372.0	1259.4	0.142	0.000				+.			

F = -3. -2. -1. 0.0 +1. +2. +3.

N AÑO I / CO MCY ECM PCAN I I I I I I I

PROMEDIO DE LOS 13 AÑOS = 1259.4

DESVIACION ESTANDAR = 107.7

COEFICIENTE DE VARIACION = 0.126

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO ISAC-CESTA *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CESTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350710	SUMONDOCO	SUMONDOCO	+04 59 35	+073 25 54	1650 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1962	-9.9	-9.9	-9.9	53.0	229.0	263.0	220.0	128.0	124.0	41.0	44.0	30.0	-9.9	1962
1963	19.0	63.0	16.0	168.0	217.0	142.0	178.0	176.0	153.0	37.0	90.0	23.0	1282.0	1963
1964	0.0	0.0	0.0	113.0	232.0	227.0	172.0	102.0	164.0	145.0	83.0	40.0	1278.0	1964
1965	14.0	35.0	44.0	124.0	264.0	246.0	291.0	158.0	114.0	119.0	-9.9	22.0	-9.9	1965
1966	11.0	15.0	97.0	85.0	104.0	138.0	154.0	145.0	78.0	52.0	119.0	40.0	1018.0	1966
1967	18.0	12.0	65.0	155.0	148.0	240.0	226.0	202.0	175.0	91.0	35.0	0.0	1371.0	1967
1968	5.0	23.0	13.0	176.0	110.0	202.0	257.0	111.0	103.0	102.0	56.0	10.0	1168.0	1968
1969	74.0	25.0	43.0	123.0	193.0	134.0	179.0	186.0	75.0	197.0	55.0	55.0	1339.0	1969
1970	36.0	40.0	65.0	170.0	305.0	228.0	309.0	140.0	90.0	121.0	33.0	79.0	1616.0	1970
1971	24.0	36.0	107.0	106.0	239.0	166.0	257.0	177.0	115.0	76.0	60.0	28.0	1391.0	1971
1972	38.0	29.0	83.0	192.0	246.0	243.0	215.0	-9.9	152.0	112.0	-9.9	-9.9	-9.9	1972
1973	-9.9	11.0	43.0	108.0	183.0	170.0	175.0	239.0	167.0	110.0	114.0	24.0	-9.9	1973
1974	10.0	21.0	44.0	113.0	192.0	163.0	245.0	152.0	92.0	79.0	66.0	4.0	1183.0	1974
1975	9.0	12.0	49.0	106.0	118.0	226.0	186.0	144.0	103.0	117.0	63.0	52.0	1185.0	1975
1976	13.0	13.0	42.0	136.0	136.0	294.0	230.0	183.0	95.0	42.0	117.0	31.0	1332.0	1976
1977	0.0	31.0	43.0	102.0	167.0	214.0	216.0	148.0	126.0	51.0	30.0	16.0	1144.0	1977
1978	7.0	10.0	97.0	170.0	115.0	209.0	118.0	155.0	84.0	50.0	19.0	25.0	1065.0	1978
NUMERO DE ANOS	15	16	16	17	17	17	17	16	17	17	15	16	13	
VALOR MAXIMO	74.0	63.0	107.0	192.0	305.0	294.0	309.0	239.0	175.0	197.0	119.0	79.0	1616.0	
CUARTIL SUPERIOR	24.0	33.0	74.0	169.0	235.5	241.5	251.0	184.5	152.5	118.0	90.0	40.0	1355.0	
MEDIANA	13.0	22.0	44.0	123.0	192.0	214.0	216.0	153.5	114.0	91.0	60.0	26.5	1278.0	
CUARTIL INFERIOR	7.0	12.5	42.5	106.0	127.0	164.5	176.5	142.0	91.0	50.5	35.0	19.0	1156.0	
VALOR MINIMO	0.0	0.0	0.0	53.0	104.0	134.0	118.0	102.0	75.0	37.0	15.0	0.0	1018.0	
PROMEDIOS	18.5	23.9	53.2	128.2	189.3	206.2	213.4	161.6	117.6	90.7	66.0	29.9	1259.4	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1298.6	
PORCENTAJES	1.4	1.8	4.1	9.9	14.6	15.9	16.4	12.4	9.1	7.0	5.1	2.3		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 35. INDICE DE ARNOLDUS = 152.

DEV. ESTANDAR	19.0	15.1	30.9	39.1	62.0	46.5	49.7	35.6	32.0	43.6	32.4	20.1	157.7
COEF. VARIACION	1.026	0.633	0.582	0.305	0.327	0.227	0.233	0.221	0.272	0.481	0.490	0.671	0.125
COEF. ASIMETRIA	1.971	1.019	0.208	-0.164	0.220	-0.075	0.135	0.344	0.432	0.736	0.466	0.849	0.637

PROYECTO IGAC-CRSTGM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTGM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2403380	SOTAQUIRA	SOTAQUIRA	+05 46 00	+073 15 00	2600 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JJL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	178.0	48.0	99.5	-9.9
1961	36.0	13.0	131.0	137.0	16.0	12.0	80.0	53.0	63.0	178.0	133.0	67.0	919.0
1962	32.0	13.0	102.0	121.0	206.0	210.0	136.0	112.0	111.0	106.0	205.0	54.0	1408.0
1963	22.0	101.0	126.0	193.0	266.0	68.0	93.0	99.0	38.0	176.0	195.0	16.0	1413.0
1964	20.0	46.0	11.0	167.0	168.0	228.0	155.0	149.0	94.0	123.0	142.0	73.0	1366.0
1965	28.0	12.0	55.0	239.0	239.0	59.0	36.0	77.0	52.0	185.0	335.0	31.0	1348.0
1966	37.0	37.0	104.0	197.0	215.0	125.0	94.0	138.0	145.0	251.0	241.0	181.0	1765.0
1967	14.0	81.0	136.0	199.0	182.0	124.0	105.0	87.0	103.0	154.0	138.0	95.0	1372.0
1968	39.0	66.0	85.0	308.0	168.0	170.0	89.0	71.0	139.0	162.0	140.0	15.0	1452.0
1969	105.0	151.0	28.0	190.0	100.0	165.0	52.0	57.0	105.0	245.0	105.0	28.0	1355.0
1970	19.5	22.0	73.0	103.0	226.0	113.0	114.5	95.0	82.0	195.0	79.0	72.0	1194.0
1971	142.0	75.0	129.0	117.0	288.0	93.0	48.0	99.0	131.0	266.0	144.0	114.0	1646.0
1972	94.0	94.0	103.0	291.0	219.0	131.0	20.0	58.0	43.0	57.0	128.0	70.0	1308.0
1973	5.0	0.0	46.0	68.0	81.0	70.0	88.0	85.0	200.0	123.0	230.0	335.0	1331.0
1974	65.0	91.0	114.5	286.0	-9.9	22.0	47.0	35.0	166.0	276.0	270.0	27.0	-9.9
1975	5.0	127.0	139.0	103.0	376.5	150.0	196.0	167.0	113.0	310.5	123.0	112.0	1922.0
1976	48.0	91.0	220.0	330.0	116.0	111.0	32.0	52.0	62.0	254.0	130.0	42.0	1488.0
1977	4.0	11.0	58.0	64.0	113.0	110.0	89.0	94.0	61.0	155.0	201.0	32.0	992.0
1978	0.0	19.0	147.0	260.0	187.0	112.0	116.0	58.0	90.0	146.0	50.0	61.0	1246.0
1979	79.0	15.0	118.0	224.0	82.0	151.0	62.0	112.0	98.0	205.0	75.0	40.0	1299.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X SCTACLIMA MUNICIPIO DE SCTACLIMA PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

F = -3. -2. -1. 0.0 +1. +2. +3.

N	AN	T /	CO	MCY	ECR	ECAN
1	1975	1259.0	1259.0	1259.0	-0.337	-0.056
2	1976	1246.0	2505.0	1272.5	-0.555	-0.166
3	1977	992.0	3497.0	1179.0	-1.026	-0.438
4	1978	1468.0	5029.0	1258.3	0.457	-0.356
5	1979	1524.0	6547.0	1309.4	2.261	0.037
6	1973	1331.0	8278.0	1379.7	-0.202	0.002
7	1972	1308.0	9586.0	1369.4	-0.255	-0.045
8	1971	1644.0	11232.0	1404.0	1.121	0.144
9	1970	1194.0	12426.0	1380.7	-0.778	0.010
10	1969	1355.0	13781.0	1378.1	-0.101	-0.007
11	1968	1452.0	15233.0	1384.6	0.006	0.046
12	1967	1372.0	16605.0	1383.8	-0.030	0.040
13	1966	1765.0	18370.0	1413.1	1.621	0.320
14	1965	1398.0	19716.0	1408.4	-0.131	0.256
15	1964	1368.0	21084.0	1405.6	-0.255	0.286
16	1963	1413.0	22497.0	1406.1	0.142	0.313
17	1962	1408.0	23905.0	1406.2	0.121	0.334
18	1961	919.0	24824.0	1379.1	-1.933	0.0

F = -3. -2. -1. 0.0 +1. +2. +3.

N	AN	T /	CO	MCY	ECR	ECAN

PROMEDIO DE LOS 18 ANOS = 1379.1

DESVIACION ESTANDAR = 238.0

COEFICIENTE DE VARIACION = 0.173

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CESTEA *** CALCO DE HIDROCLIMATOLOGIA *** PROGRAMA CESTEA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240338	SUTAGUIRA	SUTAGUIRA	+05 45 57	+073 14 55	2620 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9 ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	178.0	46.0	99.5	-9.9	1960
1961	30.0	13.0	131.0	137.0	16.0	12.0	60.0	53.0	63.0	178.0	133.0	67.0	919.0	1961
1962	32.0	13.0	102.0	121.0	206.0	210.0	136.0	112.0	111.0	106.0	205.0	54.0	1408.0	1962
1963	22.0	101.0	126.0	193.0	266.0	88.0	93.0	99.0	38.0	176.0	195.0	16.0	1413.0	1963
1964	20.0	36.0	11.0	167.0	168.0	228.0	155.0	149.0	94.0	123.0	142.0	73.0	1366.0	1964
1965	28.0	12.0	55.0	239.0	239.0	59.0	36.0	77.0	52.0	185.0	335.0	31.0	1348.0	1965
1966	37.0	37.0	104.0	197.0	215.0	125.0	94.0	138.0	145.0	251.0	241.0	181.0	1765.0	1966
1967	14.0	81.0	136.0	199.0	182.0	124.0	105.0	87.0	103.0	154.0	138.0	49.0	1372.0	1967
1968	39.0	60.0	85.0	308.0	168.0	170.0	69.0	71.0	139.0	162.0	140.0	15.0	1452.0	1968
1969	105.0	151.0	28.0	190.0	100.0	185.0	52.0	57.0	105.0	249.0	105.0	28.0	1355.0	1969
1970	19.5	22.0	73.0	103.0	226.0	113.0	114.5	95.0	82.0	195.0	79.0	72.0	1194.0	1970
1971	142.0	75.0	129.0	117.0	268.0	93.0	48.0	99.0	131.0	266.0	144.0	114.0	1646.0	1971
1972	94.0	94.0	103.0	291.0	219.0	131.0	20.0	58.0	43.0	57.0	128.0	70.0	1308.0	1972
1973	5.0	5.0	46.0	68.0	81.0	70.0	88.0	85.0	200.0	123.0	230.0	335.0	1331.0	1973
1974	65.0	91.0	114.5	286.0	-9.9	22.0	47.0	35.0	166.0	276.0	270.0	27.0	-9.9	1974
1975														1975
1976	48.0	91.0	220.0	330.0	116.0	111.0	32.0	52.0	62.0	254.0	130.0	42.0	1488.0	1976
1977														1977
1978	0.0	19.0	147.0	260.0	187.0	112.0	116.0	58.0	90.0	146.0	80.0	61.0	1246.0	1978
1979	79.0	15.0	118.0	224.0	82.0	191.0	62.0	112.0	96.0	205.0	75.0	40.0	1299.0	1979
NUMERO DE ANOS	17	17	17	17	16	17	17	17	17	18	18	18	16	
VALOR MAXIMO	142.0	151.0	220.0	330.0	268.0	228.0	155.0	149.0	200.0	276.0	335.0	335.0	1765.0	
CUARTIL SUPERIOR	72.0	91.0	130.0	273.0	222.5	177.5	109.8	105.5	135.0	249.0	205.0	73.0	1432.5	
MEDIANA	36.0	37.0	104.0	197.0	184.5	113.0	88.0	85.0	96.0	178.0	139.0	57.5	1360.5	
CUARTIL INFERIOR	19.8	14.0	64.0	129.0	108.0	79.0	47.5	57.5	62.5	146.0	105.0	31.0	1303.5	
VALOR MINIMO	0.0	0.0	11.0	68.0	16.0	12.0	20.0	35.0	38.0	57.0	46.0	15.0	919.0	
PROMEDIOS	46.2	53.9	101.7	201.8	172.4	120.2	80.4	84.5	101.2	182.4	154.9	76.4	1369.4	
									TOTAL DE LOS PROMEDIOS MENSUALES =				1376.1	
PORCENTAJES	3.4	3.9	7.4	14.7	12.5	8.7	5.8	6.1	7.4	13.3	11.3	5.5		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 30. INDICE DE ARNOLDUS = 136.

DEV. ESTANDAR	38.7	43.1	49.9	77.1	75.0	61.8	38.3	31.6	44.5	60.4	77.7	76.0	185.7
COEF. VARIACION	0.838	0.799	0.491	0.382	0.435	0.514	0.476	0.374	0.440	0.331	0.501	0.995	0.136
COEF. ASIMETRIA	1.183	0.622	0.232	0.010	-0.518	0.029	0.212	0.497	0.571	-0.157	0.723	2.655	-0.164

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240338	SUTAQUIRA	SUTAQUIRA	+05 45 57	+073 14 55	2620 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	17.2	106.6	70.5	199.9	229.4	29.5	169.9	104.7	57.9	178.0	48.0	99.5	1317.1	1960
1961	36.0	13.0	131.0	137.0	16.0	12.0	80.0	53.0	63.0	178.0	133.0	67.0	919.0	1961
1962	32.0	13.0	102.0	121.0	206.0	210.0	136.0	112.0	111.0	106.0	205.0	54.0	1408.0	1962
1963	22.0	101.0	126.0	193.0	266.0	88.0	93.0	99.0	38.0	176.0	195.0	16.0	1413.0	1963
1964	20.0	36.0	11.0	167.0	168.0	228.0	155.0	149.0	94.0	123.0	142.0	73.0	1366.0	1964
1965	28.0	12.0	55.0	239.0	239.0	59.0	36.0	77.0	52.0	185.0	335.0	31.0	1348.0	1965
1966	37.0	37.0	104.0	197.0	215.0	125.0	94.0	138.0	145.0	251.0	241.0	181.0	1765.0	1966
1967	14.0	81.0	136.0	199.0	182.0	124.0	105.0	87.0	103.0	154.0	138.0	49.0	1372.0	1967
1968	39.0	66.0	85.0	308.0	168.0	170.0	89.0	71.0	139.0	162.0	140.0	15.0	1452.0	1968
1969	105.0	151.0	28.0	190.0	100.0	185.0	52.0	57.0	105.0	249.0	105.0	28.0	1355.0	1969
1970	19.5	22.0	73.0	103.0	226.0	113.0	114.5	95.0	82.0	195.0	79.0	72.0	1194.0	1970
1971	142.0	75.0	129.0	117.0	288.0	93.0	48.0	99.0	131.0	266.0	144.0	114.0	1646.0	1971
1972	94.0	94.0	103.0	291.0	219.0	131.0	20.0	58.0	43.0	57.0	128.0	70.0	1308.0	1972
1973	5.0	0.0	46.0	68.0	81.0	70.0	88.0	85.0	200.0	123.0	230.0	335.0	1331.0	1973
1974	50.3	70.5	88.7	221.7	133.3	17.0	36.4	27.1	128.7	213.9	209.3	20.9	1217.8	1974
1975	4.2	106.8	116.9	86.6	316.8	126.2	164.9	140.5	95.1	261.3	103.5	94.2	1617.0	1975
1976	48.0	91.0	220.0	330.0	116.0	111.0	32.0	52.0	62.0	254.0	130.0	42.0	1488.0	1976
1977	4.6	12.4	65.5	72.3	127.7	124.3	100.5	106.2	68.9	175.1	227.1	36.1	1120.6	1977
1978	0.0	19.0	147.0	260.0	187.0	112.0	116.0	58.0	90.0	146.0	50.0	61.0	1246.0	1978
1979	79.0	13.0	118.0	224.0	82.0	191.0	62.0	112.0	96.0	205.0	75.0	40.0	1299.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	142.0	151.0	220.0	330.0	316.8	228.0	169.9	149.0	200.0	266.0	335.0	335.0	1765.0	
CUARTIL SUPERIOR	49.1	92.5	127.5	231.5	227.7	150.5	115.3	109.1	119.8	231.4	207.1	83.6	1432.5	
MEDIANA	30.0	51.5	102.5	195.0	184.5	118.5	91.0	91.0	94.5	178.0	139.0	57.5	1351.5	
CUARTIL INFERIOR	15.6	14.0	69.3	119.0	121.8	79.0	50.0	58.0	62.5	150.0	104.3	33.5	1272.5	
VALOR MINIMO	0.0	0.0	11.0	68.0	16.0	12.0	20.0	27.1	38.0	57.0	48.0	15.0	919.0	
PROMEDIOS	39.8	50.1	98.1	186.2	178.3	115.9	89.6	89.0	95.2	182.9	152.9	74.9	1359.1	
PORCENTAJES	2.9	4.1	7.2	13.7	13.1	8.5	6.6	6.6	7.0	13.5	11.2	5.5		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 26. INDICE DE ARNOLDUS = 134.

INDICE DE IRREGULARIDAD INTERANUAL =1.43

DEV. ESTANDAR	37.8	43.4	46.9	77.3	76.5	60.7	44.8	32.8	40.1	56.4	72.6	72.8	186.9
COEF. VARIACION	0.949	0.773	0.478	0.415	0.429	0.524	0.500	0.368	0.421	0.308	0.475	0.972	0.138

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1667.	1599.	1517.	1359.	1202.	1119.	1051.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.423	0.461	0.451	0.145	-0.233	0.026	0.249	0.116	0.812	-0.295	0.703	2.717	0.025

IMPRESO EN COLOMBIA PJH BARRANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240129	SUTAMARCHAN	SUTAMARCHAN	+05 37 15	+073 37 33	2090 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1961	34.5	10.0	105.2	101.5	7.5	16.2	2.5	0.0	20.5	123.0	262.6	10.0	699.5
1962	64.3	15.0	60.0	92.2	120.0	71.5	15.5	40.0	20.0	103.0	186.0	13.0	800.5
1963	17.5	112.5	121.5	142.5	237.0	43.5	25.5	14.5	46.0	55.5	131.0	16.0	1005.0
1964	7.0	63.5	47.0	167.0	135.5	67.5	30.5	18.0	39.5	132.0	79.5	33.0	836.0
1965	13.5	47.5	23.0	165.5	124.0	5.0	5.0	27.5	19.0	115.0	167.0	48.0	750.0
1966	0.0	9.0	27.0	61.0	106.5	60.0	25.0	27.5	44.0	85.0	132.5	103.5	725.0
1967	22.5	55.0	96.5	114.0	93.0	32.5	29.0	6.0	8.5	46.5	132.5	66.0	722.0
1968	7.0	30.0	63.0	171.0	68.0	58.5	2.0	19.0	79.5	152.5	153.0	9.0	852.5
1969	29.0	25.5	31.0	257.0	60.5	37.0	2.0	0.0	55.0	166.0	102.5	22.0	791.5
1970	2.0	17.0	49.0	56.0	48.5	44.0	39.0	23.0	53.0	157.5	114.5	107.5	711.0
1971	101.0	85.0	117.0	135.0	96.0	24.0	15.0	26.0	61.0	121.0	116.0	47.0	944.0
1972	103.0	20.0	70.4	227.5	88.0	54.3	43.5	30.5	0.0	17.0	52.0	53.0	755.2
1973	6.0	0.0	59.0	112.5	43.5	64.5	47.0	60.5	115.0	58.0	124.0	43.0	785.0
1974	15.0	66.0	123.0	105.0	93.0	41.0	15.0	31.0	130.0	175.0	164.0	6.0	966.0
1975	0.0	96.0	110.0	72.0	103.0	35.0	50.5	59.0	33.0	157.5	54.0	113.0	887.0
1976	7.0	86.0	192.0	115.0	57.0	22.0	0.0	8.0	63.0	145.0	90.0	20.0	845.0
1977	3.0	9.0	120.0	54.0	35.0	51.0	46.0	17.0	69.0	55.0	146.0	20.0	631.0
1978	0.0	35.0	135.0	181.0	65.0	10.0	42.0	5.0	42.0	68.0	32.0	56.0	691.0
1979	25.0	60.0	100.0	120.0	122.0	68.0	35.0	90.0	36.0	260.0	190.0	98.0	1184.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X SUTAMARCHAN MUNICIPIO DE SUTAMARCHAN PERIODO COEF DE CORRECCION

1961 - 1979 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1184.0	1184.0	1184.0	2.735	0.443				I +			.
2	1978	691.0	1875.0	937.5	-0.972	0.286			.	I +			
3	1977	631.0	2506.0	835.3	-1.423	0.055			.	+			
4	1976	845.0	3351.0	837.8	0.186	0.085				+.			
5	1975	887.0	4238.0	847.6	0.502	0.167				I+ .			
6	1974	966.0	5204.0	867.3	1.096	0.344				I + .			
7	1973	785.0	5989.0	855.6	-0.265	0.301			.	I +			
8	1972	759.2	6748.2	843.5	-0.459	0.227			.	I +			
9	1971	944.0	7692.2	854.7	0.931	0.378				I + .			
10	1970	711.0	8403.2	840.3	-0.822	0.244			.	I +			
11	1969	791.5	9194.7	835.9	-0.216	0.209			.	I +			
12	1968	852.5	10047.2	837.3	0.242	0.249				I *			
13	1967	722.0	10769.2	828.4	-0.739	0.129			.	I +			
14	1966	725.0	11494.2	821.0	-0.717	0.013			.	+			
15	1965	750.0	12244.2	816.3	-0.529	-0.073			.	+			
16	1964	836.0	13080.2	817.5	0.118	-0.054				+.			
17	1963	1005.0	14085.2	828.5	1.389	0.171				I +	.		
18	1962	800.5	14885.7	827.0	-0.149	0.147			.	I +			
19	1961	699.5	15585.2	820.3	-0.908	0.0			.	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 19 ANOS = 820.3

DEVIACION ESTANDAR = 133.0

COEFICIENTE DE VARIACION = 0.162

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240129	SUTAMARCHAN	SUTAMARCHAN	+05 37 19	+073 37 33	2090 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1961	34.5	10.0	105.2	101.5	7.5	16.2	2.5	0.0	26.5	123.0	262.6	10.0	699.5	1961
1962	64.3	15.0	60.0	92.2	120.0	71.5	15.5	40.0	20.0	103.0	166.0	13.0	800.5	1962
1963	17.5	112.5	121.5	142.5	237.0	43.5	25.5	14.5	46.0	95.5	131.0	18.0	1005.0	1963
1964	7.0	63.5	37.0	167.0	135.5	87.5	36.5	18.0	39.5	132.0	79.5	33.0	836.0	1964
1965	13.5	37.5	23.0	165.5	124.0	5.0	5.0	27.5	19.0	115.0	167.0	48.0	750.0	1965
1966	0.0	9.0	27.0	81.0	100.5	80.0	25.0	27.5	44.0	89.0	132.5	103.5	725.0	1966
1967	22.5	55.0	96.5	114.0	93.0	32.5	29.0	6.0	8.5	46.5	132.5	86.0	722.0	1967
1968	7.0	30.0	63.0	171.0	68.0	98.5	2.0	19.0	79.5	152.5	153.0	9.0	852.5	1968
1969	29.0	29.5	31.0	257.0	60.5	37.0	2.0	0.0	55.0	166.0	102.5	22.0	791.5	1969
1970	2.0	17.0	49.0	56.0	48.5	44.0	39.0	23.0	53.0	157.5	114.5	107.5	711.0	1970
1971	101.0	65.0	117.0	135.0	96.0	24.0	15.0	26.0	61.0	121.0	116.0	47.0	944.0	1971
1972	103.0	20.0	70.4	227.5	68.0	54.3	43.5	30.5	0.0	17.0	82.0	53.0	759.2	1972
1973	6.0	0.0	53.0	112.5	41.5	84.5	47.0	60.5	115.0	98.0	124.0	43.0	785.0	1973
1974	15.0	60.0	123.0	105.0	93.0	41.0	15.0	31.0	130.0	175.0	164.0	8.0	966.0	1974
1975	0.0	90.0	110.0	72.0	103.0	39.0	50.5	59.0	33.0	157.5	54.0	113.0	887.0	1975
1976	7.0	80.0	192.0	115.0	97.0	22.0	0.0	8.0	63.0	145.0	90.0	20.0	845.0	1976
1977	3.0	9.0	120.0	54.0	35.0	51.0	48.0	17.0	69.0	59.0	146.0	20.0	631.0	1977
1978	0.0	35.0	135.0	181.0	85.0	10.0	42.0	5.0	42.0	68.0	32.0	56.0	691.0	1978
1979	25.0	60.0	100.0	120.0	122.0	88.0	35.0	90.0	36.0	260.0	190.0	58.0	1184.0	1979
NUMERO DE ANOS	19	19	19	19	19	19	19	19	19	19	19	19	19	
VALOR MAXIMO	103.0	112.5	192.0	257.0	237.0	98.5	50.5	90.0	130.0	260.0	262.6	113.0	1184.0	
CUARTIL SUPERIOR	29.0	66.0	120.0	167.0	120.0	80.0	42.0	31.0	63.0	157.5	164.0	58.0	887.0	
MEDIANA	13.5	35.0	96.5	115.0	93.0	43.5	25.5	23.0	44.0	121.0	131.0	43.0	791.5	
CUARTIL INFERIOR	3.0	15.0	49.0	92.2	60.5	24.0	5.0	8.0	26.5	89.0	90.0	18.0	722.0	
VALOR MINIMO	0.0	0.0	23.0	54.0	7.5	5.0	0.0	0.0	0.0	17.0	32.0	8.0	631.0	
PROMEDIOS	24.1	44.0	86.0	130.0	92.7	48.9	25.2	26.4	49.5	120.0	127.8	45.7	820.3	
											TOTAL DE LOS PROMEDIOS MENSUALES =		820.3	
PORCENTAJES	2.9	5.4	10.5	15.8	11.3	6.0	3.1	3.2	6.0	14.6	15.6	5.6		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO
INDICE DE FOURNIER = 21. INDICE DE ARREGUDUS = 51.

DEV. ESTANDAR	31.6	33.6	45.0	54.5	48.6	28.6	17.7	22.9	32.9	54.9	55.0	34.6	133.0
COEF. VARIACION	1.314	0.763	0.523	0.419	0.524	0.585	0.702	0.867	0.666	0.457	0.430	0.758	0.162
COEF. ASIMETRIA	1.822	0.580	0.437	0.772	1.130	0.276	-0.100	1.379	1.004	0.467	0.413	0.823	1.193

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240129	SUTAMARCHAN	SUTAMARCHAN	+05 37 19	+073 37 33	2090 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	42.3	64.0	87.1	111.1	89.9	42.0	24.6	25.5	47.8	116.9	126.6	44.2	822.0	1960
1961	34.5	10.0	105.2	101.5	7.5	16.2	2.5	0.0	26.5	123.0	262.6	10.0	699.5	1961
1962	64.5	15.0	60.0	92.2	120.0	71.5	15.5	40.0	20.0	103.0	186.0	13.0	800.5	1962
1963	17.5	112.5	121.5	142.5	237.0	43.5	25.5	14.5	46.0	95.5	131.0	18.0	1005.0	1963
1964	7.0	63.5	37.0	167.0	135.5	87.5	36.5	18.0	39.5	132.0	79.5	33.0	836.0	1964
1965	13.5	37.5	23.0	165.5	124.0	5.0	5.0	27.5	19.0	115.0	167.0	48.0	750.0	1965
1966	0.0	9.0	27.0	81.0	106.5	80.0	25.0	27.5	44.0	89.0	132.5	103.5	725.0	1966
1967	22.5	53.0	96.5	114.0	93.0	32.5	29.0	6.0	8.5	46.5	132.5	86.0	722.0	1967
1968	7.0	30.0	63.0	171.0	68.0	98.5	2.0	19.0	79.5	152.5	153.0	9.0	852.5	1968
1969	29.0	29.5	31.0	257.0	60.5	37.0	2.0	0.0	55.0	166.0	102.5	22.0	791.5	1969
1970	2.0	17.0	49.0	56.0	48.5	44.0	39.0	23.0	53.0	157.5	114.5	107.5	711.0	1970
1971	101.0	85.0	117.0	135.0	96.0	24.0	15.0	26.0	61.0	121.0	116.0	47.0	944.0	1971
1972	103.0	20.0	70.4	227.5	88.0	54.3	43.5	30.5	0.0	17.0	52.0	53.0	759.2	1972
1973	6.0	0.0	53.0	112.5	41.5	84.5	47.0	60.5	115.0	98.0	124.0	43.0	785.0	1973
1974	15.0	66.0	123.0	105.0	93.0	41.0	15.0	31.0	130.0	175.0	164.0	8.0	966.0	1974
1975	0.0	96.0	110.0	72.0	103.0	39.0	50.5	59.0	33.0	157.5	54.0	113.0	887.0	1975
1976	7.0	86.0	192.0	115.0	97.0	22.0	0.0	8.0	63.0	145.0	90.0	20.0	845.0	1976
1977	3.0	9.0	120.0	54.0	35.0	51.0	48.0	17.0	69.0	59.0	146.0	20.0	631.0	1977
1978	0.0	35.0	135.0	181.0	85.0	10.0	42.0	5.0	42.0	68.0	32.0	56.0	691.0	1978
1979	25.0	60.0	100.0	120.0	122.0	88.0	35.0	90.0	36.0	260.0	190.0	58.0	1184.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	103.0	112.5	192.0	257.0	237.0	98.5	50.5	90.0	130.0	260.0	262.6	113.0	1184.0	
CUARTIL SUPERIOR	31.8	65.0	118.5	166.3	113.3	75.8	40.5	30.8	62.0	155.0	158.5	57.0	869.8	
MEDIANA	14.3	36.3	91.8	114.5	93.0	42.8	25.3	24.3	45.0	118.9	128.8	43.6	796.0	
CUARTIL INFERIOR	4.5	16.0	51.0	96.8	64.3	28.3	10.0	11.3	29.8	92.3	96.3	19.0	723.5	
VALOR MINIMO	0.0	0.0	23.0	54.0	7.5	5.0	0.0	0.0	0.0	17.0	32.0	8.0	631.0	
PROMEDIOS	25.0	45.0	86.0	129.0	92.5	48.6	25.1	26.4	49.4	119.9	127.8	45.6	820.4	
PORCENTAJES	3.0	5.5	10.5	15.7	11.3	5.9	3.1	3.2	6.0	14.6	15.6	5.6		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 90.

INDICE DE IRREGULARIDAD INTERANUAL =1.51

DEV. ESTANDAR	31.1	33.0	43.8	53.2	47.3	27.9	17.2	22.3	32.1	53.4	53.5	33.7	129.4
COEF. VARIACION	1.243	0.733	0.509	0.413	0.511	0.574	0.684	0.846	0.649	0.446	0.419	0.739	0.158

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1033.	986.	929.	820.	711.	654.	607.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.727	0.488	0.442	0.837	1.164	0.321	-0.097	1.416	1.034	0.487	0.426	0.848	1.216

IMPRESO EN COLOMBIA POR DANAPANJE

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240316	TASCO	TASCO	+05 55 00	+072 47 00	2500 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	59.5	41.2	-9.9
1958	0.1	28.8	13.4	92.9	68.7	34.0	15.9	43.2	5.9	101.1	110.3	45.6	563.9
1959	9.0	15.5	12.5	51.4	103.1	30.7	74.6	40.5	44.3	142.9	75.3	56.9	656.7
1960	36.8	34.6	66.7	110.1	69.6	20.2	77.4	63.6	72.2	102.7	66.2	74.2	754.3
1961	33.5	19.0	90.0	88.3	16.2	47.1	28.2	12.8	50.6	122.2	128.1	0.1	636.1
1962	62.0	27.0	110.0	121.0	116.0	54.0	63.0	65.0	19.0	134.0	166.0	43.0	1020.0
1963	5.0	40.0	98.0	138.0	188.0	57.0	29.0	30.0	9.0	95.0	108.0	6.0	807.0
1964	0.0	12.0	22.0	111.0	65.0	61.0	66.0	24.0	44.0	77.0	79.0	30.0	591.0
1965	3.0	4.0	16.0	196.0	72.0	35.0	21.0	50.0	37.0	130.0	106.0	23.0	693.0
1966	13.0	19.0	23.0	44.0	94.0	55.0	25.0	76.0	37.0	87.0	177.0	136.0	786.0
1967	36.0	58.0	88.0	92.0	77.0	67.0	60.0	36.0	59.0	71.0	121.0	28.0	793.0
1968	22.0	59.0	68.0	174.0	56.0	51.0	29.0	8.0	66.0	46.0	62.0	0.0	683.0
1969	71.0	9.0	2.0	214.0	63.0	59.0	25.0	30.0	57.0	176.0	120.0	4.0	830.0
1970	31.0	64.0	33.0	47.0	89.0	35.0	39.0	29.0	61.0	135.0	154.0	9.0	726.0
1971	57.0	62.0	109.0	88.0	137.0	17.0	35.0	47.0	35.0	64.0	39.0	44.0	754.0
1972	71.0	21.0	108.0	233.0	89.0	37.0	16.0	12.0	41.0	34.0	65.0	28.0	755.0
1973	23.0	13.0	37.0	51.0	66.0	28.0	28.0	32.0	121.0	57.0	142.0	72.0	670.0
1974	28.0	117.0	88.0	103.0	126.0	29.0	51.0	56.0	94.0	89.0	145.0	1.0	927.0
1975	0.0	63.0	63.0	65.0	126.0	47.0	84.0	58.0	76.0	98.0	56.0	98.0	834.0
1976	8.0	41.0	129.0	123.0	74.0	64.0	48.0	29.0	40.0	186.0	79.0	20.0	841.0
1977	2.0	2.0	83.0	167.0	96.0	76.0	23.0	50.0	58.0	90.0	161.0	7.0	815.0
1978	1.0	52.2	83.0	155.0	133.0	78.0	43.0	41.0	101.0	132.0	88.0	14.0	921.2
1979	3.0	33.0	139.0	109.0	99.0	187.0	91.0	106.0	54.0	168.0	178.0	50.0	1217.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR BANFERAL

ESTACION X TASCO MUNICIPIO DE TASCO PERIODO 1957 - 1977 COEF DE CORRECCION 1.000

ESTACION Y SATIVA NORTE MUNICIPIO DE SATIVA NORTE PERIODO 1957 - 1977 COEF DE CORRECCION 1.000

N	AN	CLX	CUY	RAN	FCAN	I=-4. R:0.6	-3. 0.7	-2. 0.8	-1. 0.9	0.0 1.0	+1. 1.1	+2. 1.2	+3. 1.3	+4. 1.4
1	1976	841.	1200.	1.059	0.062					+ .				
2	1974	1708.	2405.	1.107	0.140					I+ .				
3	1973	2438.	3421.	1.059	0.229					I + .				
4	1972	3195.	4367.	0.979	0.207					. I +				
5	1971	3947.	5304.	0.828	0.001					+				
6	1970	4673.	7091.	0.974	-0.025					. +				
7	1969	5505.	8240.	1.092	0.066					+ .				
8	1968	6186.	9501.	0.819	-0.133					+I				
9	1967	6579.	10665.	1.030	-0.103					+I .				
10	1966	7765.	11991.	0.924	-0.188					+I				
11	1965	8458.	13353.	0.758	-0.479				+	I				
12	1963	9285.	14600.	0.903	-0.520				+ .	I				
13	1962	10285.	15681.	1.426	-0.120					+I				
14	1961	10521.	16652.	0.983	-0.134					*I				
15	1960	11715.	17628.	1.239	0.007					+				
16	1959	12372.	19719.	0.910	-0.018					+				
17	1953	12536.	19550.	1.026	0.0					+ .				

N	AN	CLX	CUY	RAN	FCAN	F=-4. R:0.6	-3. 0.7	-2. 0.8	-1. 0.9	0.0 1.0	+1. 1.1	+2. 1.2	+3. 1.3	+4. 1.4

PROMEDIOS = 760.9 1190.0

RAZONES PROMEDIOS Y/X = 1.911

X/Y = 0.882

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-CNSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA DBSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240316	TASCO	TASCO	+05 54 40	+072 47 30	2500 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	89.5	41.2	-9.9	1957
1958	0.1	28.6	13.4	92.9	68.7	34.0	15.9	43.2	5.9	101.1	110.3	49.6	563.9	1958
1959	9.0	15.5	12.5	91.4	103.1	30.7	74.6	40.5	44.3	142.9	75.3	56.9	656.7	1959
1960	36.8	34.6	66.7	110.1	69.6	20.2	77.4	63.6	72.2	102.7	66.2	74.2	794.3	1960
1961	33.5	19.0	90.0	88.3	16.2	47.1	28.2	12.8	50.6	122.2	126.1	0.1	636.1	1961
1962	62.0	27.0	110.0	121.0	116.0	94.0	63.0	65.0	19.0	134.0	166.0	43.0	1020.0	1962
1963	5.0	40.0	98.0	138.0	188.0	57.0	29.0	30.0	9.0	99.0	106.0	6.0	807.0	1963
1964	0.0	12.0	22.0	111.0	65.0	61.0	66.0	24.0	44.0	77.0	79.0	30.0	591.0	1964
1965	3.0	4.0	16.0	196.0	72.0	35.0	21.0	50.0	37.0	130.0	106.0	23.0	693.0	1965
1966	13.0	19.0	23.0	44.0	94.0	55.0	25.0	76.0	37.0	87.0	177.0	136.0	786.0	1966
1967	36.0	58.0	88.0	92.0	77.0	67.0	60.0	36.0	59.0	71.0	121.0	28.0	793.0	1967
1968	22.0	59.0	68.0	174.0	86.0	91.0	29.0	8.0	66.0	48.0	62.0	0.0	683.0	1968
1969	71.0	9.0	2.0	214.0	63.0	59.0	25.0	30.0	57.0	176.0	120.0	4.0	830.0	1969
1970	31.0	64.0	33.0	47.0	89.0	35.0	39.0	29.0	61.0	135.0	154.0	9.0	726.0	1970
1971	57.0	62.0	109.0	88.0	137.0	17.0	35.0	47.0	35.0	84.0	39.0	44.0	754.0	1971
1972	71.0	21.0	108.0	233.0	89.0	37.0	16.0	12.0	41.0	34.0	69.0	28.0	755.0	1972
1973	23.0	13.0	37.0	51.0	66.0	28.0	28.0	32.0	121.0	57.0	142.0	72.0	670.0	1973
1974	28.0	117.0	88.0	103.0	126.0	29.0	51.0	56.0	94.0	89.0	148.0	1.0	927.0	1974
1975	0.0	63.0	63.0	65.0	126.0	47.0	64.0	58.0	76.0	98.0	56.0	98.0	834.0	1975
1976	8.0	41.0	129.0	123.0	74.0	64.0	48.0	29.0	40.0	186.0	79.0	20.0	841.0	1976
1977	2.0	2.0	83.0	167.0	96.0	76.0	23.0	50.0	58.0	90.0	161.0	7.0	815.0	1977
1978	1.0	52.2	83.0	155.0	133.0	78.0	43.0	41.0	101.0	132.0	88.0	14.0	921.2	1978
1979	3.0	33.0	139.0	109.0	99.0	187.0	91.0	106.0	54.0	168.0	178.0	50.0	1217.0	1979

NUMERO DE ANOS	22	22	22	22	22	22	22	22	22	22	23	23	22
VALOR MAXIMO	71.0	117.0	139.0	233.0	188.0	187.0	91.0	106.0	121.0	186.0	178.0	136.0	1217.0
CUARTIL SUPERIOR	36.0	58.0	98.0	155.0	116.0	67.0	63.0	56.0	66.0	134.0	145.0	50.0	834.0
MEDIANA	17.5	30.9	75.5	109.5	89.0	51.0	37.0	40.8	52.3	100.0	108.0	28.0	789.5
CUARTIL INFERIOR	3.0	15.5	23.0	88.0	68.7	34.0	25.0	29.0	37.0	84.0	66.2	7.0	683.0
VALOR MINIMO	0.0	2.0	2.0	44.0	16.2	17.0	15.9	8.0	5.9	34.0	39.0	0.0	563.9
PROMEDIOS	23.4	36.1	67.3	117.0	92.0	56.8	44.2	42.7	53.7	107.4	108.1	36.3	787.0
											TOTAL DE LOS PROMEDIOS MENSUALES =		785.0
PORCENTAJES	3.0	4.6	8.6	14.9	11.7	7.2	5.6	5.4	6.8	13.7	13.8	4.6	

TRIMESTRE MAS LLUVIOSO MAR AER MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 80.

DEV. ESTANDAR	23.9	27.1	41.4	54.2	36.1	36.4	23.3	22.7	28.0	40.3	42.6	34.3	146.7
COEF. VARIACION	1.020	0.751	0.614	0.463	0.392	0.640	0.526	0.532	0.521	0.375	0.394	0.946	0.186
COEF. ASIMETRIA	0.867	1.241	-0.074	0.600	0.621	2.290	0.643	0.907	0.556	0.237	0.182	1.322	1.151

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Biblioteca

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240316	TASCO	TASCO	+05 54 40	+072 47 30	2500 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	36.8	34.6	66.7	110.1	69.6	20.2	77.4	63.6	72.2	102.7	66.2	74.2	794.3	1960
1961	33.5	19.0	90.0	88.3	16.2	47.1	28.2	12.8	50.6	122.2	128.1	0.1	636.1	1961
1962	62.0	27.0	110.0	121.0	116.0	94.0	63.0	65.0	19.0	134.0	166.0	43.0	1020.0	1962
1963	5.0	40.0	98.0	138.0	188.0	57.0	29.0	30.0	9.0	99.0	108.0	6.0	807.0	1963
1964	0.0	12.0	22.0	111.0	65.0	61.0	66.0	24.0	44.0	77.0	79.0	30.0	591.0	1964
1965	3.0	4.0	16.0	196.0	72.0	35.0	21.0	50.0	37.0	130.0	106.0	23.0	693.0	1965
1966	13.0	19.0	23.0	44.0	94.0	55.0	25.0	76.0	37.0	87.0	177.0	136.0	786.0	1966
1967	36.0	58.0	88.0	92.0	77.0	67.0	60.0	36.0	59.0	71.0	121.0	28.0	793.0	1967
1968	22.0	59.0	68.0	174.0	56.0	91.0	29.0	8.0	66.0	48.0	62.0	0.0	683.0	1968
1969	71.0	9.0	2.0	214.0	63.0	59.0	25.0	30.0	57.0	176.0	120.0	4.0	830.0	1969
1970	31.0	64.0	33.0	47.0	89.0	35.0	39.0	29.0	61.0	135.0	154.0	9.0	726.0	1970
1971	57.0	62.0	109.0	88.0	137.0	17.0	35.0	47.0	35.0	84.0	39.0	44.0	754.0	1971
1972	71.0	21.0	108.0	233.0	89.0	37.0	16.0	12.0	41.0	34.0	65.0	28.0	755.0	1972
1973	23.0	13.0	37.0	51.0	66.0	28.0	28.0	32.0	121.0	57.0	142.0	72.0	670.0	1973
1974	28.0	117.0	88.0	103.0	126.0	29.0	51.0	56.0	94.0	89.0	145.0	1.0	927.0	1974
1975	0.0	63.0	63.0	65.0	126.0	47.0	84.0	58.0	76.0	98.0	56.0	98.0	834.0	1975
1976	8.0	41.0	129.0	123.0	74.0	64.0	48.0	29.0	40.0	186.0	79.0	20.0	841.0	1976
1977	2.0	2.0	83.0	167.0	96.0	76.0	23.0	50.0	58.0	90.0	161.0	7.0	815.0	1977
1978	1.0	52.2	83.0	155.0	133.0	78.0	43.0	41.0	101.0	132.0	88.0	14.0	921.2	1978
1979	3.0	33.0	139.0	109.0	99.0	187.0	91.0	106.0	54.0	168.0	178.0	50.0	1217.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	71.0	117.0	139.0	233.0	188.0	187.0	91.0	106.0	121.0	186.0	178.0	136.0	1217.0	
CUARTIL SUPERIOR	36.4	58.5	103.0	161.0	121.0	71.5	61.5	57.0	69.1	133.0	149.5	47.0	837.5	
MEDIANA	22.5	33.8	83.0	110.5	89.0	56.0	37.0	38.5	55.5	98.5	114.0	25.5	793.6	
CUARTIL INFERIOR	3.0	10.0	35.0	88.1	67.8	35.0	26.5	29.0	38.5	80.5	72.6	6.5	709.5	
VALOR MINIMO	0.0	2.0	2.0	44.0	16.2	17.0	16.0	8.0	9.0	34.0	39.0	0.0	591.0	
PROMEDIOS	25.3	37.5	72.8	121.5	92.6	59.2	44.1	42.8	56.6	106.0	112.0	34.4	804.7	
PORCENTAJES	3.1	4.7	9.0	15.1	11.5	7.4	5.5	5.3	7.0	13.2	13.9	4.3		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 18. INDICE DE ARNOLDUS = 82.

INDICE DE IRREGULARIDAD INTERANUAL =1.58

DEV. ESTANDAR	24.2	28.0	39.3	54.4	37.4	37.3	22.5	23.9	27.0	41.6	43.6	36.4	141.3
COEF. VARIACION	0.958	0.748	0.540	0.448	0.404	0.630	0.511	0.558	0.478	0.392	0.389	1.060	0.176

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FREQUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1037.	986.	924.	805.	686.	624.	572.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.731	1.113	-0.251	0.492	0.578	2.181	0.779	0.861	0.659	0.322	0.002	1.463	1.297

IMPRESO EN COLOMBIA POR DANARAJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
3507?4	TIBANA	TIBANA	+05 19 00	+073 24 00	2100 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1958	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	82.5	63.0	18.0	-9.9
1959	1.5	18.0	27.5	72.5	142.5	91.0	164.0	139.0	85.0	105.0	61.5	30.0	937.5
1960	6.5	19.0	60.0	69.0	106.0	109.0	138.0	129.0	121.0	98.0	42.0	87.0	984.5
1961	13.0	7.0	52.0	54.5	43.0	102.0	137.0	166.5	79.5	176.0	93.0	17.5	941.0
1962	13.0	9.0	67.0	31.0	201.0	144.0	165.0	73.0	84.0	79.0	63.0	-9.9	-9.9
1963	-9.9	-9.9	-9.9	-9.9	-9.9	143.0	187.0	146.0	62.0	40.0	76.0	11.0	-9.9
1964	0.0	13.0	3.0	90.0	145.0	134.0	180.0	87.0	149.0	92.0	67.0	66.0	1026.0
1965	9.0	19.0	42.0	108.0	199.0	146.0	128.0	139.0	115.0	202.0	167.0	20.0	1294.0
1966	9.0	1.0	70.0	47.0	74.0	136.0	179.0	134.0	118.0	77.0	181.0	71.0	1097.0
1967	33.0	1.0	39.0	141.0	145.0	169.0	122.0	143.0	102.0	51.0	78.0	9.0	1033.0
1968	17.0	39.0	23.0	114.0	71.0	122.0	145.0	122.0	92.0	109.0	61.0	8.0	923.0
1969	91.0	25.0	14.0	131.0	132.0	118.0	155.0	116.0	85.0	169.0	57.5	38.0	1131.5
1970	51.0	63.0	12.0	50.5	130.0	112.0	169.5	127.5	73.0	117.5	37.0	22.5	965.5
1971	46.0	19.0	48.0	53.0	247.0	110.0	138.0	129.0	102.0	110.0	46.0	34.0	1082.0
1972	46.0	17.0	42.0	124.0	116.0	81.0	75.0	75.0	100.0	47.0	59.0	0.0	782.0
1973	2.0	0.0	8.0	56.0	123.0	122.0	107.0	174.0	142.0	88.0	74.0	31.0	927.0
1974	20.0	24.0	63.0	82.0	47.0	60.0	74.0	80.0	81.0	105.0	83.0	0.0	719.0
1975	2.0	38.0	49.0	36.0	59.0	116.0	86.0	128.0	62.0	100.0	86.0	64.5	826.5
1976	7.0	15.0	44.0	85.0	138.0	178.0	157.0	99.0	98.0	141.0	100.0	21.5	1083.5
1977	0.0	5.0	21.0	74.0	118.0	178.0	105.0	130.0	130.0	61.0	70.0	8.0	900.0
1978	3.0	7.0	51.0	139.0	97.0	107.0	85.0	119.0	91.0	45.0	25.0	18.0	787.0
1979	2.0	6.0	24.0	114.0	74.0	173.0	112.0	101.0	46.0	127.0	129.0	48.0	956.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X TIBANA MUNICIPIO DE TIBANA PERIODO 1963 - 1979 COEF DE CORRECCION 1.000

ESTACION Y EL PUENTE MUNICIPIO DE GUACHETA PERIODO 1963 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	CUY	RAN	FCAN	F = -4. -3. -2. -1. 0.0 +1. +2. +3. +4.
						R : C.6 C.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4
1	1979	956.	779.	0.935	-C.C6E	
2	1978	1743.	1408.	0.954	-C.1CE	
3	1977	2643.	2095.	0.993	-C.114	
4	1976	3727.	2997.	C.920	-C.212	
5	1975	4553.	3747.	0.840	-C.374	
6	1974	5272.	4386.	0.857	-C.45E	
7	1973	6199.	5144.	0.933	-C.567	
8	1972	6581.	5902.	0.786	-C.7E6	
9	1971	8063.	6716.	1.011	-C.774	
10	1970	9029.	7464.	0.987	-C.767	
11	1969	10160.	8130.	1.295	-C.522	
12	1968	11083.	8872.	0.948	-C.574	
13	1967	12116.	9645.	1.018	-C.555	
14	1966	13213.	10406.	1.095	-C.454	
15	1965	14507.	11187.	1.264	-C.176	
16	1964	15533.	11839.	1.195	C.C	

N	AN	CLX	CUY	RAN	FCAN	F = -4. -3. -2. -1. 0.0 +1. +2. +3. +4.
						R : C.6 C.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4

PROMEDIOS = 570.8 739.9

RAZONES PROMEDIOS Y/X = 0.762

X/Y = 1.312

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
245518	SAN RAFAEL	TIBASOSA	+05 47 00	+072 59 00	2550 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1969	-9.9	-9.9	-9.9	-9.9	-9.9	35.6	17.9	29.2	-9.9	177.6	86.9	34.5	-9.9
1970	22.5	37.9	-9.9	-9.9	91.1	47.1	95.8	35.9	61.4	97.9	57.8	47.0	-9.9
1971	67.4	65.2	124.3	112.6	125.8	16.5	36.4	57.4	53.8	103.6	20.5	54.9	858.8
1972	83.0	41.1	92.4	141.6	105.4	62.5	21.8	9.6	41.2	25.5	62.6	20.0	710.7
1973	13.8	9.2	86.0	76.1	94.8	94.0	80.8	47.3	117.9	106.2	119.9	65.6	824.6
1974	22.4	49.2	81.5	67.1	61.6	55.1	34.8	13.6	86.8	92.0	189.5	18.5	752.1
1975	0.0	63.4	54.4	70.1	120.9	40.5	70.0	46.5	52.8	153.2	84.8	61.5	818.5
1976	11.4	56.6	79.5	75.6	101.8	27.5	31.1	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1977	0.0	3.3	98.0	96.0	80.8	102.0	32.6	57.1	78.2	94.7	157.1	18.2	820.0
1978	0.8	4.3	73.6	131.6	144.4	68.1	75.0	19.3	79.1	97.1	30.1	55.1	778.5
1979	7.6	-9.9	87.9	141.3	81.2	156.5	68.7	115.6	110.9	156.1	94.5	28.0	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-CRESTA 440 GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAF

ESTACION A SAN RAFAEL MUNICIPIO DE TIERASOSA PERIODO 1969 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CO	MCY	ECR	PCAN	F = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1978	778.5	778.5	778.5	-0.400	-0.027				. +			
2	1977	821.0	1599.5	799.3	0.418	-0.003				+ .			
3	1976	816.5	2417.0	805.7	0.363	0.020				- + .			
4	1974	792.1	3209.1	802.3	-0.177	0.009				.+			
5	1973	824.0	4033.7	806.7	0.513	0.039				+ .			
6	1972	710.7	4744.4	790.7	-1.506	-0.073			.	+			
7	1971	858.8	5603.2	800.5	1.239	0.000				+	.		

N	AN	T A	CO	MCY	ECR	PCAN	F = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 7 ANOS = 800.5
DESVIACION ESTANDAR = 47.1
COEFICIENTE DE VARIACION = 0.059

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
243518	SAN RAFAEL	TIBASOSA	+05 47 33	+072 59 28	2480 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1969	-9.9	-9.9	-9.9	-9.9	-9.9	35.6	17.9	29.2	-9.9	177.6	66.9	34.5	-9.9	1969
1970	22.5	37.9	-9.9	-9.9	91.1	47.1	55.8	35.9	61.4	97.9	57.8	47.0	-9.9	1970
1971	87.4	65.2	124.3	112.6	125.8	16.9	36.4	57.4	53.8	103.6	20.5	54.9	858.8	1971
1972	83.0	41.1	52.4	141.6	105.4	62.5	21.8	9.6	41.2	29.5	62.6	20.0	710.7	1972
1973	13.8	0.2	86.0	76.1	54.8	54.0	80.8	47.3	117.9	106.2	119.9	65.6	824.6	1973
1974	22.4	49.2	81.5	67.1	61.6	55.1	34.8	13.6	86.8	92.0	169.5	18.5	792.1	1974
1975	0.0	63.4	54.4	70.1	120.9	40.9	70.0	46.5	52.8	153.2	64.8	61.5	818.5	1975
1976	11.4	56.6	79.5	75.6	101.8	27.5	31.1	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1976
1977	0.0	3.3	98.0	98.0	80.8	102.0	32.6	57.1	78.2	94.7	157.1	18.2	820.0	1977
1978	0.8	4.3	73.6	131.6	144.4	68.1	75.0	19.3	79.1	97.1	20.1	55.1	778.5	1978
1979	7.6	-9.9	87.9	141.3	61.2	158.9	66.7	115.6	110.9	156.1	94.5	28.0	-9.9	1979
NUMERO DE ANOS	10	9	9	9	10	11	11	10	9	10	10	10	7	
VALOR MAXIMO	87.4	65.2	124.3	141.6	144.4	158.9	95.8	115.6	117.9	177.6	169.5	65.6	858.8	
MEDIANA	12.6	41.1	86.0	98.0	56.4	54.0	36.4	41.2	78.2	100.7	66.8	40.8	818.5	
VALOR MINIMO	0.0	0.2	54.4	67.1	54.8	16.9	17.9	9.6	41.2	29.5	20.5	18.2	710.7	
PROMEDIOS	24.9	35.7	86.4	101.8	58.8	60.8	51.4	43.1	75.8	110.6	90.4	40.3	800.5	
											TOTAL DE LOS PROMEDIOS MENSUALES =		820.1	
PORCENTAJES	3.0	4.4	10.5	12.4	12.0	7.4	6.3	5.3	9.2	13.5	11.0	4.9		
DEV. ESTANDAR	32.9	26.4	18.9	30.9	26.4	39.6	27.0	30.7	26.4	42.1	53.3	18.6	47.1	
COEF. VARIACION	1.320	0.740	0.219	0.303	0.267	0.652	0.526	0.712	0.348	0.380	0.590	0.462	0.059	
COEF. ASIMETRIA	1.513	-0.443	0.494	0.262	0.181	1.701	0.323	1.466	0.458	-0.159	0.625	0.011	-1.153	

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 15. INDICE DE ARREGLOS = 60.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240341	TIBASOSA	TIBASOSA	+05 45 00	+073 00 00	2550 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NOV	DIC	TCTAL
1964	0.0	35.2	6.0	193.0	310.0	269.0	123.0	-9.9	232.0	290.0	138.0	-9.9	-9.9
1965	0.0	23.0	-9.9	191.0	185.0	12.0	54.0	78.0	21.4	165.C	36.8	34.7	-9.9
1966	0.0	0.0	48.8	56.0	233.0	25.0	35.0	120.8	165.6	157.8	341.8	162.0	1325.8
1967	32.0	38.0	182.0	198.0	93.0	90.0	62.0	78.0	132.0	86.0	101.5	21.5	1114.0
1968	10.0	60.0	53.0	227.9	104.4	111.8	24.3	59.0	91.8	60.5	71.8	0.5	875.0
1969	125.3	2.1	16.9	188.5	85.4	61.0	26.2	38.3	48.8	143.4	54.2	24.0	814.1
1970	68.0	18.0	3.0	31.0	57.0	21.0	57.0	13.0	85.0	101.0	101.0	1.0	556.0
1971	45.0	83.0	79.0	136.0	175.0	41.0	23.0	53.0	34.0	31.0	12.0	77.0	789.0
1972	184.0	39.0	61.0	178.0	74.0	31.0	2.0	11.0	25.0	24.0	119.0	24.0	772.0
1973	0.0	0.0	156.0	87.0	157.0	89.0	147.0	49.0	276.0	86.0	211.0	112.C	1372.0
1974	17.0	69.0	147.0	97.0	148.0	67.0	71.0	33.0	156.0	143.0	210.0	14.0	1172.0
1975													
1976													
1977													
1978	-9.9	-9.9	-9.9	-9.9	13.1	11.3	9.5	1.9	8.9	-9.9	4.1	0.7	-9.9
1979	10.0	13.0	107.0	126.0	79.0	226.0	53.0	99.0	81.0	225.0	260.0	79.0	1358.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PROYECTC IGAC-ORSTCM *** GRUPO DE HIDROCLIMATOLCGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAFO

ESTACION X TIBASOSA MUNICIPIO DE TIBASOSA PERIODO 1964 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MUY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1358.0	1358.0	1358.0	1.183	0.338				I +	.		
2	1974	1172.0	2530.0	1265.0	0.542	0.493				I + .			
3	1973	1372.0	3902.0	1300.7	1.232	0.845				I + .			
4	1972	772.0	4674.0	1168.5	-0.637	0.006			.	I +			
5	1971	789.0	5463.0	1092.6	-0.779	0.383			.	I +			
6	1970	556.0	6019.0	1003.2	-1.582	-0.065		.		+			
7	1969	814.1	6833.1	976.2	-0.692	-0.266			.	+ I			
8	1968	875.0	7708.1	963.5	-0.482	-0.404			*	I			
9	1967	1114.0	8822.1	980.2	0.342	-0.306			+	I .			
10	1966	1325.8	10147.9	1014.8	1.072	0.000				+	.		

N	AN	T A	CU	MUY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 10 ANOS = 1014.8

DESVIACION ESTANDAR = 290.0

COEFICIENTE DE VARIACION = 0.286

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240341	TIBASOSA	TIBASOSA	+05 44 57	+073 CC 11	2530 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	0.0	0.0	30.1	34.6	143.8	15.4	21.6	74.5	102.2	122.0	210.9	62.9	818.0	1966
1967	19.7	23.4	112.3	122.3	57.4	55.5	38.2	48.1	81.4	53.1	62.6	13.3	687.3	1967
1968	10.0	60.0	53.0	227.9	104.4	111.8	24.3	59.0	91.8	60.5	71.8	0.5	875.0	1968
1969	125.3	2.1	16.9	188.5	65.4	61.0	26.2	38.3	48.8	143.4	54.2	24.0	814.1	1969
1970	68.0	18.0	3.0	31.0	87.0	21.0	57.0	13.0	85.0	101.0	101.0	1.0	556.0	1970
1971	45.0	83.0	79.0	136.0	175.0	41.0	23.0	53.0	34.0	31.0	12.0	77.0	789.0	1971
1972	184.0	39.0	61.0	178.0	74.0	31.0	2.0	11.0	25.0	24.0	119.0	24.0	772.0	1972
1973	0.0	0.0	96.3	53.7	56.8	54.9	90.7	30.2	170.3	54.3	130.2	69.1	846.5	1973
1974	10.5	42.0	90.7	59.8	91.3	41.3	43.8	20.4	96.3	88.2	129.6	8.6	723.1	1974
1975														1975
1976														1976
1977														1977
1978														1978
1979	6.2	8.0	66.0	77.7	48.7	139.4	32.7	61.1	50.0	138.8	160.6	48.7	837.9	1979
NUMERO DE ANOS	10	10	10	10	10	10	10	10	10	10	10	10	10	
VALOR MAXIMO	184.0	83.0	112.3	227.9	175.0	139.4	90.7	74.5	170.3	143.4	210.9	77.0	875.0	
MEDIANA	15.1	20.7	63.5	100.0	68.3	48.1	29.4	43.2	83.2	74.3	110.0	24.0	801.5	
VALOR MINIMO	0.0	0.0	3.0	31.0	46.7	15.4	2.0	11.0	25.0	24.0	12.0	0.5	556.0	
PROMEDIOS	46.9	27.6	60.8	110.9	93.4	57.2	35.9	40.9	78.5	81.6	105.2	32.9	771.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		771.9	
PORCENTAJES	6.1	3.6	7.9	14.4	12.1	7.4	4.7	5.3	10.2	10.6	13.6	4.3		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARREGLOUS = 76.

DEV. ESTANDAR	62.2	28.2	35.6	70.1	40.0	39.5	24.2	21.8	42.3	43.5	57.6	29.1	94.8
COEF. VARIACION	1.328	1.020	0.586	0.631	0.428	0.690	0.673	0.534	0.538	0.533	0.548	0.883	0.123
COEF. ASIMETRIA	1.543	0.660	-0.288	0.432	1.046	1.288	1.244	-0.048	0.931	0.205	0.238	0.419	-1.437

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240341	TIBASOSA	TIBASOSA	+05 44 57	+073 00 11	2530 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	29.9	20.4	61.0	64.5	77.7	11.8	64.1	51.3	108.4	105.0	108.8	64.6	767.5	1960
1961	39.5	8.3	75.3	140.7	29.1	29.9	25.2	53.4	74.6	82.1	117.6	3.8	679.5	1961
1962	11.9	13.8	42.5	82.3	157.2	94.2	63.4	61.3	65.1	66.8	97.7	35.7	791.9	1962
1963	39.3	56.9	78.5	119.7	175.6	43.0	35.8	39.6	64.2	78.4	79.1	7.3	817.4	1963
1964	1.9	0.0	30.3	128.1	88.5	139.9	67.1	62.4	88.3	36.5	100.2	47.2	790.4	1964
1965	0.0	19.4	51.2	160.7	155.7	10.1	45.4	65.6	18.0	142.2	31.0	29.2	728.5	1965
1966	0.0	0.0	30.1	34.6	143.8	15.4	21.6	74.5	102.2	122.0	210.9	62.9	818.0	1966
1967	19.7	23.4	112.3	122.3	57.4	55.5	38.2	48.1	81.4	53.1	62.6	13.3	687.3	1967
1968	10.0	60.0	53.0	227.9	104.4	111.8	24.3	59.0	91.8	60.5	71.8	0.5	875.0	1968
1969	125.3	2.1	16.9	188.5	85.4	61.0	26.2	38.3	48.8	143.4	54.2	24.0	814.1	1969
1970	68.0	18.0	3.0	31.0	57.0	21.0	57.0	13.0	85.0	101.0	101.0	1.0	556.0	1970
1971	45.0	83.0	79.0	130.0	175.0	41.0	23.0	53.0	34.0	31.0	12.0	77.0	789.0	1971
1972	184.0	39.0	61.0	178.0	74.0	31.0	2.0	11.0	25.0	24.0	119.0	24.0	772.0	1972
1973	0.0	0.0	90.3	53.7	96.8	54.9	90.7	30.2	170.3	54.3	130.2	69.1	846.5	1973
1974	10.5	42.6	90.7	59.8	91.3	41.3	43.8	20.4	96.3	88.2	129.6	8.6	723.1	1974
1975	11.1	59.4	51.6	66.1	106.9	46.7	23.6	44.5	75.0	99.0	126.5	96.6	807.0	1975
1976	14.9	42.1	115.8	99.1	86.3	32.0	30.8	12.8	83.1	69.1	116.2	29.1	731.3	1976
1977	9.8	4.3	66.5	91.2	112.7	57.2	35.6	37.2	71.9	65.7	107.8	18.9	678.8	1977
1978	0.5	4.6	103.5	173.0	118.9	58.6	16.6	22.0	93.4	71.0	53.2	36.1	751.4	1978
1979	6.2	8.0	66.0	77.7	48.7	139.4	32.7	61.1	50.0	138.8	160.6	48.7	837.9	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	184.0	83.0	115.8	227.9	175.6	139.9	90.7	74.5	170.3	143.4	210.9	96.6	875.0	
CUARTIL SUPERIOR	39.4	42.3	84.8	150.7	131.3	59.8	51.2	60.0	92.6	103.0	122.8	55.8	815.7	
MEDIANA	11.5	18.7	63.5	109.4	94.0	44.8	34.1	46.3	78.2	74.7	104.4	29.1	780.5	
CUARTIL INFERIOR	4.1	4.4	46.8	65.3	75.8	30.4	23.9	26.1	57.1	57.4	67.2	10.9	725.8	
VALOR MINIMO	0.0	0.0	3.0	31.0	29.1	10.1	2.0	11.0	18.0	24.0	12.0	0.5	556.0	
PROMEDIOS	31.4	25.3	64.2	111.7	102.1	54.8	38.4	42.9	76.3	81.6	95.5	34.9	763.1	
PORCENTAJES	4.1	3.3	8.4	14.6	13.4	7.2	5.0	5.6	10.0	10.7	13.0	4.6		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 77.

INDICE DE IRREGULARIDAD INTERANUAL =1.28

DEV. ESTANDAR	46.9	24.7	30.8	54.9	41.8	38.4	21.1	19.4	33.5	35.8	45.3	27.7	74.2
COEF. VARIACION	1.494	0.979	0.480	0.491	0.410	0.702	0.549	0.451	0.439	0.439	0.455	0.793	0.097

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	885.	858.	826.	763.	701.	668.	641.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.398	0.878	-0.124	0.390	0.328	1.187	0.810	-0.323	0.695	0.334	0.279	0.655	-1.105

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240131	LOS ARRAYANES	TINJACA	+05 35 35	+073 43 02	2560 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JJL	AGO	SEP	CCT	NCV	DIC	TCTAL
1961	55.0	29.5	176.5	111.5	24.0	52.5	25.0	5.0	58.0	196.5	193.0	82.5	1009.0
1962	91.5	29.0	143.0	148.0	158.5	120.5	34.0	57.5	58.0	112.5	250.5	124.0	1327.0
1963	59.5	64.0	220.5	143.5	215.0	79.5	18.0	21.5	10.5	127.5	295.5	31.5	1286.5
1964	42.5	121.0	118.5	251.0	200.0	85.0	86.0	21.0	75.0	177.5	178.5	81.5	1437.5
1965	40.0	66.0	52.0	326.0	178.5	9.0	12.5	64.0	21.0	191.5	248.0	104.0	1312.5
1966	2.0	9.5	61.5	104.0	165.3	80.5	27.0	32.5	92.0	231.5	201.0	159.5	1166.3
1967	82.5	89.0	100.0	162.0	139.0	75.0	13.0	21.0	80.0	86.0	228.5	141.5	1221.5
1968	12.5	112.0	65.5	231.0	116.0	184.5	12.0	12.5	142.0	223.5	143.0	6.0	1260.5
1969	48.0	79.1	56.0	154.6	125.0	44.0	12.5	16.5	109.2	220.5	202.0	129.5	1196.9
1970	15.0	21.0	48.5	184.0	195.0	63.5	50.5	34.5	90.5	197.0	212.0	134.5	1246.0
1971	227.0	151.5	186.0	237.5	177.0	27.5	34.5	32.0	106.0	230.5	241.5	100.0	1751.0
1972	102.5	127.5	127.0	323.0	209.0	96.0	30.0	88.0	56.5	98.0	193.0	82.5	1493.0
1973	15.0	2.0	134.0	146.5	95.5	132.5	138.5	67.5	202.0	177.0	316.5	186.5	1613.5
1974	39.0	183.0	237.5	287.5	176.5	66.5	20.0	28.5	175.5	342.0	323.0	47.5	1926.5
1975	11.5	131.5	64.5	192.5	146.0	42.0	125.5	108.0	107.5	234.0	119.5	178.0	1460.5
1976	28.5	106.0	228.5	172.0	126.5	24.0	0.0	19.5	95.5	261.0	155.0	98.0	1314.5
1977	39.0	13.0	131.5	80.5	87.0	56.0	48.0	21.5	127.0	275.5	232.0	64.0	1175.0
1978	0.0	59.0	194.0	179.0	106.0	39.5	13.0	69.1	71.0	158.5	93.0	201.0	1183.1
1979	60.5	65.5	124.0	306.0	186.5	63.0	118.0	123.5	103.5	242.5	240.5	72.0	1726.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAF

ESTACION X SUTAMARCHAN MUNICIPIO DE SUTAMARCHAN PERIODO COEF DE CORRECCION
1961 - 1979 1.000

ESTACION Y LOS ARRAYANES MUNICIPIO DE TINJACA PERIODO COEF DE CORRECCION
1961 - 1979 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	1184.	1727.	1.149	0.187					I+				
2	1978	1875.	2910.	0.978	0.168					I+				
3	1977	2506.	4085.	0.900	0.082				•	+				
4	1976	3351.	5499.	1.077	0.156					I+	•			
5	1975	4238.	6860.	1.017	0.174					I*				
6	1974	5204.	8786.	0.840	-0.050			•		+				
7	1973	5989.	10400.	0.815	-0.267			•	+	I				
8	1972	6748.	11893.	0.852	-0.428			•	+	I				
9	1971	7692.	13644.	0.903	-0.552			•	+	I				
10	1970	8403.	14890.	0.956	-0.592				+•	I				
11	1969	9195.	16086.	1.108	-0.498				+	I	•			
12	1968	10047.	17347.	1.133	-0.376				+	I		•		
13	1967	10769.	18568.	0.990	-0.385				+	•				
14	1966	11494.	19735.	1.041	-0.350				+	I	•			
15	1965	12244.	21047.	0.957	-0.391				•+	I				
16	1964	13080.	22485.	0.974	-0.418				+	• I				
17	1963	14085.	23771.	1.309	-0.129					+I				•
18	1962	14886.	25098.	1.011	-0.118					+I•				
19	1961	15585.	26107.	1.161	0.0					+		•		
						P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CUX	CUY	RAN	PCAN	R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 820.3 1374.1

RAZONES PROMEDIOS Y/X = 1.675
X/Y = 0.597

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio da Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240131	LOS ARRAYANES	TINJACA	+05 35 36	+073 42 01	2575 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1961	55.0	29.5	176.5	111.5	24.0	52.5	25.0	5.0	58.0	196.5	193.0	82.5	1009.0	1961
1962	91.5	29.0	143.0	148.0	158.5	120.5	34.0	57.5	58.0	112.5	250.5	124.0	1327.0	1962
1963	59.5	64.0	220.5	143.5	215.0	79.5	18.0	21.5	10.5	127.5	295.5	31.5	1286.5	1963
1964	42.5	121.0	118.5	251.0	200.0	85.0	66.0	21.0	75.0	177.5	176.5	81.5	1437.5	1964
1965	40.0	66.0	52.0	326.0	178.5	9.0	12.5	64.0	21.0	191.5	248.0	104.0	1312.5	1965
1966	2.0	9.5	61.5	104.0	165.3	80.5	27.0	32.5	92.0	231.5	201.0	159.5	1166.3	1966
1967	82.5	89.0	100.0	162.0	139.0	79.0	13.0	21.0	80.0	86.0	226.5	141.5	1221.5	1967
1968	12.5	112.0	65.5	231.0	116.0	184.5	12.0	12.5	142.0	223.5	143.0	6.0	1260.5	1968
1969	48.0	79.1	56.0	154.6	125.0	44.0	12.5	16.5	109.2	220.5	202.0	129.5	1196.9	1969
1970	15.0	21.0	48.5	184.0	195.0	63.5	50.5	34.5	90.5	197.0	212.0	134.5	1246.0	1970
1971	227.0	151.5	186.0	237.5	177.0	27.5	34.5	32.0	106.0	230.5	241.5	100.0	1751.0	1971
1972														1972
1973														1973
1974														1974
1975	11.5	131.3	64.5	192.5	146.0	42.0	125.5	108.0	107.5	234.0	119.5	178.0	1460.5	1975
1976	28.5	106.0	228.5	172.0	126.5	24.0	0.0	19.5	95.5	261.0	155.0	98.0	1314.5	1976
1977	39.0	13.0	131.5	80.5	67.0	56.0	48.0	21.5	127.0	275.5	232.0	64.0	1175.0	1977
1978	0.0	59.0	194.0	179.0	106.0	39.5	13.0	69.1	71.0	158.5	93.0	201.0	1183.1	1978
1979	60.5	65.5	124.0	306.0	186.5	83.0	118.0	123.5	103.5	242.5	240.5	73.0	1726.5	1979
NUMERO DE ANOS	16	16	16	16	16	16	16	16	16	16	16	16	16	
VALOR MAXIMO	227.0	151.5	228.5	326.0	215.0	184.5	125.5	123.5	142.0	275.5	295.5	201.0	1751.0	
CUARTIL SUPERIOR	60.0	109.0	181.3	234.3	182.5	81.8	49.3	60.8	106.8	232.8	241.0	138.0	1382.3	
MEDIANA	41.3	65.8	121.3	175.5	152.3	59.8	26.0	26.8	91.3	208.8	207.0	102.0	1273.5	
CUARTIL INFERIOR	13.8	29.3	63.0	145.8	120.5	40.8	12.8	20.3	64.5	168.0	166.8	77.3	1190.0	
VALOR MINIMO	0.0	9.5	48.5	80.5	24.0	9.0	0.0	5.0	10.5	86.0	93.0	6.0	1009.0	
PROMEDIOS	50.9	71.7	122.2	186.4	146.6	66.9	39.3	41.2	84.2	197.9	202.1	106.8	1317.1	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1317.1	
PORCENTAJES	3.9	5.4	9.4	14.2	11.1	5.1	3.0	3.1	6.4	15.0	15.3	8.1		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 31. INDICE DE ARNOLDUS = 141.

DEV. ESTANDAR	54.1	44.2	62.8	69.0	49.0	42.2	38.3	34.5	35.1	53.8	53.5	51.4	196.6
COEF. VARIACION	1.063	0.617	0.510	0.370	0.334	0.632	0.973	0.836	0.417	0.272	0.265	0.482	0.149
COEF. ASIMETRIA	2.461	0.201	0.350	0.594	-0.939	1.428	1.436	1.419	-0.652	-0.726	-0.496	-0.098	1.142

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240131	LOS ARRAYANES	TINJACA	+05 35 36	+073 43 01	2575 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	38.5	63.7	165.0	170.0	147.5	57.9	30.0	39.9	88.4	202.2	200.5	101.8	1305.4	1960
1961	55.0	29.5	176.5	111.5	24.0	52.5	25.0	5.0	58.0	196.5	193.0	82.5	1009.0	1961
1962	91.5	29.0	143.0	148.0	158.5	120.5	34.0	57.5	58.0	112.5	250.5	124.0	1327.0	1962
1963	59.5	64.0	220.5	143.5	215.0	79.5	18.0	21.5	10.5	127.5	295.5	31.5	1286.5	1963
1964	42.5	121.0	118.5	251.0	200.0	85.0	86.0	21.0	75.0	177.5	178.5	81.5	1437.5	1964
1965	40.0	60.0	52.0	320.0	178.5	9.0	12.5	64.0	21.0	191.5	248.0	104.0	1312.5	1965
1966	2.0	9.5	61.5	104.0	165.3	80.5	27.0	32.5	92.0	231.5	201.0	159.5	1166.3	1966
1967	82.5	89.0	100.0	162.0	139.0	79.0	13.0	21.0	80.0	86.0	228.5	141.5	1221.5	1967
1968	12.5	112.0	65.5	231.0	116.0	184.5	12.0	12.5	142.0	223.5	143.0	6.0	1260.5	1968
1969	48.0	79.1	56.0	154.6	125.0	44.0	12.5	16.5	109.2	220.5	202.0	129.5	1196.9	1969
1970	15.0	21.0	48.5	184.0	195.0	63.5	50.5	34.5	90.5	197.0	212.0	134.5	1246.0	1970
1971	227.0	151.5	186.0	237.5	177.0	27.5	34.5	32.0	106.0	230.5	241.5	100.0	1751.0	1971
1972	80.4	99.9	99.5	253.2	163.8	43.9	23.5	69.0	44.3	76.8	151.3	64.7	1170.3	1972
1973	12.6	1.7	112.9	123.4	80.5	111.6	116.7	56.9	170.2	149.1	266.6	157.1	1359.3	1973
1974	30.0	140.6	182.5	220.9	135.6	51.1	15.4	21.9	134.9	262.8	248.2	36.5	1480.4	1974
1975	11.5	131.5	64.5	192.5	146.0	42.0	125.5	108.0	107.5	234.0	119.5	178.0	1460.5	1975
1976	28.5	106.0	228.5	172.0	126.5	24.0	0.0	19.5	95.5	261.0	156.0	98.0	1314.5	1976
1977	39.0	13.0	131.5	80.5	87.0	56.0	48.0	21.5	127.0	275.5	232.0	64.0	1175.0	1977
1978	0.0	59.0	194.0	179.0	106.0	39.5	13.0	69.1	71.0	158.5	93.0	201.0	1183.1	1978
1979	60.5	65.5	124.0	306.0	186.5	83.0	118.0	123.5	103.5	242.5	240.5	73.0	1726.5	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	227.0	151.5	228.5	320.0	215.0	184.5	125.5	123.5	170.2	275.5	295.5	201.0	1751.0	
CUARTIL SUPERIOR	60.0	109.0	179.5	234.3	177.8	81.8	49.3	60.8	108.3	232.8	244.8	138.0	1398.4	
MEDIANA	39.5	65.8	121.3	175.5	146.8	56.9	26.0	32.3	91.3	199.6	207.0	100.9	1295.9	
CUARTIL INFERIOR	13.8	29.3	65.0	145.8	120.5	42.9	13.0	21.0	64.5	153.8	166.8	68.8	1190.0	
VALOR MINIMO	0.0	1.7	48.5	80.5	24.0	9.0	0.0	5.0	10.5	76.8	93.0	6.0	1009.0	
PROMEDIOS	48.8	72.6	126.5	187.5	143.6	66.7	40.8	42.4	89.2	192.8	205.0	103.4	1319.5	
PORCENTAJES	3.7	5.5	9.6	14.2	10.9	5.1	3.1	3.2	6.8	14.6	15.5	7.8		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 32. INDICE DE ARNOLDUS = 140.

INDICE DE IRREGULARIDAD INTERANUAL =1.43

DEV. ESTANDAR	49.6	45.8	58.4	65.4	46.2	39.5	39.0	31.8	39.4	58.1	52.1	50.6	182.1
COEF. VARIACION	1.017	0.630	0.462	0.349	0.322	0.592	0.956	0.750	0.442	0.301	0.254	0.490	0.138

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1619.	1553.	1473.	1319.	1166.	1086.	1020.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.574	0.073	0.220	0.497	-0.813	1.424	1.366	1.303	-0.112	-0.634	-0.501	0.010	1.073

IMPRESO EN COLOMBIA POR DANAPRANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240355	SAN PEDRO	TOCA	+05 34 00	+073 12 00	2740 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1971	-9.9	-9.9	-9.9	-9.9	169.0	40.0	34.0	51.0	51.0	70.0	60.0	25.0	-9.9
1972	51.0	57.0	41.0	156.0	76.0	63.0	19.0	29.0	34.0	63.0	53.0	4.0	646.0
1973	0.0	1.0	17.0	52.0	89.0	25.0	42.0	63.0	124.0	81.0	123.0	89.0	716.0
1974	6.0	31.0	70.0	43.0	74.0	56.0	24.0	7.0	60.0	98.0	104.0	1.0	574.0
1975	0.0	32.0	57.0	75.0	99.0	27.0	74.0	60.0	51.0	155.0	107.0	166.0	933.0
1976	6.0	28.0	96.0	107.0	87.0	23.0	38.0	16.0	21.0	96.0	57.0	59.0	636.0
1977	0.0	0.0	42.0	71.0	125.0	65.0	21.0	81.0	54.0	61.0	94.0	7.0	621.0
1978	0.0	21.0	38.0	98.0	94.0	44.0	35.0	12.0	-9.9	-9.9	24.0	50.0	-9.9
1979	0.0	27.0	64.0	126.0	58.0	118.0	26.0	93.0	51.0	154.0	152.0	35.0	904.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X SAN PEDRO MUNICIPIO DE TOCA PERIODO 1971 - 1979 COEF DE CORRECCION 1.000

ESTACION Y UNIVERSIDAD DE TUNJA MUNICIPIO DE TUNJA PERIODO 1971 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	904.	861.	1.016	0.020					+				
2	1977	1525.	1365.	1.194	0.161					I+				
3	1976	2161.	2086.	0.853	0.008				•	+				
4	1975	3094.	2792.	1.280	0.292					I +			•	
5	1974	3668.	3444.	0.852	0.153				•	I+				
6	1973	4384.	4246.	0.865	-0.003				•	+				
7	1972	5030.	4869.	1.003	-0.000					*				

N	AN	CUX	CUY	RAN	PCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 718.6 695.6

RAZONES PROMEDIOS Y/X = 0.968

X/Y = 1.033

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240355	SAN PEDRO	TOCA	+05 34 27	+073 11 41	2735 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1971	-9.9	-9.9	-9.9	-9.9	169.0	40.0	34.0	51.0	51.0	70.0	60.0	25.0	-9.9	1971
1972	51.0	57.0	41.0	156.0	76.0	63.0	19.0	29.0	34.0	63.0	53.0	4.0	646.0	1972
1973	0.0	1.0	17.0	52.0	89.0	35.0	42.0	63.0	124.0	81.0	123.0	89.0	716.0	1973
1974	6.0	31.0	70.0	43.0	74.0	56.0	24.0	7.0	60.0	98.0	104.0	1.0	574.0	1974
1975	0.0	32.0	57.0	75.0	99.0	37.0	74.0	60.0	51.0	155.0	107.0	186.0	933.0	1975
1976	6.0	28.0	96.0	107.0	87.0	23.0	38.0	16.0	21.0	98.0	57.0	59.0	636.0	1976
1977	0.0	0.0	42.0	71.0	125.0	65.0	21.0	81.0	54.0	61.0	94.0	7.0	621.0	1977
1978	0.0	21.0	38.0	98.0	94.0	44.0	35.0	12.0	-9.9	-9.9	24.0	50.0	-9.9	1978
1979	0.0	27.0	64.0	126.0	88.0	118.0	26.0	93.0	51.0	154.0	152.0	35.0	904.0	1979
NUMERO DE ANOS	8	8	8	8	9	9	9	9	8	8	9	9	7	
VALOR MAXIMO	51.0	57.0	96.0	156.0	169.0	118.0	74.0	93.0	124.0	155.0	152.0	186.0	933.0	
MEDIANA	0.0	27.5	49.5	86.5	89.0	44.0	34.0	51.0	51.0	89.5	94.0	35.0	646.0	
VALOR MINIMO	0.0	0.0	17.0	43.0	58.0	23.0	19.0	7.0	21.0	61.0	24.0	1.0	574.0	
PROMEDIOS	7.9	24.6	53.1	91.0	96.8	53.4	34.8	45.8	55.8	97.5	86.0	50.7	718.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		697.3	
PORCENTAJES	1.1	3.5	7.6	13.0	13.9	7.7	5.0	6.6	8.0	14.0	12.3	7.3		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 14. INDICE DE ARNOLDUS = 72.

DEV. ESTANDAR	17.6	18.3	24.1	38.2	32.9	27.9	16.7	31.2	30.3	37.9	40.3	58.4	143.1
COEF. VARIACION	2.239	0.742	0.453	0.420	0.339	0.521	0.480	0.683	0.544	0.389	0.469	1.153	0.199
COEF. ASIMETRIA	2.700	0.202	0.425	0.477	1.444	1.705	1.801	0.154	1.817	0.894	0.092	1.779	0.902

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240313	TOCA	TOCA	+05 34 00	+073 11 00	2740 METROS

AÑO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	45.8	24.0	60.0	216.5	158.0	36.0	-9.9
1958	3.0	10.0	70.0	151.0	62.0	120.0	45.0	41.0	4.0	135.7	137.0	46.0	824.7
1959	15.0	29.0	35.0	90.0	150.0	76.0	65.0	95.0	31.0	128.0	56.0	21.0	791.0
1960	6.0	32.0	58.0	45.0	66.0	31.0	92.0	58.0	38.0	67.0	60.0	123.0	676.0
1961	8.0	45.0	53.0	99.0	13.0	53.0	45.0	26.0	33.0	71.0	121.0	4.0	571.0
1962	6.0	15.0	61.0	67.0	138.0	94.0	45.0	52.0	72.0	97.0	133.0	52.0	832.0
1963	4.0	8.0	46.0	125.0	204.0	87.0	41.0	51.0	14.0	70.0	153.0	0.0	803.0
1964	0.0	7.0	2.0	81.0	93.0	113.0	88.0	29.0	40.0	65.0	55.0	31.0	604.0
1965	3.0	7.0	8.0	164.0	108.0	32.0	31.0	36.0	40.0	155.0	159.0	9.0	752.0
1966	5.0	5.0	43.0	43.0	81.0	66.0	46.0	64.0	50.0	103.0	180.0	67.0	775.0
1967	1.0	79.0	95.0	120.0	135.0	120.0	71.0	40.0	50.0	68.0	102.0	20.0	901.0
1968	6.0	51.0	20.0	209.0	55.0	91.0	58.0	17.0	58.0	72.0	48.0	25.0	710.0
1969	48.0	6.0	5.0	120.0	52.0	59.0	26.0	36.0	64.0	208.0	93.0	7.0	724.0
1970	17.0	55.0	15.0	46.0	84.0	19.0	49.5	82.0	55.0	133.0	121.0	15.0	691.5
1971	58.0	19.0	153.0	134.0	264.0	54.0	58.0	76.0	83.0	110.0	61.0	28.0	1098.0
1972	75.0	76.0	65.0	177.0	79.0	110.0	38.0	44.0	53.0	77.0	58.0	20.0	872.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X PESCA MUNICIPIO DE PESCA PERIODO 1957 - 1972 COEF DE CORRECCION 1.000

ESTACION Y TOCA MUNICIPIO DE TOCA PERIODO 1957 - 1972 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1972	797.	872.	0.911	-0.099					+				
2	1971	1687.	1970.	0.808	-0.308					+ I				
3	1970	2408.	2662.	1.039	-0.334					+ I				
4	1969	3241.	3386.	1.147	-0.198					+I				
5	1968	4164.	4096.	1.296	0.069					+				
6	1967	4920.	4997.	0.836	-0.119					+I				
7	1966	5672.	5772.	0.967	-0.151					+I				
8	1965	6470.	6524.	1.058	-0.096					+				
9	1963	7277.	7327.	1.002	-0.094					*				
10	1962	8086.	8159.	0.969	-0.127					+I				
11	1961	8685.	8730.	1.045	-0.094					+				
12	1960	9495.	9406.	1.193	0.073					+				
13	1959	10231.	10197.	0.928	-0.000					+				

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 787.0 784.3

RAZONES PROMEDIOS Y/X = 0.997

X/Y = 1.003

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240313	TOCA	TOCA	+05 34 04	+073 11 21	2760 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	45.8	24.0	60.0	216.5	156.0	36.0	-9.9	1957
1958	3.0	10.0	70.0	151.0	62.0	120.0	45.0	41.0	4.0	135.7	137.0	46.0	824.7	1958
1959	15.0	29.0	35.0	90.0	180.0	76.0	65.0	95.0	31.0	128.0	56.0	21.0	791.0	1959
1960	0.0	32.0	58.0	45.0	66.0	31.0	92.0	58.0	38.0	67.0	60.0	129.0	676.0	1960
1961	8.0	45.0	53.0	99.0	13.0	53.0	45.0	26.0	33.0	71.0	121.0	4.0	571.0	1961
1962	0.0	15.0	61.0	67.0	138.0	94.0	45.0	52.0	72.0	97.0	133.0	52.0	832.0	1962
1963	4.0	3.0	46.0	125.0	204.0	87.0	41.0	51.0	14.0	70.0	153.0	0.0	803.0	1963
1964	0.0	7.0	2.0	81.0	93.0	113.0	88.0	29.0	40.0	65.0	55.0	31.0	604.0	1964
1965	3.0	7.0	8.0	164.0	108.0	32.0	31.0	36.0	40.0	155.0	159.0	9.0	752.0	1965
1966	5.0	5.0	43.0	43.0	81.0	88.0	46.0	64.0	50.0	103.0	180.0	67.0	775.0	1966
1967	1.0	79.0	95.0	120.0	135.0	120.0	71.0	40.0	50.0	68.0	102.0	20.0	901.0	1967
1968	0.0	51.0	20.0	209.0	55.0	91.0	58.0	17.0	58.0	72.0	46.0	25.0	710.0	1968
1969	48.0	0.0	5.0	120.0	52.0	59.0	26.0	36.0	64.0	208.0	93.0	7.0	724.0	1969
1970	17.0	55.0	15.0	46.0	84.0	19.0	49.5	62.0	55.0	133.0	121.0	15.0	691.5	1970
1971	58.0	19.0	153.0	134.0	264.0	54.0	58.0	76.0	83.0	110.0	61.0	28.0	1098.0	1971
1972	75.0	79.0	85.0	177.0	79.0	110.0	38.0	44.0	53.0	77.0	58.0	20.0	872.0	1972
NUMERO DE ANOS	15	15	15	15	15	15	16	16	16	16	16	16	15	
VALOR MAXIMO	75.0	79.0	153.0	209.0	264.0	120.0	92.0	95.0	83.0	216.5	180.0	123.0	1098.0	
CUARTIL SUPERIOR	17.0	51.0	65.0	151.0	138.0	110.0	61.5	61.0	59.0	134.3	145.0	41.0	832.0	
MEDIANA	6.0	19.0	46.0	120.0	84.0	87.0	45.9	42.5	50.0	100.0	111.5	23.0	775.0	
CUARTIL INFERIOR	3.0	7.0	15.0	87.0	62.0	53.0	43.0	32.5	35.5	70.5	55.0	12.0	691.5	
VALOR MINIMO	0.0	3.0	2.0	43.0	13.0	19.0	26.0	17.0	4.0	65.0	46.0	0.0	571.0	
PROMEDIOS	17.0	29.6	48.6	111.4	105.6	76.5	52.8	48.2	46.6	111.0	105.9	31.5	775.0	
									TOTAL DE LOS PROMEDIOS MENSUALES =				784.6	
PORCENTAJES	2.2	3.8	6.2	14.2	13.5	9.7	6.7	6.1	5.9	14.1	13.5	4.0		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 83.

DEV. ESTANDAR	23.5	25.8	39.6	50.6	64.4	33.5	18.5	22.1	20.3	49.0	45.0	30.4	128.6
COEF. VARIACION	1.380	0.871	0.814	0.454	0.610	0.438	0.351	0.459	0.436	0.441	0.425	0.964	0.166
COEF. ASIMETRIA	1.728	0.653	1.249	0.264	1.174	-0.304	0.908	0.710	-0.401	1.106	0.089	1.999	0.831

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Material de Referencia

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240313	TUCA	TUCA	+05 34 04	+073 11 21	2760 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	6.0	32.0	58.0	45.0	66.0	31.0	92.0	58.0	38.0	67.0	60.0	123.0	676.0	1960
1961	8.0	45.0	53.0	99.0	13.0	53.0	45.0	26.0	33.0	71.0	121.0	4.0	571.0	1961
1962	6.0	15.0	61.0	67.0	138.0	94.0	45.0	52.0	72.0	97.0	133.0	52.0	832.0	1962
1963	4.0	8.0	46.0	125.0	204.0	87.0	41.0	51.0	14.0	70.0	153.0	0.0	803.0	1963
1964	0.0	7.0	2.0	81.0	93.0	113.0	88.0	29.0	40.0	65.0	55.0	31.0	604.0	1964
1965	3.0	7.0	8.0	164.0	108.0	32.0	31.0	36.0	40.0	155.0	159.0	9.0	752.0	1965
1966	5.0	5.0	43.0	43.0	81.0	88.0	46.0	64.0	50.0	103.0	180.0	67.0	775.0	1966
1967	1.0	79.0	95.0	120.0	135.0	120.0	71.0	40.0	50.0	68.0	102.0	20.0	901.0	1967
1968	6.0	51.0	20.0	209.0	55.0	91.0	58.0	17.0	58.0	72.0	48.0	25.0	710.0	1968
1969	48.0	6.0	5.0	120.0	52.0	59.0	26.0	36.0	64.0	208.0	93.0	7.0	724.0	1969
1970	17.0	55.0	15.0	46.0	84.0	19.0	49.5	82.0	55.0	133.0	121.0	15.0	691.5	1970
1971	58.0	19.0	153.0	134.0	264.0	54.0	58.0	76.0	83.0	110.0	61.0	28.0	1098.0	1971
1972	75.0	76.0	65.0	177.0	79.0	110.0	38.0	44.0	53.0	77.0	58.0	20.0	872.0	1972
1973	2.6	3.8	104.6	59.1	106.2	102.2	48.5	87.6	145.2	137.0	133.6	39.6	970.0	1973
1974	25.5	63.0	106.6	127.9	73.0	64.9	67.4	10.4	91.9	138.8	168.6	2.6	940.6	1974
1975	5.2	48.7	41.1	80.0	77.5	67.4	111.0	77.2	77.4	195.0	68.2	61.1	909.8	1975
1976	14.9	27.2	90.0	120.2	53.6	52.4	50.2	16.5	83.5	118.7	76.3	19.2	722.7	1976
1977	6.9	8.5	32.1	70.0	125.4	59.0	27.1	47.8	65.5	67.5	125.6	10.3	645.7	1977
1978	0.0	23.3	97.5	116.8	136.3	71.7	61.6	18.1	73.6	90.6	38.1	29.0	756.6	1978
1979	31.0	0.5	56.4	138.0	49.0	110.0	110.3	80.1	60.0	242.9	200.7	37.2	1116.1	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	75.0	79.0	153.0	209.0	264.0	120.0	111.0	87.6	145.2	242.9	200.7	123.0	1116.1	
CUARTIL SUPERIOR	21.3	49.8	92.5	130.9	130.2	98.1	69.2	70.0	75.5	137.9	143.3	38.4	905.4	
MEDIANA	6.0	21.1	54.7	118.4	82.5	69.5	49.8	45.9	59.0	100.0	111.5	22.5	765.8	
CUARTIL INFERIOR	3.5	7.0	26.0	68.5	60.5	53.5	43.0	27.5	45.0	70.5	60.5	9.6	700.8	
VALOR MINIMO	0.0	0.5	2.0	43.0	13.0	19.0	26.0	10.4	14.0	65.0	38.1	0.0	571.0	
PROMEDIOS	16.2	29.0	57.6	107.1	99.6	73.9	58.2	47.4	62.4	114.3	107.8	30.0	803.5	
PORCENTAJES	2.0	3.6	7.2	13.3	12.4	9.2	7.2	5.9	7.8	14.2	13.4	3.7		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 83.

INDICE DE IRREGULARIDAD INTERANUAL =1.63

DEV. ESTANDAR	21.2	25.5	40.2	45.9	57.4	29.6	25.1	24.3	27.5	52.3	48.8	28.9	150.8
COEF. VARIACION	1.309	0.881	0.697	0.428	0.576	0.400	0.431	0.513	0.440	0.458	0.452	0.963	0.188

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
/VALORES	1052.	997.	931.	804.	677.	610.	555.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.778	0.702	0.580	0.399	1.417	-0.139	0.925	0.175	1.237	1.155	0.276	1.928	0.607

IMPRESO EN COLOMBIA POR DANARANIC

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
403047	TOTA	TOTA	+05 34 00	+072 59 00	2875 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	2.4	4.1	48.7	19.8	89.9	71.3	64.3	82.4	74.8	103.8	210.4	112.6	884.5
1967	8.1	5.8	50.1	98.1	91.2	105.7	81.9	62.1	66.2	64.7	39.7	11.4	685.0
1968	5.9	29.8	21.1	213.3	73.8	94.4	61.7	43.7	22.4	48.7	-9.9	7.2	-9.9
1969	-9.9	-9.9	11.8	114.4	45.6	55.7	43.2	62.1	34.5	172.9	68.0	9.4	-9.9
1970	12.3	34.6	15.4	13.1	90.8	45.6	94.8	87.4	75.9	117.0	88.5	2.4	677.8
1971	31.4	37.5	70.8	74.5	197.6	43.3	96.2	100.5	60.8	61.9	38.3	45.5	858.3
1972	39.4	23.2	50.4	215.0	75.3	60.0	48.7	25.3	38.8	49.4	69.8	4.9	700.2
1973	4.5	0.0	46.1	23.0	65.3	-9.9	50.2	45.2	70.4	83.8	56.1	30.8	-9.9
1974													
1975													
1976													
1977													
1978	0.0	11.4	79.8	176.8	94.7	47.7	41.8	36.8	90.8	161.0	83.0	43.0	666.8
1979	5.0	24.0	104.0	136.8	94.4	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANSREA O

ESTACION X TOTA MUNICIPIO DE TOTA PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I
1	1978	666.8	666.8	666.8	0.877	0.113				I+	.		
2	1972	700.2	1367.0	683.5	-0.782	0.012			.	+			
3	1971	858.3	2225.3	808.4	0.792	0.114				I+	.		
4	1970	677.8	3103.1	775.8	-1.006	-0.015			.	+			
5	1967	685.0	3788.1	757.6	-0.934	-0.136			.	+I			
6	1966	684.5	4472.6	778.8	1.053	0.000				+	.		
N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I

PROMEDIO DE LOS 6 ANOS = 778.8

DESVIACION ESTANDAR = 100.4

COEFICIENTE DE VARIACION = 0.129

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
53047	TUTA	TUTA	+05 33 53	+072 59 17	2875 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	2.4	4.1	48.7	19.8	89.9	71.3	64.3	82.4	74.8	103.8	210.4	112.6	884.5	1966
1967	8.1	5.8	50.1	98.1	91.2	105.7	81.9	62.1	66.2	64.7	39.7	11.4	685.0	1967
1968	5.9	29.8	21.1	213.3	73.8	94.4	61.7	43.7	22.4	48.7	-9.9	7.2	-9.9	1968
1969	-9.9	-9.9	11.8	114.4	45.6	55.7	43.2	62.1	34.5	172.9	68.0	9.4	-9.9	1969
1970	12.3	34.8	15.4	13.1	90.8	45.6	94.8	87.4	75.9	117.0	88.5	2.4	677.8	1970
1971	31.4	37.5	70.8	74.5	197.6	43.3	96.2	100.5	60.8	61.9	38.3	45.5	858.3	1971
1972	39.4	23.2	50.4	215.0	75.3	60.0	48.7	25.3	38.8	49.4	69.8	4.9	700.2	1972
1973	4.6	0.0	46.1	23.0	65.3	-9.9	50.2	45.2	70.4	83.8	56.1	30.8	-9.9	1973
1974														1974
1975														1975
1976														1976
1977														1977
1978	0.0	11.4	79.8	176.8	94.7	47.7	41.8	36.8	90.8	161.0	83.0	43.0	866.8	1978
1979	5.0	24.0	104.0	136.8	94.4	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1979
NUMERO DE ANOS	9	9	10	10	10	8	9	9	9	9	8	9	6	
VALOR MAXIMO	39.4	37.5	104.0	215.0	197.6	105.7	96.2	100.5	90.8	172.9	210.4	112.6	884.5	
MEDIANA	5.9	23.2	49.4	106.2	90.3	57.8	61.7	62.1	66.2	83.8	68.9	11.4	779.2	
VALOR MINIMO	0.0	0.0	11.8	13.1	45.6	43.3	41.8	25.3	22.4	48.7	38.3	2.4	677.8	
PROMEDIOS	12.1	18.9	49.8	108.5	91.9	65.5	64.8	60.6	59.4	95.9	81.7	29.7	778.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		738.8	
PORCENTAJES	1.6	2.6	6.7	14.7	12.4	8.9	8.8	8.2	8.0	13.0	11.1	4.0		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 75.

DEV. ESTANDAR	13.8	14.0	29.3	77.0	40.3	23.4	21.4	25.3	22.6	46.6	55.1	35.2	100.4
COEF. VARIACION	1.138	0.738	0.589	0.710	0.439	0.357	0.330	0.418	0.380	0.485	0.674	1.186	0.129
COEF. ASIMETRIA	1.453	-0.059	0.417	0.144	2.230	0.960	0.557	0.268	-0.476	0.740	2.226	1.897	0.006

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
243513	UNIVERSIDAD DE TUNJA	TUNJA	+05 33 00	+073 24 00	2690 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1962	-9.9	-9.9	-9.9	-9.9	77.3	68.6	49.7	42.5	32.4	85.4	126.0	26.0	-9.9
1963	14.3	13.4	36.7	82.6	98.3	52.0	44.6	26.9	12.3	33.8	124.2	0.5	539.6
1964	-9.9	0.7	9.5	110.4	58.3	62.8	47.7	28.0	16.0	47.5	33.5	25.5	-9.9
1965	16.0	15.0	-9.9	123.0	-9.9	22.6	-9.9	27.0	12.6	-9.9	116.2	1.9	-9.9
1966	-9.9	0.2	59.3	66.0	-9.9	60.4	60.0	45.9	32.1	71.3	150.8	43.6	-9.9
1967	9.6	8.5	52.5	87.7	105.6	117.1	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1968	8.0	16.5	27.2	177.1	28.7	75.6	38.1	44.8	61.1	53.5	36.1	27.5	598.4
1969	80.8	12.3	19.8	107.7	49.7	68.3	25.8	20.8	31.1	99.7	31.1	20.2	567.3
1970	25.1	7.4	2.4	31.9	73.4	26.7	60.1	40.1	42.5	112.4	55.5	9.4	486.9
1971	44.1	26.3	81.2	40.0	166.9	49.3	50.5	54.9	49.2	86.0	36.6	41.3	726.3
1972	63.5	36.9	47.5	136.6	58.7	57.9	37.8	45.3	28.1	53.3	47.4	10.2	623.2
1973	0.4	14.7	72.3	30.4	98.8	69.8	63.9	62.4	141.3	113.2	87.9	46.4	801.5
1974	19.3	27.8	82.9	55.9	63.1	52.0	29.6	25.3	68.8	91.9	125.9	10.0	652.5
1975	0.5	18.3	32.0	63.5	61.4	54.0	70.1	69.8	44.9	125.1	50.9	111.3	705.8
1976	2.4	23.9	88.5	132.4	84.9	53.0	29.2	26.2	61.2	99.3	72.0	48.7	721.7
1977	0.0	0.5	28.0	62.5	65.5	53.0	23.9	48.4	42.6	50.1	105.2	23.8	503.5
1978	1.1	43.5	69.9	131.2	106.6	52.9	60.9	21.6	39.3	55.3	26.2	28.6	637.1
1979	14.1	12.9	43.9	142.0	89.6	66.1	21.0	68.6	34.8	160.8	158.8	26.4	861.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAF

ESTACION X UNIVERSIDAD DE TUNJA MUNICIPIO DE TUNJA PERIODO 1962 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	861.0	861.0	861.0	1.891	0.329				I +	.		
2	1978	637.1	1498.1	749.0	-0.097	0.312				. +			
3	1977	503.5	2001.6	667.2	-1.284	0.089			.	+			
4	1976	721.7	2723.3	680.8	0.654	0.202				I + .			
5	1975	705.8	3429.1	685.8	0.513	0.291				I + .			
6	1974	652.5	4081.6	680.3	0.039	0.298				. +			
7	1973	801.5	4883.1	697.6	1.363	0.535				I + .			
8	1972	623.2	5506.3	688.3	-0.221	0.497			.	I +			
9	1971	726.3	6232.6	692.5	0.695	0.617				I *			
10	1970	486.9	6719.5	671.9	-1.431	0.369			.	I +			
11	1969	567.3	7286.8	662.4	-0.717	0.244			.	I +			
12	1968	598.4	7885.2	657.1	-0.441	0.167			.	I+			
13	1963	539.6	8424.8	648.1	-0.963	0.000			.	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 13 ANOS = 648.1
DEVIACION ESTANDAR = 112.6
COEFICIENTE DE VARIACION = 0.174

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
24.1513	UNIVERSIDAD DE TUNJA	TUNJA	+05 33 22	+073 21 35	2690 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1962	-9.9	-9.9	-9.9	-9.9	77.3	68.6	49.7	42.5	32.4	85.4	126.0	26.0	-9.9	1962
1963	14.3	13.4	36.7	82.6	98.3	52.0	44.6	26.5	12.3	33.8	124.2	0.5	539.6	1963
1964	-9.9	0.7	9.5	110.4	98.3	82.8	47.7	28.0	16.0	47.9	33.5	25.5	-9.9	1964
1965	16.0	15.0	-9.9	123.0	-9.9	22.8	-9.9	27.0	12.6	-9.9	116.2	1.9	-9.9	1965
1966	-9.9	0.2	59.3	66.0	-9.9	80.4	60.0	45.9	32.1	71.3	150.8	43.6	-9.9	1966
1967	9.0	8.5	52.5	87.7	105.6	117.1	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1967
1968	8.0	10.5	27.2	177.1	28.7	79.8	38.1	44.8	61.1	53.5	36.1	27.5	598.4	1968
1969	80.8	12.3	19.8	107.7	49.7	68.3	25.8	20.8	31.1	99.7	31.1	20.2	567.3	1969
1970														1970
1971	44.1	20.3	81.2	40.0	166.9	49.3	50.5	54.9	49.2	86.0	36.6	41.3	726.3	1971
1972	63.5	30.9	47.5	136.6	58.7	57.9	37.8	45.3	28.1	53.3	47.4	10.2	623.2	1972
1973														1973
1974	19.3	27.8	82.9	55.9	63.1	52.0	29.6	25.3	68.8	91.9	125.9	10.0	652.5	1974
1975	0.5	18.3	32.0	63.5	61.4	54.0	70.1	69.8	44.9	129.1	50.9	111.3	705.8	1975
1976	2.4	23.9	88.5	132.4	84.9	53.0	29.2	26.2	61.2	99.3	72.0	48.7	721.7	1976
1977	0.0	0.5	28.0	62.5	65.5	53.0	23.9	48.4	42.6	50.1	105.2	23.8	503.5	1977
1978	1.1	43.5	69.9	131.2	100.6	52.9	60.9	21.6	39.3	55.3	26.2	28.6	637.1	1978
1979	14.1	12.9	43.9	142.0	89.6	88.1	21.0	68.6	34.8	160.8	158.8	26.4	861.0	1979
NUMERO DE ANOS	13	15	14	15	14	16	14	15	15	14	15	15	11	
VALOR MAXIMO	80.8	43.5	88.5	177.1	166.9	117.1	70.1	69.8	68.8	160.8	158.8	111.3	861.0	
CUARTIL SUPERIOR	31.7	26.3	69.9	132.4	98.3	80.1	50.5	48.4	49.2	99.3	125.9	41.3	******	
MEDIANA	14.1	15.0	45.7	107.7	81.1	55.9	41.3	42.5	34.8	78.3	72.0	26.0	637.1	
CUARTIL INFERIOR	1.7	8.5	28.0	63.5	61.4	52.4	29.2	26.2	28.1	53.3	36.1	10.2	******	
VALOR MINIMO	0.0	0.2	9.5	40.0	28.7	22.8	21.0	20.8	12.3	33.8	26.2	0.5	503.5	
PROMEDIOS	21.1	17.1	48.5	101.2	82.5	64.5	42.1	39.7	37.8	79.8	82.7	29.7	648.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		646.7	
PORCENTAJES	3.3	2.6	7.5	15.7	12.8	10.0	6.5	6.1	5.8	12.3	12.8	4.6		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 67.

DEV. ESTANDAR	25.7	12.8	25.0	39.3	33.4	21.6	15.2	16.2	17.4	35.2	46.2	26.6	101.3	
COEF. VARIACION	1.222	0.749	0.515	0.388	0.405	0.335	0.363	0.408	0.460	0.440	0.582	0.896	0.156	
COEF. ASIMETRIA	1.534	0.536	0.251	0.176	0.593	0.682	0.301	0.615	0.206	0.950	0.238	2.151	0.651	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
24351J	UNIVERSIDAD DE TUNJA	TUNJA	+05 33 22	+073 21 35	2690 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	13.2	15.3	52.2	101.6	51.1	34.0	51.5	51.2	27.3	105.6	51.8	96.7	651.4	1960
1961	12.9	22.9	74.1	52.1	10.5	35.7	49.7	18.7	22.0	129.9	108.6	14.7	551.8	1961
1962	52.4	25.2	62.1	82.9	77.3	68.6	49.7	42.5	32.4	85.4	126.0	26.0	730.5	1962
1963	14.3	13.4	36.7	82.6	98.3	52.0	44.6	26.9	12.3	33.8	124.2	0.5	539.6	1963
1964	52.3	0.7	9.5	110.4	98.3	82.8	47.7	28.0	16.0	47.9	33.5	25.5	552.6	1964
1965	16.0	15.0	17.3	123.0	82.3	22.8	50.6	27.0	12.6	90.7	116.2	1.9	575.4	1965
1966	21.1	0.2	59.3	66.0	82.5	80.4	60.0	45.9	32.1	71.3	150.8	43.6	713.2	1966
1967	9.6	8.5	52.5	87.7	105.6	117.1	66.0	51.1	39.0	38.7	83.0	23.3	682.1	1967
1968	8.0	16.5	27.2	177.1	28.7	79.8	38.1	44.8	61.1	53.5	36.1	27.5	598.4	1968
1969	80.6	12.3	19.8	107.7	49.7	68.3	25.8	20.8	31.1	99.7	31.1	20.2	567.3	1969
1970	29.8	8.8	2.8	37.9	87.3	31.7	71.5	47.7	50.5	133.7	66.0	11.1	578.8	1970
1971	44.1	26.3	81.2	40.0	166.9	49.3	50.5	54.9	49.2	86.0	36.6	41.3	726.3	1971
1972	63.5	36.9	47.5	136.6	58.7	57.9	37.8	45.3	28.1	53.3	47.4	10.2	623.2	1972
1973	0.3	11.5	56.9	23.9	77.8	55.0	50.3	49.1	111.3	89.2	69.2	36.5	631.0	1973
1974	19.3	27.8	82.9	55.9	63.1	52.0	29.6	25.3	68.8	91.9	125.9	10.0	652.5	1974
1975	0.5	18.3	32.0	63.5	61.4	54.0	70.1	69.8	44.9	129.1	50.9	111.3	705.8	1975
1976	2.4	23.9	88.5	132.4	84.9	53.0	29.2	26.2	61.2	99.3	72.0	48.7	721.7	1976
1977	0.0	0.5	28.0	62.5	65.5	53.0	23.9	48.4	42.6	50.1	105.2	23.8	503.5	1977
1978	1.1	43.5	69.9	131.2	106.6	52.9	60.9	21.6	39.3	55.3	26.2	28.6	637.1	1978
1979	14.1	12.9	43.9	142.0	89.6	88.1	21.0	68.6	34.8	160.8	158.8	26.4	861.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	80.6	43.5	88.5	177.1	166.9	117.1	71.5	69.8	111.3	160.8	158.8	111.3	861.0	
CUARTIL SUPERIOR	38.9	24.5	66.0	127.1	93.9	74.2	55.8	50.1	49.8	102.6	120.2	38.9	709.5	
MEDIANA	14.2	15.1	49.8	85.3	80.0	53.5	49.7	45.0	36.9	87.6	70.6	25.8	634.0	
CUARTIL INFERIOR	5.2	10.1	27.6	59.2	60.0	50.6	33.7	26.5	27.7	53.4	42.0	12.9	571.3	
VALOR MINIMO	0.0	0.2	2.8	23.9	10.5	22.8	21.0	18.7	12.3	33.8	26.2	0.5	503.5	
PROMEDIOS	22.8	17.0	47.2	90.8	77.3	59.4	46.4	40.7	40.8	85.3	81.0	31.4	640.2	
PORCENTAJES	3.6	2.7	7.4	14.2	12.1	9.3	7.3	6.4	6.4	13.3	12.6	4.9		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 13. INDICE DE ARNOLDUS = 64.

INDICE DE IRREGULARIDAD INTERANUAL =1.42

DEV. ESTANDAR	23.5	11.5	25.2	41.2	32.6	22.3	15.2	15.4	22.9	35.1	42.6	28.1	86.6
COEF. VARIACION	1.030	0.674	0.533	0.453	0.421	0.375	0.327	0.379	0.561	0.412	0.526	0.895	0.135

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	783.	751.	713.	640.	567.	529.	498.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.186	0.556	-0.059	0.264	0.546	0.764	-0.088	0.221	1.535	0.412	0.367	1.862	0.677

IMPRESO EN COLOMBIA POR LITOGRAFIA

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350703	TURMEQUE	TURMEQUE	+05 20 00	+073 29 00	2400 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	95.5	54.5	66.0	97.0	38.0	12.5	-9.9
1958	0.0	-9.9	45.0	-9.9	98.0	101.5	94.2	101.2	27.0	91.0	57.0	11.0	-9.9
1959	2.0	4.0	31.0	68.0	111.0	85.0	134.0	118.5	67.0	162.5	74.0	24.0	881.0
1960	29.0	8.0	45.0	83.0	105.0	66.5	105.0	93.0	101.0	101.0	36.0	72.0	844.5
1961	19.0	3.0	47.0	70.0	28.0	96.0	114.0	77.0	69.0	121.0	67.0	9.0	720.0
1962	14.0	12.0	68.0	22.0	133.0	105.0	146.0	84.0	42.0	61.0	90.0	18.0	795.0
1963	6.0	52.0	11.0	111.0	150.0	94.0	130.0	104.0	48.0	42.0	87.0	12.0	847.0
1964	0.0	0.0	0.0	99.0	150.0	113.0	80.0	36.0	65.0	46.0	42.0	16.0	647.0
1965	10.0	12.0	32.0	182.0	146.0	89.0	110.0	103.0	49.0	127.0	89.0	11.0	960.0
1966	2.0	7.0	83.0	35.0	67.0	98.0	105.0	46.0	199.0	65.0	171.0	46.0	924.0
1967	20.0	2.0	56.0	112.0	121.0	162.0	82.0	128.0	72.0	55.0	90.0	22.0	942.0
1968	23.0	32.0	15.0	124.0	58.0	125.0	112.0	80.0	99.0	75.0	55.0	17.0	815.0
1969	77.0	16.0	13.0	144.0	88.0	85.0	93.0	72.0	39.0	156.5	53.5	12.5	851.5
1970	20.0	63.5	12.0	36.0	123.0	88.0	111.0	73.0	90.0	97.0	44.0	8.0	764.5
1971	41.0	16.0	55.0	62.0	180.0	84.0	135.0	91.0	71.0	43.0	-9.9	141.0	-9.9
1972	181.0	24.0	23.0	168.0	110.0	180.0	124.0	145.0	91.0	67.0	52.0	7.0	1172.0
1973	9.0	3.0	17.0	51.0	113.0	41.0	113.0	142.0	129.0	105.0	63.0	33.0	819.0
1974	12.0	24.0	111.0	92.0	77.0	37.0	118.0	91.4	86.0	105.0	96.0	1.0	850.4
1975	5.5	48.0	38.0	44.0	52.0	120.0	83.0	99.0	65.0	121.0	90.0	86.0	851.5
1976	18.0	39.0	114.0	123.0	122.0	149.0	151.0	173.0	124.0	150.0	107.0	58.0	1328.0
1977	0.0	4.0	30.0	111.0	105.0	173.0	105.0	145.0	126.0	72.0	101.0	26.0	998.0
1978	1.0	15.0	82.0	176.0	98.0	120.0	122.0	92.0	100.0	83.0	43.0	36.0	968.0
1979	2.0	31.0	48.0	168.0	84.0	189.0	111.0	121.0	31.0	170.0	162.0	24.0	1141.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARAMO

ESTACION X TURMEQUE MUNICIPIO DE TURMEQUE PERIODO 1957 - 1975 COEF DE CORRECCION 1.000

N	AN	T /	CU	MGY	ECR	PCAN
1	1979	1141.0	1141.0	1141.0	1.467	C.255
2	1978	968.0	2109.0	1054.5	C.387	C.328
3	1977	998.0	3107.0	1035.7	C.674	C.429
4	1976	1328.0	4435.0	1108.8	2.634	C.895
5	1975	851.5	5286.5	1057.3	-C.340	C.835
6	1974	850.4	6136.9	1022.8	-C.347	C.774
7	1973	819.0	6955.9	993.7	-C.543	C.678
8	1972	1172.0	8127.9	1016.0	1.660	C.971
9	1970	764.5	8892.4	988.0	-C.663	C.815
10	1969	851.5	9743.9	974.4	-C.340	C.755
11	1968	819.0	10558.9	959.9	-C.566	C.655
12	1967	942.0	11500.9	958.4	C.226	C.695
13	1966	924.0	12424.9	955.8	C.113	C.714
14	1965	960.0	13384.9	956.1	C.337	C.774
15	1964	647.0	14031.9	935.5	-1.616	C.488
16	1963	847.0	14878.9	929.9	-C.368	C.423
17	1962	795.0	15673.9	922.0	-C.653	C.301
18	1961	720.0	16393.9	910.8	-1.161	C.098
19	1960	844.5	17238.4	907.3	-C.384	C.028
20	1959	881.0	18119.4	906.0	-C.156	C.0

F = -3. -2. -1. 0.0 +1. +2. +3.

N	AN	T /	CU	MGY	ECR	PCAN

PROMEDIO DE LOS 20 ANOS = 906.0

DEVIACION ESTANDAR = 160.2

COEFICIENTE DE VARIACION = 0.177

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA GESTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350703	TURMEQUE	TURMEQUE	+05 19 30	+073 25 40	2400 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1965	10.0	12.0	32.0	182.0	146.0	89.0	110.0	103.0	49.0	127.0	89.0	11.0	960.0	1965
1966	2.0	7.0	83.0	35.0	67.0	98.0	105.0	46.0	199.0	65.0	171.0	46.0	924.0	1966
1967	20.0	2.0	56.0	112.0	121.0	182.0	82.0	128.0	72.0	55.0	90.0	22.0	942.0	1967
1968	23.0	32.0	15.0	124.0	88.0	125.0	112.0	80.0	99.0	75.0	95.0	17.0	815.0	1968
1969	77.0	16.0	13.0	144.0	88.0	85.0	93.0	72.0	39.0	158.5	53.5	12.5	851.5	1969
1970	20.0	63.5	12.0	35.0	123.0	88.0	111.0	73.0	90.0	97.0	44.0	8.0	764.5	1970
1971	41.0	16.0	55.0	62.0	160.0	84.0	135.0	91.0	71.0	43.0	-9.9	141.0	-9.9	1971
1972														1972
1973	9.0	3.0	17.0	51.0	113.0	41.0	113.0	142.0	129.0	105.0	63.0	33.0	819.0	1973
1974	12.0	24.0	111.0	92.0	77.0	37.0	118.0	91.4	86.0	105.0	96.0	1.0	850.4	1974
1975	5.5	48.0	38.0	44.0	82.0	120.0	83.0	99.0	65.0	121.0	90.0	86.0	851.5	1975
1976														1976
1977	0.0	4.0	30.0	111.0	105.0	173.0	105.0	145.0	126.0	72.0	101.0	26.0	998.0	1977
1978	1.0	15.0	82.0	170.0	98.0	120.0	122.0	92.0	100.0	83.0	43.0	36.0	968.0	1978
1979	2.0	31.0	48.0	168.0	84.0	189.0	111.0	121.0	31.0	170.0	162.0	24.0	1141.0	1979
NUMERO DE ANOS	13	13	13	13	13	13	13	13	13	13	12	13	12	
VALOR MAXIMO	77.0	63.5	111.0	182.0	160.0	189.0	135.0	145.0	199.0	170.0	171.0	141.0	1141.0	
CUARTIL SUPERIOR	21.5	31.5	69.0	156.0	122.0	149.0	115.5	124.5	113.0	124.0	96.5	41.0	964.0	
MEDIANA	10.0	16.0	38.0	111.0	98.0	98.0	111.0	92.0	86.0	97.0	85.5	24.0	887.8	
CUARTIL INFERIOR	2.0	5.5	16.0	47.5	72.0	84.5	99.0	76.5	57.0	68.5	54.3	11.8	834.7	
VALOR MINIMO	0.0	2.0	12.0	35.0	82.0	37.0	82.0	46.0	31.0	43.0	43.0	1.0	764.5	
PROMEDIOS	17.1	21.0	45.5	102.8	100.9	110.1	107.7	98.7	88.9	98.2	88.1	35.7	907.1	
											TOTAL DE LOS PROMEDIOS MENSUALES =		914.8	
PORCENTAJES	1.9	2.3	5.0	11.2	11.0	12.0	11.8	10.8	9.7	10.7	9.6	3.9		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 13. INDICE DE ARNOLDUS = 91.

DEV. ESTANDAR	21.4	16.5	31.1	54.2	36.2	48.5	14.8	28.9	44.7	38.4	42.1	38.3	103.1
COEF. VARIACION	1.250	0.879	0.684	0.528	0.359	0.441	0.137	0.293	0.502	0.391	0.477	1.075	0.114
COEF. ASIMETRIA	2.110	1.197	0.825	0.133	0.726	0.295	-0.318	0.106	1.154	0.533	1.030	2.094	0.897

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350703	TURMEQUE	TURMEQUE	+05 19 30	+073 29 40	2400 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	31.2	8.0	48.4	89.3	113.0	71.6	113.0	100.1	108.7	108.7	38.7	77.5	908.8	1960
1961	20.5	3.2	50.9	75.8	30.3	104.0	123.5	83.4	74.7	131.1	72.6	9.7	779.7	1961
1962	16.6	14.3	81.0	26.2	158.5	125.2	174.0	100.1	50.0	72.7	107.3	21.4	947.3	1962
1963	7.1	61.7	13.0	131.8	178.2	111.6	154.4	123.5	57.0	49.8	103.3	14.2	1005.6	1963
1964	0.0	0.0	0.0	134.5	203.8	153.5	108.7	48.9	88.3	62.5	57.0	21.7	878.9	1964
1965	10.0	12.0	32.0	182.0	146.0	89.0	110.0	103.0	49.0	127.0	89.0	11.0	960.0	1965
1966	2.0	7.0	83.0	35.0	67.0	98.0	105.0	46.0	199.0	65.0	171.0	46.0	924.0	1966
1967	20.0	2.0	56.0	112.0	121.0	182.0	82.0	128.0	72.0	55.0	90.0	22.0	942.0	1967
1968	24.0	32.0	15.0	124.0	58.0	125.0	112.0	80.0	99.0	75.0	58.0	17.0	815.0	1968
1969	77.0	16.0	13.0	144.0	88.0	85.0	93.0	72.0	39.0	158.5	53.5	12.5	851.5	1969
1970	20.0	63.5	12.0	35.0	123.0	88.0	111.0	73.0	90.0	97.0	44.0	8.0	764.5	1970
1971	41.0	16.0	55.0	62.0	180.0	84.0	135.0	91.0	71.0	43.0	92.0	141.0	1011.0	1971
1972	18.0	24.0	23.0	168.0	110.0	180.0	124.0	145.0	91.0	67.0	52.0	7.0	1009.0	1972
1973	9.0	3.0	17.0	51.0	113.0	41.0	113.0	142.0	129.0	105.0	63.0	33.0	819.0	1973
1974	12.0	24.0	111.0	92.0	77.0	37.0	118.0	91.4	86.0	105.0	96.0	1.0	850.4	1974
1975	5.5	48.0	38.0	44.0	52.0	120.0	83.0	99.0	65.0	121.0	90.0	86.0	851.5	1975
1976	12.8	27.8	81.4	87.9	87.1	106.4	107.9	123.6	88.6	107.2	76.4	41.4	948.5	1976
1977	0.0	4.0	30.0	111.0	105.0	173.0	105.0	145.0	126.0	72.0	101.0	26.0	998.0	1977
1978	1.0	15.0	82.0	176.0	98.0	120.0	122.0	92.0	100.0	83.0	43.0	36.0	968.0	1978
1979	2.0	31.0	48.0	168.0	84.0	189.0	111.0	121.0	31.0	170.0	162.0	24.0	1141.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	77.0	63.5	111.0	182.0	203.8	189.0	174.0	145.0	199.0	170.0	171.0	141.0	1141.0	
CUARTIL SUPERIOR	20.3	29.4	68.5	139.3	134.5	139.3	122.8	123.5	99.5	114.8	98.5	38.7	983.0	
MEDIANA	12.4	15.5	43.0	101.5	107.5	109.0	111.5	99.5	87.1	90.0	82.7	21.8	933.0	
CUARTIL INFERIOR	3.8	5.5	16.0	56.5	80.5	86.5	106.4	81.7	61.0	66.0	54.3	11.8	850.9	
VALOR MINIMO	0.0	0.0	0.0	26.2	30.3	37.0	82.0	46.0	31.0	43.0	36.7	1.0	764.5	
PROMEDIOS	16.4	20.7	44.5	102.5	109.6	114.2	115.3	100.4	85.7	93.8	82.8	32.8	918.7	
PORCENTAJES	1.8	2.2	4.8	11.2	11.9	12.4	12.5	10.9	9.3	10.2	9.0	3.6		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 14. INDICE DE ARNOLDUS = 93.

INDICE DE IRREGULARIDAD INTERANUAL =1.30

DEV. ESTANDAR	17.9	18.9	30.6	50.5	45.6	43.8	21.3	29.1	37.6	35.4	36.0	33.7	93.4
COEF. VARIACION	1.091	0.914	0.689	0.492	0.416	0.384	0.185	0.290	0.439	0.378	0.435	1.027	0.102

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1072.	1038.	997.	919.	840.	799.	765.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.223	1.174	0.529	0.054	0.427	0.184	1.135	-0.125	1.338	0.601	1.133	2.132	0.314

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240309	EL BOQUERON	TUTA	+05 40 00	+073 16 00	2603 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1955	-9.9	-9.9	-9.9	-9.9	39.1	57.9	67.7	21.8	71.2	85.4	110.8	66.2	-9.9
1956	29.6	56.2	32.9	28.2	25.1	28.5	18.2	23.5	54.4	81.9	51.3	45.0	474.8
1957	7.5	21.9	22.9	55.5	30.9	13.3	14.3	9.7	27.4	11.5	31.3	13.8	260.0
1958	2.6	20.0	51.0	158.0	83.0	69.0	33.0	57.0	39.5	110.5	174.5	56.5	854.6
1959	13.5	43.5	30.0	88.5	154.0	101.5	75.5	79.0	38.5	144.0	97.0	27.5	892.5
1960	17.0	79.5	67.0	145.5	93.5	54.5	133.0	108.0	61.0	149.0	67.5	142.0	1117.5
1961	16.0	5.0	113.0	88.5	10.0	57.0	68.0	48.0	44.0	176.5	162.5	14.5	803.0
1962	11.0	0.0	94.0	83.0	131.0	274.0	109.0	138.0	172.0	196.0	210.0	55.0	1475.0
1963	5.0	12.0	19.0	248.0	350.0	247.0	267.0	150.0	33.0	122.0	353.0	2.0	1808.0
1964	0.0	14.0	3.0	273.0	288.0	354.0	228.0	219.0	227.0	173.0	98.0	77.0	1954.0
1965	27.0	45.0	23.0	286.0	341.0	34.0	64.0	86.0	44.0	334.0	326.0	10.0	1620.0
1966	0.0	50.0	12.0	113.0	170.0	69.0	16.0	112.0	94.0	112.0	248.0	122.0	1118.0
1967	0.0	0.0	168.0	89.0	145.0	94.0	18.0	28.0	41.0	58.0	91.0	5.0	737.0
1968	10.0	0.0	10.0	229.0	18.0	90.0	30.0	32.0	128.0	68.0	14.0	5.0	634.0
1969	158.0	32.0	33.0	185.0	124.0	110.0	6.0	0.0	130.0	175.0	27.0	128.0	1108.0
1970	21.0	32.0	13.0	59.0	104.0	41.0	98.0	31.0	29.0	122.0	109.0	12.0	671.0
1971	45.0	36.0	211.0	124.0	229.0	76.0	33.0	73.0	112.0	163.0	100.0	84.0	1276.0
1972	94.0	84.0	106.0	235.0	111.0	89.0	4.0	54.0	34.0	86.0	67.0	6.0	970.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR OANARANJO

ESTACION X EL ECUCERCA MUNICIPIO DE TOTA PERIODO COEF DE CORRECCION

1955 --1972 ---------- 1.000

N	AÑO	I-A	CO	MCY	ECR	PCAN	P = -3. -2. -1. 0.0 +1. +2. +3.
1	1972	570.0	570.0	570.0	-0.162	-0.072	
2	1971	1274.0	2240.0	1123.0	0.456	0.148	
3	1970	671.0	2917.0	972.3	-0.805	-0.210	
4	1969	1108.0	4025.0	1006.3	0.134	-0.150	
5	1968	634.0	4659.0	931.8	-0.885	-0.544	
6	1967	737.0	5396.0	899.3	-0.663	-0.635	
7	1966	1118.0	6514.0	930.6	0.154	-0.765	
8	1965	1622.0	8136.0	1016.8	1.235	-0.220	
9	1964	1554.0	10688.0	1120.5	1.554	0.645	
10	1963	1608.0	11696.0	1169.6	1.440	1.378	
11	1962	1475.0	13371.0	1215.5	0.524	1.785	
12	1961	803.0	14174.0	1181.2	-0.521	1.557	
13	1960	1117.5	15291.5	1176.3	0.195	1.626	
14	1959	892.5	16184.0	1156.0	-0.325	1.480	
15	1958	854.6	17038.6	1135.5	-0.410	1.297	
16	1957	260.0	17298.6	1081.2	-1.685	0.546	
17	1956	474.6	17773.4	1045.5	-1.227	0.0	

P = -3. -2. -1. 0.0 +1. +2. +3.

N	AÑO	I-A	CO	MCY	ECR	PCAN

PROMEDIO DE LOS 17 AÑOS = 1045.5

DESVIACION ESTANDAR = 465.1

COEFICIENTE DE VARIACION = 0.445

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IDAC-CRSTCH *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCH

Universidad Nacional de Colombia

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240309	EL OCCIDENTE	TUTA	+05 40 02	+073 12 19	2700 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	2.0	20.0	51.0	158.0	83.0	69.0	33.0	57.0	39.5	110.5	174.5	56.5	854.0	1958
1959	13.5	43.5	30.0	88.5	154.0	101.5	75.5	79.0	38.5	144.0	97.0	27.5	892.5	1959
1960	17.0	79.5	67.0	145.5	93.5	94.5	133.0	108.0	61.0	149.0	67.5	142.0	1117.5	1960
1961	16.0	5.0	113.0	88.5	10.0	57.0	66.0	46.0	44.0	176.5	162.5	14.5	803.0	1961
1962														1962
1963														1963
1964														1964
1965														1965
1966	0.0	50.0	12.0	113.0	170.0	69.0	16.0	112.0	94.0	112.0	248.0	122.0	1118.0	1966
1967	0.0	0.0	108.0	89.0	145.0	94.0	18.0	28.0	41.0	58.0	91.0	5.0	737.0	1967
1968	10.0	0.0	10.0	229.0	18.0	90.0	30.0	32.0	128.0	68.0	14.0	5.0	634.0	1968
1969	158.0	32.0	33.0	185.0	124.0	110.0	6.0	0.0	130.0	175.0	27.0	128.0	1108.0	1969
1970	21.0	32.0	13.0	59.0	104.0	41.0	98.0	31.0	29.0	122.0	109.0	12.0	671.0	1970
1971	45.0	36.0	211.0	124.0	229.0	76.0	33.0	73.0	112.0	153.0	100.0	84.0	1276.0	1971
1972	94.0	84.0	106.0	235.0	111.0	89.0	4.0	54.0	34.0	86.0	67.0	6.0	970.0	1972
NUMERO DE ANOS	11	11	11	11	11	11	11	11	11	11	11	11	11	
VALOR MAXIMO	158.0	84.0	211.0	235.0	229.0	110.0	133.0	112.0	130.0	176.5	248.0	142.0	1276.0	
MEDIANA	16.0	32.0	51.0	124.0	111.0	76.0	33.0	54.0	44.0	122.0	97.0	27.5	892.5	
VALOR MINIMO	0.0	0.0	10.0	59.0	10.0	41.0	4.0	0.0	29.0	58.0	14.0	5.0	634.0	
PROMEDIOS	34.3	34.7	74.0	137.7	112.9	77.4	46.8	56.5	68.3	123.1	105.2	54.8	925.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		925.6	
PORCENTAJES	3.7	3.8	8.0	14.9	12.2	8.4	5.1	6.1	7.4	13.3	11.4	5.9		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 92.

DEV. ESTANDAR	49.2	28.8	67.8	58.9	63.7	21.5	41.5	34.4	39.7	40.6	67.9	54.7	209.4
COEF. VARIACION	1.434	0.828	0.917	0.428	0.564	0.278	0.888	0.609	0.582	0.330	0.645	0.998	0.226
COEF. ASIMETRIA	2.014	0.516	1.018	0.562	-0.057	-0.156	1.022	0.259	0.708	-0.277	0.812	0.643	0.174

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2401353	SAN ANTONIO	TUTA	+05 42 00	+073 15 00	2700 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1971	-9.9	-9.9	-9.9	-9.9	266.0	96.0	42.0	110.0	114.0	161.0	95.0	97.0	-9.9
1972	64.0	84.0	60.0	223.0	127.0	75.0	14.0	39.0	32.0	60.0	94.0	13.0	885.0
1973	4.0	0.0	77.0	50.0	100.0	201.0	76.0	22.0	296.0	154.0	137.0	55.0	1172.0
1974	13.0	91.0	64.0	107.0	74.0	81.0	5.0	38.0	163.0	97.0	138.0	0.0	841.0
1975	4.0	76.0	63.0	62.0	164.0	37.0	68.0	73.0	-9.9	150.0	138.0	61.0	-9.9
1976	3.0	55.0	150.0	156.0	30.0	23.0	12.0	26.0	48.0	94.0	101.0	96.0	794.0
1977	22.0	9.0	60.0	83.0	92.0	-9.9	40.0	85.0	71.0	116.0	106.0	22.0	-9.9
1978	0.0	56.0	98.0	236.0	163.0	71.0	101.0	51.0	55.0	159.0	90.0	68.0	1148.0
1979	11.0	16.0	69.0	142.0	125.0	168.0	45.0	157.0	44.0	181.0	158.0	25.0	1141.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAF

ESTACION X SAN ANTONIO MUNICIPIO DE TOTA PERIODO 1971 - 1979 COEF DE CORRECCION 1.000

N	AN	I /	CO	MCY	ECR	ECAN	F. = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1975	1141.0	1141.0	1141.0	0.026	0.145				I+			
2	1978	1146.0	2289.0	1144.5	0.000	0.256				I+			
3	1976	794.0	3083.0	1027.7	-1.162	0.093				+			
4	1974	641.0	3724.0	931.0	-0.693	-0.004				+			
5	1973	1172.0	5056.0	1019.2	1.004	0.112				I+			
6	1972	665.0	5681.0	946.8	-0.641	0.0				+			

N	AN	I /	CO	MCY	ECR	ECAN	F. = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 6 ANOS = 946.8

DESVIACION ESTANDAR = 174.5

COEFICIENTE DE VARIACION = 0.175

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IDEAM-CASTOR *** CALEC DE MICROCLIMATOLOGIA *** PROGRAMA CASTOR

Biblioteca de Ingeniería
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240353	SAN ANTONIO	TUTA	+05 42 29	+073 14 03	2590 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1971	-9.9	-9.9	-9.9	-9.9	266.0	96.0	42.0	110.0	114.0	161.0	95.0	97.0	-9.9	1971
1972	64.0	84.0	60.0	223.0	127.0	75.0	14.0	39.0	32.0	60.0	94.0	13.0	885.0	1972
1973	4.0	0.0	77.0	50.0	100.0	201.0	76.0	22.0	296.0	154.0	137.0	55.0	1172.0	1973
1974	13.0	91.0	64.0	107.0	74.0	51.0	9.0	36.0	163.0	97.0	136.0	0.0	841.0	1974
1975	4.0	76.0	63.0	62.0	164.0	37.0	68.0	73.0	-9.9	190.0	138.0	61.0	-9.9	1975
1976	3.0	50.0	150.0	156.0	30.0	23.0	12.0	26.0	48.0	94.0	101.0	96.0	794.0	1976
1977	22.0	9.0	60.0	83.0	92.0	-9.9	40.0	85.0	71.0	116.0	106.0	22.0	-9.9	1977
1978	0.0	56.0	98.0	236.0	163.0	71.0	101.0	51.0	55.0	159.0	90.0	68.0	1148.0	1978
1979	11.0	10.0	69.0	142.0	125.0	168.0	45.0	157.0	44.0	181.0	156.0	25.0	1141.0	1979
NUMERO DE ANOS	8	8	8	8	9	8	9	9	8	9	9	9	6	
VALOR MAXIMO	64.0	91.0	150.0	236.0	266.0	201.0	101.0	157.0	296.0	190.0	156.0	97.0	1172.0	
MEDIANA	7.5	55.5	66.5	124.5	125.0	73.0	42.0	51.0	63.0	154.0	106.0	55.0	1013.0	
VALOR MINIMO	0.0	0.0	60.0	50.0	30.0	23.0	5.0	22.0	32.0	60.0	90.0	0.0	794.0	
PROMEDIOS	15.1	46.4	80.1	132.4	126.8	90.3	44.8	66.8	102.9	134.7	117.4	48.6	996.8	
PORCENTAJES	1.5	4.8	7.9	13.1	12.6	9.0	4.4	6.6	10.2	13.4	11.6	4.8	TOTAL DE LOS PROMEDIOS MENSUALES = 1008.1	
DEV. ESTANDAR	21.0	35.6	30.9	70.1	67.2	63.1	32.2	44.6	89.3	44.5	25.2	35.5	174.5	
COEF. VARIACION	1.387	0.737	0.386	0.530	0.530	0.699	0.720	0.668	0.868	0.331	0.215	0.730	0.175	
COEF. ASIMETRIA	2.249	-0.266	2.058	0.457	0.850	0.989	0.448	1.115	1.752	-0.427	0.410	0.140	-0.097	

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 18. INDICE DE ARNOLDUS = 101.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240365	TUTASA	TUTASA	+06 02 00	+072 52 00	2875 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1974	-9.9	-9.9	-9.9	-9.9	-9.9	53.0	55.0	60.0	174.0	196.0	175.0	33.0	-9.9
1975	0.0	62.0	82.0	75.0	184.0	62.0	101.0	45.0	113.0	137.0	171.0	174.0	1207.0
1976	3.0	91.0	205.0	135.0	75.0	70.0	52.0	35.0	97.0	220.0	51.0	67.0	1101.0
1977	5.0	8.0	74.0	68.0	143.0	115.0	34.0	41.0	79.0	136.0	191.0	89.0	983.0
1978	15.0	22.0	178.0	215.0	227.0	66.0	36.0	72.0	246.0	223.0	143.0	64.0	1507.0
1979	15.0	135.0	171.0	212.0	110.0	266.0	40.0	96.0	58.0	295.0	322.0	6.0	1726.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X TASCO MUNICIPIO DE TASCO PERIODO 1974 - 1979 COEF DE CORRECCION 1.000

ESTACION Y TOTASA MUNICIPIO DE TOTASA PERIODO 1974 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	CLY	RAN	RCAN	F = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
					F :	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1975	1217.	1726.	0.994	-0.006					*				
2	1976	2136.	3253.	0.802	-0.166					+I				
3	1977	2553.	4216.	1.109	-0.041					+				
4	1978	3754.	5517.	1.077	0.024					+				
5	1979	4226.	6524.	0.974	0.000					. +				
N	AN	CLX	CLY	RAN	RCAN	F = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
					F :	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 525.6 1304.6

RAZONES PROMEDIOS Y/X = 1.419

X/Y = 0.705

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IDAC-CRSTOM *** CROQUIS DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240305	TUTASA	TUTASA	+06 02 04	+072 51 35	2840 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1974	-9.9	-9.9	-9.9	-9.9	-9.9	53.0	55.0	60.0	174.0	196.0	175.0	33.0	-9.9	1974
1975	0.0	62.0	82.0	75.0	164.0	63.0	101.0	45.0	113.0	137.0	171.0	174.0	1207.0	1975
1976	3.0	51.0	205.0	135.0	75.0	70.0	52.0	35.0	97.0	220.0	51.0	67.0	1101.0	1976
1977	5.0	8.0	74.0	68.0	143.0	115.0	34.0	41.0	79.0	136.0	191.0	89.0	983.0	1977
1978	15.0	22.0	178.0	215.0	227.0	66.0	36.0	72.0	246.0	223.0	143.0	64.0	1507.0	1978
1979	15.0	135.0	171.0	212.0	110.0	266.0	40.0	96.0	58.0	295.0	322.0	6.0	1726.0	1979
NUMERO DE ANOS	6	6	6	6	6	6	6	6	6	6	6	6	6	
VALOR MAXIMO	15.0	135.0	205.0	215.0	227.0	266.0	101.0	96.0	246.0	295.0	322.0	174.0	1726.0	
MEDIANA	5.0	62.0	171.0	135.0	143.0	68.0	46.0	52.5	105.0	208.0	173.0	65.5	1207.0	
VALOR MINIMO	0.0	8.0	74.0	68.0	75.0	53.0	34.0	35.0	58.0	136.0	51.0	6.0	983.0	
PROMEDIOS	7.6	63.6	142.0	141.0	147.6	105.5	53.0	58.2	127.8	201.2	175.5	72.2	1304.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1295.3	
PORCENTAJES	0.6	4.9	11.0	10.9	11.4	8.1	4.1	4.5	9.9	15.5	13.5	5.6		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 31. INDICE DE ARNOLDUS = 136.

DEV. ESTANDAR	7.0	51.7	59.9	71.1	59.9	81.5	25.0	22.9	70.0	60.0	67.5	57.7	305.4
COEF. VARIACION	0.919	0.812	0.422	0.504	0.405	0.773	0.472	0.394	0.548	0.298	0.385	0.800	0.234
COEF. ASIMETRIA	0.314	0.425	-0.407	0.100	0.202	2.108	1.853	0.920	1.099	0.419	0.530	1.108	0.589

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350705	UMBITA	UMBITA	+05 14 00	+073 27 00	1080 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1956	-9.9	-9.9	-9.9	-9.9	-9.9	71.6	53.5	76.3	74.8	81.6	26.8	19.7	-9.9
1957	0.0	7.2	22.0	42.3	82.3	54.6	62.8	52.1	39.4	66.5	11.4	26.2	466.8
1958	1.0	7.0	27.8	37.0	55.8	54.1	93.2	100.8	18.5	54.0	26.0	70.0	585.2
1959	2.0	4.0	50.0	64.0	134.0	106.0	124.0	172.0	102.0	81.0	70.0	40.0	949.0
1960	10.0	34.0	50.0	44.0	66.0	68.0	154.0	116.0	88.0	52.0	46.0	38.0	766.0
1961	16.0	9.0	40.0	84.0	48.0	82.0	72.0	66.0	34.0	52.0	52.0	8.0	563.0
1962	6.0	16.0	24.0	46.0	114.0	58.0	100.0	52.0	60.0	32.0	48.0	12.0	608.0
1963	4.0	24.0	30.0	40.0	66.0	54.0	50.0	52.0	14.0	12.0	42.0	8.0	396.0
1964	0.0	2.0	0.0	54.0	56.0	76.0	54.0	76.0	84.0	78.0	85.0	27.0	594.0
1965	14.0	16.0	16.0	160.0	160.0	146.0	162.0	142.0	86.0	112.0	132.0	24.0	1170.0
1966	11.0	3.0	78.0	54.0	56.0	148.0	114.0	88.0	73.0	53.0	151.0	62.0	891.0
1967	23.0	2.0	61.0	111.0	112.0	203.0	111.0	173.0	103.0	103.0	89.0	19.0	1110.0
1968	14.0	12.0	21.0	147.0	100.0	158.0	144.0	108.0	110.0	91.0	48.0	30.0	983.0
1969	68.0	28.0	22.0	128.0	117.0	93.0	175.0	102.0	30.0	126.5	63.0	23.0	975.5
1970	-9.9	31.5	13.0	63.0	158.0	94.0	195.0	149.0	90.0	150.0	107.0	47.0	-9.9
1971	43.0	24.1	96.1	83.5	237.2	62.7	186.8	-9.9	82.2	74.2	-9.9	38.3	-9.9
1972	29.6	13.5	50.6	143.6	133.1	119.5	122.8	117.2	93.3	58.6	51.1	8.9	941.8
1973	0.8	0.8	13.3	82.8	155.1	103.8	125.7	163.3	166.0	91.6	110.2	40.2	1053.6
1974	31.4	46.6	62.4	128.0	99.7	66.8	120.5	78.5	101.6	98.8	80.3	0.5	936.1
1975	2.2	26.4	22.5	87.1	58.6	128.9	87.7	119.7	69.0	113.0	40.8	77.7	833.6
1976	9.7	29.2	79.3	113.0	153.2	177.8	125.9	101.7	92.8	79.7	82.9	31.6	1076.8
1977	0.0	7.7	37.5	87.4	100.9	117.2	121.6	132.3	138.3	56.7	77.0	0.3	876.9
1978	3.5	4.1	89.2	194.8	167.0	128.3	107.3	180.3	101.8	92.1	45.6	17.4	1131.4

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR ENTRAMA

ESTACION X UMBITA MUNICIPIO DE UMBITA PERIODO 1956 - 1978 COEF DE CORRECCION 1.000

N	AN	T /	CU	MOY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1978	1131.4	1131.4	1131.4	1.222	0.338	I + I I I I I I
2	1977	876.9	2008.3	1004.1	0.135	0.376	I + I I I I I I
3	1976	1076.8	3085.1	1028.4	0.585	0.650	I + I I I I I I
4	1975	833.6	3918.7	979.7	-0.050	0.636	I + I I I I I I
5	1974	935.1	4853.8	970.8	0.384	0.742	I + I I I I I I
6	1973	1053.6	5907.4	984.6	0.650	0.588	I + I I I I I I
7	1972	941.8	6849.2	978.5	0.412	1.102	I + I I I I I I
8	1969	975.5	7824.7	978.1	0.556	1.256	I + I I I I I I
9	1968	983.0	8807.7	978.6	0.568	1.419	I + I I I I I I
10	1967	1110.0	9917.7	991.8	1.131	1.732	I + I I I I I I
11	1966	891.0	10808.7	982.6	0.195	1.786	I + I I I I I I
12	1965	1170.0	11978.7	998.2	1.388	2.170	I + I I I I I I
13	1964	594.0	12572.7	967.1	-1.074	1.873	I + I I I I I I
14	1963	396.0	12968.7	926.3	-1.521	1.341	I + I I I I I I
15	1962	608.0	13576.7	905.1	-1.018	1.061	I + I I I I I I
16	1961	563.0	14139.7	883.7	-1.207	0.727	I + I I I I I I
17	1960	766.0	14905.7	876.8	-0.335	0.633	I + I I I I I I
18	1959	949.0	15854.7	880.8	0.443	0.756	I + I I I I I I
19	1958	585.2	16439.9	865.3	-1.112	0.448	I + I I I I I I
20	1957	466.8	16906.7	845.3	-1.618	0.0	+ I I I I I I I

N	AN	T /	CU	MOY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 20 ANOS = 845.3

DEVIACION ESTANDAR = 233.9

COEFICIENTE DE VARIACION = 0.277

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTCM *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
3507J5	UMBITA	UMBITA	+05 13 25	+073 27 26	2440 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1961	25.9	14.6	64.9	136.2	77.8	133.0	116.7	107.0	65.2	84.3	64.3	13.0	912.9	1961
1962	9.7	25.9	38.9	74.6	164.9	158.9	162.2	84.3	97.3	51.9	77.8	19.5	985.9	1962
1963	6.5	38.9	48.6	64.9	107.0	87.6	81.1	84.3	22.7	19.5	66.0	13.0	642.1	1963
1964	0.0	3.2	0.0	87.6	90.8	126.5	87.6	123.2	136.2	126.5	137.8	43.8	963.2	1964
1965	14.0	16.0	16.0	160.0	160.0	146.0	162.0	142.0	86.0	112.0	132.0	24.0	1170.0	1965
1966	11.0	3.0	78.0	54.0	56.0	148.0	114.0	88.0	73.0	53.0	151.0	62.0	891.0	1966
1967	23.0	2.0	61.0	111.0	112.0	203.0	111.0	173.0	103.0	103.0	69.0	19.0	1110.0	1967
1968	14.0	12.0	21.0	147.0	100.0	158.0	144.0	108.0	110.0	91.0	48.0	30.0	983.0	1968
1969	68.0	28.0	22.0	128.0	117.0	93.0	175.0	102.0	30.0	126.5	63.0	23.0	975.5	1969
1970	-9.9	31.5	13.0	63.0	158.0	94.0	195.0	149.0	90.0	150.0	107.0	47.0	-9.9	1970
1971	43.0	24.1	96.1	83.5	237.2	82.7	166.8	-9.9	82.2	74.2	-9.9	38.3	-9.9	1971
1972	29.6	13.5	50.6	143.6	133.1	119.5	122.8	117.2	93.3	58.6	51.1	8.9	941.8	1972
1973	0.8	0.8	13.3	82.8	155.1	103.6	125.7	163.3	166.0	91.6	110.2	40.2	1053.6	1973
1974	31.4	40.6	62.4	128.0	59.7	86.8	120.5	78.5	101.6	98.6	80.3	0.5	935.1	1974
1975	2.2	26.4	22.5	87.1	58.6	128.9	87.7	119.7	69.0	113.0	40.8	77.7	833.6	1975
1976	9.7	29.2	79.3	113.0	153.2	177.8	125.9	101.7	92.8	79.7	82.9	31.6	1076.8	1976
1977	0.0	7.7	37.5	87.4	100.9	117.2	121.6	132.3	138.3	56.7	77.0	0.3	876.9	1977
1978	3.5	4.1	89.2	194.8	167.0	128.3	107.3	180.3	101.8	92.1	48.6	17.4	1131.4	1978
NUMERO DE ANOS	17	18	18	18	18	18	18	17	18	16	17	18	16	
VALOR MAXIMO	68.0	46.6	96.1	194.8	237.2	203.0	195.0	180.3	166.0	150.0	151.0	77.7	1170.0	
CUARTIL SUPERIOR	27.7	28.0	64.9	136.2	156.0	148.0	162.0	145.5	103.0	112.0	108.6	40.2	1065.2	
MEDIANA	11.0	15.3	43.7	99.3	114.5	127.4	122.2	117.2	93.0	91.3	80.3	23.5	969.3	
CUARTIL INFERIOR	2.8	4.1	21.0	82.8	59.7	94.0	111.0	94.8	73.0	58.6	57.0	13.0	901.5	
VALOR MINIMO	0.0	0.8	0.0	54.0	56.0	82.7	81.1	78.5	22.7	19.5	40.8	0.3	642.1	
PROMEDIOS	17.2	18.2	45.2	108.1	126.0	127.4	130.4	120.8	91.6	87.9	85.0	28.3	967.7	
											TOTAL DE LOS PROMEDIOS MENSUALES =		986.2	
PORCENTAJES	1.7	1.8	4.6	11.0	12.8	12.9	13.2	12.3	9.3	8.9	8.6	2.9		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARREOLDUS = 104.

DEV. ESTANDAR	18.1	13.7	29.1	38.4	46.6	33.6	33.7	31.7	35.4	32.3	33.0	20.5	129.3
COEF. VARIACION	1.056	0.754	0.644	0.355	0.370	0.264	0.258	0.262	0.386	0.367	0.388	0.725	0.134
COEF. ASIMETRIA	1.553	0.433	0.229	0.589	0.585	0.563	0.520	0.525	-0.021	-0.156	0.609	0.852	-0.737

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350705	UMBITA	UMBITA	+05 13 25	+073 27 28	2440 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	14.0	47.7	70.1	81.7	92.6	95.4	216.0	162.7	123.4	72.9	64.5	53.3	1074.3	1960
1961	25.9	14.6	64.9	136.2	77.8	133.0	116.7	107.0	55.2	84.3	84.3	13.0	912.9	1961
1962	9.7	25.9	38.9	74.6	184.9	158.9	102.2	84.3	97.3	51.9	77.8	19.5	985.9	1962
1963	6.5	38.9	48.6	64.9	107.0	87.6	81.1	84.3	22.7	19.5	68.0	13.0	642.1	1963
1964	0.0	3.2	0.0	87.6	90.8	126.5	87.6	123.2	136.2	126.5	137.8	43.8	963.2	1964
1965	14.0	16.0	16.0	160.0	160.0	146.0	162.0	142.0	86.0	112.0	132.0	24.0	1170.0	1965
1966	11.0	3.0	78.0	54.0	56.0	148.0	114.0	88.0	73.0	53.0	151.0	62.0	891.0	1966
1967	23.0	2.0	61.0	111.0	112.0	203.0	111.0	173.0	103.0	103.0	89.0	19.0	1110.0	1967
1968	14.0	12.0	21.0	147.0	100.0	158.0	144.0	108.0	110.0	91.0	48.0	30.0	983.0	1968
1969	68.0	28.0	22.0	128.0	117.0	93.0	175.0	102.0	30.0	126.5	63.0	23.0	975.5	1969
1970	32.5	31.5	13.0	63.0	158.0	94.0	195.0	149.0	90.0	150.0	107.0	47.0	1130.0	1970
1971	43.0	24.1	96.1	83.5	237.2	82.7	186.8	85.0	82.2	74.2	64.9	38.3	1098.0	1971
1972	29.6	13.5	50.6	143.6	133.1	119.5	122.8	117.2	93.3	58.6	51.1	8.9	941.8	1972
1973	0.8	0.8	13.3	82.8	155.1	103.8	125.7	163.3	166.0	91.6	110.2	40.2	1053.6	1973
1974	31.4	46.6	62.4	128.0	99.7	86.8	120.5	78.5	101.6	98.8	80.3	0.5	935.1	1974
1975	2.2	26.4	22.5	87.1	58.6	128.9	87.7	119.7	69.0	113.0	40.8	77.7	833.6	1975
1976	9.7	29.2	79.3	113.0	153.2	177.8	125.9	101.7	92.8	79.7	82.9	31.6	1076.8	1976
1977	0.0	7.7	37.5	87.4	100.9	117.2	121.6	132.3	138.3	56.7	77.0	0.3	876.9	1977
1978	3.5	4.1	89.2	194.8	167.0	128.3	107.3	180.3	101.8	92.1	45.6	17.4	1131.4	1978
1979	2.8	7.8	61.0	161.1	87.9	143.4	131.3	136.0	55.6	100.8	117.5	52.2	1057.4	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	68.0	47.7	96.1	194.8	237.2	203.0	216.0	180.3	166.0	150.0	151.0	77.7	1170.0	
CUARTIL SUPERIOR	27.7	28.6	67.9	139.9	156.5	147.0	162.1	145.5	106.5	107.5	108.6	45.4	1087.4	
MEDIANA	12.5	15.3	49.6	99.3	109.5	127.4	124.2	118.4	93.0	91.3	79.0	27.0	984.4	
CUARTIL INFERIOR	3.1	5.9	21.5	78.7	91.7	94.7	112.5	94.8	71.0	65.7	63.8	15.2	924.0	
VALOR MINIMO	0.0	0.8	0.0	54.0	56.0	82.7	81.1	78.5	22.7	19.5	40.8	0.3	642.1	
PROMEDIOS	17.1	19.1	47.3	108.5	122.4	126.6	134.7	121.9	91.4	87.8	84.6	30.7	992.1	
PORCENTAJES	1.7	1.9	4.8	10.9	12.3	12.8	13.6	12.3	9.2	8.9	8.5	3.1		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 18. INDICE DE ARNOLDUS = 104.

INDICE DE IRREGULARIDAD INTERANUAL =1.39

	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
DEV. ESTANDAR	17.4	14.8	28.3	39.8	45.5	32.9	37.2	31.9	35.2	30.9	31.9	20.8	126.0
COEF. VARIACION	1.016	0.773	0.599	0.367	0.371	0.260	0.276	0.262	0.385	0.352	0.377	0.677	0.127

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1200.	1154.	1098.	992.	886.	831.	785.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
COEF. ASIMETRIA	1.495	0.533	0.030	0.487	0.763	0.568	0.668	0.371	-0.019	-0.148	0.633	0.518	-1.019

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
35)702	VENTAQUEMADA	VENTAQUEMADA	+05 22 00	+073 31 00	2600 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	129.0	95.0	63.0	118.0	23.7	18.0	-9.9
1958	0.0	20.0	88.0	71.0	105.0	144.0	107.0	123.0	79.0	122.0	66.0	33.0	958.0
1959	0.0	30.0	21.2	72.0	156.0	67.0	163.0	110.0	113.0	177.0	79.0	31.0	1039.2
1960	8.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	31.0	11.0	-9.9	-9.9	-9.9
1961	-9.9	-9.9	-9.9	-9.9	-9.9	126.5	110.5	120.0	55.0	164.0	102.0	-9.9	-9.9
1962	-9.9	27.0	21.0	11.0	40.0	14.0	-9.9	-9.9	-9.9	-9.9	-9.9	25.0	-9.9
1963	26.0	46.0	24.0	107.0	124.0	126.0	141.0	87.0	68.0	-9.9	154.0	-9.9	-9.9
1964	-9.9	-9.9	-9.9	140.0	146.0	133.0	126.0	71.0	85.0	77.0	52.0	20.0	-9.9
1965	9.0	12.0	16.0	237.0	167.0	131.0	109.0	126.0	57.0	143.0	120.0	12.0	1139.0
1966	8.0	3.0	106.0	70.0	76.0	60.0	160.0	79.0	93.0	30.0	188.0	64.0	957.0
1967	19.0	1.0	67.0	158.0	104.0	176.0	85.0	142.0	75.0	40.0	107.0	24.0	998.0
1968	21.0	41.0	16.0	173.0	77.0	109.0	131.0	83.0	97.0	89.0	75.0	9.0	921.0
1969	59.0	16.0	10.5	157.0	108.0	104.0	115.0	56.0	73.0	133.5	80.0	18.0	930.0
1970	31.0	49.0	14.0	65.0	141.0	112.0	141.0	184.0	200.0	274.0	150.0	37.0	1358.0
1971	114.0	56.0	285.0	318.0	611.0	271.0	410.0	422.0	336.0	333.0	279.0	169.0	3604.0
1972	209.0	139.0	170.0	422.0	262.0	252.0	375.0	318.0	372.0	176.0	198.0	33.0	2926.0
1973	14.0	24.0	101.0	181.0	210.0	219.0	236.0	191.0	148.0	106.0	102.0	64.0	1596.0
1974	27.0	74.0	105.0	132.0	92.0	73.0	141.0	116.0	115.0	87.0	170.0	0.0	1132.0
1975	8.0	77.0	67.0	120.0	114.0	156.0	112.0	138.0	61.0	155.0	108.0	173.0	1333.0
1976	10.0	42.0	172.0	196.0	143.0	213.0	215.0	150.0	183.0	150.0	97.0	56.0	1627.0
1977	0.0	0.0	40.0	185.0	115.0	238.0	184.0	169.0	217.0	125.0	103.0	27.0	1403.0
1978	5.0	32.0	79.0	229.0	109.0	139.0	108.0	212.0	106.0	104.0	94.0	52.0	1269.0
1979	2.0	21.0	46.0	205.0	82.0	223.0	151.0	188.0	65.0	265.0	151.0	70.0	1469.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X VENTAQUEMADA MUNICIPIO DE VENTAQUEMADA PERIODO 1957 - 1979 COEF DE CORRECCION 1.000

N	AN	T /	CU	MCY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1979	1465.0	1469.0	1469.0	C.C22	C.011	
2	1978	1269.0	2738.0	1369.0	-C.252	-C.115	
3	1977	1403.0	4141.0	1380.3	-C.C68	-C.150	
4	1976	1627.0	5768.0	1442.0	C.236	-C.030	
5	1975	1333.0	7101.0	1420.2	-C.164	-C.113	
6	1974	1132.0	8233.0	1372.2	-C.440	-C.333	
7	1973	1596.0	9829.0	1404.1	C.156	-C.235	
8	1972	2926.0	12755.0	1594.4	2.018	C.775	
9	1971	3604.0	16359.0	1817.7	2.946	2.260	
10	1970	1398.0	17757.0	1775.7	-C.075	2.222	
11	1969	930.0	18687.0	1698.8	-C.716	1.662	
12	1968	921.0	19608.0	1634.0	-C.725	1.496	
13	1967	998.0	20606.0	1585.1	-C.623	1.183	
14	1966	957.0	21563.0	1540.2	-C.675	C.841	
15	1965	1139.0	22702.0	1513.5	-C.430	C.625	
16	1959	1039.2	23741.2	1483.8	-C.567	C.341	
17	1958	958.0	24699.2	1452.9	-C.678	0.0	

N	AN	T /	CU	MCY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 17 ANOS = 1452.9
DEVIACION ESTANDAR = 730.1
COEFICIENTE DE VARIACION = 0.503

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240141	EL EMPORIO	VILLA DE LEIVA	+05 37 00	+073 33 00	2120 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1970	-9.9	6.0	15.9	50.6	52.2	15.2	29.0	25.7	53.5	136.6	69.8	17.4	-9.9
1971	81.7	50.2	133.6	92.5	98.0	16.9	10.0	28.1	42.7	80.6	90.1	48.2	772.6
1972	65.4	12.7	69.5	245.3	55.8	15.3	15.8	66.4	14.0	36.2	126.0	39.0	761.4
1973	0.1	5.0	88.0	49.0	26.0	55.0	58.0	52.0	146.0	108.0	148.0	82.0	817.1
1974	6.0	85.0	95.0	90.0	66.0	22.0	10.0	14.0	139.0	85.0	197.0	30.0	843.0
1975	6.0	81.0	59.0	53.0	72.0	41.0	42.0	43.0	53.0	75.0	40.0	72.0	637.0
1976	26.0	96.0	144.0	104.0	75.0	33.0	0.0	6.0	79.0	183.0	76.0	36.0	858.0
1977	8.0	21.0	91.0	98.0	11.0	19.0	31.0	15.0	37.0	64.0	74.0	21.0	490.0
1978	0.0	24.0	101.0	155.0	85.0	5.0	13.0	3.0	17.0	84.0	81.0	40.0	610.0
1979	32.0	34.0	67.0	132.0	108.0	59.0	68.0	68.0	43.0	175.0	146.0	32.0	964.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9).

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DIVAR.

ESTACION X EL EMPORIO MUNICIPIO DE VILLA DE LEIVA PERIODO COEF DE CORRECCION

1970 - 1979 1.000

ESTACION Y SUTAMARCHAN MUNICIPIO DE SUTAMARCHAN PERIODO COEF DE CORRECCION

1970 - 1979 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	964.	1184.	0.927	-0.101						+I			
2	1978	1574.	1875.	1.006	-0.096						*			
3	1977	2064.	2506.	0.885	-0.181						+I			
4	1976	2922.	3351.	1.157	-0.027						+			
5	1975	3559.	4238.	0.818	-0.215						+I			
6	1974	4402.	5204.	0.994	-0.222						+I			
7	1973	5219.	5989.	1.186	-0.052						+			
8	1972	5980.	6748.	1.142	0.075						+			
9	1971	6753.	7692.	0.932	0.0						+			
						P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CUX	CUY	RAN	PCAN	R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 750.3 854.7

RAZONES PROMEDIOS Y/X = 1.139

X/Y = 0.878

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240141	EL ENPORIO	VILLA DE LEIVA	+05 38 19	+073 32 54	2120 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1970	-9.9	6.0	15.9	50.6	82.2	15.2	29.0	25.7	53.5	136.6	69.8	17.4	-9.9	1970
1971	81.7	50.2	133.6	92.5	98.0	16.9	10.0	28.1	42.7	80.6	90.1	48.2	772.6	1971
1972	65.4	12.7	69.5	245.3	55.8	15.3	15.8	66.4	14.0	36.2	126.0	39.0	761.4	1972
1973	0.1	5.0	88.0	49.0	26.0	55.0	58.0	52.0	146.0	108.0	146.0	82.0	817.1	1973
1974	6.0	85.0	95.0	90.0	66.0	22.0	10.0	14.0	139.0	89.0	197.0	30.0	843.0	1974
1975	6.0	81.0	59.0	53.0	72.0	41.0	42.0	43.0	53.0	75.0	40.0	72.0	637.0	1975
1976	26.0	96.0	144.0	104.0	75.0	33.0	0.0	6.0	79.0	183.0	76.0	36.0	858.0	1976
1977	8.0	21.0	91.0	98.0	11.0	19.0	31.0	15.0	37.0	64.0	74.0	21.0	490.0	1977
1978	0.0	26.0	101.0	155.0	85.0	5.0	13.0	3.0	17.0	84.0	81.0	40.0	610.0	1978
1979	32.0	34.0	87.0	132.0	108.0	59.0	68.0	68.0	43.0	175.0	146.0	32.0	964.0	1979
NUMERO DE ANOS	9	10	10	10	10	10	10	10	10	10	10	10	9	
VALOR MAXIMO	81.7	96.0	144.0	245.3	108.0	59.0	68.0	68.0	146.0	183.0	197.0	82.0	964.0	
MEDIANA	8.0	30.0	89.5	95.3	69.0	20.5	22.4	26.9	48.0	86.5	85.5	37.5	772.6	
VALOR MINIMO	0.0	5.0	15.9	49.0	11.0	5.0	0.0	3.0	14.0	36.2	40.0	17.4	490.0	
PROMEDIOS	25.0	41.7	86.4	106.9	64.9	28.1	27.7	32.1	62.4	103.1	104.8	41.8	750.3	
									TOTAL DE LOS PROMEDIOS MENSUALES =				725.0	
PORCENTAJES	3.5	5.8	11.9	14.8	9.0	3.9	3.8	4.4	8.6	14.2	14.5	5.8		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 76.

DEV. ESTANDAR	29.9	34.4	36.9	59.7	30.1	18.2	22.4	24.0	46.1	47.8	47.7	20.8	146.3
COEF. VARIACION	1.195	0.825	0.427	0.559	0.464	0.646	0.809	0.747	0.738	0.463	0.455	0.497	0.195
COEF. ASIMETRIA	1.193	0.582	-0.230	1.456	-0.469	0.737	0.734	0.420	1.132	0.654	0.715	1.039	-0.501

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240517	PASADENA	VILLA DE LEIVA	+05 41 00	+073 35 00	2520 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1962	-9.9	-9.9	-9.9	-9.9	-9.9	49.0	15.0	19.5	18.0	85.0	141.5	6.5	-9.9
1963	30.0	49.0	114.0	136.0	167.0	53.0	29.0	8.0	71.0	62.0	106.5	4.0	831.5
1964	20.0	25.0	37.0	100.0	109.5	80.5	61.0	36.6	41.5	244.2	113.1	27.7	896.2
1965	22.2	36.7	48.3	138.9	76.1	9.2	8.3	32.8	15.0	85.1	156.5	23.8	636.9
1966	1.7	5.9	60.8	56.7	85.3	54.6	28.6	35.0	60.5	103.2	57.4	27.2	576.9
1967	23.4	46.1	37.5	76.6	145.6	45.4	33.5	20.9	26.5	61.7	96.8	72.6	688.6
1968	10.2	-9.9	41.8	136.8	76.3	135.2	8.2	11.7	38.9	93.3	61.4	17.9	-9.9
1969	43.4	57.0	26.7	224.6	36.8	66.0	5.7	7.3	52.1	124.9	68.8	40.5	776.0
1970	28.1	4.7	50.9	92.8	54.6	75.6	36.0	29.6	87.8	114.7	163.1	32.9	770.8
1971	65.6	70.6	95.8	160.0	107.8	32.7	26.9	29.9	53.3	75.5	66.0	57.7	647.8
1972	105.6	44.7	63.7	211.2	59.7	42.7	58.5	74.2	12.1	35.2	91.0	73.3	675.9
1973	32.7	0.7	92.5	79.7	31.0	72.7	70.5	31.5	100.8	80.6	108.5	61.3	822.5
1974	2.4	64.3	122.4	73.5	65.9	55.7	29.6	67.0	99.1	130.9	182.4	11.4	904.6
1975	8.4	52.0	75.8	48.9	104.3	45.2	74.6	91.4	64.9	164.2	38.4	55.0	823.1
1976	33.2	55.4	116.4	106.2	90.4	37.5	1.0	7.9	77.3	216.0	80.1	21.4	642.8
1977	12.5	11.5	93.9	65.9	19.5	32.1	34.7	-9.9	42.5	54.3	-9.9	-9.9	-9.9
1978													
1979	20.5	12.1	18.6	63.2	142.4	12.6	14.3	83.7	39.4	144.0	133.3	40.6	804.7

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-CRESTA *** GRUPO DE HIDROCLIMATOLOGIA

IMPRESO EN COLOMBIA POR DANEPRAN O

ESTACION 4 PASADENA MUNICIPIO DE VILLA DE LEIVA PERIODO 1962 - 1979 COEF DE CORRECCION 1.000

ESTACION 7 LOS ARRAYANES MUNICIPIO DE TINJACA PERIODO 1962 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	805.	1727.	0.846	-0.184					+I				
2	1976	1647.	3041.	1.164	-0.034					+		•		
3	1975	2471.	4502.	1.023	-0.011					+ •				
4	1974	3375.	6428.	0.853	-0.208			•		+ I				
5	1973	4198.	8042.	0.926	-0.291				•	+ I				
6	1972	5074.	9535.	1.065	-0.223					+ I	•			
7	1971	5921.	11286.	0.879	-0.370				•	+ I				
8	1970	6692.	12532.	1.123	-0.264					+ I		•		
9	1969	7468.	13728.	1.177	-0.116					+I			•	
10	1967	8157.	14950.	1.024	-0.096					+ •				
11	1966	8734.	16116.	0.898	-0.179				•	+I				
12	1965	9371.	17429.	0.881	-0.287				•	+ I				
13	1964	10267.	18866.	1.132	-0.155					+I		•		
14	1963	11098.	20153.	1.174	-0.000					+			•	

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 792.7 1439.5

RAZONES PROMEDIOS Y/X = 1.816

X/Y = 0.551

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240517	PASACENA	VILLA DE LEIVA	+05 40 01	+073 35 53	2120 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y CCELES MASAS ** (LCS VALCRES FALTANTES SE HAN SENALADO CCN -9.9) ***

ANCS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGC	SEP	OCT	NCV	DIC	TOTAL	ANOS
1962	-9.9	-9.9	-9.9	-9.9	-9.9	49.0	15.0	19.5	18.0	89.0	141.5	6.5	-9.9	1962
1963	30.0	49.0	114.0	138.0	167.0	53.0	29.0	8.0	71.0	62.0	106.5	4.0	831.5	1963
1964	20.0	25.0	37.0	100.0	109.5	80.5	61.0	36.6	41.5	244.3	113.1	27.7	896.2	1964
1965	22.2	38.7	48.3	138.9	78.1	19.2	8.3	32.8	15.0	65.1	156.5	23.8	636.9	1965
1966	1.7	5.9	60.8	56.7	85.3	54.6	28.6	35.0	60.5	103.2	57.4	27.2	576.9	1966
1967	23.4	48.1	37.5	76.0	145.6	45.4	33.5	20.9	26.5	61.7	96.8	72.6	688.6	1967
1968	10.2	-9.9	41.8	136.8	76.3	135.2	8.2	11.7	38.9	93.3	61.4	17.9	-9.9	1968
1969	43.4	57.0	26.7	224.8	36.8	88.0	5.7	7.3	52.1	124.9	66.8	40.5	776.0	1969
1970	28.1	4.7	50.9	92.8	54.6	75.6	36.0	29.6	87.8	114.7	163.1	32.9	770.8	1970
1971	65.6	76.8	95.8	160.0	107.8	32.7	26.9	29.9	53.3	75.5	66.0	57.7	847.8	1971
1972	105.6	44.7	63.7	211.2	59.7	42.7	58.5	74.2	12.1	39.2	91.0	73.3	875.9	1972
1973	32.7	0.7	92.5	79.7	31.0	72.7	70.5	31.5	160.8	80.6	108.5	61.3	822.5	1973
1974	2.4	84.3	122.4	73.5	65.9	55.7	29.6	67.0	99.1	130.9	182.4	11.4	904.6	1974
1975	8.4	52.0	75.8	48.9	104.3	45.2	74.6	91.4	64.9	164.2	36.4	55.0	823.1	1975
1976	33.2	55.4	116.4	106.2	90.4	37.5	1.0	7.9	77.3	216.0	80.1	21.4	842.8	1976
1977	12.5	11.5	93.9	85.9	19.5	32.1	34.7	-9.9	42.5	54.3	-9.9	-9.9	-9.9	1977
1978														1978
1979	20.5	12.1	18.6	83.2	142.4	72.6	14.3	83.7	39.4	144.0	133.3	40.6	804.7	1979
NUMERO DE ANOS	16	15	16	16	16	17	17	16	17	17	16	16	14	
VALOR MAXIMO	105.6	76.8	122.4	224.8	167.0	135.2	74.6	91.4	160.8	244.3	182.4	73.3	904.6	
CUARTIL SUPERIOR	32.9	55.4	94.8	138.4	108.6	74.1	47.3	51.8	74.1	137.4	137.4	56.3	847.8	
MEDIANA	22.8	44.7	62.2	96.4	81.7	53.0	29.0	30.7	52.1	93.3	101.6	30.3	822.5	
CUARTIL INFERIOR	11.4	11.5	39.6	78.1	57.1	40.1	11.3	15.6	32.7	63.5	67.4	19.6	770.8	
VALOR MINIMO	1.7	0.7	18.6	48.9	19.5	9.2	1.0	7.3	12.1	39.2	36.4	4.0	576.9	
PROMEDIOS	28.7	38.4	68.5	113.3	85.9	57.7	31.5	36.7	56.5	109.6	104.0	35.9	792.7	
											TOTAL DE LCS PROMEDIOS MENSUALES =		764.8	
PORCENTAJES	3.8	4.8	9.0	14.8	11.2	7.6	4.1	4.8	7.4	14.3	13.6	4.7		

TRIMESTRE MAS LLUVIOSO SEP OCT NCV **** TRIMESTRE MENOS LLUVICSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 79.

DEV. ESTANDAR	26.1	24.4	33.7	51.5	42.3	28.4	22.8	27.5	36.7	56.8	42.1	22.5	96.7
COEF. VARIACION	0.906	0.671	0.491	0.454	0.492	0.492	0.723	0.750	0.649	0.518	0.404	0.627	0.122
COEF. ASIMETRIA	1.933	-0.145	0.239	1.012	0.326	1.093	0.627	0.914	1.427	1.146	0.340	0.348	-1.144

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2405017	PASADENA	VILLA DE LEIVA	+05 40 01	+073 35 53	2120 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	8.3	36.4	96.8	154.7	53.2	34.8	79.9	41.2	22.5	109.6	102.3	49.1	788.8	1960
1961	78.6	8.7	197.3	75.6	47.3	57.3	40.2	9.7	83.5	180.5	96.5	12.4	887.6	1961
1962	25.4	40.5	72.1	106.2	95.9	49.0	15.0	19.5	18.0	89.0	141.5	6.5	678.6	1962
1963	30.0	49.0	114.0	138.0	167.0	53.0	29.0	8.0	71.0	62.0	106.5	4.0	831.5	1963
1964	20.0	25.0	37.0	100.0	109.5	80.5	61.0	36.6	41.5	244.3	113.1	27.7	896.2	1964
1965	22.2	38.7	48.3	138.9	78.1	9.2	8.3	32.8	15.0	65.1	156.5	23.8	636.9	1965
1966	1.7	5.9	60.8	56.7	85.3	54.6	28.6	35.0	60.5	103.2	57.4	27.2	576.9	1966
1967	23.4	48.1	37.5	76.6	145.6	45.4	33.5	20.9	26.5	61.7	96.8	72.6	688.6	1967
1968	10.2	15.2	41.8	130.8	76.3	135.2	8.2	11.7	38.9	93.3	61.4	17.9	646.9	1968
1969	43.4	57.0	26.7	224.8	36.8	88.0	5.7	7.3	52.1	124.9	68.8	40.5	776.0	1969
1970	28.1	4.7	50.9	92.8	54.6	75.6	36.0	29.6	87.8	114.7	163.1	32.9	770.8	1970
1971	65.6	76.6	95.8	160.0	107.8	32.7	26.9	29.9	53.3	75.5	66.0	57.7	847.8	1971
1972	105.6	44.7	63.7	211.2	59.7	42.7	58.5	74.2	12.1	39.2	91.0	73.3	875.9	1972
1973	32.7	0.7	92.5	79.7	31.0	72.7	70.5	31.5	160.8	80.6	108.5	61.3	822.5	1973
1974	2.4	64.3	122.4	73.5	65.9	55.7	29.6	67.0	99.1	130.9	182.4	11.4	904.6	1974
1975	8.4	52.0	75.8	48.9	104.3	45.2	74.6	91.4	64.9	164.2	38.4	55.0	823.1	1975
1976	33.2	55.4	116.4	106.2	90.4	37.5	1.0	7.9	77.3	216.0	80.1	21.4	842.8	1976
1977	12.6	11.5	93.9	86.9	19.5	32.1	34.7	76.4	42.5	54.3	157.0	35.4	655.7	1977
1978	0.3	27.9	91.1	175.6	85.2	58.2	37.4	24.2	66.7	89.4	65.5	29.9	751.4	1978
1979	20.5	12.1	18.6	83.2	142.4	72.6	14.3	83.7	39.4	144.0	133.3	40.6	804.7	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	105.6	76.6	197.3	224.8	167.0	135.2	79.9	91.4	160.8	244.3	182.4	73.3	904.6	
CUARTIL SUPERIOR	32.9	50.5	96.3	140.8	106.0	72.6	49.3	54.1	74.1	137.4	137.4	52.0	845.3	
MEDIANA	22.8	37.3	73.9	103.1	81.6	53.8	31.5	30.7	52.7	98.2	99.5	31.4	796.7	
CUARTIL INFERIOR	9.3	11.8	45.0	78.1	53.9	40.1	14.6	15.6	32.7	70.3	67.4	19.6	683.6	
VALOR MINIMO	0.3	0.7	18.6	48.9	19.5	9.2	1.0	7.3	12.1	39.2	38.4	4.0	576.9	
PROMEDIOS	28.6	33.7	77.7	116.3	82.8	56.6	34.6	36.9	56.7	112.1	104.3	35.0	775.4	
PORCENTAJES	3.7	4.3	10.0	15.0	10.7	7.3	4.5	4.8	7.3	14.5	13.5	4.5		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 80.

INDICE DE IRREGULARIDAD INTERANUAL =1.38

DEV. ESTANDAR	27.1	22.4	41.8	49.5	39.2	26.6	23.6	27.0	35.2	54.7	40.3	20.9	97.2
COEF. VARIACION	0.945	0.663	0.538	0.426	0.474	0.469	0.680	0.731	0.621	0.488	0.387	0.598	0.125

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	935.	900.	857.	775.	694.	651.	615.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.612	0.098	1.089	0.797	0.488	1.209	0.530	0.837	1.296	1.027	0.356	0.395	-0.541

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240116	VILLA DE LEIVA	VILLA DE LEIVA	+05 38 00	+072 32 00	2200 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TOTAL
1941	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	21.2	19.6	43.0	-9.9	-9.9	64.6	-9.9
1942	54.0	59.2	95.2	157.6	59.7	117.1	5.5	15.9	23.4	157.5	137.0	69.5	952.0
1943	54.2	40.9	157.2	166.6	65.0	35.0	5.0	32.9	26.8	132.9	119.7	55.7	891.9
1944	28.6	61.8	52.2	33.4	219.9	33.2	4.5	46.7	66.0	214.6	120.1	71.8	953.0
1945													
1946													
1947													
1948													
1949													
1950													
1951													
1952													
1953													
1954													
1955													
1956													
1957													
1958	19.0	19.0	90.0	172.0	15.0	68.0	26.0	70.0	75.5	156.0	84.0	111.0	905.5
1959	13.0	57.0	84.0	14.0	86.0	56.0	31.0	26.0	-9.9	165.0	89.0	49.0	-9.9
1960	14.0	29.0	130.0	182.0	55.0	11.0	64.0	32.0	40.0	182.0	71.0	132.0	942.0
1961	80.0	13.0	161.0	54.0	0.0	28.0	17.0	10.0	7.0	141.0	216.0	75.0	802.0
1962	44.0	48.0	96.0	124.0	55.0	93.0	17.0	32.0	25.0	117.0	221.0	53.0	925.0
1963	67.0	87.0	167.0	149.0	220.0	40.0	45.0	14.0	0.0	135.0	235.0	17.0	1176.0
1964	46.0	76.0	54.0	170.0	121.0	105.0	18.0	68.0	61.0	58.0	33.0	5.0	859.0
1965	44.0	10.0	48.0	112.0	46.0	0.0	0.0	-9.9	0.0	-9.9	-9.9	-9.9	-9.9
1966	4.0	0.0	57.0	52.0	76.0	30.0	3.0	10.0	50.0	-9.9	-9.9	-9.9	-9.9
1967	-9.9	-9.9	-9.9	136.0	25.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1968	-9.9	-9.9	-9.9	-9.9	23.0	65.0	0.0	-9.9	-9.9	-9.9	-9.9	15.0	-9.9
1969	53.0	79.0	20.0	232.0	44.0	45.0	6.0	0.0	-9.9	46.0	136.0	99.0	-9.9
1970	37.0	6.0	34.0	85.0	93.0	33.0	4.0	21.0	54.0	-9.9	235.0	72.0	-9.9
1971	129.0	129.0	174.0	163.0	142.0	50.0	9.0	90.0	82.0	133.0	149.0	74.0	1324.0
1972	151.0	34.0	114.0	312.0	135.0	31.0	31.0	136.0	15.0	100.0	136.0	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION 6 VILLA DE LEIVA MUNICIPIO DE VILLA DE LEIVA PERIODO 1941 - 1972 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1971	1324.0	1324.0	1324.0	2.235	0.361				I +		•	
2	1964	859.0	2183.0	1091.5	-0.726	0.243			•	I +			
3	1963	1176.0	3359.0	1119.7	1.293	0.452				I +	•		
4	1962	925.0	4284.0	1071.0	-0.306	0.403			•	I +			
5	1961	802.0	5086.0	1017.2	-1.089	0.227		•		I +			
6	1960	942.0	6028.0	1004.7	-0.198	0.195				•I +			
7	1958	905.5	6933.5	990.5	-0.430	0.126			•	I +			
8	1944	953.0	7886.5	985.8	-0.128	0.105				•I +			
9	1943	891.9	8778.4	975.4	-0.517	0.022			•	+			
10	1942	952.0	9730.4	973.0	-0.134	0.0				•+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 10 ANOS = 973.0

DEVIACION ESTANDAR = 157.0

COEFICIENTE DE VARIACION = 0.161

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240116	VILLA DE LEIVA	VILLA DE LEIVA	+05 38 16	+073 31 46	2145 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	19.0	19.0	90.0	172.0	15.0	68.0	26.0	70.0	75.5	156.0	64.0	111.0	905.5	1958
1959	13.0	57.0	84.0	14.0	66.0	56.0	31.0	26.0	-9.9	165.0	69.0	49.0	-9.9	1959
1960	14.0	29.0	130.0	182.0	55.0	11.0	64.0	32.0	40.0	182.0	71.0	132.0	942.0	1960
1961	80.0	13.0	161.0	54.0	0.0	28.0	17.0	10.0	7.0	141.0	216.0	75.0	802.0	1961
1962	44.0	48.0	96.0	124.0	55.0	93.0	17.0	32.0	25.0	117.0	221.0	53.0	925.0	1962
1963	67.0	87.0	167.0	149.0	220.0	40.0	45.0	14.0	0.0	135.0	235.0	17.0	1176.0	1963
1964	46.0	76.0	54.0	170.0	121.0	109.0	18.0	68.0	61.0	98.0	33.0	5.0	859.0	1964
1965	44.0	10.0	48.0	112.0	46.0	0.0	0.0	-9.9	0.0	-9.9	-9.9	-9.9	-9.9	1965
1966	4.0	0.0	57.0	52.0	76.0	30.0	3.0	10.0	50.0	-9.9	-9.9	-9.9	-9.9	1966
1967	-9.9	-9.9	-9.9	136.0	25.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1967
1968	-9.9	-9.9	-9.9	-9.9	23.0	65.0	0.0	-9.9	-9.9	-9.9	-9.9	15.0	-9.9	1968
1969	53.0	79.0	20.0	232.0	44.0	49.0	6.0	0.0	-9.9	46.0	136.0	99.0	-9.9	1969
1970	37.0	6.0	34.0	85.0	93.0	33.0	4.0	21.0	54.0	-9.9	235.0	72.0	-9.9	1970
1971	129.0	129.0	174.0	163.0	142.0	50.0	9.0	90.0	62.0	133.0	149.0	74.0	1324.0	1971
1972	151.0	34.0	114.0	312.0	135.0	31.0	31.0	136.0	15.0	100.0	136.0	-9.9	-9.9	1972
NUMERO DE ANOS	13	13	13	14	15	14	14	12	11	10	11	11	7	
VALOR MAXIMO	151.0	129.0	174.0	312.0	220.0	109.0	64.0	136.0	82.0	182.0	235.0	132.0	1324.0	
CUARTIL SUPERIOR	73.5	77.5	145.5	172.0	121.0	65.0	31.0	69.0	*****	*****	*****	*****	******	
MEDIANA	44.0	34.0	90.0	142.5	55.0	44.5	17.0	29.0	40.0	134.0	136.0	72.0	925.0	
CUARTIL INFERIOR	16.5	11.5	51.0	85.0	25.0	30.0	4.0	12.0	*****	*****	*****	*****	******	
VALOR MINIMO	4.0	0.0	20.0	14.0	0.0	0.0	0.0	0.0	0.0	46.0	33.0	5.0	802.0	
PROMEDIOS	53.9	45.2	94.5	139.8	75.7	47.4	19.4	42.4	37.2	127.3	145.9	63.8	990.5	
												TOTAL DE LOS PROMEDIOS MENSUALES =	892.5	
PORCENTAJES	6.0	5.1	10.6	15.7	8.5	5.3	2.2	4.8	4.2	14.3	16.3	7.2		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 24. INDICE DE ARNOLDUS = 57.

DEV. ESTANDAR	44.2	38.7	51.8	77.2	59.0	29.7	18.6	40.6	29.7	39.2	72.2	41.0	188.1
COEF. VARIACION	0.820	0.856	0.548	0.552	0.779	0.627	0.963	0.956	0.798	0.306	0.495	0.642	0.190
COEF. ASIMETRIA	1.200	0.818	0.262	0.498	1.040	0.561	1.184	1.278	0.105	-0.783	-0.033	0.074	1.173

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240354	ZETAQUIRA	ZETAQUIRA	+05 17 00	+073 10 00	1825 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	239.0	172.0	176.0	137.5	56.0	-9.9
1958	10.0	25.0	116.0	110.0	238.0	179.0	252.0	201.0	60.0	137.0	55.0	5.0	1388.0
1959	0.0	0.0	92.0	195.0	396.0	281.0	421.0	290.0	307.0	151.0	119.0	131.0	2383.0
1960	65.0	13.0	19.0	95.0	375.0	185.0	296.0	283.0	257.0	229.0	131.0	39.0	1987.0
1961	41.1	-9.9	33.4	84.5	365.0	1711.0	1890.0	1754.0	479.5	145.0	61.5	-9.9	-9.9
1962	19.0	7.0	243.0	244.0	174.0	471.0	1599.0	186.0	142.0	115.0	125.0	105.0	3430.0
1963	33.0	39.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1964	-9.9	-9.9	-9.9	400.0	361.0	255.0	244.0	130.0	278.0	202.0	-9.9	3.0	-9.9
1965	23.0	23.0	44.0	230.0	521.0	655.0	518.0	450.0	122.0	178.0	-9.9	-9.9	-9.9
1966	84.0	16.0	261.0	278.0	204.0	188.0	174.0	468.0	183.0	160.0	216.0	242.0	2474.0
1967	119.0	6.0	111.0	243.0	222.0	358.0	334.0	319.0	229.0	165.0	98.0	43.0	2287.0
1968	25.0	14.0	24.0	449.0	307.0	256.0	400.0	208.0	263.0	147.0	135.0	22.0	2290.0
1969	22.0	15.0	62.0	302.0	142.0	213.0	257.0	202.0	-9.9	254.0	122.0	80.0	-9.9
1970	65.0	80.0	80.0	163.0	305.0	428.0	437.0	308.0	257.0	277.0	177.0	43.0	2620.0
1971	51.0	33.0	88.0	139.0	415.0	232.0	303.0	209.0	143.0	158.0	120.0	35.0	1966.0
1972	75.0	96.0	90.0	204.0	254.0	254.0	270.0	188.0	222.0	73.0	204.0	27.0	1957.0
1973	10.0	10.0	37.0	111.0	262.0	204.0	232.0	271.0	228.0	142.0	223.0	141.0	1871.0
1974	22.0	22.0	38.0	144.0	169.0	225.0	230.0	163.0	193.0	183.0	271.0	38.0	1698.0
1975	22.0	19.0	61.0	83.0	174.0	278.0	213.0	244.0	77.0	215.0	118.0	-9.9	-9.9
1976	16.0	26.0	63.0	194.0	199.0	367.0	312.0	187.0	84.0	64.0	198.0	118.0	1828.0
1977	0.0	2.0	24.0	131.0	246.0	306.0	217.0	195.0	216.0	142.0	84.0	8.0	1571.0
1978	30.0	10.0	67.0	145.0	341.0	345.0	334.0	221.0	105.0	84.0	53.0	88.0	1823.0
1979	0.0	0.0	48.0	188.0	166.0	284.0	177.0	213.0	150.0	118.0	274.0	225.0	1843.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION K ZETAQUIRA MUNICIPIO DE ZETAQUIRA PERIODO 1957 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1843.0	1843.0	1843.0	-0.501	-0.118				+I			
2	1978	1823.0	3666.0	1833.0	-0.542	-0.245				+I			
3	1977	1571.0	5237.0	1745.7	-1.057	-0.492			•	+I			
4	1975	1828.0	7065.0	1766.3	-0.532	-0.617			+•	I			
5	1974	1698.0	8763.0	1752.6	-0.797	-0.804			+•	I			
6	1973	1871.0	10634.0	1772.3	-0.444	-0.908			+ •	I			
7	1972	1957.0	12591.0	1798.7	-0.209	-0.971			+ •	I			
8	1971	1966.0	14557.0	1819.6	-0.250	-1.030			+ •	I			
9	1970	2620.0	17177.0	1908.6	1.085	-0.775			+	I •			
10	1968	2290.0	19467.0	1946.7	0.411	-0.679			+	I •			
11	1967	2287.0	21754.0	1977.6	0.405	-0.584			+	I •			•
12	1966	2474.0	24228.0	2019.0	0.787	-0.399			+	I •			
13	1962	3430.0	27658.0	2127.5	2.739	0.243				I +			•
14	1960	1987.0	29645.0	2117.5	-0.207	0.194			•	I+			
15	1959	2383.0	32028.0	2135.2	0.601	0.335				I + •			
16	1958	1388.0	33416.0	2088.5	-1.430	0.0			•	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 16 ANOS = 2088.5
DEVIACION ESTANDAR = 489.7
COEFICIENTE DE VARIACION = 0.234

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTUM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
230612	EL PORVENIR	ARBAN	+04 51 00	+074 28 00	1700 METROS

ANO	ENE	FEB	MAR	APR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	195.4	107.4	224.1	207.4	204.0	43.8	75.9	43.3	79.1	222.1	244.2	273.8	1920.5
1961	436.5	113.2	252.4	243.5	63.2	130.0	68.0	15.4	42.0	252.5	336.7	184.2	2137.6
1962	166.8	267.7	227.8	335.3	153.3	115.5	56.8	121.0	92.1	316.3	307.8	243.6	2410.0
1963	215.6	278.5	311.2	293.6	200.3	83.5	131.4	64.1	52.8	256.3	420.2	280.1	2587.6
1964	144.2	161.0	132.1	360.9	301.0	327.7	143.9	118.0	147.9	445.8	416.3	239.8	2942.6
1965	236.0	115.7	222.8	500.6	320.6	81.2	26.6	15.3	216.2	373.5	332.6	235.1	2616.2
1966	50.1	89.1	130.8	189.4	86.1	356.1	112.7	57.5	128.6	83.9	296.0	97.7	1678.0
1967	108.8	170.7	112.2	125.7	73.8	46.0	25.8	28.2	15.1	187.8	72.1	117.0	1085.2
1968	136.4	105.4	61.8	295.2	110.6	129.3	22.3	25.0	116.9	148.7	92.3	63.2	1307.1
1969	50.4	77.3	201.7	97.9	79.0	99.0	20.8	17.2	149.2	173.2	141.3	77.1	1184.1
1970	83.5	82.0	124.1	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

FFCYECIG IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARAJO

ESTACION X EL PORVENIR MUNICIPIO DE ALBAN PERIODO 1960 - 1970 COEF DE CORRECCION 1.000

N	AN	I /	CU	MGY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1969	1184.1	1184.1	1184.1	-1.221	-0.404				+			
2	1968	1307.1	2491.2	1245.6	-1.034	-0.746				+			
3	1967	1085.2	3576.4	1192.1	-1.371	-1.200			+				
4	1966	1678.0	5254.4	1313.6	-0.470	-1.356				+			
5	1965	2616.2	7870.6	1574.1	0.557	-1.035					+		
6	1964	2942.6	10813.2	1802.2	1.453	-0.556						+	
7	1963	2587.6	13400.8	1914.4	0.914	-0.255					+		
8	1962	2410.0	15810.8	1976.3	0.642	-0.042				+			
9	1961	2137.6	17948.4	1994.3	0.225	0.033				+			
10	1960	1920.5	19868.9	1986.9	-0.101	0.0				+			

N	AN	I /	CU	MGY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 10 ANOS = 1986.9

DESVIACION ESTANDAR = 657.6

COEFICIENTE DE VARIACION = 0.331

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-GESTION *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA GESTION

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600123	ANCLAIMA	ANCLAIMA	+04 45 00	+074 29 00	1726 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1955	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	180.0	252.0	166.2	155.5	-9.9
1956	158.5	121.7	93.7	168.1	118.4	143.6	56.4	46.9	165.4	256.1	112.2	168.3	1651.3
1957	47.6	95.8	138.0	129.4	224.1	26.2	59.3	23.4	106.7	166.7	57.4	55.5	1130.1
1958	134.8	35.4	49.4	101.5	106.5	58.8	26.5	54.4	26.4	145.2	207.0	81.4	1031.3
1959	6.1	48.9	77.3	124.6	248.0	101.8	47.7	43.0	157.4	165.5	173.0	69.9	1263.2
1960	56.2	112.1	48.2	68.6	105.0	150.3	63.0	94.7	29.5	137.9	31.8	135.8	1033.1
1961	137.7	77.2	118.2	220.0	35.5	142.8	91.5	34.6	72.0	300.7	298.9	123.7	1652.8
1962	93.7	92.7	135.1	62.0	257.4	136.6	-9.9	51.1	84.7	176.2	128.9	68.8	-9.9
1963	47.7	146.8	54.7	262.5	233.1	32.7	37.7	46.8	137.3	241.7	160.2	173.5	1574.7
1964	44.4	46.4	67.8	248.0	119.1	83.6	81.8	55.0	34.7	91.3	108.8	103.0	1083.9
1965	98.3	53.3	41.7	275.8	58.0	7.0	7.8	-9.9	-9.9	-9.9	-9.9	123.1	-9.9
1966	20.0	20.0	222.0	146.4	118.0	159.3	59.2	13.4	-9.9	-9.9	124.2	221.6	-9.9
1967	59.0	174.1	291.0	185.3	139.5	173.5	61.0	21.5	77.0	175.8	218.5	119.0	1695.2
1968	98.0	78.0	6.0	214.0	47.0	139.0	42.0	32.5	161.0	257.5	277.5	54.5	1407.0
1969	108.5	53.0	30.3	187.0	134.0	105.6	4.0	62.1	147.6	275.9	201.2	114.7	1427.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DATAGRAF

ESTACION X ANCLADA MUNICIPIO.DE ANCLADA PERIODO 1955 - 1965 COEF DE CORRECCION 1.000

N	AÑO	T x	CO	MCY	ECR	RCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1965	1427.3	1427.3	1427.3	0.266	0.050				+ .			
2	1966	1403.0	2834.3	1417.1	0.183	0.088				+ .			
3	1967	1455.2	4289.5	1429.8	0.288	0.333				I + .			
4	1964	1383.5	5673.0	1418.2	-1.044	0.130			.	- I+			
5	1963	1374.7	7048.1	1409.6	0.821	0.285				I + .			
6	1961	1452.6	8500.9	1416.8	0.115	0.050				I + .			
7	1960	1383.1	9874.0	1410.6	-1.242	0.269			.	I +			
8	1959	1263.2	11137.2	1392.1	-0.345	0.159			.	I+			
9	1958	1431.3	12568.5	1396.3	-0.245	-0.047			.	+I			
10	1957	1136.1	13704.6	1370.5	-0.472	-0.215			.	+ I			
11	1956	1451.3	15156.9	1378.8	0.113	0.0				+ .			

N	AÑO	T x	CO	MCY	ECR	RCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 11 AÑOS = 1378.8

DESVIACION ESTANDAR = 262.5

COEFICIENTE DE VARIACION = 0.190

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* PRUEBAS DE SIMPLE RASA *

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PROYECTO LOCAL-CESTEN *** CURSO DE AGROCLIMATOLOGIA *** PROGRAMA CESTEN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600123	ANOLAIMA	ANOLAIMA	+04 46 15	+074 27 45	1725 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1961	137.7	77.2	118.2	220.0	35.5	142.8	91.5	34.6	72.0	300.7	298.9	123.7	1652.8	1961
1962	93.7	92.7	135.1	62.0	257.4	136.6	-9.9	51.1	84.7	176.2	128.9	68.5	-9.9	1962
1963	47.7	146.6	54.7	262.5	233.1	32.7	37.7	46.8	137.3	241.7	160.2	173.5	1574.7	1963
1964	44.4	46.4	67.8	248.0	119.1	83.6	81.8	55.0	34.7	91.3	108.8	103.0	1083.9	1964
1965	95.3	53.3	41.7	279.8	58.0	7.0	7.8	-9.9	-9.9	-9.9	-9.9	123.1	-9.9	1965
1966	20.0	20.0	222.0	146.4	118.0	159.3	59.2	13.4	-9.9	-9.9	124.2	221.6	-9.9	1966
1967	59.0	174.1	291.0	185.3	139.5	173.5	61.0	21.5	77.0	175.8	218.5	119.0	1695.2	1967
1968	98.0	78.0	6.0	214.0	47.0	139.0	42.0	32.5	161.0	257.5	277.5	54.5	1407.0	1968
1969	108.5	53.0	30.3	187.0	134.0	105.0	4.0	62.1	147.6	279.9	201.2	114.7	1427.3	1969
NUMERO DE ANOS	9	9	9	9	9	9	8	8	7	7	8	9	6	
VALOR MAXIMO	137.7	174.1	291.0	279.8	257.4	173.5	91.5	62.1	161.0	300.7	298.9	221.6	1695.2	
MEDIANA	93.7	77.2	67.8	214.0	119.1	136.6	50.6	40.7	84.7	241.7	160.2	119.0	1501.0	
VALOR MINIMO	20.0	20.0	6.0	62.0	35.5	7.0	4.0	13.4	34.7	91.3	108.8	84.5	1083.9	
PROMEDIOS	78.6	82.4	107.4	200.6	126.8	108.8	48.1	39.6	102.0	217.6	185.8	122.4	1473.5	
PORCENTAJES	5.5	5.8	7.5	14.1	8.9	7.6	3.4	2.8	7.2	15.3	13.3	8.6	TOTAL DE LOS PROMEDIOS MENSUALES = 1424.2	
DEV. ESTANDAR	37.6	49.5	95.3	66.6	77.6	57.4	31.7	17.0	46.8	73.5	71.7	50.5	223.6	
COEF. VARIACION	0.479	0.601	0.887	0.332	0.612	0.528	0.658	0.428	0.459	0.338	0.378	0.413	0.152	
COEF. ASIMETRIA	-0.080	0.927	1.063	-1.074	0.630	-0.871	-0.177	-0.296	-0.023	-0.744	0.483	0.788	-1.124	

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 33. INDICE DE ARNOLDUS = 144.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600122	CACHIPAY	ANOLAIMA	+04 44 00	+074 26 00	1250 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1955	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	180.0	252.0	166.0	155.0	-9.9
1956	-9.9	-9.9	-9.9	-9.9	118.0	144.0	-9.9	46.0	166.0	258.0	112.0	188.0	-9.9
1957	48.0	96.0	138.0	129.0	224.0	26.0	59.0	23.0	107.0	167.0	57.0	56.0	1130.0
1958	134.0	36.0	49.0	101.0	106.0	58.0	20.0	54.0	26.0	145.0	207.0	81.0	1017.0
1959	6.0	49.0	77.0	125.0	248.0	102.0	48.0	43.0	157.0	163.0	173.0	70.0	1261.0
1960	56.0	112.0	48.0	68.0	106.0	150.0	63.0	94.0	29.0	137.0	31.0	135.0	1029.0
1961	138.0	77.0	118.0	220.0	36.0	143.0	91.0	34.0	72.0	301.0	298.0	68.0	1596.0
1962	94.0	93.0	135.0	62.0	257.0	137.0	40.0	51.0	85.0	176.0	129.0	88.0	1347.0
1963	47.0	146.0	54.0	262.0	233.0	32.0	37.0	46.0	137.0	241.0	160.0	173.0	1568.0
1964	44.0	46.0	67.0	248.0	119.0	63.0	81.0	55.0	36.0	91.0	108.0	103.0	1081.0
1965	98.0	54.0	41.0	279.0	58.0	7.0	-9.9	-9.9	-9.9	-9.9	182.0	123.0	-9.9
1966	20.7	18.6	254.3	120.2	75.7	157.8	42.0	24.0	99.8	-9.9	184.7	208.7	-9.9
1967	59.0	-9.9	269.1	172.7	127.3	82.5	55.7	17.6	75.6	185.6	199.5	66.6	-9.9
1968	66.8	72.6	8.6	215.2	62.1	139.4	29.0	29.8	181.0	264.8	301.5	47.6	1418.4
1969	121.8	55.6	34.6	251.3	137.9	219.0	-9.9	-9.9	135.2	279.9	201.2	114.7	-9.9
1970	59.2	153.3	103.9	125.9	-9.9	102.9	81.2	94.2	154.9	19.2	340.0	174.5	-9.9
1971	155.3	107.7	215.5	163.3	193.8	35.4	39.8	77.4	155.2	126.4	239.9	93.1	1602.8
1972	212.8	40.3	111.4	233.9	128.9	104.9	13.6	56.6	38.5	301.5	166.3	67.7	1476.4
1973	35.0	14.4	81.5	147.6	110.3	65.1	154.4	77.2	212.5	262.9	194.0	265.1	1660.0
1974	96.4	213.2	184.8	-9.9	-9.9	50.5	22.3	58.1	176.9	227.1	220.1	105.2	-9.9
1975	43.3	140.2	171.2	82.8	202.0	93.0	214.7	85.1	125.2	247.1	416.8	265.3	2086.7
1976	-9.9	-9.9	211.1	100.4	-9.9	44.5	2.0	3.5	50.6	445.4	110.8	66.4	-9.9
1977	18.0	80.1	65.6	209.8	123.0	112.8	29.6	53.0	232.0	147.3	238.9	70.3	1380.4
1978	48.0	84.9	285.7	245.6	98.1	39.8	19.9	27.5	81.2	148.4	157.8	114.9	1351.8
1979	75.2	40.8	194.7	143.4	252.2	102.7	35.9	98.6	113.5	241.7	230.2	26.4	1555.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAMA

ESTACION : CACHIPAY MUNICIPIO DE ANOLAIMA PERIODO 1965 - 1975 COEF DE CORRECCION 1.000

N	AÑO	T /	CO	MCY	ECF	FCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1975	1555.2	1555.2	1555.2	0.222	0.103				I+			
2	1976	1351.8	2907.1	1453.5	-0.210	0.062				.+			
3	1977	1356.9	4263.5	1429.2	-0.107	0.141				.+			
4	1978	2066.7	6329.2	1582.3	2.434	0.821				I +			.
5	1979	1664.0	7993.2	1598.6	0.455	0.656				I + .			
6	1972	1476.4	9469.6	1578.1	0.225	0.748				I . +			
7	1971	1662.6	11132.2	1590.3	0.453	0.882				I . +			
8	1966	1418.4	12551.6	1569.5	0.230	0.887				. +			
9	1969	1061.0	13612.6	1512.9	-0.184	0.654				I +			
10	1963	1567.0	15180.6	1518.1	0.566	0.766				I . +			
11	1962	1347.0	16527.6	1502.9	-0.227	0.721				. I +			
12	1961	1554.0	18129.6	1510.3	0.665	0.853				I . +			
13	1960	1025.0	19152.6	1473.3	-0.291	0.563				I +			
14	1965	1261.0	20413.6	1456.1	-0.536	0.477				I +			
15	1956	1017.0	21430.6	1428.7	-0.414	0.155				I+			
16	1967	1130.0	22560.6	1410.0	-1.007	0.0				+I			

N	AÑO	T /	CO	MCY	ECF	FCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 16 AÑOS = 1410.0

DESVIACION ESTANDAR = 278.0

COEFICIENTE DE VARIACION = 0.197

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO ICAC-CENICA *** CURSO DE AGROCLIMATOLOGIA *** PROGRAMA CENICA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600122	CACHIPAY	ANOLAIMA	+04 43 07	+074 27 37	1250 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1961	138.0	77.0	118.0	220.0	36.0	143.0	91.0	34.0	72.0	301.0	298.0	68.0	1596.0	1961
1962	94.0	93.0	135.0	62.0	257.0	137.0	40.0	51.0	85.0	176.0	129.0	88.0	1347.0	1962
1963	47.0	146.0	54.0	262.0	233.0	32.0	27.0	46.0	137.0	241.0	160.0	173.0	1568.0	1963
1964	44.0	46.0	67.0	248.0	119.0	83.0	61.0	55.0	36.0	91.0	106.0	103.0	1081.0	1964
1965	98.0	93.0	41.0	279.0	58.0	7.0	-9.9	-9.9	-9.9	-9.9	162.0	123.0	-9.9	1965
1966	20.7	18.6	254.3	120.2	75.7	197.8	42.0	24.0	99.8	-9.9	184.7	208.7	-9.9	1966
1967	59.0	-9.9	269.1	172.7	127.3	82.5	55.7	17.6	75.6	185.6	199.5	66.6	-9.9	1967
1968	66.8	72.6	8.6	215.2	62.1	139.4	29.0	29.8	181.0	264.8	301.5	47.6	1418.4	1968
1969	121.8	99.6	34.6	251.3	137.9	219.0	-9.9	-9.9	135.2	279.9	201.2	114.7	-9.9	1969
1970	59.2	153.3	103.9	125.9	-9.9	102.9	61.2	94.2	154.9	19.2	340.0	174.5	-9.9	1970
1971	155.3	107.7	215.5	163.3	193.8	35.4	39.8	77.4	155.2	126.4	239.9	93.1	1602.8	1971
1972	212.8	40.3	111.4	233.9	128.9	104.9	13.6	56.6	38.5	301.5	166.3	67.7	1476.4	1972
1973	35.0	14.4	81.5	147.6	110.3	85.1	154.4	77.2	212.5	282.9	194.0	265.1	1660.0	1973
1974	96.4	213.2	184.8	-9.9	-9.9	50.5	22.3	58.1	176.9	227.1	220.1	105.2	-9.9	1974
1975	43.3	140.2	171.2	82.8	202.0	93.0	214.7	85.1	125.2	247.1	416.8	265.3	2086.7	1975
1976	-9.9	-9.9	211.1	100.4	-9.9	44.5	2.0	3.5	50.6	449.4	110.8	66.4	-9.9	1976
1977	18.0	80.1	65.6	209.8	123.0	112.8	29.6	53.0	232.0	147.3	236.9	70.3	1380.4	1977
1978	48.0	84.5	285.7	245.6	98.1	39.8	19.9	27.5	61.2	148.4	157.8	114.9	1351.8	1978
1979	75.2	40.8	194.7	143.4	252.2	102.7	35.9	98.6	113.5	241.7	230.2	26.4	1555.3	1979
NUMERO DE ANOS	18	17	19	18	16	19	17	17	18	17	19	19	12	
VALOR MAXIMO	212.8	213.2	285.7	279.0	257.0	219.0	214.7	98.6	232.0	449.4	416.8	265.3	2086.7	
CUARTIL SUPERIOR	98.0	123.9	211.1	245.6	157.9	137.0	61.1	77.3	155.2	281.4	239.9	173.0	1599.4	
MEDIANA	63.0	77.0	118.0	191.2	125.1	93.0	39.8	53.0	119.3	241.0	199.5	103.0	1515.8	
CUARTIL INFERIOR	44.0	43.4	65.6	125.9	66.9	44.5	25.6	28.6	75.6	147.6	160.0	67.7	1366.1	
VALOR MINIMO	18.0	14.4	8.6	62.0	36.0	7.0	2.0	3.5	36.0	19.2	106.0	26.4	1081.0	
PROMEDIOS	79.6	84.5	137.2	182.4	138.4	95.4	58.2	52.3	120.1	219.4	214.7	118.0	1510.3	
										TOTAL DE LOS PROMEDIOS MENSUALES =			1500.1	
PORCENTAJES	5.3	5.6	9.1	12.2	9.2	6.4	3.9	3.5	8.0	14.6	14.3	7.9		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 32. INDICE DE ARNOLDUS = 146.

DEV. ESTANDAR	51.1	53.3	85.0	66.9	69.8	55.7	54.4	27.6	57.9	98.8	79.4	69.0	240.9	
COEF. VARIACION	0.642	0.631	0.619	0.367	0.504	0.584	0.935	0.528	0.482	0.450	0.370	0.585	0.160	
COEF. ASIMETRIA	1.180	0.917	0.280	-0.288	0.456	0.603	1.907	0.091	0.309	0.151	0.992	1.074	0.829	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600122	CACHIPAY	ANOLAIMA	+04 43 07	+074 27 37	1250 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	82.7	165.4	70.9	100.4	156.5	221.5	93.0	42.8	138.8	202.3	45.8	199.4	1519.5	1960
1961	138.0	77.0	118.0	220.0	36.0	143.0	91.0	34.0	72.0	301.0	298.0	68.0	1596.0	1961
1962	94.0	93.0	135.0	62.0	257.0	137.0	40.0	51.0	85.0	176.0	129.0	88.0	1347.0	1962
1963	47.0	146.0	54.0	262.0	233.0	32.0	37.0	46.0	137.0	241.0	160.0	173.0	1568.0	1963
1964	44.0	46.0	67.0	248.0	119.0	83.0	81.0	55.0	36.0	91.0	108.0	103.0	1081.0	1964
1965	98.0	53.0	41.0	279.0	58.0	7.0	40.8	75.0	148.0	467.4	182.0	123.0	1572.2	1965
1966	20.7	18.6	254.3	120.2	75.7	197.8	42.0	24.0	99.8	240.1	184.7	208.7	1486.6	1966
1967	59.0	202.8	269.1	172.7	127.3	82.5	55.7	17.6	75.6	185.6	199.5	66.6	1514.0	1967
1968	66.6	72.6	8.6	215.2	62.1	139.4	29.0	29.8	181.0	264.8	301.5	47.6	1418.4	1968
1969	121.8	55.6	34.6	251.3	137.9	219.0	13.3	43.7	135.2	279.9	201.2	114.7	1608.2	1969
1970	59.2	153.3	103.9	125.9	74.2	102.9	81.2	94.2	154.9	119.2	240.0	174.5	1483.4	1970
1971	155.3	107.7	215.5	163.3	153.8	35.4	39.8	77.4	155.2	126.4	239.9	93.1	1602.8	1971
1972	212.8	40.3	111.4	233.9	128.9	104.9	13.6	56.6	38.5	301.5	166.3	67.7	1476.4	1972
1973	35.0	14.4	81.5	147.6	110.3	85.1	154.4	77.2	212.5	282.9	194.0	265.1	1660.0	1973
1974	96.4	213.2	184.8	92.5	57.2	50.5	22.3	58.1	176.9	227.1	220.1	105.2	1504.3	1974
1975	43.3	140.2	171.2	82.8	202.0	93.0	214.7	85.1	125.2	247.1	416.8	265.3	2086.7	1975
1976	100.9	196.4	211.1	100.4	146.3	44.5	2.0	3.5	50.6	449.4	110.7	66.4	1482.2	1976
1977	18.0	80.1	65.6	209.8	123.0	112.8	29.6	53.0	232.0	147.3	238.9	70.3	1380.4	1977
1978	48.0	84.9	285.7	245.6	98.1	39.8	19.9	27.5	81.2	148.4	157.8	114.9	1351.8	1978
1979	75.2	40.8	194.7	143.4	252.2	102.7	35.9	98.6	113.5	241.7	230.2	26.4	1555.3	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	212.8	213.2	285.7	279.0	257.0	221.5	214.7	98.6	232.0	467.4	416.8	265.3	2086.7	
CUARTIL SUPERIOR	99.4	149.6	202.9	239.7	175.1	138.2	81.1	76.1	155.0	281.4	239.4	173.8	1584.1	
MEDIANA	71.0	82.5	114.7	168.0	125.1	97.8	39.9	52.0	130.2	240.5	196.8	104.1	1509.1	
CUARTIL INFERIOR	45.5	49.5	66.3	110.3	74.9	47.5	25.6	31.9	78.4	162.2	158.9	67.8	1447.4	
VALOR MINIMO	18.0	14.4	8.6	62.0	36.0	7.0	2.0	3.5	36.0	91.0	45.8	26.4	1081.0	
PROMEDIOS	80.8	100.1	133.9	173.8	132.4	101.7	56.8	52.5	122.4	237.0	201.2	122.0	1514.7	
PORCENTAJES	5.3	6.6	8.8	11.5	8.7	6.7	3.8	3.5	8.1	15.6	13.3	8.1		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 37. INDICE DE ARNOLDUS = 149.

INDICE DE IRREGULARIDAD INTERANUAL =1.37

DEV. ESTANDAR	48.6	62.3	84.0	68.6	66.3	61.1	51.7	26.0	55.3	98.0	80.5	69.6	185.5
COEF. VARIACION	0.601	0.622	0.628	0.395	0.500	0.601	0.910	0.495	0.451	0.413	0.400	0.570	0.122

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1820.	1753.	1671.	1515.	1359.	1277.	1209.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.136	0.492	0.376	-0.048	0.550	0.600	1.897	0.094	0.183	0.909	0.699	0.884	0.904

IMPRESO EN COLOMBIA POR DANAPAJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212534	ACUEDUCTO ROSA	BOGOTA D.E.	+04 37 00	+074 11 00	2585 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1947	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	78.1	29.4	8.8	-9.9
1948	3.0	24.9	23.6	106.5	44.1	16.0	57.1	58.8	66.6	48.2	60.7	32.2	541.7
1949	9.0	6.0	58.2	51.6	72.4	44.2	28.7	57.0	34.7	77.2	90.0	5.8	534.8
1950	46.4	63.8	60.1	44.3	49.4	97.4	44.9	80.9	45.1	80.5	56.1	55.8	724.7
1951	10.2	47.2	71.5	105.5	57.3	15.2	38.1	18.6	19.5	57.9	68.3	19.6	528.9
1952	6.4	19.8	24.7	116.3	88.8	36.1	41.7	18.6	26.2	32.8	152.1	25.3	588.8
1953	12.4	19.7	27.8	75.4	79.5	60.5	21.1	3.8	94.2	360.7	414.1	158.8	1328.4
1954	19.1	40.6	81.2	143.7	78.7	165.4	54.7	92.6	79.9	49.3	14.1	6.5	845.8
1955	15.0	38.8	104.4	108.6	43.2	44.4	41.0	17.1	72.8	165.7	116.8	118.2	886.0
1956	47.5	60.3	86.4	70.2	78.8	105.5	32.9	45.8	75.6	188.9	56.9	59.3	908.5
1957	1.7	1.2	26.9	45.6	94.2	36.3	33.4	11.8	66.2	56.0	41.5	7.3	462.1
1958	10.8	16.9	56.0	79.6	37.8	24.1	20.2	53.3	37.2	53.3	114.9	39.0	543.1
1959	35.6	4.5	11.9	59.5	85.4	53.8	56.7	58.4	23.4	37.8	60.4	60.0	577.4
1960													
1961	31.3	8.7	46.2	86.1	22.5	46.5	28.3	21.0	20.4	121.5	141.3	15.6	589.4
1962	28.1	4.5	66.1	41.0	85.5	64.7	27.2	40.3	30.0	47.7	95.5	15.9	546.5
1963	15.0	58.9	26.2	49.8	115.1	55.3	21.0	24.4	39.6	64.3	113.3	7.2	594.1
1964	16.0	0.0	19.7	83.5	69.4	50.5	57.1	36.3	21.3	51.4	43.7	25.5	514.4
1965	7.7	4.5	16.6	143.2	75.8	18.0	27.8	34.0	12.7	71.8	136.3	16.6	565.0
1966	0.0	15.7	44.0	63.0	38.5	78.6	35.6	32.0	21.0	42.9	63.5	43.0	477.8
1967	19.5	22.1	40.5	54.2	107.5	104.5	47.8	23.3	15.3	50.0	93.8	49.3	667.8
1968	3.6	45.1	54.8	75.7	38.2	77.8	19.8	20.4	65.0	92.5	71.3	9.7	573.9
1969	66.0	21.4	28.5	115.8	37.7	55.7	18.6	46.0	57.0	131.9	45.9	33.6	658.1
1970	31.8	16.7	12.1	41.7	93.0	54.2	52.6	36.9	45.8	60.5	60.1	-9.9	-9.9
1971	26.2	74.0	84.0	145.4	166.6	62.2	58.0	94.6	73.8	146.8	60.2	34.6	1046.4
1972	67.4	25.0	71.0	116.0	67.5	34.0	36.5	20.0	4.0	57.0	98.0	11.0	607.4
1973	1.0	0.0	24.0	15.0	77.0	70.0	61.0	84.0	190.0	91.5	46.0	63.0	722.5
1974	20.2	49.3	26.4	57.8	69.3	27.9	11.4	10.6	65.2	68.5	84.3	13.0	503.9
1975	5.4	41.5	69.1	65.3	83.4	38.5	30.3	54.4	58.4	86.3	86.5	82.2	701.3
1976	12.8	26.3	50.8	68.1	82.9	45.1	11.0	14.7	42.7	109.6	36.8	25.9	546.7
1977	0.2	27.0	44.0	70.0	2.0	20.0	43.0	93.0	83.0	140.0	99.4	42.0	663.6
1978	0.0	0.9	38.0	86.0	79.0	63.0	76.0	68.0	68.0	77.0	39.0	6.0	620.9
1979	11.0	2.0	72.0	98.0	56.0	61.0	29.0	57.0	59.0	113.0	191.0	5.0	754.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARAY

ESTACION X LA RANADA MUNICIPIO DE PLANZA PERIODO COEF DE CORRECCION
1947 - 1979 1.000

ESTACION Y ACUEDUCTO BOSA MUNICIPIO DE BOGOTA D.E. PERIODO COEF DE CORRECCION
1947 - 1979 1.000

N	AN	CLX	CUY	RAN	FCAN	E = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
						F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	804.	754.	0.975	-0.024					+				
2	1978	1448.	1375.	0.952	-0.045					+				
3	1977	2081.	2038.	0.875	-0.133					+I				
4	1975	2930.	2740.	1.110	-0.077					+				
5	1974	3670.	3244.	1.349	0.187					I+				
6	1973	4352.	3966.	0.917	0.057					+				
7	1972	5150.	4574.	1.146	0.225					I +				
8	1971	6019.	5020.	0.762	-0.144					+I				
9	1969	6834.	6278.	1.136	-0.010					+				
10	1968	7558.	6652.	1.158	0.127					I+				
11	1967	8180.	7520.	0.855	-0.019					+				
12	1966	8834.	7998.	1.256	0.164					I+				
13	1965	9503.	8563.	1.087	0.238					I +				
14	1964	10218.	9077.	1.276	0.450					I +				
15	1963	10879.	9671.	1.021	0.465					I +				
16	1962	11551.	10218.	1.125	0.574					I +				
17	1961	12262.	10807.	1.139	0.657					I +				
18	1959	12839.	11384.	0.885	0.558					I +				
19	1958	13591.	11927.	1.271	0.816					I +				
20	1957	14229.	12590.	1.267	1.003					I +				
21	1956	15140.	13294.	0.920	0.654					I +				
22	1955	16129.	14184.	1.024	0.526					I +				
23	1954	16959.	15030.	0.901	0.800					I +				
24	1953	17702.	16358.	0.814	-0.167					+I				
25	1952	18382.	16947.	1.055	-0.116					+I				
26	1949	19084.	17482.	1.205	0.045					+				
27	1948	19639.	18024.	0.940	0.0					+				

N	AN	CLX	CUY	RAN	FCAN	E = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
						F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 727.4 667.5

RAZONES PROMEDIOS Y/X = 0.918

X/Y = 1.090

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA DRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212534	ACUEDUCTO EOSA	BOGOTA D.E.	+04 36 57	+074 11 10	2590 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1959	35.6	4.5	11.9	59.5	65.4	93.8	56.7	58.4	23.4	37.6	60.4	50.0	577.4	1959
1960														1960
1961	31.3	8.7	46.2	86.1	22.5	46.5	28.3	21.0	20.4	121.5	141.3	15.6	589.4	1961
1962	28.1	4.5	66.1	41.0	65.5	64.7	27.2	40.3	30.0	47.7	95.5	15.9	546.5	1962
1963	15.0	58.9	26.2	49.8	115.1	59.3	21.0	24.4	39.6	64.3	113.3	7.2	594.1	1963
1964	10.0	0.0	19.7	83.5	69.4	90.5	57.1	36.3	21.3	51.4	43.7	25.5	514.4	1964
1965	7.7	4.5	16.6	143.2	75.8	18.0	27.8	34.0	12.7	71.8	136.3	16.6	565.0	1965
1966	0.0	15.7	44.0	63.0	38.5	78.6	35.6	32.0	21.0	42.9	63.5	43.0	477.8	1966
1967	19.5	22.1	40.5	54.2	107.5	104.5	47.8	23.3	15.3	90.0	93.8	49.3	667.8	1967
1968	3.6	45.1	54.8	75.7	38.2	77.8	19.8	20.4	65.0	92.5	71.3	9.7	573.9	1968
1969	60.0	21.4	28.5	115.8	27.7	55.7	18.6	46.0	57.0	131.9	45.9	33.6	658.1	1969
1970	31.8	10.7	12.1	41.7	93.0	54.2	52.6	36.9	45.8	60.5	60.1	-9.9	-9.9	1970
1971														1971
1972	67.4	25.0	71.0	116.0	67.5	34.0	36.5	20.0	4.0	57.0	95.0	11.0	607.4	1972
1973	1.0	0.0	24.0	15.0	77.0	70.0	61.0	64.0	190.0	91.5	46.0	63.0	722.5	1973
1974	20.2	49.3	26.4	57.8	69.3	27.9	11.4	10.6	65.2	68.5	84.3	13.0	503.9	1974
1975	5.4	41.5	69.1	65.3	83.4	38.5	30.3	54.4	58.4	86.3	86.5	82.2	701.3	1975
1976	12.8	20.3	50.8	88.1	82.9	45.1	11.0	14.7	42.7	109.6	36.8	25.9	546.7	1976
1977	0.2	27.0	44.0	70.0	2.0	20.0	43.0	93.0	83.0	140.0	99.4	42.0	663.6	1977
1978	0.0	0.9	38.0	86.0	79.0	83.0	76.0	68.0	68.0	77.0	35.0	6.0	620.9	1978
1979	11.0	2.0	72.0	98.0	56.0	61.0	29.0	57.0	59.0	113.0	191.0	5.0	754.0	1979
NUMERO DE ANOS	19	19	19	19	19	19	19	19	19	19	19	18	18	
VALOR MAXIMO	67.4	58.9	72.0	143.2	115.1	104.5	76.0	93.0	190.0	140.0	191.0	82.2	754.0	
CUARTIL SUPERIOR	31.3	27.0	54.8	68.1	85.4	78.6	52.6	57.0	65.0	109.6	99.4	43.0	663.6	
MEDIANA	15.0	10.7	40.5	70.0	75.8	59.3	30.3	36.3	42.7	77.0	84.3	21.0	591.7	
CUARTIL INFERIOR	3.6	4.5	24.0	54.2	38.5	38.5	21.0	21.0	21.0	57.0	46.0	11.0	546.7	
VALOR MINIMO	0.0	0.0	11.9	15.0	2.0	18.0	11.0	10.6	4.0	37.6	36.8	5.0	477.8	
PROMEDIOS	19.6	19.7	40.1	74.2	67.7	59.1	36.4	40.8	48.5	81.9	84.5	28.6	604.7	
											TOTAL DE LOS PROMEDIOS MENSUALES =		601.0	
PORCENTAJES	3.3	3.3	6.7	12.3	11.3	9.8	6.0	6.8	8.1	13.6	14.1	4.8		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 12. INDICE DE ARNOLDUS = 60.

DEV. ESTANDAR	20.1	16.2	20.0	30.5	28.9	25.1	18.1	23.2	40.9	30.5	40.5	22.1	77.0
COEF. VARIACION	1.027	0.823	0.499	0.411	0.426	0.425	0.497	0.569	0.844	0.372	0.479	0.772	0.127
COEF. ASIMETRIA	1.358	0.770	0.246	0.402	-0.637	0.024	0.555	0.869	2.385	0.421	1.063	1.002	0.311

PROYECTO IGAC-CRSTOM *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA CRSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212534	ACUEDUCTO BOSA	BOGOTA D.E.	+04 36 57	+074 11 10	2590 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	10.1	14.0	38.7	128.4	40.6	45.1	47.7	42.5	21.9	107.3	44.1	48.5	595.5	1960
1961	31.3	8.7	46.2	80.1	22.5	46.5	28.3	21.0	20.4	121.5	141.3	15.6	589.4	1961
1962	28.1	4.5	66.1	41.0	85.5	64.7	27.2	40.3	30.0	47.7	95.5	15.9	546.5	1962
1963	15.0	58.9	20.2	49.8	115.1	59.3	21.0	24.4	39.6	64.3	113.3	7.2	594.1	1963
1964	10.0	0.0	19.7	83.5	69.4	90.5	57.1	36.3	21.3	51.4	43.7	25.5	514.4	1964
1965	7.7	4.5	10.6	143.2	75.8	18.0	27.8	34.0	12.7	71.8	136.3	16.6	565.0	1965
1966	0.0	15.7	44.0	63.0	38.5	78.6	35.6	32.0	21.0	42.9	63.5	43.0	477.8	1966
1967	19.5	22.1	40.5	54.2	107.5	104.5	47.8	23.3	15.3	90.0	93.8	49.3	667.8	1967
1968	3.6	45.1	54.8	75.7	38.2	77.8	19.8	20.4	65.0	92.5	71.3	9.7	573.9	1968
1969	66.0	21.4	28.5	115.8	37.7	55.7	18.6	46.0	57.0	131.9	45.9	33.6	658.1	1969
1970	31.8	16.7	12.1	41.7	93.0	54.2	52.6	36.9	45.8	60.5	60.1	11.0	516.4	1970
1971	20.0	56.4	64.0	110.8	127.0	62.7	44.2	72.1	56.3	111.9	45.9	26.4	797.7	1971
1972	67.4	25.0	71.0	116.0	67.5	34.0	36.5	20.0	4.0	57.0	98.0	11.0	607.4	1972
1973	1.0	0.0	24.0	15.0	77.0	70.0	61.0	84.0	190.0	91.5	46.0	63.0	722.5	1973
1974	20.2	49.3	26.4	57.8	69.3	27.9	11.4	10.6	65.2	68.5	84.3	13.0	503.9	1974
1975	5.4	41.5	69.1	65.3	83.4	38.5	30.3	54.4	58.4	86.3	86.5	82.2	701.3	1975
1976	12.8	20.3	50.8	88.1	82.9	45.1	11.0	14.7	42.7	109.6	36.8	25.9	546.7	1976
1977	0.2	27.0	44.0	70.0	2.0	20.0	43.0	93.0	83.0	140.0	99.4	42.0	663.6	1977
1978	0.0	0.9	38.0	80.0	79.0	83.0	76.0	68.0	68.0	77.0	39.0	6.0	620.9	1978
1979	11.0	2.0	72.0	98.0	56.0	61.0	29.0	57.0	59.0	113.0	191.0	5.0	754.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	67.4	58.9	72.0	143.2	127.0	104.5	76.0	93.0	190.0	140.0	191.0	82.2	797.7	
CUARTIL SUPERIOR	24.1	34.3	59.4	104.4	84.4	73.9	47.7	55.7	62.0	110.7	98.7	42.5	665.7	
MEDIANA	15.5	19.0	42.3	79.6	72.6	57.5	32.9	36.6	44.2	88.1	77.8	21.0	594.8	
CUARTIL INFERIOR	4.5	4.5	26.3	56.0	39.5	41.8	24.1	22.1	21.1	62.4	45.9	11.0	546.6	
VALOR MINIMO	0.0	0.0	12.1	15.0	2.0	18.0	11.0	10.6	4.0	42.9	36.8	5.0	477.8	
PROMEDIOS	18.7	22.0	42.6	79.5	68.4	56.9	36.3	41.5	48.8	86.8	81.8	27.5	610.8	
PORCENTAJES	3.1	3.6	7.0	13.0	11.2	9.3	5.9	6.8	8.0	14.2	13.4	4.5		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 12. INDICE DE ARNOLDUS = 61.

INDICE DE IRREGULARIDAD INTERANUAL =1.45

DEV. ESTANDAR	19.2	19.2	19.0	32.6	31.5	23.2	17.2	23.3	39.9	28.9	41.0	21.2	87.2
COEF. VARIACION	1.031	0.870	0.446	0.411	0.461	0.408	0.475	0.562	0.818	0.333	0.501	0.769	0.143

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	754.	723.	684.	611.	537.	499.	467.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.597	0.648	0.131	0.121	-0.194	0.145	0.538	0.810	2.391	0.199	1.096	1.126	0.529

IMPRESO EN COLOMBIA POR DANAGRAMO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212552	AEROPUERTO EL DORADO	BOGOTA	+04 42 00	+074 08 00	2547 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	34.2	33.2	33.1	54.6	103.5	39.6	95.2	117.3	78.9	131.4	32.1	161.8	914.9
1961	58.0	20.7	90.9	107.1	18.2	81.7	48.5	9.9	26.3	134.7	103.1	23.3	722.4
1962	53.7	12.0	100.3	71.2	125.9	114.4	26.7	54.5	37.8	92.8	108.6	31.4	829.3
1963	36.4	71.8	28.9	64.3	103.4	60.6	25.8	13.9	16.7	53.1	73.9	16.7	565.5
1964	0.0	11.3	5.6	118.6	85.6	96.0	68.9	22.2	26.2	59.1	49.6	46.7	589.8
1965	13.1	22.6	-9.9	-9.9	102.8	-9.9	17.7	-9.9	12.2	141.9	123.8	47.5	-9.9
1966	2.7	8.8	60.5	37.9	37.5	77.8	30.3	32.6	-9.9	97.0	145.0	35.6	-9.9
1967	26.5	23.7	22.7	47.7	91.0	67.1	59.1	22.7	38.4	115.7	122.7	16.1	673.4
1968	9.5	64.3	21.3	125.1	44.2	132.1	33.8	21.4	92.5	104.4	68.2	22.8	739.3
1969	42.8	37.1	35.7	164.0	71.8	66.2	10.8	31.2	69.9	230.2	72.3	72.4	924.4
1970	61.8	79.1	19.3	65.7	91.3	56.2	49.3	28.8	44.1	212.4	71.1	50.5	829.6
1971	117.1	55.3	84.6	61.9	104.7	60.0	35.6	49.7	105.2	102.7	84.6	56.6	918.0
1972	72.1	21.9	57.2	159.4	118.1	58.1	36.7	39.6	17.4	71.6	101.1	28.5	781.7
1973	2.9	3.8	50.1	39.3	75.0	59.5	55.1	57.4	130.3	115.4	105.8	117.3	811.9
1974	79.6	100.0	28.5	83.8	61.3	65.5	15.8	46.8	91.8	100.3	150.6	24.0	848.0
1975	5.5	32.2	130.0	57.9	105.3	56.4	60.3	52.2	55.1	160.8	70.7	77.9	864.3
1976	31.2	59.9	118.3	122.1	104.4	58.9	17.4	34.7	47.3	140.0	81.6	49.5	865.3
1977	9.1	20.4	-9.9	86.4	34.1	15.9	52.0	52.9	115.7	-9.9	82.3	-9.9	-9.9
1978	5.0	24.0	54.0	119.0	73.0	71.0	55.0	11.0	70.0	103.0	48.0	29.0	662.0
1979	16.6	10.0	50.5	152.4	90.3	76.8	64.3	113.9	83.5	122.7	254.6	19.3	1064.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA FCP EAN

ESTACION X REFERENTE EL CLAVEL MUNICIPIO DE ECCCIA PERIODO 1960 - 1975 COEF DE CORRECCION 1.000

ESTACION Y CONTACCR MUNICIPIO DE USAQUEN PERIODO 1960 - 1975 COEF DE CORRECCION 1.000

N	AN	CL	CUY	RAN	ESAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						F = 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1975	1169.	1020.	1.237	0.258					I +				
2	1974	1727.	1764.	1.027	0.266					I +				
3	1973	2551.	2648.	0.963	0.236					I +				
4	1972	3403.	3645.	0.962	0.157					I +				
5	1972	4165.	4645.	0.930	0.123					I +				
6	1971	5103.	5524.	1.006	0.133					I +				
7	1970	5532.	6631.	1.084	0.214					I +				
8	1969	6857.	7659.	1.066	0.266					I +				
9	1968	7556.	8745.	0.985	0.272					I +				
10	1967	8269.	9616.	0.915	0.157					I +				
11	1964	8655.	10421.	0.871	0.067					+				
12	1963	9425.	11417.	0.873	-0.261					+ I				
13	1962	10254.	12473.	0.931	-0.336					+ I				
14	1961	10976.	13326.	1.002	-0.336					+				
15	1960	11651.	14096.	1.411	-0.000					+				
						F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CL	CUY	RAN	ESAN	I	I	I	I	I	I	I	I	I
						F = 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 852.6 535.8

RAZONES PROMEDIOS Y/X = 1.169

X/Y = 0.844

****
* PRUEBAS DE CCELE NASA *
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PROYECTO IGAC-CASTOR *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CESTCA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212552	AEROPUERTO EL DORADO	BOGOTA	+04 42 47	+074 09 17	2550 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1961	58.0	20.7	90.9	107.1	18.2	81.7	46.5	9.9	26.3	134.7	103.1	23.3	722.4	1961
1962	53.7	12.0	100.3	71.2	125.9	114.4	26.7	54.5	37.8	92.8	108.6	31.4	829.3	1962
1963														1963
1964	0.0	11.3	5.6	118.0	85.6	96.0	68.9	22.2	26.2	59.1	45.6	46.7	589.8	1964
1965	13.1	22.6	-9.9	-9.9	102.8	-9.9	17.7	-9.9	12.2	141.9	123.8	47.5	-9.9	1965
1966	2.7	8.8	60.5	37.9	37.5	77.8	30.3	32.6	-9.9	97.0	145.0	35.6	-9.9	1966
1967	26.5	23.7	22.7	47.7	91.0	87.1	59.1	22.7	38.4	115.7	122.7	16.1	673.4	1967
1968	9.5	64.3	21.3	125.1	44.2	132.1	33.8	21.4	92.5	104.4	68.2	22.5	739.3	1968
1969	42.8	37.1	35.7	104.0	71.8	86.2	10.8	31.2	69.9	230.2	72.3	72.4	924.4	1969
1970	61.8	79.1	19.3	85.7	91.3	56.2	49.3	28.8	44.1	212.4	71.1	50.5	829.6	1970
1971	117.1	55.3	84.6	81.9	104.7	60.0	35.6	49.7	105.2	102.7	84.6	56.6	918.0	1971
1972	72.1	21.9	57.2	159.4	118.1	58.1	36.7	39.6	17.4	71.6	101.1	28.5	781.7	1972
1973	2.9	3.8	50.1	39.3	75.0	59.5	55.1	57.4	130.3	115.4	105.8	117.3	811.9	1973
1974	79.0	100.0	28.5	83.8	61.3	65.5	15.8	46.8	91.8	100.3	150.6	24.0	848.0	1974
1975	5.5	32.2	130.0	57.9	105.3	56.4	60.3	52.2	55.1	160.6	70.7	77.9	864.3	1975
1976	31.2	59.9	118.3	122.1	104.4	58.9	17.4	34.7	47.3	140.0	81.6	49.5	865.3	1976
1977	9.1	20.4	-9.9	86.4	24.1	15.9	52.0	52.9	115.7	-9.9	82.3	-9.9	-9.9	1977
1978	5.0	24.0	54.0	119.0	73.0	71.0	55.0	11.0	70.0	103.0	46.0	29.0	662.0	1978
1979	16.0	10.0	50.5	152.4	90.3	76.8	64.3	113.9	83.5	132.7	254.6	19.3	1064.9	1979
NUMERO DE ANOS	18	18	16	17	18	17	18	17	17	17	18	17	15	
VALOR MAXIMO	117.1	100.0	130.0	164.0	125.9	132.1	68.9	113.9	130.3	230.2	254.6	117.3	1064.9	
CUARTIL SUPERIOR	58.0	55.3	87.7	123.0	104.4	86.6	55.1	52.5	92.1	140.9	122.7	53.5	865.3	
MEDIANA	21.5	23.1	52.3	86.4	87.9	71.0	42.6	34.7	55.1	115.4	92.8	35.6	829.3	
CUARTIL INFERIOR	5.5	12.0	25.6	59.9	61.3	58.5	26.7	22.4	32.0	98.6	71.1	23.6	722.4	
VALOR MENINO	0.0	3.8	5.6	37.9	18.2	15.9	10.8	9.9	12.2	59.1	45.0	16.1	589.8	
PROMEDIOS	33.7	33.7	58.1	95.3	79.7	73.7	41.0	40.1	62.6	124.4	102.4	44.0	808.3	
												TOTAL DE LOS PROMEDIOS MENSUALES =	788.7	
PORCENTAJES	4.3	4.3	7.4	12.1	10.1	9.3	5.2	5.1	7.9	15.8	13.0	5.6		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 78.

DEV. ESTANDAR	33.5	27.0	37.2	41.7	30.5	26.1	18.4	24.3	35.9	44.6	48.0	26.2	119.7
COEF. VARIACION	0.992	0.801	0.640	0.438	0.383	0.353	0.448	0.605	0.573	0.359	0.469	0.595	0.148
COEF. ASIMETRIA	1.043	1.185	0.569	0.240	-0.547	0.259	-0.193	1.700	0.376	1.120	1.955	1.521	0.153

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212552	AEROPUERTO EL DORADO	BOGOTA	+04 42 47	+074 09 17	2550 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	23.7	23.0	22.9	37.8	71.8	27.4	66.0	81.4	54.7	91.1	22.2	112.2	634.2	1960
1961	58.0	20.7	90.9	107.1	18.2	81.7	48.5	9.9	26.3	134.7	103.1	23.3	722.4	1961
1962	53.7	12.0	100.3	71.2	125.9	114.4	26.7	54.5	37.8	92.8	108.6	31.4	829.3	1962
1963	50.6	99.9	40.2	89.4	143.9	84.3	35.9	19.3	23.2	73.8	102.8	23.2	786.5	1963
1964	0.0	11.3	5.6	116.6	85.6	96.0	68.9	22.2	26.2	59.1	49.6	46.7	589.8	1964
1965	13.1	22.6	33.3	170.9	102.8	15.3	17.7	28.1	12.2	141.9	123.8	47.5	729.2	1965
1966	2.7	8.8	60.5	37.9	37.5	77.8	30.3	32.6	48.5	97.0	145.0	35.6	614.2	1966
1967	26.5	23.7	22.7	47.7	91.0	87.1	59.1	22.7	38.4	115.7	122.7	16.1	673.4	1967
1968	9.5	64.3	21.3	125.1	44.2	132.1	33.8	21.4	92.5	104.4	68.2	22.5	739.3	1968
1969	42.8	37.1	35.7	164.0	71.8	86.2	10.8	31.2	69.9	230.2	72.3	72.4	924.4	1969
1970	61.8	79.1	19.3	65.7	91.3	56.2	49.3	28.8	44.1	212.4	71.1	50.5	829.6	1970
1971	117.1	55.3	84.6	61.9	104.7	60.0	35.6	49.7	105.2	102.7	84.6	56.6	918.0	1971
1972	72.1	21.9	57.2	159.4	118.1	58.1	36.7	39.6	17.4	71.6	101.1	28.5	781.7	1972
1973	2.9	3.8	50.1	39.3	75.0	59.5	55.1	57.4	130.3	115.4	105.8	117.3	811.9	1973
1974	79.6	100.0	28.5	83.8	61.3	65.5	15.8	46.8	91.8	100.3	150.6	24.0	848.0	1974
1975	5.5	32.2	130.0	57.9	105.3	56.4	60.3	52.2	55.1	160.8	70.7	77.9	864.3	1975
1976	31.2	59.9	118.3	122.1	104.4	58.9	17.4	34.7	47.3	140.0	81.6	49.5	865.3	1976
1977	9.1	20.4	76.4	86.4	34.1	15.9	52.0	52.9	115.7	185.4	82.3	26.1	756.7	1977
1978	5.0	24.0	54.0	119.0	73.0	71.0	55.0	11.0	70.0	103.0	48.0	29.0	662.0	1978
1979	16.6	10.0	50.5	152.4	90.3	76.8	64.3	113.9	83.5	132.7	254.6	19.3	1064.9	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	117.1	100.0	130.0	170.9	143.9	132.1	68.9	113.9	130.3	230.2	254.6	117.3	1064.9	
CUARTIL SUPERIOR	55.8	57.6	80.5	123.6	104.5	85.2	57.1	52.5	87.6	140.9	115.6	53.5	856.1	
MEDIANA	25.1	23.3	50.3	87.9	87.9	68.3	42.6	33.6	51.6	109.9	92.8	33.5	784.1	
CUARTIL INFERIOR	7.3	16.2	25.7	59.9	66.5	57.2	28.5	22.4	32.0	94.9	70.9	23.6	697.9	
VALOR MINIMO	0.0	3.8	5.6	37.8	18.2	15.3	10.8	9.9	12.2	59.1	22.2	16.1	589.8	
PROMEDIOS	34.1	36.5	55.1	95.9	82.5	69.0	42.0	40.5	59.5	123.3	98.4	45.5	782.3	
PORCENTAJES	4.4	4.7	7.0	12.3	10.5	8.8	5.4	5.2	7.6	15.8	12.6	5.8		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 19. INDICE DE ARNOLDUS = 77.

INDICE DE IRREGULARIDAD INTERANUAL = 1.48

DEV. ESTANDAR	32.0	29.7	34.9	44.1	32.3	29.1	18.3	24.8	34.2	45.4	48.8	29.3	117.9
COEF. VARIACION	0.938	0.813	0.632	0.459	0.392	0.422	0.436	0.613	0.574	0.369	0.496	0.644	0.151

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	976.	933.	882.	782.	683.	631.	588.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.028	1.124	0.735	0.288	-0.240	-0.009	-0.206	1.484	0.564	0.997	1.656	1.429	0.390

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
609104	ALTO CAICEDO	BOGOTA D.E.	+04 08 05	+074 14 55	3800 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	202.0	121.0	93.0	119.0	100.0	-9.9
1967	29.0	40.0	32.0	73.0	-9.9	185.0	203.0	334.0	37.0	52.0	96.0	60.0	-9.9
1968	-9.9	-9.9	37.4	175.8	98.4	211.4	165.8	97.0	94.8	123.9	143.3	-9.9	-9.9
1969	-9.9	23.1	30.2	185.9	163.3	-9.9	-9.9	-9.9	119.7	159.8	78.2	39.7	-9.9
1970	78.0	33.5	72.9	68.9	133.4	186.1	122.3	114.9	147.8	136.6	134.6	21.0	1250.0
1971	80.5	62.7	122.7	152.3	180.6	152.6	173.5	158.0	97.2	91.0	111.2	45.6	1467.9
1972	106.6	29.5	85.6	134.6	206.7	156.1	143.6	95.6	72.7	68.0	113.0	32.0	1244.0
1973	15.4	3.8	21.0	91.6	208.6	140.5	137.0	177.1	168.1	103.0	109.2	88.6	1263.9
1974	75.0	61.7	52.6	121.6	167.5	134.4	190.7	99.5	98.2	137.5	107.3	11.6	1257.6
1975	11.8	42.5	83.6	82.6	133.3	185.9	86.9	129.5	133.6	146.2	112.0	158.8	1306.7
1976	27.7	51.2	95.6	147.7	149.0	170.3	155.7	70.8	74.1	163.7	77.3	29.0	1232.1
1977	0.0	53.4	46.1	93.1	74.5	100.1	128.6	146.8	95.2	114.2	131.4	27.4	1010.8
1978	12.0	22.4	77.9	163.3	119.3	165.3	142.6	120.5	91.3	91.9	46.9	50.7	1094.1
1979	22.2	20.1	85.0	200.4	-9.9	136.2	109.3	116.9	105.2	172.4	190.1	47.1	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DALARANJE

ESTACION X ALTO CAICEDO MUNICIPIO DE BOGOTA D.E. PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

ESTACION Y LAS SEPAS MUNICIPIO DE BOGOTA D.E. PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	COY	RAN	FCAN	F = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1973	1094.	1252.	1.010	0.008					*				
2	1977	2105.	2519.	0.922	-0.061					+				
3	1976	3337.	4032.	0.941	-0.123					+I				
4	1975	4644.	5565.	0.984	-0.140					*I				
5	1974	5901.	7016.	1.002	-0.136					+.				
6	1973	7169.	8417.	1.042	-0.097					+ .				
7	1972	8409.	9808.	1.033	-0.064					+ .				
8	1971	9677.	11355.	1.097	0.040					+ .				
9	1970	11127.	12857.	0.962	0.0					. +				
N	AN	CLX	COY	RAN	FCAN	F = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 1236.3 1428.5

RAZONES PROMEDIOS Y/X = 1.155

X/Y = 0.865

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
6030104	ALTO CAICEDO	BOGOTA D.E.	+04 08 08	+074 15 10	3800 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	202.0	121.0	93.0	119.0	100.0	-9.9	1966
1967	29.0	40.0	32.0	73.0	-9.9	185.0	203.0	334.0	37.0	52.0	56.0	60.0	-9.9	1967
1968	-9.9	-9.9	37.4	175.8	58.4	211.4	165.8	97.0	54.8	123.9	143.3	-9.9	-9.9	1968
1969	-9.9	23.1	30.2	185.9	163.3	-9.9	-9.9	-9.9	119.7	199.8	78.2	39.7	-9.9	1969
1970	78.0	35.5	72.9	68.9	133.4	186.1	122.3	114.9	147.8	136.6	134.6	21.0	1250.0	1970
1971	80.5	62.7	122.7	152.3	180.6	192.6	173.5	158.0	97.2	91.0	111.2	45.6	1467.9	1971
1972	100.0	29.5	85.6	134.6	206.7	156.1	143.6	95.6	72.7	68.0	113.0	32.0	1244.0	1972
1973	15.4	3.8	21.0	91.6	208.6	140.5	137.0	177.1	168.1	103.0	109.2	88.6	1263.9	1973
1974	75.0	61.7	52.6	121.6	167.5	134.4	150.7	99.5	98.2	137.5	107.3	11.6	1257.6	1974
1975	11.8	42.5	83.6	82.6	133.3	185.9	66.9	129.5	133.6	146.2	112.0	158.8	1306.7	1975
1976	27.7	51.2	95.6	147.7	149.0	170.3	155.7	70.8	74.1	183.7	77.3	29.0	1232.1	1976
1977	0.0	53.4	46.1	93.1	74.5	100.1	128.6	146.8	95.2	114.2	131.4	27.4	1010.8	1977
1978	12.0	22.4	77.9	163.3	119.3	165.3	132.6	120.5	91.3	91.9	46.9	50.7	1094.1	1978
1979	22.2	20.1	85.0	200.4	-9.9	136.2	109.3	116.9	105.2	172.4	190.1	47.1	-9.9	1979
NUMERO DE ANOS	11	12	13	13	11	12	12	13	14	14	14	13	9	
VALOR MAXIMO	100.0	62.7	122.7	200.4	208.6	211.4	203.0	334.0	168.1	199.8	190.1	158.8	1467.9	
CUARTIL SUPERIOR	*****	52.3	85.3	169.5	*****	186.0	169.6	167.5	121.0	146.2	131.4	74.3	******	
MEDIANA	27.7	36.8	72.9	134.6	149.0	167.8	140.3	120.5	97.7	119.0	111.6	45.6	1250.0	
CUARTIL INFERIOR	*****	22.7	34.7	87.1	*****	138.3	125.4	98.3	91.3	91.9	56.0	28.2	******	
VALOR MINIMO	0.0	3.8	21.0	68.9	74.5	100.1	86.9	70.8	37.0	52.0	46.9	11.6	1010.8	
PROMEDIOS	41.7	37.0	64.8	130.1	148.6	163.7	145.8	143.3	104.0	122.4	112.1	54.7	1236.3	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1268.0	
PORCENTAJES	3.3	2.9	5.1	10.3	11.7	12.9	11.5	11.3	8.2	9.7	8.8	4.3		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 21. INDICE DE ARREGUDS = 123.

DEV. ESTANDAR	36.2	18.2	30.5	45.0	42.3	31.4	33.7	67.7	33.1	43.3	33.8	40.2	128.0	
COEF. VARIACION	0.869	0.492	0.471	0.346	0.285	0.192	0.231	0.472	0.318	0.354	0.302	0.734	0.104	
COEF. ASIMETRIA	0.078	-0.146	0.207	0.045	-0.179	-0.528	0.102	2.049	0.050	0.263	0.373	1.651	-0.121	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212008	ARRAYAN SAN FRANCISCO	BOGOTA D.E.	+04 35 00	+074 02 00	3047 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1933	-9.9	-9.9	-9.9	-9.9	-9.9	110.5	55.4	69.6	77.6	150.1	325.2	156.8	-9.9
1934	95.5	63.0	99.0	83.8	121.2	82.9	112.3	74.5	58.8	145.3	279.4	71.6	1287.3
1935	106.4	57.0	47.8	165.8	78.5	115.9	121.6	109.5	170.2	126.4	275.1	6.1	1382.3
1936	39.1	54.2	51.1	65.2	89.8	95.2	75.0	142.7	52.8	131.7	67.6	133.9	1002.3
1937	109.0	63.2	80.6	86.9	73.1	66.1	105.7	64.3	59.9	84.1	162.7	104.1	1059.7
1938	58.6	52.4	140.2	213.0	125.2	79.8	116.6	80.5	28.0	209.4	206.2	191.5	1501.4
1939	21.2	18.8	116.7	91.6	111.1	88.7	95.2	69.9	40.6	211.0	183.0	48.8	1096.6
1940	77.1	46.8	75.7	134.8	69.0	55.6	74.4	73.6	33.7	141.8	149.6	107.4	1039.5
1941	45.6	85.8	92.7	98.3	74.2	47.5	78.6	64.7	50.5	145.4	94.1	14.2	891.6
1942	13.4	85.4	55.0	58.9	86.0	115.5	52.4	76.0	23.8	194.1	186.0	107.2	1053.7
1943	103.9	85.0	174.8	164.3	127.8	94.2	185.6	139.9	50.4	81.5	121.8	198.5	1527.7
1944	102.1	38.0	69.1	191.1	230.3	147.5	60.5	49.7	50.6	246.8	162.1	66.6	1414.4
1945	14.5	80.0	43.6	248.5	232.7	41.6	77.3	73.0	41.4	126.6	255.0	98.0	1334.2
1946	104.1	59.4	65.0	129.0	104.9	65.7	105.3	137.7	17.6	98.1	154.5	113.8	1155.1
1947	62.9	46.5	32.1	34.9	36.9	71.5	109.3	54.6	111.9	188.8	49.4	6.4	805.2
1948	14.0	43.4	16.0	123.0	66.6	76.7	78.5	64.8	14.2	7.2	126.3	46.1	676.8
1949	94.6	66.9	122.1	-9.9	-9.9	71.5	86.2	47.2	56.3	143.4	85.8	58.0	-9.9
1950	124.5	120.6	199.4	91.8	216.8	117.5	111.6	59.8	103.4	150.0	87.0	110.4	1492.8
1951	16.5	93.7	131.8	72.5	81.5	58.5	100.0	43.5	31.5	155.4	232.8	13.4	1071.1
1952	99.8	47.5	146.7	105.1	117.0	84.3	129.9	64.2	21.3	62.5	240.9	119.5	1238.7
1953	89.0	13.5	64.5	86.0	84.0	76.5	95.5	33.0	75.0	167.0	115.0	39.0	940.0
1954	34.0	42.0	32.0	143.0	77.5	112.0	115.0	93.0	57.0	259.0	193.0	125.0	1282.5
1955	29.0	95.0	74.0	117.0	34.0	111.0	100.0	34.0	126.0	210.0	188.0	120.0	1238.0
1956	115.5	178.5	116.0	40.8	36.6	111.3	57.2	62.1	63.1	191.5	56.0	172.5	1201.1
1957	29.5	18.0	220.1	96.3	210.7	72.6	69.6	55.7	53.7	118.9	87.0	42.8	1074.9
1958	36.7	25.8	41.5	38.6	49.1	83.3	44.0	84.5	31.3	160.0	266.0	103.0	933.8
1959	34.0	9.0	12.0	42.0	101.0	83.0	143.0	58.0	59.0	136.0	110.0	30.0	819.0
1960	39.0	83.0	81.0	83.0	62.0	34.0	62.0	113.5	59.0	90.0	46.5	121.0	874.0
1961	52.5	26.0	165.5	75.0	66.1	159.5	114.3	32.0	42.0	148.5	137.5	0.0	1018.9
1962	52.0	24.0	72.5	98.0	78.0	103.0	107.8	113.8	47.4	172.5	146.0	104.5	1119.5
1963	51.0	197.0	53.0	182.0	181.0	52.0	53.0	65.0	42.5	155.0	220.0	30.0	1281.5
1964	2.0	8.0	32.5	113.0	162.5	146.0	139.0	123.4	110.4	114.0	107.0	85.5	1143.3
1965	29.0	11.0	20.0	299.0	194.0	73.5	69.0	6.0	4.0	26.5	68.0	72.0	872.0
1966	1.0	80.0	117.0	59.0	39.5	85.0	74.0	52.0	27.0	105.0	270.0	210.0	1123.5
1967	40.3	6.5	204.0	105.0	101.0	224.0	85.0	74.5	23.0	75.0	174.0	32.5	1144.8
1968	8.0	114.0	12.0	188.0	41.5	43.5	116.5	40.5	75.9	174.2	349.4	53.0	1216.5
1969	103.1	19.2	6.8	175.5	82.5	63.5	71.0	81.0	46.0	206.0	116.0	32.0	1002.6
1970	76.5	154.5	48.0	30.0	145.0	113.0	105.5	57.0	87.0	334.0	281.0	17.0	1448.5
1971	74.0	114.5	183.0	128.5	167.0	83.5	79.5	66.0	80.0	87.0	112.0	124.0	1299.0
1972	237.5	102.0	118.0	213.1	114.1	93.5	71.5	43.0	22.0	94.0	134.3	6.5	1249.5
1973	6.5	0.0	25.5	74.5	73.0	63.0	61.5	106.5	138.5	156.5	112.5	195.5	1013.5
1974	29.0	134.0	105.0	98.0	123.0	37.0	70.0	41.5	54.5	132.5	149.5	30.0	1004.0
1975	8.9	100.1	64.5	62.4	176.9	99.4	92.0	119.6	68.8	144.6	-9.9	230.6	-9.9
1976	19.3	39.2	104.0	147.8	126.1	97.0	107.7	72.1	104.9	157.3	98.6	53.1	1127.1
1977	0.2	29.5	76.3	119.8	34.7	82.2	93.9	62.7	110.3	98.0	142.4	49.3	899.3
1978	3.5	26.9	59.6	204.8	106.7	82.8	50.0	87.9	66.5	66.3	60.4	54.5	869.9
1979	25.1	16.3	67.0	152.3	140.7	129.5	63.0	99.1	76.5	206.9	233.6	73.5	1283.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAF

ESTACION X ARBOLEDA SAN FRANCISCO MUNICIPIO DE BOGOTA D.E. PERIODO 1933 - 1979 COEF DE CORRECCION 1.000

ESTACION Y EL DELIRIO MUNICIPIO DE BOGOTA D.E. PERIODO 1933 - 1979 COEF DE CORRECCION 1.000

	N	AN	CLX	CUY	RAN	FCAN	P = -4.	-3.	-2.	-1.	0.C	+1.	+2.	+3.	+4.
					R = C.6	C.7	0.8	0.9	1.C	1.1	1.2	1.3	1.4		
	1	1979	12E4.	1134.	1.243	C.224					I +				
	2	1978	2153.	2108.	C.98C	C.2CE					I +				
	3	1977	3CE3.	3073.	1.022	C.22E					I +				
	4	1976	41EC.	4436.	0.9CS	C.12S					I +				
	5	1974	51E4.	5553.	0.S8E	C.112					I +				
	6	1973	6157.	6593.	1.07C	C.171					I +				
	7	1972	7447.	7965.	1.00C	C.171					I +				
	8	1971	E746.	9263.	1.082	C.2SS					I +				
	9	1970	10154.	10578.	1.22E	C.45E					I +				
	10	1969	11157.	11717.	C.S67	C.467					I +				
	11	1968	12413.	13046.	1.00S	C.473					I +				
	12	1967	13SSE.	14515.	0.8SS	C.3CC					I +				
	13	1966	14EE2.	15815.	C.94S	C.24C					I +				
	14	1964	15E2S.	16895.	1.162	C.3ES					I +				
	15	1963	171uc.	18246.	1.041	C.434					I +				
	16	1962	18226.	19592.	0.913	C.33S					I +				
	17	1961	19245.	20713.	C.997	C.33E					I +				
	18	1960	2011S.	21938.	0.783	C.121					I +				
	19	1959	20S3E.	24186.	0.72C	-C.163				+I					
	20	1958	21E72.	24258.	0.95E	-C.2C1				+ I					
	21	1957	22547.	25535.	0.92S	-C.27S				+ I					
	22	1956	2414E.	26846.	1.00S	-C.274				+ I					
	23	1955	25366.	28136.	1.052	-C.21S				+ I					
	24	1954	26CE8.	29728.	0.88E	-C.3E7				+ I					
	25	1953	27CC8.	31025.	0.79E	-C.SE2				+ I					
	26	1952	28E47.	32556.	0.887	-C.723				+ I					
	27	1951	29518.	33599.	1.12S	-C.E14				+ I					
	28	1950	31411.	35190.	1.03C	-C.E7S				+ I					
	29	1948	32CEE.	36404.	0.E12	-C.SSE				+ I					
	30	1947	32E93.	37543.	C.77E	-1.16S				+ I					
	31	1946	34C4E.	38941.	0.907	-1.271				+ I					
	32	1945	35362.	40228.	1.13S	-1.12E				+ I					
	33	1944	3675E.	41505.	1.21E	-C.SCS				+ I					
	34	1943	38324.	42c05.	1.93C	-C.433				+ I					
	35	1942	39378.	43910.	0.88E	-C.SE3				+ I					
	36	1941	40265.	44846.	1.04E	-C.S1E				+ I					
	37	1940	41305.	45782.	1.21S	-C.3E2				+ I					
	38	1939	42406.	46898.	1.07S	-C.2EC				+ I					
	39	1934	43653.	47906.	1.322	C.S				+					

	N	AN	CLX	CUY	RAN	FCAN	P = -4.	-3.	-2.	-1.	0.C	+1.	+2.	+3.	+4.
					R = C.6	C.7	0.8	0.9	1.C	1.1	1.2	1.3	1.4		

PROMEDIOS = 1120.3 1225.9

RAZONES PROMEDIOS Y/X = 1.09E

X/Y = 0.911

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-CRSTCM *** CURSO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212038	ARRAYAN SAN FRANCISCO	BOGOTA D.E.	+04 35 29	+074 03 05	3045 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1947	62.9	46.5	32.1	34.9	36.9	71.5	109.3	54.6	111.9	188.8	45.4	6.4	805.2	1947
1948														1948
1949	94.6	66.9	122.1	-9.9	-9.9	71.5	86.2	47.2	56.3	143.4	65.8	58.0	-9.9	1949
1950	124.5	120.0	199.4	91.8	216.8	117.5	111.6	59.8	103.4	150.0	87.0	110.4	1492.8	1950
1951	16.5	93.7	131.8	72.5	81.5	58.5	100.0	43.5	31.5	195.4	238.8	13.4	1071.1	1951
1952	59.8	47.5	148.7	105.1	117.0	84.3	129.9	64.2	21.3	62.5	240.9	119.5	1238.7	1952
1953	89.0	13.5	64.5	86.0	64.0	78.5	95.5	33.0	75.0	167.0	115.0	39.0	940.0	1953
1954	34.0	42.0	32.0	143.0	77.5	112.0	115.0	93.0	57.0	259.0	193.0	125.0	1282.5	1954
1955	29.0	93.0	74.0	117.0	34.0	111.0	100.0	34.0	126.0	210.0	188.0	120.0	1238.0	1955
1956	115.5	178.5	110.0	40.8	36.6	111.3	57.2	62.1	63.1	191.5	56.0	172.5	1201.1	1956
1957	29.5	18.0	220.1	96.3	210.7	72.6	69.6	55.7	53.7	118.9	87.0	42.8	1074.9	1957
1958	36.7	25.8	41.5	38.0	49.1	53.3	44.0	84.5	31.3	160.0	266.0	103.0	933.8	1958
1959	34.0	9.0	12.0	42.0	101.0	83.0	143.0	58.0	59.0	138.0	110.0	30.0	819.0	1959
1960	35.0	83.0	81.0	83.0	62.0	34.0	62.0	113.5	59.0	90.0	46.5	121.0	874.0	1960
1961	52.5	26.0	165.5	75.0	66.1	159.5	114.3	32.0	42.0	148.5	137.5	0.0	1018.9	1961
1962	52.0	24.0	72.5	98.0	78.0	103.0	107.8	113.8	47.4	172.5	146.0	104.5	1119.5	1962
1963	51.0	197.0	53.0	182.0	181.0	52.0	53.0	65.0	42.5	155.0	220.0	30.0	1281.5	1963
1964	2.0	8.0	32.5	113.0	162.5	146.0	139.0	123.4	110.4	114.0	107.0	85.5	1143.3	1964
1965	29.0	11.0	20.0	299.0	194.0	73.5	69.0	6.0	4.0	26.5	68.0	72.0	872.0	1965
1966	1.0	80.0	117.0	59.0	39.5	89.0	74.0	52.0	27.0	105.0	270.0	210.0	1123.5	1966
1967	40.3	6.5	204.0	105.0	101.0	224.0	85.0	74.5	23.0	75.0	174.0	32.5	1144.8	1967
1968	8.0	114.0	12.0	188.0	41.5	43.5	116.5	40.5	75.9	174.2	349.4	53.0	1216.5	1968
1969	103.1	194.2	6.8	175.5	82.5	63.5	71.0	81.0	46.0	206.0	116.0	32.0	1002.6	1969
1970	76.5	154.5	48.0	30.0	145.0	113.0	105.5	57.0	87.0	334.0	281.0	17.0	1448.5	1970
1971	74.0	114.5	183.0	128.5	167.0	83.5	79.5	66.0	80.0	87.0	118.0	124.0	1299.0	1971
1972	237.5	102.0	118.0	213.1	114.1	93.5	71.5	43.0	22.0	94.0	134.3	6.5	1249.5	1972
1973	0.5	0.0	25.5	74.5	73.0	63.0	61.5	106.5	138.5	156.5	112.5	195.5	1013.5	1973
1974	29.0	134.0	105.0	98.0	123.0	37.0	70.0	41.5	54.5	132.5	145.5	30.0	1004.0	1974
1975	8.9	100.1	64.5	62.4	176.9	99.4	92.0	119.6	68.8	144.6	-9.9	230.6	-9.9	1975
1976	19.3	39.2	104.0	147.8	126.1	97.0	107.7	72.1	104.9	157.3	98.6	53.1	1127.1	1976
1977	0.2	29.5	76.3	119.8	34.7	82.2	93.9	62.7	110.3	98.0	142.4	49.3	899.3	1977
1978	3.5	26.9	59.6	204.8	106.7	82.8	80.0	87.9	66.5	66.3	60.4	54.5	869.9	1978
1979	25.1	16.3	67.0	152.3	140.7	129.5	63.0	99.1	76.5	206.9	233.6	73.5	1283.5	1979

*** CARACTERISTICAS PLUVIOMETRICAS MENSUALES Y ANUALES DE LA PAGINA ANTERIOR ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
NUMERO DE ANOS	32	32	32	31	31	32	32	32	32	32	31	32	30	
VALOR MAXIMO	237.5	197.0	220.1	299.0	216.8	224.0	143.0	123.4	138.5	334.0	249.4	230.6	1492.8	
CUARTIL SUPERIOR	75.3	101.0	120.0	147.8	145.0	111.1	108.5	86.2	83.5	181.5	220.0	119.8	1238.7	
MEDIANA	35.3	44.3	73.3	98.0	101.0	83.3	69.1	62.4	59.0	149.3	134.3	56.3	1121.5	
CUARTIL INFERIOR	17.9	18.8	37.0	72.5	62.0	67.5	69.3	45.3	42.3	101.5	87.0	31.0	940.0	
VALOR MINIMO	0.2	0.0	6.8	30.0	34.0	34.0	44.0	6.0	4.0	26.5	46.5	0.0	805.2	
PROMEDIOS	50.8	63.8	87.7	112.2	105.2	90.4	89.0	67.1	64.9	147.8	150.6	78.6	1102.9	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1108.0	
PORCENTAJES	4.6	5.8	7.9	10.1	9.5	8.2	8.0	6.1	5.9	13.3	13.6	7.1		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 102.

DEV. ESTANDAR	49.3	54.3	60.1	61.4	55.3	38.3	26.3	28.7	33.4	61.2	76.3	61.4	181.4	
COEF. VARIACION	0.971	0.851	0.685	0.547	0.526	0.423	0.296	0.427	0.516	0.414	0.520	0.781	0.165	
COEF. ASIMETRIA	1.944	0.842	0.683	1.063	0.486	1.449	0.230	0.333	0.396	0.692	0.745	0.925	0.179	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2120308	ARRAYAN SAN FRANCISCO	BOGOTA D.E.	+04 35 29	+074 03 05	3045 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	39.0	83.0	81.0	83.0	62.0	34.0	62.0	113.5	59.0	90.0	46.5	121.0	874.0	1960
1961	52.5	20.0	165.5	75.0	66.1	159.5	114.3	32.0	42.0	148.5	137.5	0.0	1018.9	1961
1962	52.0	24.0	72.5	98.0	78.0	103.0	107.8	113.8	47.4	172.5	146.0	104.5	1119.5	1962
1963	51.0	197.0	53.0	182.0	181.0	52.0	53.0	65.0	42.5	155.0	220.0	30.0	1281.5	1963
1964	2.0	8.0	32.5	113.0	162.5	146.0	139.0	123.4	110.4	114.0	107.0	85.5	1143.3	1964
1965	29.0	11.0	20.0	299.0	194.0	73.5	69.0	6.0	4.0	26.5	68.0	72.0	872.0	1965
1966	1.0	80.0	117.0	59.0	39.5	89.0	74.0	52.0	27.0	105.0	270.0	210.0	1123.5	1966
1967	40.3	6.5	204.0	109.0	101.0	224.0	85.0	74.5	23.0	75.0	174.0	32.5	1144.8	1967
1968	8.0	114.0	12.0	188.0	41.5	43.5	116.5	40.5	75.9	174.2	349.4	53.0	1216.5	1968
1969	103.1	19.2	6.8	175.5	82.5	63.5	71.0	81.0	46.0	206.0	116.0	32.0	1002.6	1969
1970	76.5	154.5	48.0	30.0	145.0	113.0	105.5	57.0	87.0	334.0	281.0	17.0	1448.5	1970
1971	74.0	114.5	183.0	128.5	167.0	83.5	79.5	66.0	80.0	87.0	112.0	124.0	1299.0	1971
1972	237.5	102.0	118.0	213.1	114.1	93.5	71.5	43.0	22.0	94.0	134.3	6.5	1249.5	1972
1973	6.5	0.0	25.5	74.5	73.0	63.0	61.5	106.5	138.5	156.5	112.5	195.5	1013.5	1973
1974	29.0	134.0	105.0	98.0	123.0	37.0	70.0	41.5	54.5	132.5	149.5	30.0	1004.0	1974
1975	8.9	100.1	64.5	62.4	176.9	99.4	92.0	119.6	68.8	144.6	148.5	82.1	1167.8	1975
1976	19.3	39.2	104.0	147.8	126.1	97.0	107.7	72.1	104.9	157.3	98.6	53.1	1127.1	1976
1977	0.2	29.5	76.3	119.8	34.7	82.2	93.9	62.7	110.3	98.0	142.4	49.3	899.3	1977
1978	3.5	20.9	59.6	204.8	106.7	82.8	50.0	87.9	66.5	66.3	60.4	54.5	869.9	1978
1979	25.1	16.3	67.9	152.3	140.7	129.5	63.0	99.1	76.5	206.9	233.6	73.5	1283.5	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	237.5	197.0	204.0	299.0	194.0	224.0	139.0	123.4	138.5	334.0	349.4	210.0	1448.5	
CUARTIL SUPERIOR	52.3	108.0	111.0	178.8	153.8	108.0	106.6	102.8	83.5	164.9	197.0	95.0	1233.0	
MEDIANA	29.0	34.3	69.8	116.4	110.4	86.3	76.8	69.0	62.8	138.5	139.9	53.8	1125.3	
CUARTIL INFERIOR	7.3	17.7	40.3	79.0	69.5	63.3	66.0	47.5	42.3	92.0	109.5	31.0	1003.3	
VALOR MINIMO	0.2	0.0	6.8	30.0	34.7	34.0	50.0	6.0	4.0	26.5	46.5	0.0	869.9	
PROMEDIOS	42.9	64.3	80.8	130.4	110.8	93.4	84.3	72.9	64.3	137.2	155.4	71.3	1107.9	
PORCENTAJES	3.9	5.8	7.3	11.8	10.0	8.4	7.6	6.6	5.8	12.4	14.0	6.4		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 22. INDICE DE ARNOLDUS = 104.

INDICE DE IRREGULARIDAD INTERANUAL =1.46

DEV. ESTANDAR	54.1	57.6	55.6	65.3	50.3	45.6	24.2	32.6	34.6	66.1	78.7	56.9	162.5
COEF. VARIACION	1.261	0.896	0.689	0.501	0.454	0.488	0.288	0.447	0.538	0.482	0.507	0.798	0.147

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1375.	1316.	1245.	1108.	971.	900.	840.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.666	0.780	0.805	0.833	0.069	1.272	0.594	-0.078	0.337	1.220	0.984	1.212	0.126

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212048	AVE.JIMENEZ	BOGOTA D.E.	+04 36 00	+074 04 00	2651 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1956	40.6	110.5	67.0	39.0	42.5	77.7	23.4	22.0	43.4	257.6	47.6	114.5	885.8
1957	54.3	39.6	102.9	133.4	179.1	35.5	31.8	19.8	61.0	160.1	83.9	53.5	944.9
1958	8.4	20.3	42.5	42.7	51.4	44.1	18.3	56.6	27.8	110.8	255.0	95.1	773.0
1959	9.6	37.6	19.6	83.5	100.1	44.2	83.3	38.7	39.5	124.2	136.8	44.7	761.8
1960	11.0	44.9	59.7	99.9	53.2	26.6	99.1	73.6	61.4	100.1	28.2	147.0	804.7
1961	43.3	15.3	80.5	98.5	31.0	101.0	57.3	39.1	28.3	193.6	219.0	29.5	936.4
1962	145.0	52.0	129.7	134.8	101.0	103.5	38.5	67.0	59.0	137.5	169.0	153.0	1290.0
1963	73.5	150.0	50.0	149.3	139.5	95.0	16.5	37.0	55.5	134.0	254.0	24.5	1138.8
1964	11.0	22.8	11.5	143.0	107.0	100.2	66.4	22.2	36.4	94.2	51.5	45.0	671.2
1965	7.0	61.5	15.0	220.5	187.5	26.0	52.1	28.5	7.2	126.5	188.5	37.8	962.1
1966	1.0	87.0	73.0	75.5	73.0	155.5	41.3	46.2	38.0	-9.9	254.1	175.0	-9.9
1967	21.8	46.0	68.0	96.5	79.5	94.5	45.5	26.5	65.0	95.5	147.5	47.0	833.3
1968	4.0	72.0	37.0	238.0	42.5	97.5	44.0	17.0	67.5	179.5	193.5	40.0	1032.5
1969	120.5	39.0	5.0	179.0	73.5	93.5	24.5	40.0	70.0	186.0	80.8	60.5	934.3
1970	101.0	62.5	43.2	45.0	130.0	89.0	50.0	23.0	51.0	266.0	163.0	13.5	1009.2
1971	59.5	126.0	160.3	236.5	138.8	75.5	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

ESTACION : AVELLANEDA MUNICIPIO DE BOGOTA D.E. PERIODO 1956 - 1971 COEF DE CORRECCION 1.000

N	AÑO	T /	CO	MCY	ECR	ECAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1970	1005.2	1005.2	1005.2	0.410	0.065				+	•		
2	1969	534.3	1543.5	571.7	0.045	0.057				+			
3	1968	1032.5	2576.0	552.0	0.054	0.210				I +	•		
4	1967	833.3	3409.3	562.3	-0.581	0.105			•	I+			
5	1965	562.1	4771.4	564.3	0.216	0.147				I+.			
6	1964	671.2	5442.6	567.1	-1.566	-0.125			•	+I			
7	1963	1138.8	6581.4	540.2	1.213	0.100				+	•		
8	1962	1256.0	7871.4	563.5	2.251	0.451				I +		•	
9	1961	536.4	8607.8	576.6	0.056	0.501				. +			
10	1960	604.7	9012.5	561.2	-0.856	0.365			•	I +			
11	1959	761.8	10374.3	543.1	-1.024	0.151			•	I+			
12	1958	873.0	11147.3	526.5	-0.555	0.025			•	+			
13	1957	544.5	12092.8	530.2	0.111	0.044				+.			
14	1956	885.8	12978.0	527.0	-0.255	0.000				. +			

N	AÑO	T /	CO	MCY	ECR	ECAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 14 AÑOS = 927.0
DESVIACION ESTANDAR = 101.3
COEFICIENTE DE VARIACION = 0.174

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IDEAM-CESTA *** CURSO DE AGROCLIMATOLOGIA *** PROGRAMA CESTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212048	AVE.JIMENEZ	BOGOTA D.E.	+04 36 13	+074 04 35	2650 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1956	40.6	110.5	67.0	39.0	42.5	77.7	23.4	22.0	43.4	257.6	47.6	114.5	885.8	1956
1957	54.3	39.6	102.9	133.4	179.1	35.5	21.8	19.8	51.0	160.1	83.9	53.5	944.9	1957
1958	8.4	20.3	42.5	42.7	51.4	44.1	18.3	56.6	27.8	110.8	255.0	95.1	773.0	1958
1959	9.6	37.6	19.6	83.5	100.1	44.2	83.3	38.7	39.5	124.2	136.8	44.7	761.8	1959
1960	11.0	44.9	59.7	99.9	53.2	26.6	59.1	73.6	61.4	100.1	26.2	147.0	804.7	1960
1961	43.3	15.3	80.5	98.3	31.0	101.0	57.3	39.1	28.3	193.6	219.0	29.5	936.4	1961
1962														1962
1963	73.5	150.0	50.0	149.3	139.5	55.0	16.5	37.0	55.5	134.0	254.0	24.5	1138.8	1963
1964	11.0	22.8	11.5	143.0	107.0	100.2	66.4	22.2	36.4	54.2	51.5	45.0	671.2	1964
1965	7.0	61.5	15.0	220.5	167.5	28.0	52.1	28.5	7.2	128.5	166.5	37.8	962.1	1965
1966	1.0	67.0	73.0	75.5	73.0	155.5	41.3	46.2	38.0	-9.9	254.1	175.0	-9.9	1966
1967	21.8	46.0	68.0	90.5	79.5	94.5	45.5	26.5	65.0	95.5	147.5	47.0	833.3	1967
1968	4.0	72.0	37.0	238.0	42.5	97.5	44.0	17.0	67.5	179.5	193.5	40.0	1032.5	1968
1969	120.5	39.0	5.0	179.0	73.5	53.5	24.5	40.0	70.0	188.0	80.8	60.5	934.3	1969
1970	101.0	62.5	43.2	45.0	130.0	59.0	50.0	23.0	51.0	268.0	163.0	13.5	1009.2	1970
1971	59.5	126.0	160.3	236.5	138.8	75.5	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1971
NUMERO DE ANOS	15	15	15	15	15	15	14	14	14	13	14	14	13	
VALOR MAXIMO	120.5	150.0	160.3	238.0	167.5	155.5	99.1	73.6	70.0	268.0	255.0	175.0	1138.8	
CUARTIL SUPERIOR	59.5	67.0	73.0	179.0	138.8	97.5	57.3	40.0	61.4	190.8	219.0	95.1	985.6	
MEDIANA	21.8	46.0	50.0	99.9	79.5	59.0	44.8	32.8	47.2	134.0	155.3	46.0	934.3	
CUARTIL INFERIOR	8.4	37.6	19.6	75.5	51.4	44.1	24.5	22.2	36.4	105.4	80.8	37.8	788.8	
VALOR MINIMO	1.0	15.3	5.0	39.0	31.0	26.6	16.5	17.0	7.2	54.2	26.2	13.5	671.2	
PROMEDIOS	37.8	62.3	55.7	125.4	95.2	69.9	46.7	35.0	45.9	153.4	150.2	66.3	899.1	
												TOTAL DE LOS PROMEDIOS MENSUALES =	943.7	
PORCENTAJES	4.0	6.6	5.9	13.3	10.1	7.4	4.9	3.7	4.9	16.3	15.9	7.0		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 25. INDICE DE ARNOLDUS = 100.

DEV. ESTANDAR	37.5	40.1	40.2	68.2	50.3	35.3	24.2	15.9	17.8	62.7	61.0	48.3	127.9
COEF. VARIACION	0.993	0.644	0.721	0.544	0.528	0.505	0.519	0.454	0.389	0.409	0.539	0.729	0.142
COEF. ASIMETRIA	1.051	0.982	1.187	0.482	0.549	0.912	0.787	1.179	-0.547	0.525	-0.108	1.279	0.015

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600106	EL CHOCHAL LOS AMARILLOS	BOGOTA D.E.	+04 03 20	+074 13 45	3500 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	37.8	31.3	110.7	67.9	76.1	140.3	130.3	162.5	-9.9	-9.9	137.8	105.3	-9.9
1967	91.4	18.2	61.4	178.0	204.6	226.9	235.9	-9.9	98.8	65.6	92.9	53.1	-9.9
1968													
1969	59.5	26.7	65.1	179.2	145.7	145.5	131.8	133.8	109.9	155.5	82.6	36.5	1317.6
1970	69.2	47.3	77.2	130.8	209.0	-9.9	-9.9	-9.9	-9.9	-9.9	96.1	27.5	-9.9
1971	53.0	75.0	101.7	125.5	194.6	231.9	239.4	190.9	127.0	111.4	90.8	61.6	1602.8
1972	99.1	36.0	96.1	134.9	232.8	175.0	189.0	115.5	87.8	61.9	89.2	41.7	1359.0
1973	26.6	2.1	25.5	79.6	196.4	175.8	175.5	186.6	197.9	105.9	132.9	75.6	1380.4
1974	75.7	54.0	59.6	151.3	155.5	179.4	255.7	155.8	109.6	119.3	135.7	12.7	1464.3
1975	20.0	43.2	74.4	84.2	159.3	260.5	132.6	149.4	126.3	175.8	99.1	119.5	1444.3
1976	37.6	48.4	112.1	191.7	224.1	237.1	238.9	106.0	93.6	127.7	16.7	33.8	1467.7
1977	0.0	62.8	51.6	132.9	113.7	120.2	172.7	112.0	115.9	106.2	105.7	36.3	1130.0
1978	26.6	37.9	79.5	160.0	116.7	157.2	106.3	119.0	118.0	66.6	13.3	33.3	1054.4
1979	11.1	6.0	59.3	181.1	-9.9	182.4	84.8	108.5	103.3	161.8	90.8	69.8	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR BANARIA

ESTACION X EL GUAMO MUNICIPIO DE BOGOTA D.E. PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

ESTACION Y EL CHOCHAL LOS AMARILLOS MUNICIPIO DE BOGOTA D.E. PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R = 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1973	1441.	1158.	1.232	0.207					I +				
2	1975	2494.	2222.	0.997	0.204					. +				
3	1977	3470.	3352.	0.862	0.085				.	+				
4	1976	4875.	4820.	0.958	0.035				.	+				
5	1975	6525.	5254.	1.140	0.190					I +		.		
6	1979	7832.	7728.	0.861	0.068				.	+				
7	1975	9245.	9105.	1.022	0.091					+ .				
8	1972	10509.	10468.	0.928	0.017				.	+				
9	1969	11807.	11795.	0.983	-0.000					.+				
N	AN	CUX	CUY	RAN	PCAN	P = -4. I R = 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 1311.9 1309.5

RAZONES PROMEDIOS Y/X = 0.998

X/Y = 1.002

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
6001D6	EL CHOCHAL LOS AMARILLOS	BOGOTA D.E.	+04 05 58	+074 13 41	3550 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	37.8	31.3	110.7	67.9	76.1	140.3	130.3	162.5	-9.9	-9.9	137.8	105.3	-9.9	196
1967	91.4	18.2	61.4	178.0	204.6	226.9	235.9	-9.9	98.8	89.6	92.9	53.1	-9.9	196
1968														196
1969	59.5	26.7	65.1	179.2	145.7	145.9	131.8	133.8	109.9	198.5	82.6	38.9	1317.6	196
1970	69.2	47.3	77.2	130.8	209.0	-9.9	-9.9	-9.9	-9.9	-9.9	96.1	27.5	-9.9	197
1971	53.0	75.0	101.7	125.5	194.6	231.9	239.4	190.9	127.0	111.4	90.8	61.6	1602.8	197
1972	99.1	36.0	96.1	134.9	232.8	175.0	189.0	115.5	87.8	61.9	89.2	41.7	1359.0	197
1973	26.6	2.1	25.5	79.6	196.4	175.8	175.5	186.6	197.9	105.9	132.9	75.6	1380.4	197
1974	75.7	54.0	59.6	151.3	155.5	179.4	255.7	155.8	109.6	119.2	135.7	12.7	1464.3	197
1975	20.0	43.2	74.4	84.2	159.3	260.5	132.6	149.4	126.3	175.8	99.1	119.5	1444.3	197
1976	37.6	48.4	112.1	191.7	224.1	237.1	238.9	106.0	93.6	127.7	16.7	33.8	1467.7	197
1977	0.0	62.6	51.6	132.9	113.7	120.2	172.7	112.0	115.9	106.2	105.7	36.3	1130.0	197
1978	26.6	37.9	79.5	160.0	116.7	157.2	106.3	119.0	118.0	86.6	13.3	33.3	1054.4	197
1979	11.1	6.0	59.3	181.1	108.9	182.4	84.8	108.5	103.3	161.8	90.8	69.8	1167.8	197
NUMERO DE ANOS	13	13	13	13	13	12	12	11	11	11	13	13	10	
VALOR MAXIMO	99.1	75.0	112.1	191.7	232.8	260.5	255.7	190.9	197.9	198.5	137.8	119.5	1602.8	
CUARTIL SUPERIOR	72.4	51.2	98.9	178.6	206.8	229.4	237.4	*****	*****	*****	119.3	72.7	******	
MEDIANA	37.8	37.9	74.4	134.9	159.3	177.6	174.1	133.8	109.9	111.4	92.9	41.7	1369.7	
CUARTIL INFERIOR	23.3	22.4	59.4	104.9	115.2	151.5	131.0	*****	*****	*****	88.9	33.5	******	
VALOR MINIMO	0.0	2.1	25.5	67.9	76.1	120.2	84.8	106.0	87.8	61.9	13.3	12.7	1054.4	
PROMEDIOS	46.7	37.6	74.9	138.2	164.4	186.0	174.4	140.0	117.1	122.2	91.0	54.5	1338.8	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1347.3	
PORCENTAJES	3.5	2.8	5.6	10.3	12.2	13.8	12.9	10.4	8.7	9.1	6.8	4.0		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 26. INDICE DE ARNOLDUS = 134.

DEV. ESTANDAR	30.9	21.1	25.2	41.0	50.0	43.8	58.1	31.0	29.6	41.1	38.6	31.1	173.1
COEF. VARIACION	0.660	0.561	0.336	0.297	0.304	0.235	0.333	0.222	0.253	0.336	0.424	0.571	0.129
COEF. ASIMETRIA	0.289	-0.107	-0.115	-0.478	-0.284	0.309	0.024	0.543	2.271	0.614	-1.049	0.961	-0.358

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212013	EL DELIRIO	BOGOTA D.E.	+04 33 00	+074 03 00	3000 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1933	-9.9	-9.9	-9.9	-9.9	86.9	134.4	110.7	55.7	46.7	151.5	385.2	180.0	-9.9
1934	51.2	30.7	47.7	60.2	106.9	114.6	181.0	53.5	51.6	66.9	260.7	43.9	1068.9
1935	63.4	69.9	33.9	113.0	34.2	115.0	158.0	36.3	106.4	115.3	208.2	-9.9	-9.9
1936	-9.9	-9.9	95.7	71.6	217.8	85.2	114.8	152.5	53.5	150.5	83.4	138.5	-9.9
1937	144.0	-9.9	98.0	90.5	100.0	134.2	168.2	90.0	41.7	137.1	163.1	56.5	-9.9
1938	73.2	29.3	128.9	176.2	149.2	123.2	134.2	103.0	-9.9	246.5	123.8	169.4	-9.9
1939	31.5	9.5	140.6	95.3	92.8	99.4	135.4	105.9	36.0	186.4	135.8	46.8	1115.4
1940	79.0	19.2	60.0	103.7	109.4	35.7	30.0	73.1	30.5	163.5	188.1	44.1	936.3
1941	5.0	30.7	66.3	111.0	93.5	58.5	142.1	104.3	69.2	146.4	91.2	17.7	935.9
1942	10.2	84.3	144.5	96.9	108.1	175.6	121.7	208.8	33.7	162.0	110.9	48.5	1305.2
1943	44.0	21.1	21.4	20.0	137.5	123.6	130.1	207.0	72.0	157.7	103.6	58.0	1096.0
1944	81.4	61.4	62.9	183.9	227.6	143.3	93.5	57.9	81.4	128.3	107.2	52.4	1281.2
1945	8.4	83.5	31.6	239.5	184.9	63.0	121.1	77.5	31.8	134.8	231.4	58.8	1286.3
1946	90.1	53.8	96.3	110.2	108.1	121.8	266.9	237.1	18.6	107.4	96.1	91.7	1398.1
1947	12.2	68.3	39.2	74.1	46.1	141.9	198.1	136.4	135.9	212.6	58.6	15.9	1139.3
1948	19.3	64.1	66.0	188.7	86.0	146.2	116.0	140.8	65.0	99.0	101.8	118.5	1213.4
1949	41.6	9.3	44.1	38.9	92.1	11.9	117.1	72.4	90.5	93.3	56.8	57.1	725.1
1950	95.5	166.6	150.9	87.9	209.4	125.0	192.7	98.1	137.0	92.4	135.9	100.2	1591.6
1951	33.6	104.9	98.5	98.9	86.7	120.0	238.9	88.5	44.0	52.8	68.3	6.2	1041.3
1952	112.8	71.9	162.8	125.0	120.3	133.0	231.7	105.8	45.6	60.7	262.4	100.9	1532.9
1953	79.8	16.5	80.7	70.9	124.0	124.0	187.0	90.8	107.4	206.0	161.0	48.4	1296.5
1954	50.8	46.2	55.3	159.4	115.7	170.1	221.1	181.2	96.6	244.1	147.4	102.0	1589.9
1955	19.0	66.4	116.5	100.6	79.0	135.0	167.2	63.0	107.4	155.2	190.3	92.5	1292.1
1956	86.6	122.4	103.9	40.5	65.3	215.6	112.6	114.7	126.6	166.8	53.7	102.8	1311.5
1957	30.5	20.3	152.9	93.5	219.5	107.7	143.0	128.6	79.2	189.5	75.0	36.6	1276.3
1958	63.3	38.3	69.0	89.0	72.9	97.1	120.3	169.7	35.1	117.5	122.8	77.2	1072.2
1959	35.5	10.5	23.4	90.7	109.9	160.2	200.2	109.1	106.9	149.7	183.1	68.7	1247.9
1960	67.5	79.6	64.4	63.4	90.0	106.9	100.8	238.3	91.6	133.5	34.0	154.9	1224.9
1961	67.0	18.1	171.8	59.2	53.9	115.9	138.3	143.9	60.9	166.5	123.3	2.7	1121.5
1962	33.7	48.1	63.7	44.0	115.5	177.1	200.0	164.0	72.0	142.5	189.0	96.5	1246.1
1963	46.0	130.5	46.5	205.0	211.5	104.0	86.8	153.5	75.2	112.0	144.4	35.5	1350.9
1964	0.0	55.0	6.0	135.9	136.5	77.0	163.3	162.5	92.6	77.5	93.4	80.0	1079.7
1965	22.7	11.7	22.1	-9.9	166.7	126.6	170.4	98.3	31.2	148.2	121.3	32.9	-9.9
1966	5.0	74.3	164.1	48.0	91.4	88.6	132.2	114.4	30.1	96.0	248.1	247.6	1299.8
1967	33.1	17.5	109.5	123.0	164.9	217.3	164.6	241.1	68.9	73.6	201.5	54.3	1469.3
1968	16.0	94.8	23.5	202.3	35.6	117.8	259.7	85.8	84.9	112.8	240.0	55.8	1329.0
1969	103.9	24.4	8.1	150.6	122.1	104.5	200.5	107.6	67.9	129.3	87.9	32.0	1138.8
1970	112.8	171.0	36.7	51.0	110.8	123.4	169.6	102.4	106.0	171.4	123.5	16.7	1295.3
1971	50.5	77.6	140.9	134.9	126.1	114.1	183.9	105.0	88.8	98.0	143.0	95.1	1317.9
1972	233.5	140.6	80.1	126.2	125.9	127.4	156.8	87.9	53.6	124.1	92.4	23.6	1372.1
1973	22.4	0.0	37.2	55.9	123.0	87.3	107.3	123.7	113.4	100.8	83.3	185.7	1040.0
1974	64.5	118.9	210.8	85.1	86.9	59.3	140.6	69.1	57.1	94.4	118.4	12.6	1117.7
1975	3.8	44.7	59.0	52.6	132.3	133.3	55.3	145.8	74.1	127.9	134.9	206.7	1170.4
1976	35.8	9.4	103.5	122.5	138.3	159.7	282.5	133.1	109.1	135.8	68.9	63.2	1361.8
1977	1.0	30.2	48.5	127.9	65.8	80.4	101.8	85.9	142.4	108.6	135.2	38.0	965.7
1978	0.0	21.3	79.8	117.7	129.2	144.3	75.8	165.2	76.6	88.0	53.3	55.8	974.0
1979	6.1	40.0	68.0	39.4	82.6	150.1	105.3	117.0	45.2	218.5	184.0	47.6	1133.8

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Centro Público

IMPRESO EN COLOMBIA - FOTOGRABADO

ESTACION X EL CELINIC MUNICIPIO DE BOGOTA D.E. PERIODO 1933 - 1979 COEF DE CORRECCION 1.000

N	AN	T /	CO	MCY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1979	1133.8	1133.8	1133.8	-0.449	-0.066	
2	1978	974.0	2107.8	1053.9	-1.321	-0.267	
3	1977	965.7	3073.5	1024.5	-1.366	-0.473	
4	1976	1361.8	4435.3	1108.8	0.755	-0.353	
5	1975	1170.4	5605.7	1121.1	-0.250	-0.391	
6	1974	1117.7	6723.4	1120.6	-0.537	-0.472	
7	1973	1040.0	7763.4	1109.1	-0.561	-0.616	
8	1972	1372.1	9135.5	1141.9	0.851	-0.488	
9	1971	1317.9	10453.4	1161.5	0.888	-0.404	
10	1970	1295.3	11748.7	1174.9	0.432	-0.335	
11	1969	1138.8	12887.5	1171.6	-0.422	-0.403	
12	1968	1329.0	14216.5	1184.7	0.616	-0.310	
13	1967	1469.3	15685.8	1206.6	1.381	-0.102	
14	1966	1299.8	16985.6	1213.3	0.456	-0.033	
15	1964	1079.7	18065.3	1204.4	-0.744	-0.145	
16	1963	1350.9	19416.2	1213.5	0.735	-0.038	
17	1962	1346.1	20762.3	1221.3	0.709	0.072	
18	1961	1121.5	21883.8	1215.8	-0.516	-0.006	
19	1960	1224.5	23108.7	1216.2	0.048	0.002	
20	1959	1247.5	24356.6	1217.8	0.173	0.028	
21	1958	1072.2	25428.8	1210.9	-0.765	-0.091	
22	1957	1276.3	26705.1	1213.5	0.328	-0.041	
23	1956	1311.5	28016.6	1216.1	0.520	0.037	
24	1955	1292.1	29308.7	1221.2	0.414	0.100	
25	1954	1585.9	30894.6	1235.5	2.039	0.407	
26	1953	1296.5	32191.1	1238.3	0.438	0.473	
27	1952	1532.9	33728.0	1249.2	1.726	0.734	
28	1951	1041.3	34769.3	1241.8	-0.954	0.590	
29	1950	1591.6	36360.9	1253.8	2.048	0.898	
30	1949	725.1	37086.0	1236.2	-2.675	0.495	
31	1948	1213.4	38299.4	1235.5	-0.015	0.492	
32	1947	1139.3	39438.6	1232.5	-0.415	0.425	
33	1946	1398.1	40836.7	1237.5	0.993	0.675	
34	1945	1286.3	42123.0	1238.9	0.383	0.637	
35	1944	1281.2	43404.2	1240.1	0.355	0.690	
36	1943	1096.0	44500.2	1236.1	-0.655	0.591	
37	1942	1305.2	45805.4	1238.0	0.486	0.664	
38	1941	935.5	46741.2	1230.0	-1.529	0.434	
39	1940	936.3	47077.6	1222.5	-1.527	0.204	
40	1939	1115.4	48793.0	1219.8	-0.550	0.121	
41	1938	1066.9	49861.9	1216.1	-0.603	0.0	

N	AN	T /	CO	MCY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 41 ANOS = 1216.1

DEVIACION ESTANDAR = 183.3

COEFICIENTE DE VARIACION = 0.151

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTCN *** CALPC DE AGROCLIMATOLOGIA *** PROGRAMA CRSTCN

Biblioteca Universidad
y
Credencial

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212013	EL DELIRIO	BOGOTA D.E.	+04 32 31	+074 03 44	2875 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANO
1942	10.2	84.3	144.5	96.9	108.1	175.6	121.7	208.8	33.7	162.0	110.9	48.5	1305.2	1942
1943	44.0	21.1	21.4	20.0	137.5	123.6	130.1	207.0	72.0	157.7	103.6	58.0	1096.0	1943
1944	81.4	61.4	62.9	183.9	227.6	143.3	93.5	57.9	81.4	128.3	107.2	52.4	1281.2	1944
1945	8.4	83.5	31.6	239.5	184.9	83.0	121.1	77.5	31.8	134.8	231.4	58.8	1286.3	1945
1946	90.1	53.6	96.3	110.2	108.1	121.8	266.9	237.1	18.6	107.4	96.1	91.7	1398.1	1946
1947	12.2	68.3	39.2	74.1	46.1	141.9	198.1	136.4	135.9	212.6	58.6	15.9	1139.3	1947
1948	19.3	64.1	66.0	188.7	66.0	148.2	116.0	140.8	65.0	99.0	101.8	118.5	1213.4	1948
1949														1949
1950	95.5	166.6	150.9	87.9	209.4	125.0	192.7	98.1	137.0	92.4	139.9	100.2	1591.6	1950
1951	33.6	104.9	98.5	98.9	66.7	120.0	238.9	88.5	44.0	52.8	68.3	6.2	1041.3	1951
1952	112.8	71.9	162.8	125.0	120.3	133.0	231.7	105.8	45.6	60.7	262.4	100.9	1532.9	1952
1953	79.8	16.5	80.7	70.9	124.0	124.0	187.0	90.8	107.4	206.0	161.0	48.4	1296.5	1953
1954	50.8	46.2	55.3	159.4	115.7	170.1	221.1	181.2	96.6	244.1	147.4	102.0	1589.9	1954
1955	19.0	60.4	116.5	100.6	79.0	135.0	167.2	63.0	107.4	155.2	190.3	92.5	1292.1	1955
1956	86.6	122.4	103.9	40.5	65.3	215.6	112.6	114.7	126.6	166.8	53.7	102.8	1311.5	1956
1957	30.5	20.3	152.9	93.5	219.5	107.7	143.0	128.6	79.2	189.5	75.0	36.6	1276.3	1957
1958	63.3	38.3	69.0	89.0	72.9	97.1	120.3	169.7	35.1	117.5	122.8	77.2	1072.2	1958
1959	35.5	10.5	23.4	90.7	109.9	160.2	200.2	109.1	106.9	149.7	183.1	68.7	1247.9	1959
1960	67.5	79.0	64.4	63.4	90.0	106.9	100.8	238.3	91.6	133.5	34.0	154.9	1224.9	1960
1961	67.0	18.1	171.8	59.2	83.9	115.9	138.3	143.9	60.9	166.5	123.3	2.7	1121.5	1961
1962	33.7	48.1	63.7	44.0	115.5	177.1	200.0	164.0	72.0	142.5	189.0	96.5	1346.1	1962
1963	40.0	130.5	46.5	205.0	211.5	104.0	86.8	153.5	75.2	112.0	144.4	35.5	1350.9	1963
1964	0.0	55.0	6.0	135.9	136.5	77.0	163.3	162.5	92.6	77.5	93.4	80.0	1079.7	1964
1965	22.7	11.7	22.1	-9.9	166.7	126.6	170.4	98.3	31.2	148.2	121.3	32.9	-9.9	1965
1966	5.0	74.3	164.1	48.0	91.4	88.6	132.2	114.4	30.1	56.0	248.1	247.6	1299.8	1966
1967	33.1	17.5	109.5	123.0	164.9	217.3	164.6	241.1	68.9	73.6	201.5	54.3	1469.3	1967
1968	10.0	94.8	23.5	202.3	35.6	117.8	259.7	85.8	84.9	112.8	240.0	55.8	1329.0	1968
1969	103.9	24.4	8.1	150.6	122.1	104.5	200.5	107.6	67.9	129.3	87.9	32.0	1138.8	1969
1970	112.8	171.0	36.7	51.0	110.8	123.4	169.6	102.4	106.0	171.4	123.5	16.7	1295.3	1970
1971	50.5	77.6	140.9	134.9	126.1	114.1	183.9	105.0	88.8	58.0	143.0	95.1	1317.9	1971
1972	233.5	140.6	80.1	126.2	125.9	127.4	156.8	87.9	53.6	124.1	92.4	23.6	1372.1	1972
1973	22.4	0.0	37.2	55.9	123.0	87.3	107.3	123.7	113.4	100.8	83.3	185.7	1040.0	1973
1974	64.5	118.9	210.8	85.1	66.9	59.3	140.6	69.1	57.1	94.4	116.4	12.6	1117.7	1974
1975	3.8	44.7	59.0	52.6	132.3	133.3	55.3	145.8	74.1	127.9	134.9	206.7	1170.4	1975
1976	35.8	9.4	103.5	122.5	138.3	159.7	282.5	133.1	109.1	135.8	66.9	63.2	1361.8	1976
1977	1.0	30.2	48.5	127.9	65.8	80.4	101.8	85.9	142.4	108.6	135.2	38.0	965.7	1977
1978	0.0	21.3	79.8	117.7	129.2	144.3	75.8	165.2	76.6	55.0	53.3	55.8	974.0	1978
1979	6.1	40.0	58.0	39.4	82.6	190.1	105.3	117.0	45.2	218.5	164.0	47.6	1133.8	1979

*** CARACTERISTICAS PLUVIOMETRICAS MENSUALES Y ANUALES DE LA PAGINA ANTERIOR ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	AN
NUMERO DE ANOS	37	37	37	36	37	37	37	37	37	37	37	37	36	
VALOR MAXIMO	233.5	171.0	210.8	239.5	227.6	217.3	282.5	241.1	142.4	244.1	262.4	247.6	1591.6	
CUARTIL SUPERIOR	73.0	85.9	113.0	131.4	137.0	146.2	199.0	163.3	106.4	159.8	172.0	98.3	1337.5	
MEDIANA	35.5	55.0	66.0	97.9	115.7	124.0	156.8	117.0	75.2	128.3	122.8	58.0	1283.7	
CUARTIL INFERIOR	14.1	21.2	38.2	61.3	66.3	105.7	114.3	94.4	49.6	96.7	90.1	36.0	1127.6	
VALOR MINIMO	0.0	0.0	6.0	20.0	35.6	59.3	66.3	57.9	18.6	52.8	34.0	2.7	965.7	
PROMEDIOS	48.6	62.4	81.4	106.0	119.2	129.2	158.3	131.3	77.5	129.3	130.5	73.4	1252.2	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1247.0	
PORCENTAJES	3.9	5.0	6.5	8.5	9.6	10.4	12.7	10.5	6.2	10.4	10.5	5.9		

TRIMESTRE MAS LLUVIOSO JUN JUL AGO **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE APHOUSS = 114.

DEV. ESTANDAR	46.2	44.9	52.1	52.9	47.5	36.3	55.9	49.2	32.8	48.3	57.9	54.7	157.4	
COEF. VARIACION	0.950	0.719	0.641	0.499	0.399	0.281	0.353	0.375	0.424	0.374	0.444	0.745	0.126	
COEF. ASIMETRIA	1.921	0.803	0.649	0.665	0.653	0.596	0.411	0.797	0.167	0.345	0.626	1.446	0.240	

*PROYECTO ICAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA OSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212013	EL DELIRIO	BOGOTA D.E.	+04 33 31	+074 03 44	2875 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	67.5	79.6	64.4	63.4	90.0	106.9	100.8	238.3	91.6	133.5	34.0	154.9	1224.9	1960
1961	67.0	18.1	171.8	59.2	53.9	115.9	136.3	143.9	60.9	166.5	123.3	2.7	1121.5	1961
1962	33.7	48.1	63.7	44.0	115.5	177.1	200.0	164.0	72.0	142.5	189.0	96.5	1346.1	1962
1963	46.0	130.5	46.5	205.0	211.5	104.0	86.8	153.5	75.2	112.0	144.4	35.5	1350.9	1963
1964	0.0	55.0	6.0	135.9	136.5	77.0	163.3	162.5	92.6	77.5	93.4	80.0	1079.7	1964
1965	22.7	12.6	22.1	252.9	166.7	126.6	170.4	98.3	31.2	148.2	121.3	32.9	1205.9	1965
1966	5.0	74.3	164.1	48.0	91.4	88.6	132.2	114.4	30.1	56.0	248.1	247.6	1299.8	1966
1967	33.1	17.5	109.5	123.0	164.9	217.3	164.6	241.1	68.9	73.6	201.5	54.3	1469.3	1967
1968	16.0	94.8	23.5	202.3	35.6	117.8	259.7	85.8	84.9	112.8	240.0	55.8	1329.0	1968
1969	103.9	24.4	8.1	150.6	122.1	104.5	200.5	107.6	67.9	129.3	87.9	32.0	1138.8	1969
1970	112.8	171.0	36.7	51.0	110.8	123.4	169.6	102.4	106.0	171.4	123.5	16.7	1295.3	1970
1971	50.5	77.6	140.9	134.9	126.1	114.1	183.9	105.0	88.8	58.0	143.0	95.1	1317.9	1971
1972	233.5	140.6	80.1	126.2	125.9	127.4	156.8	87.9	53.6	124.1	92.4	23.6	1372.1	1972
1973	22.4	0.0	37.2	55.9	123.0	87.3	107.3	123.7	113.4	100.8	83.3	185.7	1040.0	1973
1974	64.5	118.9	210.8	85.1	86.9	59.3	140.6	69.1	57.1	94.4	118.4	12.6	1117.7	1974
1975	3.8	44.7	59.0	52.6	132.3	133.3	55.3	145.8	74.1	127.9	134.9	206.7	1170.4	1975
1976	36.8	9.4	103.5	122.5	138.3	159.7	282.5	133.1	109.1	135.8	68.9	63.2	1361.8	1976
1977	1.0	30.2	48.5	127.9	65.8	80.4	101.8	85.9	142.4	108.6	135.2	38.0	965.7	1977
1978	0.0	21.3	79.8	117.7	129.2	144.3	75.8	165.2	76.6	55.0	53.3	55.8	974.0	1978
1979	6.1	40.0	58.0	59.4	82.6	190.1	105.3	117.0	45.2	218.5	184.0	47.6	1133.8	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	233.5	171.0	210.8	252.9	211.5	217.3	282.5	241.1	142.4	218.5	248.1	247.6	1469.3	
CUARTIL SUPERIOR	65.8	87.2	106.5	135.4	134.4	138.8	177.1	158.0	92.1	139.1	164.2	95.8	1337.5	
MEDIANA	33.4	46.4	61.3	120.1	122.5	116.8	148.7	120.3	74.6	118.4	123.4	55.0	1215.4	
CUARTIL INFERIOR	5.5	19.7	36.9	54.2	88.4	96.3	103.5	100.3	59.0	85.9	90.1	32.4	1119.6	
VALOR MINIMO	0.0	0.0	6.0	39.4	35.6	59.3	55.3	69.1	30.1	55.0	34.0	2.7	965.7	
PROMEDIOS	46.3	60.4	76.7	109.9	115.4	122.8	149.8	132.2	77.1	117.3	131.0	76.9	1215.7	
PORCENTAJES	3.8	5.0	6.3	9.0	9.5	10.1	12.3	10.9	6.3	9.7	10.8	6.3		

TRIMESTRE MAS LLUVIOSO JUN JUL AGO **** TRIMESTRE MENOS LLUVIOSO ENE FEB MAR

INDICE DE FOURNIER = 18. INDICE DE ARNOLDUS = 111.

INDICE DE IRREGULARIDAD INTERANUAL =1.35

DEV. ESTANDAR	55.2	49.1	57.1	60.8	40.9	39.6	58.3	46.5	27.9	42.1	57.9	69.0	142.5
COEF. VARIACION	1.194	0.812	0.744	0.553	0.355	0.323	0.389	0.352	0.362	0.359	0.442	0.897	0.117

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1450.	1398.	1336.	1216.	1096.	1033.	981.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.260	0.840	0.966	0.789	0.187	0.794	0.616	1.128	0.357	0.413	0.504	1.344	-0.180

IMPRESO EN COLOMBIA POR DANAPANJC

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211913	EL DIAMANTE	BOGOTA D.E.	+04 01 00	+074 16 00	3890 METROS

AÑO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	68.0	45.0	45.0	62.0	86.0	57.0	136.0	193.0	122.0	141.0	289.0	144.0	1428.0
1967	162.0	61.0	35.0	165.0	168.0	186.0	161.0	132.0	117.0	120.0	128.0	50.0	1485.0
1968	16.0	38.0	20.0	286.0	107.0	216.0	240.0	122.0	145.0	179.0	218.0	64.0	1653.0
1969	81.0	44.0	67.0	254.0	160.0	243.0	269.0	138.0	136.0	167.0	95.0	14.0	1668.0
1970	55.0	38.0	41.0	69.0	77.0	175.0	211.0	201.0	119.0	108.0	141.0	27.0	1262.0
1971	65.0	76.0	102.0	174.0	231.0	188.0	281.0	197.0	115.0	175.0	126.0	48.0	1778.0
1972													
1973													
1974	145.0	133.1	102.3	95.6	105.0	51.4	114.7	117.8	143.1	33.0	2.0	9.0	1092.0
1975	10.0	30.2	106.0	68.1	68.2	206.1	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1976	90.0	70.9	131.4	129.4	67.3	42.3	82.0	83.4	84.4	129.4	52.8	35.4	998.7
1977	0.0	22.3	29.0	93.1	77.0	69.3	104.5	125.4	86.7	53.0	104.0	35.2	839.5
1978	58.0	60.1	34.3	0.0	153.6	209.5	203.5	196.4	161.4	66.9	85.2	42.0	1272.9
1979	70.5	48.5	67.0	64.8	67.7	112.6	278.4	226.2	79.2	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANANJO

ESTACION X EL DIAMANTE MUNICIPIO DE BOGOTA D.E. PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1973	1272.9	1272.9	1272.9	-0.241	-0.056				+			
2	1977	839.5	2112.4	1056.2	-1.640	-0.433			+	I			
3	1976	998.7	3111.1	1037.0	-1.126	-0.692			+	I			
4	1974	1092.0	4203.1	1050.8	-0.825	-0.881			*	I			
5	1971	1778.0	5981.1	1196.2	1.388	-0.562			+	I	.		
6	1970	1262.0	7243.1	1207.2	-0.277	-0.626			+	. I			
7	1969	1668.0	8911.1	1273.0	1.033	-0.388				+ I	.		
8	1968	1653.0	10564.1	1320.5	0.985	-0.161				+I	.		
9	1967	1985.0	12549.1	1338.8	0.443	-0.060				+	.		
10	1966	1428.0	13977.1	1347.7	0.259	0.0				+ .			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 10 ANOS = 1347.7
DESVIACION ESTANDAR = 310.0
COEFICIENTE DE VARIACION = 0.230

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212032	EL GRANIZO	BOGOTA D.E.	+04 37 00	+074 03 00	3125 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1947	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	156.9	21.1	11.5	-9.9
1948	11.3	47.4	24.1	185.5	101.1	81.9	54.5	52.4	45.3	86.5	125.3	51.0	866.3
1949	69.0	109.0	121.7	59.9	187.0	71.5	46.7	70.9	87.4	186.2	152.6	74.3	1276.2
1950	117.3	122.0	182.0	215.0	223.2	156.4	146.9	79.8	102.2	176.1	148.0	96.9	1765.8
1951	45.9	132.6	161.0	97.4	102.8	60.6	118.3	66.5	44.4	212.6	252.2	28.9	1323.2
1952	69.9	61.6	184.7	113.7	143.2	105.5	151.3	89.5	37.9	105.6	282.4	117.1	1462.4
1953	52.5	48.8	72.4	86.1	93.7	100.4	110.4	44.1	84.9	157.2	106.7	34.7	1031.9
1954	40.0	59.2	25.8	172.2	126.6	121.7	136.1	107.1	68.9	227.9	185.8	106.5	1377.8
1955	19.7	104.0	108.9	114.6	83.7	63.8	52.1	39.5	107.9	255.2	195.8	102.2	1291.4
1956	125.4	138.3	75.8	50.5	56.9	135.3	72.7	81.6	89.3	213.7	77.7	159.3	1280.5
1957	34.2	24.1	241.9	133.2	264.5	107.6	123.1	63.0	65.3	178.3	118.8	48.9	1402.9
1958	38.4	39.0	58.3	55.3	58.2	50.4	51.5	87.3	35.8	241.9	290.8	90.1	1097.0
1959	21.4	56.3	26.5	54.1	115.8	102.5	158.0	86.5	71.3	145.6	145.1	58.1	1041.2
1960	40.8	100.2	-9.9	-9.9	-6.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1961	-9.9	-9.9	-9.9	-9.9	-9.9	140.4	73.6	65.2	51.7	172.0	142.9	2.6	-9.9
1962	66.5	26.7	94.7	86.2	106.4	124.7	78.6	82.1	41.6	167.6	176.9	144.6	1196.6
1963	37.6	171.6	55.4	232.0	118.9	73.3	66.0	49.4	61.1	110.2	224.6	34.1	1234.2
1964	1.4	18.9	-9.9	117.9	130.5	139.3	105.6	46.9	42.2	45.0	103.1	142.6	-9.9
1965	8.9	13.6	22.5	285.0	186.4	57.8	88.1	43.0	20.1	151.0	154.3	62.2	1132.9
1966	2.4	90.1	106.9	63.9	68.8	90.6	75.9	88.6	48.1	85.2	305.9	264.3	1290.7
1967	45.7	26.2	171.3	136.3	123.5	154.4	74.1	88.4	69.8	90.8	210.0	50.8	1241.3
1968	-9.9	141.5	22.2	208.0	55.0	57.3	102.6	37.7	70.3	147.5	253.3	42.2	-9.9
1969	113.8	51.3	14.6	189.4	79.5	67.5	66.5	65.1	59.3	194.2	134.1	33.0	1068.3
1970	75.3	111.2	46.4	33.8	137.8	88.4	91.8	63.2	86.2	266.9	216.0	13.4	1230.4
1971	49.3	116.2	199.0	185.0	149.8	77.0	75.4	73.5	85.6	92.9	117.6	87.8	1309.1
1972	184.5	94.8	127.1	244.7	123.1	120.9	92.1	49.2	29.8	118.7	137.9	10.6	1333.4
1973	14.0	0.0	39.8	80.5	76.6	71.5	67.5	116.7	148.1	158.5	132.9	255.0	1161.1
1974	70.4	146.5	90.3	78.3	129.6	43.9	64.9	36.3	59.5	128.0	176.0	37.3	1061.0
1975	14.0	105.4	63.3	53.8	172.6	57.6	76.5	103.1	73.8	129.6	166.1	203.1	1258.9
1976	25.4	37.6	156.1	141.2	122.2	84.6	76.5	53.8	97.6	155.6	116.6	47.6	1114.8
1977	0.0	35.9	75.1	169.5	30.0	73.4	77.0	57.2	94.5	113.7	208.2	44.4	978.9
1978	0.9	30.1	57.1	185.9	104.5	90.0	61.8	62.5	76.4	82.4	55.9	71.2	848.7
1979	34.2	24.9	92.1	139.1	150.7	106.3	51.9	120.7	64.1	243.1	306.0	83.9	1417.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANES

ESTACION X EL CRANIZO MUNICIPIO DE BOGOTA D.E. PERIODO 1947 - 1979 COEF DE CORRECCION 1.000

ESTACION Y SAN LUIS MUNICIPIO DE BOGOTA PERIODO 1947 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	CUY	RAN	F = -4. / F : 0.6	-3. / 0.7	-2. / 0.8	-1. / 0.9	0.0 / 1.0	+1. / 1.1	+2. / 1.2	+3. / 1.3	+4. / 1.4
1	1979	1417.	1366.	0.966	-0.035								
2	1978	2266.	2345.	0.796	-0.234								
3	1977	3245.	3202.	1.057	-0.191								
4	1976	4255.	4279.	0.954	-0.235								
5	1975	5618.	5413.	1.022	-0.213								
6	1974	6675.	6311.	1.088	-0.142								
7	1973	7640.	7315.	1.065	-0.064								
8	1972	9174.	8655.	0.916	-0.154								
9	1971	10483.	9805.	1.049	-0.134								
10	1970	11713.	11012.	0.938	-0.201								
11	1969	12782.	12041.	0.956	-0.241								
12	1967	14023.	13222.	0.968	-0.274								
13	1966	15314.	14368.	1.037	-0.236								
14	1963	16548.	15567.	0.948	-0.252								
15	1962	17744.	16706.	0.967	-0.325								
16	1959	18786.	17620.	1.050	-0.285								
17	1958	19883.	18556.	1.077	-0.221								
18	1957	21285.	19857.	0.994	-0.227								
19	1955	22577.	21069.	0.981	-0.247								
20	1954	23555.	22554.	0.855	-0.440								
21	1953	24587.	23485.	1.020	-0.423								
22	1952	26445.	24903.	0.950	-0.486								
23	1951	27772.	25800.	1.358	-0.200								
24	1950	29536.	27332.	1.062	-0.116								
25	1949	30614.	28223.	1.320	0.128								
26	1948	31660.	29175.	0.836	0.0								

N	AN	CLX	CUY	RAN	F = -4. / F : 0.6	-3. / 0.7	-2. / 0.8	-1. / 0.9	0.0 / 1.0	+1. / 1.1	+2. / 1.2	+3. / 1.3	+4. / 1.4

PROMEDIOS = 1218.5 1122.1

RAZONES PROMEDIOS Y/X = 0.921

X/Y = 1.086

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* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-CRSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212032	EL GRANIZO	BOGOTA D.E.	+04 36 46	+074 03 18	3125 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

AÑOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	AÑOS
1947	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	156.5	21.1	11.5	-9.9	19[illegible]
1948	11.3	47.4	24.1	185.5	101.1	81.9	54.5	52.4	45.3	86.5	125.3	51.0	866.3	19[illegible]
1949	69.0	109.0	121.7	99.9	187.0	71.5	46.7	70.9	87.4	186.2	152.6	74.3	1276.2	19[illegible]
1950	117.3	122.0	182.0	215.0	223.2	156.4	146.9	79.8	102.2	176.1	148.0	96.9	1765.8	19[illegible]
1951	45.9	132.6	161.0	97.4	102.8	60.6	118.3	66.5	44.4	212.6	252.2	28.9	1323.2	1951
1952	69.9	61.6	184.7	113.7	143.2	105.5	151.3	89.5	37.9	105.6	282.4	117.1	1462.4	19[illegible]
1953	52.5	48.8	72.4	86.1	93.7	100.4	110.4	44.1	84.9	197.2	106.7	34.7	1031.9	19[illegible]
1954	40.0	59.2	25.8	172.2	126.6	121.7	136.1	107.1	68.9	227.9	185.8	106.5	1377.8	19[illegible]
1955	19.7	104.0	108.9	114.6	83.7	63.8	52.1	39.5	107.9	299.2	195.8	102.2	1291.4	19[illegible]
1956	125.4	138.3	75.8	50.5	86.9	139.3	72.7	81.6	89.3	213.7	77.7	159.3	1280.5	19[illegible]
1957	34.2	24.1	241.9	133.2	264.5	107.6	123.1	63.0	65.3	178.3	118.8	48.9	1402.9	19[illegible]
1958	38.4	39.0	58.3	55.3	88.2	50.4	81.5	87.3	35.8	241.9	290.8	90.1	1097.0	19[illegible]
1959	21.4	56.3	26.5	54.1	115.8	102.5	158.0	86.5	71.3	145.6	148.1	58.1	1041.2	19[illegible]
1960	40.8	100.2	-9.9	-9.9	-6.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	19[illegible]
1961	-9.9	-9.9	-9.9	-9.9	-9.9	140.4	73.6	65.2	51.7	172.0	142.9	2.6	-9.9	19[illegible]
1962	66.5	26.7	94.7	86.2	106.4	124.7	78.6	82.1	41.6	167.6	176.9	144.6	1196.6	19[illegible]
1963	37.6	171.6	55.4	232.0	118.9	73.3	66.0	49.4	61.1	110.2	224.6	34.1	1234.2	19[illegible]
1964	1.4	16.9	-9.9	117.9	130.5	139.3	105.6	46.9	42.2	45.0	103.1	142.6	-9.9	19[illegible]
1965	8.9	13.6	22.5	285.0	186.4	57.8	88.1	43.0	20.1	191.0	184.3	62.2	1132.9	19[illegible]
1966	2.4	90.1	106.9	63.9	68.8	90.6	75.9	86.6	48.1	85.2	305.9	264.3	1290.7	19[illegible]
1967	45.7	26.2	171.3	136.3	123.5	154.4	74.1	88.4	69.8	90.8	210.0	50.8	1241.3	19[illegible]
1968	-9.9	141.5	22.2	208.0	55.0	97.3	102.6	37.7	70.3	147.5	253.3	42.2	-9.9	19[illegible]
1969	113.8	51.3	14.6	189.4	79.5	67.5	66.5	65.1	59.3	194.2	134.1	33.0	1068.3	19[illegible]
1970	75.3	111.2	46.4	33.8	137.8	88.4	91.8	63.2	86.2	266.5	216.0	13.4	1230.4	19[illegible]
1971	49.3	116.2	199.0	185.0	149.8	77.0	75.4	73.5	65.6	92.5	117.6	87.8	1309.1	19[illegible]
1972	184.5	94.8	127.1	244.7	123.1	120.9	52.1	49.2	29.8	118.7	137.9	10.6	1333.4	19[illegible]
1973	14.0	0.0	39.8	80.5	76.6	71.5	67.5	116.7	148.1	158.5	132.9	255.0	1161.1	19[illegible]
1974	70.4	146.5	90.3	78.3	129.6	43.9	64.9	36.3	59.5	128.0	176.0	37.3	1061.0	19[illegible]
1975	14.0	105.4	63.3	53.8	172.6	97.6	76.5	103.1	73.8	129.6	166.1	203.1	1258.9	19[illegible]
1976	25.4	37.6	156.1	141.2	122.2	84.6	76.5	53.8	97.6	155.6	116.6	47.6	1114.8	19[illegible]
1977	0.0	35.9	75.1	169.5	30.0	73.4	77.0	57.2	94.5	113.7	208.2	44.4	978.9	19[illegible]
1978	0.9	30.1	57.1	185.9	104.5	90.0	61.8	62.5	76.4	52.4	55.9	71.2	848.7	19[illegible]
1979	34.2	24.9	92.1	139.1	150.7	106.3	81.9	120.7	64.1	243.1	306.0	83.9	1417.0	19[illegible]

*** CARACTERISTICAS PLUVIOMETRICAS MENSUALES Y ANUALES DE LA PAGINA ANTERIOR ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
NUMERO DE ANOS	30	31	29	30	31	31	31	31	31	32	32	32	26
VALOR MAXIMO	184.5	171.6	241.9	285.0	264.5	156.4	158.0	120.7	148.1	299.2	306.0	264.3	1765.8
CUARTIL SUPERIOR	69.0	111.2	141.6	185.5	143.2	120.9	105.6	87.3	86.2	195.7	213.0	104.3	1316.1
MEDIANA	39.2	59.2	75.8	125.5	118.9	90.6	76.5	65.2	68.9	157.7	153.4	80.1	1237.7
CUARTIL INFERIOR	14.0	30.1	43.1	80.5	79.5	71.5	66.0	49.4	45.3	111.9	122.0	36.0	1082.6
VALOR MINIMO	0.0	0.0	14.6	33.8	-6.9	43.9	46.7	36.3	20.1	45.0	21.1	2.6	848.7
PROMEDIOS	47.7	73.7	93.7	133.6	116.6	95.5	86.7	70.0	68.4	159.1	170.0	81.6	1217.6
											TOTAL DE LOS PROMEDIOS MENSUALES =		1196.6
PORCENTAJES	4.0	6.2	7.8	11.2	9.7	8.0	7.2	5.9	5.7	13.3	14.2	6.8	

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 24. INDICE DE ARREDONDOS = 113.

DEV. ESTANDAR	42.7	47.2	62.0	69.8	55.2	30.4	30.9	23.2	26.9	61.3	70.8	66.0	190.4
COEF. VARIACION	0.897	0.641	0.662	0.492	0.473	0.318	0.356	0.331	0.393	0.385	0.417	0.809	0.156
COEF. ASIMETRIA	1.455	0.330	0.695	0.442	0.415	0.399	0.952	0.493	0.680	0.208	0.281	1.411	0.422

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Universidad Nacional de Colombia

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211914	EL GUANO	BOGOTA D.E.	+03 58 00	+074 17 00	3870 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	61.0	51.0	56.0	101.0	110.0	148.0	55.0	147.0	68.0	205.0	288.0	191.0	1481.0
1967	59.0	69.0	68.0	177.0	140.0	133.0	95.0	73.0	85.0	101.0	153.0	70.0	1223.0
1968	17.0	37.0	31.0	262.0	104.0	210.0	72.0	58.0	145.0	165.0	212.0	74.0	1387.0
1969	61.0	52.0	27.0	173.0	159.0	124.0	35.0	88.0	113.0	231.0	162.0	73.0	1298.0
1970	53.0	47.0	35.0	97.0	196.0	125.0	80.0	75.0	138.0	248.0	180.0	69.0	1347.0
1971	-9.9	-9.9	165.0	156.0	169.0	112.0	82.0	121.0	67.0	165.0	125.0	87.0	-9.9
1972	114.0	51.0	106.0	202.0	164.0	149.0	69.0	79.0	68.0	85.0	120.0	53.0	1264.0
1973	13.0	5.0	70.0	62.0	130.0	122.0	114.0	164.0	189.0	206.0	166.0	172.0	1413.0
1974	126.0	90.0	127.0	176.0	116.0	50.0	67.0	74.0	106.0	161.0	158.0	16.0	1307.0
1975	11.0	96.0	95.0	110.0	183.0	132.0	151.0	117.0	142.0	157.0	201.0	215.0	1650.0
1976	58.0	99.0	179.0	209.0	191.0	102.0	65.0	36.0	102.0	156.0	111.0	55.0	1405.0
1977	16.0	10.0	52.0	108.0	77.0	95.0	77.0	59.0	82.0	175.0	166.0	99.0	976.0
1978	19.0	10.0	133.2	148.0	112.0	76.0	78.0	58.0	99.0	105.0	93.0	120.0	1053.2
1979	20.0	5.0	111.0	151.0	115.0	143.0	117.0	135.0	112.0	185.0	206.0	57.0	1441.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANPER

ESTACION X EL GUAMO MUNICIPIO DE BOGOTA D.E. PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	1441.0	1441.0	1441.0	0.692	0.086				+			
2	1978	1053.2	2494.2	1247.1	-1.551	-0.120				+I			
3	1977	976.0	3470.2	1156.7	-1.989	-0.384				+ I			
4	1976	1405.0	4875.2	1218.8	0.445	-0.325				+ I			
5	1975	1650.0	6525.2	1305.0	1.835	-0.081				+			
6	1974	1307.0	7832.2	1305.4	-0.111	-0.096				+I			
7	1973	1413.0	9245.2	1320.7	0.491	-0.031				+			
8	1972	1264.0	10509.2	1313.6	-0.355	-0.078				+			
9	1970	1347.0	11856.2	1317.4	0.116	-0.062				+I			
10	1969	1298.0	13154.2	1315.4	-0.162	-0.084				+I			
11	1968	1387.0	14541.2	1321.9	0.343	-0.038				+			
12	1967	1223.0	15764.2	1313.7	-0.588	-0.116				+I			
13	1966	1481.0	17245.2	1326.6	0.876	0.0				+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 13 ANOS = 1326.6
DESVIACION ESTANDAR = 176.2
COEFICIENTE DE VARIACION = 0.133

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211514	EL GUAMO	BOGOTA D.E.	+03 58 08	+074 16 57	3870 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	61.0	51.0	56.0	101.0	110.0	148.0	55.0	147.0	68.0	205.0	288.0	191.0	1481.0	1966
1967	59.0	69.0	68.0	177.0	140.0	133.0	95.0	73.0	85.0	101.0	153.0	70.0	1223.0	1967
1968	17.0	37.0	31.0	262.0	104.0	210.0	72.0	58.0	145.0	165.0	212.0	74.0	1387.0	1968
1969	61.0	52.0	27.0	173.0	159.0	124.0	35.0	88.0	113.0	231.0	162.0	73.0	1298.0	1969
1970	53.0	47.0	35.0	97.0	196.0	129.0	80.0	75.0	138.0	248.0	180.0	69.0	1347.0	1970
1971	-9.9	-9.9	165.0	156.0	169.0	112.0	82.0	121.0	67.0	169.0	125.0	87.0	-9.9	1971
1972	114.0	51.0	106.0	202.0	164.0	149.0	69.0	79.0	68.0	89.0	120.0	53.0	1264.0	1972
1973	13.0	5.0	70.0	62.0	130.0	122.0	114.0	164.0	189.0	206.0	166.0	172.0	1413.0	1973
1974	126.0	90.0	127.0	170.0	116.0	90.0	67.0	74.0	106.0	161.0	158.0	16.0	1307.0	1974
1975	11.0	96.0	95.0	110.0	163.0	132.0	151.0	117.0	142.0	197.0	201.0	215.0	1650.0	1975
1976	58.0	99.0	179.0	209.0	191.0	102.0	65.0	36.0	102.0	198.0	111.0	55.0	1405.0	1976
1977	16.0	10.0	52.0	108.0	77.0	95.0	77.0	59.0	82.0	175.0	166.0	59.0	976.0	1977
1978	19.0	10.0	133.2	148.0	112.0	78.0	78.0	58.0	99.0	105.0	93.0	120.0	1053.2	1978
1979	20.0	5.0	111.0	191.0	115.0	143.0	117.0	135.0	112.0	189.0	206.0	97.0	1441.0	1979
NUMERO DE ANOS	13	13	14	14	14	14	14	14	14	14	14	14	13	
VALOR MAXIMO	126.0	99.0	179.0	262.0	196.0	210.0	151.0	164.0	189.0	248.0	288.0	215.0	1650.0	
CUARTIL SUPERIOR	61.0	79.5	127.0	191.0	169.0	143.0	95.0	121.0	138.0	205.0	201.0	120.0	1427.0	
MEDIANA	53.0	51.0	82.5	164.5	135.0	126.5	77.5	77.0	104.0	182.0	164.0	73.5	1347.0	
CUARTIL INFERIOR	16.5	10.0	52.0	108.0	112.0	102.0	67.0	59.0	82.0	161.0	125.0	59.0	1243.5	
VALOR MINIMO	11.0	5.0	27.0	62.0	77.0	78.0	35.0	36.0	67.0	89.0	93.0	16.0	976.0	
PROMEDIOS	48.3	47.8	89.7	155.1	140.4	126.2	82.6	91.7	108.3	174.2	167.2	96.5	1326.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1328.2	
PORCENTAJES	3.6	3.6	6.8	11.7	10.6	9.5	6.2	6.9	8.2	13.1	12.6	7.3		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO ENE FEB MAR

INDICE DE FOURNIER = 23. INDICE DE ARNOLDUS = 126.

DEV. ESTANDAR	37.9	34.0	49.2	54.3	36.8	32.6	29.0	38.4	35.3	47.7	45.9	57.7	176.2
COEF. VARIACION	0.784	0.710	0.549	0.350	0.262	0.258	0.351	0.419	0.326	0.274	0.299	0.598	0.133
COEF. ASIMETRIA	0.997	0.158	0.429	0.107	0.061	1.059	0.919	0.577	0.828	-0.554	0.651	1.007	-0.441

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211914	EL GUAMO	BOGOTA D.E.	+03 58 08	+074 16 57	3870 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	38.1	63.5	122.4	84.8	121.1	122.2	124.6	96.5	56.6	164.4	201.7	86.2	1282.1	1960
1961	31.8	4.9	151.5	185.4	63.1	122.1	61.2	56.3	122.6	159.0	231.0	40.4	1229.3	1961
1962	82.8	37.2	98.9	125.3	258.3	133.6	67.0	107.3	91.9	216.7	131.1	101.2	1451.3	1962
1963	58.5	95.1	153.4	153.1	172.3	119.2	54.4	86.5	127.2	151.6	182.2	32.7	1386.2	1963
1964	20.2	87.2	55.6	154.3	102.2	133.8	131.1	96.6	95.2	90.3	137.9	67.6	1172.0	1964
1965	44.5	55.2	48.0	231.4	174.5	129.8	44.8	55.8	71.8	187.5	229.4	55.2	1327.9	1965
1966	61.0	51.0	56.0	101.0	110.0	148.0	55.0	147.0	68.0	205.0	288.0	191.0	1481.0	1966
1967	59.0	69.0	68.0	177.0	140.0	133.0	95.0	73.0	85.0	101.0	153.0	70.0	1223.0	1967
1968	17.0	37.0	31.0	262.0	104.0	210.0	72.0	58.0	145.0	165.0	212.0	74.0	1387.0	1968
1969	61.0	52.0	27.0	173.0	159.0	124.0	35.0	88.0	113.0	231.0	182.0	73.0	1298.0	1969
1970	53.0	47.0	35.0	97.0	196.0	129.0	80.0	75.0	138.0	248.0	180.0	69.0	1347.0	1970
1971	49.2	73.8	165.0	156.0	169.0	112.0	82.0	121.0	67.0	169.0	125.0	87.0	1376.0	1971
1972	114.0	51.0	106.0	202.0	164.0	149.0	69.0	79.0	68.0	89.0	120.0	53.0	1264.0	1972
1973	13.0	5.0	70.0	62.0	130.0	122.0	114.0	164.0	189.0	206.0	166.0	172.0	1413.0	1973
1974	126.0	90.0	127.0	176.0	116.0	90.0	67.0	74.0	106.0	161.0	158.0	16.0	1307.0	1974
1975	11.0	96.0	95.0	110.0	183.0	132.0	151.0	117.0	142.0	197.0	201.0	215.0	1650.0	1975
1976	58.0	99.0	179.0	209.0	191.0	102.0	65.0	36.0	102.0	198.0	111.0	55.0	1405.0	1976
1977	16.0	10.0	52.0	108.0	77.0	95.0	77.0	59.0	82.0	175.0	166.0	59.0	976.0	1977
1978	19.0	10.0	133.2	148.0	112.0	78.0	78.0	58.0	99.0	105.0	93.0	120.0	1053.2	1978
1979	20.0	5.0	111.0	191.0	115.0	143.0	117.0	135.0	112.0	189.0	206.0	97.0	1441.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	126.0	99.0	179.0	262.0	258.3	210.0	151.0	164.0	189.0	248.0	288.0	215.0	1650.0	
CUARTIL SUPERIOR	60.0	80.5	130.1	188.2	173.4	133.7	104.5	112.1	124.9	201.5	203.8	99.1	1409.0	
MEDIANA	46.8	51.5	96.9	155.1	135.0	126.5	74.5	82.8	100.5	172.0	166.0	71.5	1337.4	
CUARTIL INFERIOR	19.5	23.9	53.8	109.0	111.0	115.6	63.1	58.5	76.9	155.3	134.5	55.1	1246.6	
VALOR MINIMO	11.0	4.9	27.0	62.0	63.1	78.0	35.0	36.0	56.6	89.0	93.0	16.0	976.0	
PROMEDIOS	47.7	51.9	94.3	155.3	142.9	126.4	82.0	89.1	104.1	170.4	172.7	86.7	1323.5	
PORCENTAJES	3.6	3.9	7.1	11.7	10.8	9.5	6.2	6.7	7.9	12.9	13.0	6.6		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 23. INDICE DE ARNOLDUS = 126.

INDICE DE IRREGULARIDAD INTERANUAL =1.34

DEV. ESTANDAR	32.2	32.6	47.6	51.8	46.7	27.2	30.8	34.0	33.2	45.4	47.7	52.0	150.3
COEF. VARIACION	0.676	0.628	0.505	0.333	0.327	0.215	0.375	0.381	0.319	0.267	0.276	0.599	0.114

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
/VALORES	1571.	1516.	1450.	1323.	1197.	1131.	1076.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.057	-0.134	0.215	0.110	0.526	1.173	0.767	0.667	0.786	-0.469	0.502	1.313	-0.393

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212020	EL HATO	BOGOTA D.E.	+04 23 00	+074 11 00	3150 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JJL	AGO	SEP	OCT	NOV	DIC	TOTAL
1928	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	119.6	72.0	-9.9
1929	5.5	9.0	85.3	120.1	167.5	130.3	73.3	48.3	55.2	67.0	59.6	22.7	843.8
1930	68.7	38.3	43.2	91.9	61.3	102.9	113.4	76.9	50.0	74.1	35.3	34.0	790.0
1931	6.0	41.8	37.4	74.0	74.6	110.3	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1932													
1933													
1934													
1935													
1936													
1937													
1938													
1939													
1940													
1941	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	28.7	97.1	54.0	11.4	-9.9
1942	1.2	34.4	42.8	98.6	100.4	61.1	43.9	79.9	17.5	127.3	72.5	33.6	713.2
1943	21.2	34.1	83.2	101.6	122.9	101.0	78.3	112.5	66.9	65.0	64.5	96.0	947.2
1944	29.5	30.5	20.0	98.0	242.0	123.5	57.5	45.0	44.5	100.0	35.0	7.0	832.5
1945	2.7	6.1	15.5	188.5	170.5	45.0	65.0	42.5	26.5	41.5	79.8	18.0	701.6
1946	27.0	16.7	39.0	59.2	78.5	53.1	-9.9	-9.9	15.3	25.3	82.3	-9.9	-9.9
1947	28.0	27.8	21.0	32.0	43.6	58.5	109.7	77.1	97.0	142.7	24.6	8.0	710.0
1948	17.1	28.6	21.3	106.1	56.7	70.8	47.5	36.4	75.5	62.9	38.8	12.4	574.1
1949	13.5	10.9	42.7	79.1	98.9	66.4	76.5	47.2	-9.9	-9.9	34.9	14.7	-9.9
1950	71.3	54.0	-9.9	65.2	103.7	58.1	85.2	94.8	88.9	118.8	69.7	25.2	-9.9
1951	6.0	62.1	78.5	87.1	73.3	-9.9	-9.9	29.5	35.7	61.4	-9.9	15.0	-9.9
1952	19.9	29.3	38.5	90.5	97.2	68.4	129.8	33.5	37.8	18.5	99.5	43.5	706.4
1953	19.0	18.5	62.5	-9.9	148.5	107.0	49.5	16.5	60.0	118.0	71.0	24.0	-9.9
1954	31.0	25.0	3.0	111.0	99.5	140.5	71.0	78.0	69.0	150.0	72.5	19.0	909.5
1955	23.0	22.5	158.0	94.5	51.9	87.6	48.5	45.5	93.5	123.5	94.0	45.0	887.5
1956	17.0	58.5	42.5	49.5	98.5	140.1	72.5	54.7	88.0	128.0	24.0	43.5	816.8
1957	12.6	10.7	30.5	76.1	146.4	46.6	90.0	40.1	72.5	98.7	35.0	18.0	683.2
1958	1.0	13.3	81.5	40.7	51.4	42.8	40.5	72.5	22.3	42.0	44.5	23.0	475.5
1959	0.0	10.2	20.2	50.9	92.9	114.3	124.8	74.0	72.1	90.0	66.7	17.0	733.1
1960	14.1	25.3	40.1	89.3	53.4	56.4	59.1	62.7	61.3	59.8	21.3	50.3	593.1
1961	19.6	11.0	43.3	80.4	51.7	107.4	81.2	40.4	34.0	131.5	105.5	12.0	718.0
1962	5.0	5.0	58.5	56.0	106.0	108.0	86.0	98.0	65.0	71.0	115.5	5.0	779.0
1963	29.0	42.8	7.0	105.0	154.5	90.9	43.1	59.5	41.2	48.0	76.0	15.5	712.5
1964	0.0	11.0	4.3	120.7	119.2	107.7	96.0	64.5	69.0	35.0	64.5	32.0	727.9
1965	12.0	2.0	32.0	91.7	115.1	48.4	64.0	53.7	25.8	120.2	109.6	18.1	692.6
1966	9.3	16.3	57.3	30.0	38.5	88.0	58.9	97.4	60.5	57.8	97.5	47.2	658.7
1967	11.0	5.0	100.5	87.0	127.0	118.0	125.4	65.7	34.5	58.7	68.0	22.8	823.6
1968	7.5	60.8	12.3	119.4	51.8	129.2	70.2	50.5	47.3	83.7	54.1	9.6	696.4
1969	45.6	18.9	12.6	157.7	76.1	76.2	52.3	60.7	44.8	167.7	46.3	42.1	821.0
1970	20.7	23.5	34.8	62.5	94.7	99.2	69.5	84.1	63.8	140.0	57.8	3.0	753.6
1971	44.1	30.6	48.7	87.5	124.4	98.1	84.2	79.5	63.5	47.9	69.5	33.0	811.0
1972	39.0	28.5	46.5	77.0	100.7	73.1	67.3	43.9	31.0	56.5	60.0	13.6	637.1
1973	3.9	5.8	23.6	47.5	-9.9	90.5	56.2	119.8	120.7	61.5	95.0	49.0	-9.9
1974	37.0	36.0	19.5	81.9	106.0	82.8	131.6	70.1	62.8	73.9	83.3	10.8	801.7
1975	10.4	53.3	57.4	51.6	145.7	127.2	76.8	106.0	78.0	123.3	72.7	106.6	1009.0
1976	10.6	44.5	72.4	104.9	120.7	114.6	97.4	51.5	69.8	156.4	55.6	15.3	913.7
1977	0.0	22.9	20.0	52.8	40.1	59.7	85.5	68.9	67.9	81.1	100.5	25.3	624.6
1978	5.9	31.7	52.7	101.1	96.3	125.7	57.0	55.8	50.0	75.2	22.5	15.3	669.2
1979	9.5	7.0	44.0	126.1	99.2	73.6	27.7	73.0	57.3	153.6	120.9	31.1	823.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

Ministerio de Hacienda
Crédito Público

IMPRESO EN COLOMBIA POR DIMARA

ESTACION X EL PATO — MUNICIPIO DE BOGOTA D.E. — PERIODO 1930 - 1979 — COEF DE CORRECCION 1.000

ESTACION Y LA REGADERA — MUNICIPIO DE USME — PERIODO 1930 - 1979 — COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	823.	1003.	1.115	0.113					I+	.			
2	1978	1512.	1840.	1.119	0.211					I +	.			
3	1977	2137.	2692.	0.997	0.208					. +				
4	1976	3050.	3864.	1.059	0.276					I +	.			
5	1975	4059.	5004.	1.203	0.504					I +	.	.		
6	1974	4861.	5953.	1.148	0.641					I +	.			
7	1972	5498.	7057.	0.799	0.428					I +				
8	1971	6309.	8221.	0.931	0.347					I +				
9	1970	7063.	9367.	0.879	0.208					I +				
10	1969	7884.	10396.	1.107	0.313					I +	.			
11	1968	8580.	11416.	0.929	0.238					I +				
12	1967	9404.	12513.	1.021	0.261					I *				
13	1966	10063.	13552.	0.862	0.121					I+				
14	1965	10755.	14529.	0.968	0.090					+				
15	1964	11483.	15449.	1.070	0.153					I+	.			
16	1963	12196.	16444.	0.974	0.128					. I+				
17	1962	12975.	17915.	0.988	0.115					.I+				
18	1961	13693.	18815.	0.887	-0.007					+				
19	1960	14286.	19456.	0.912	-0.083					+				
20	1959	15019.	20524.	0.971	-0.112					.+I				
21	1958	15494.	21299.	0.834	-0.238					+ I				
22	1957	16177.	22215.	1.013	-0.226					+ I.				
23	1956	16594.	24420.	0.917	-0.325					+ I				
24	1955	17882.	24489.	1.134	-0.185					+I	.			
25	1954	18791.	25746.	0.984	-0.205					+.I				
26	1952	19498.	26774.	0.933	-0.272					+ I				
27	1948	20072.	27962.	0.990	-0.280					+ .				
28	1947	20782.	28507.	1.021	-0.261					+ I .				
29	1945	21483.	29368.	1.103	-0.170					+I	.			
30	1944	22316.	30435.	1.062	-0.104					+I	.			
31	1943	23263.	31624.	1.081	-0.009					+	.			
32	1942	23976.	32583.	1.010	0.0					*				
						P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CUX	CUY	RAN	PCAN	I	I	I	I	I	I	I	I	I
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 749.3 1016.2

RAZONES PROMEDIOS Y/X = 1.359

X/Y = 0.736

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212020	EL HATO	BOGOTA D.E.	+04 23 18	+074 10 48	3150 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1942	1.2	34.4	42.8	98.6	100.4	61.1	43.9	79.9	17.5	127.3	72.5	33.6	713.2	1942
1943	21.2	34.1	83.2	101.6	122.9	101.0	76.3	112.5	66.9	65.0	64.5	96.0	947.2	1943
1944	29.5	30.5	20.0	98.0	242.0	123.5	57.5	45.0	44.5	100.0	35.0	7.0	832.5	1944
1945	2.7	0.1	15.5	188.5	170.5	45.0	65.0	42.5	26.5	41.5	79.8	18.0	701.6	1945
1946	27.0	16.7	39.0	59.2	78.5	53.1	-9.9	-9.9	15.3	25.3	82.3	-9.9	-9.9	1946
1947	28.0	27.8	21.0	32.0	43.6	98.5	109.7	77.1	97.0	142.7	24.6	8.0	710.0	1947
1948	17.1	28.6	21.3	100.1	56.7	70.8	47.5	36.4	75.5	62.9	38.8	12.4	574.1	1948
1949	13.5	10.9	42.7	79.1	98.9	86.4	76.5	47.2	-9.9	-9.9	34.9	14.7	-9.9	1949
1950	71.3	54.0	-9.9	65.2	103.7	98.1	65.2	94.8	88.9	118.6	65.7	25.2	-9.9	1950
1951	0.0	62.1	78.5	87.1	73.3	-9.9	-9.9	29.5	35.7	61.4	-9.9	15.0	-9.9	1951
1952	19.9	29.3	38.5	90.5	97.2	68.4	129.8	33.5	37.8	18.5	99.5	43.5	706.4	1952
1953	19.0	18.5	62.5	-9.9	148.5	107.0	49.5	16.5	60.0	118.0	71.0	24.0	-9.9	1953
1954	31.0	25.0	3.0	111.0	99.5	140.5	71.0	78.0	69.0	190.0	72.5	19.0	909.5	1954
1955	23.0	22.5	158.0	94.5	81.9	87.6	48.5	45.5	93.5	123.5	94.0	45.0	887.5	1955
1956	17.0	58.5	42.5	49.5	98.5	140.1	72.5	54.7	88.0	128.0	24.0	43.5	816.8	1956
1957	12.6	10.7	36.5	76.1	146.4	46.6	90.0	40.1	72.5	98.7	35.0	18.0	683.2	1957
1958	1.0	13.3	61.5	40.7	81.4	42.8	40.5	72.5	22.3	42.0	44.5	23.0	475.5	1958
1959	0.0	10.2	20.2	50.9	92.9	114.2	124.8	74.0	72.1	90.0	66.7	17.0	733.1	1959
1960	14.1	25.3	40.1	89.3	83.4	56.4	59.1	62.7	61.3	59.8	21.3	50.3	593.1	1960
1961	19.6	11.0	43.3	80.4	81.7	107.4	81.2	40.4	34.0	131.5	105.5	12.0	718.0	1961
1962	5.0	5.0	58.5	56.0	106.0	108.0	66.0	98.0	65.0	71.0	115.5	5.0	779.0	1962
1963	29.0	42.6	7.0	105.0	154.5	90.9	43.1	59.5	41.2	48.0	76.0	15.5	712.5	1963
1964	0.0	11.0	4.3	120.7	119.2	107.7	96.0	64.5	69.0	39.0	64.5	32.0	727.9	1964
1965	12.0	2.0	32.0	91.7	115.1	48.4	64.0	53.7	25.8	120.2	109.6	18.1	692.6	1965
1966	9.3	16.3	57.3	30.0	38.5	88.0	58.9	97.4	60.5	57.8	97.5	47.2	658.7	1966
1967	11.0	5.0	100.5	87.0	127.0	118.0	125.4	65.7	34.5	58.7	66.0	22.8	823.6	1967
1968	7.5	60.8	12.3	119.4	91.8	129.2	70.2	50.5	47.3	83.7	54.1	9.6	696.4	1968
1969	45.6	16.9	12.6	157.7	76.1	76.2	52.3	60.7	44.8	187.7	46.3	42.1	821.0	1969
1970	20.7	23.5	34.8	62.5	94.7	99.2	69.5	84.1	63.8	140.0	57.8	3.0	753.6	1970
1971	44.1	30.6	46.7	87.5	124.4	98.1	84.2	79.5	63.5	47.9	69.5	33.0	811.0	1971
1972	39.0	28.5	46.5	77.0	100.7	73.1	67.3	43.9	31.0	56.5	60.0	13.6	637.1	1972
1973	3.9	5.8	23.6	47.5	-9.9	90.5	56.2	119.8	120.7	61.5	95.0	49.0	-9.9	1973
1974	37.0	36.0	19.5	81.9	106.0	82.8	131.6	76.1	62.6	73.9	83.3	10.8	801.7	1974
1975														1975
1976	10.6	44.5	72.4	104.9	120.7	114.6	97.4	51.5	69.8	156.4	55.6	15.3	913.7	1976
1977	0.0	22.9	20.0	52.8	40.1	59.7	85.5	68.9	67.6	81.1	100.5	25.3	624.6	1977
1978	5.9	31.7	52.7	101.1	96.3	125.7	57.0	55.8	50.0	75.2	22.5	15.3	689.2	1978
1979	9.5	7.0	44.0	120.1	99.2	73.6	27.7	73.0	57.3	153.6	120.9	31.1	823.0	1979

Biblioteca Nacional de Colombia

*** CARACTERISTICAS PLUVICMETRICAS MENSUALES Y ANUALES DE LA PAGINA ANTERICR ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGC	SEP	OCT	NCV	DIC	TOTAL
NUMERO DE ANOS	37	37	3o	36	36	36	35	36	36	36	36	36	31
VALOR MAXIMO	71.3	62.1	158.0	18d.5	242.0	140.5	131.6	119.8	120.7	190.0	120.9	96.0	947.2
CUARTIL SUPERICR	27.5	32.5	55.0	103.2	119.9	107.8	66.0	77.5	69.4	125.4	66.6	33.3	821.0
MEDIANA	14.1	23.5	39.5	87.3	99.0	90.7	70.2	61.7	60.9	78.1	66.8	18.5	718.0
CUARTIL INFERICR	5.5	10.9	20.1	60.8	65.0	69.6	56.2	45.3	36.7	58.2	45.4	14.1	689.2
VALOR MINIMO	0.0	2.0	3.0	30.0	38.5	42.8	27.7	16.5	15.3	18.5	21.3	3.0	475.5
PROMEDIOS	18.0	24.9	42.7	86.3	98.7	89.8	74.4	63.5	57.0	90.5	67.6	25.4	740.9
											TOTAL DE LOS PROMEDIOS MENSUALES =		738.7
PORCENTAJES	2.4	3.4	5.8	11.7	13.4	12.2	10.1	8.6	7.7	12.2	9.1	3.4	

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVICSO DIC ENE FEE

INDICE DE FOURNIER = 13. INDICE DE ARREDDUS = 73.

DEV. ESTANDAR	15.5	16.3	30.9	33.1	41.8	27.5	26.5	23.4	24.1	44.6	27.8	18.1	105.6
COEF. VARIACION	0.862	0.653	0.724	0.384	0.424	0.306	0.357	0.368	0.422	0.493	0.411	0.713	0.142
COEF. ASIMETRIA	1.353	0.767	1.661	0.768	1.072	-0.041	0.660	0.429	0.331	0.536	0.037	1.858	-0.159

PROYECTO IGAC-CRSTOM *** GRUPC DE HIDRCCLIMATCLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212020	EL HATO	BOGOTA D.E.	+04 23 18	+074 10 48	3150 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	14.1	25.3	40.1	89.3	53.4	56.4	59.1	62.7	61.3	59.8	21.3	50.3	593.1	1960
1961	19.6	11.0	43.3	80.4	51.7	107.4	81.2	40.4	34.0	131.5	105.5	12.0	718.0	1961
1962	5.0	5.0	58.5	56.0	106.0	108.0	86.0	98.0	65.0	71.0	115.5	5.0	779.0	1962
1963	29.0	42.8	7.0	105.0	154.5	90.9	43.1	59.5	41.2	48.0	76.0	15.5	712.5	1963
1964	0.0	11.0	4.3	120.7	119.2	107.7	96.0	64.5	69.0	39.0	64.5	32.0	727.9	1964
1965	12.0	2.0	32.0	91.7	115.1	48.4	64.0	53.7	25.8	120.2	109.6	18.1	692.6	1965
1966	9.3	16.3	57.3	30.0	38.5	88.0	58.9	97.4	60.5	57.8	97.5	47.2	658.7	1966
1967	11.0	5.0	100.5	87.0	127.0	118.0	125.4	65.7	34.5	58.7	68.0	22.8	823.6	1967
1968	7.5	60.8	12.3	119.4	51.8	129.2	70.2	50.5	47.3	83.7	54.1	9.6	696.4	1968
1969	45.6	18.9	12.6	157.7	76.1	76.2	52.3	60.7	44.8	187.7	46.3	42.1	821.0	1969
1970	20.7	23.5	34.8	82.5	94.7	99.2	69.5	84.1	63.8	140.0	57.8	3.0	753.6	1970
1971	44.1	30.6	48.7	87.5	124.4	98.1	84.2	79.5	63.5	47.9	69.5	33.0	811.0	1971
1972	39.0	28.5	46.5	77.0	100.7	73.1	67.3	43.9	31.0	56.5	60.0	13.6	637.1	1972
1973	3.9	5.8	23.6	47.5	72.5	90.5	56.2	119.8	120.7	61.5	95.0	49.0	746.0	1973
1974	37.0	36.0	19.5	81.9	106.0	82.8	131.6	76.1	62.8	73.9	83.3	10.8	801.7	1974
1975	8.5	43.4	46.8	42.0	118.7	103.6	62.6	86.3	63.5	100.4	59.2	86.8	821.8	1975
1976	10.6	44.5	72.4	104.9	120.7	114.6	97.4	51.5	69.8	156.4	55.6	15.3	913.7	1976
1977	0.0	22.9	20.0	52.8	40.1	59.7	85.5	68.9	67.8	81.1	100.5	25.3	624.6	1977
1978	5.9	31.7	52.7	101.1	96.3	125.7	57.0	55.8	50.0	75.2	22.5	15.3	689.2	1978
1979	9.5	7.0	44.0	126.1	99.2	73.6	27.7	73.0	57.3	153.6	120.9	31.1	823.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	45.6	60.8	100.5	157.7	154.5	129.2	131.6	119.8	120.7	187.7	120.9	86.8	913.7	
CUARTIL SUPERIOR	24.8	33.8	50.7	104.9	118.9	107.8	85.8	81.8	64.4	125.8	99.0	37.5	816.0	
MEDIANA	10.8	23.2	41.7	87.3	99.9	94.5	68.4	65.1	60.9	74.5	68.8	20.4	736.9	
CUARTIL INFERIOR	6.7	9.0	19.8	59.3	62.9	74.9	57.9	54.7	43.0	58.2	56.7	12.8	690.9	
VALOR MINIMO	0.0	2.0	4.3	30.0	38.5	48.4	27.7	40.4	25.8	39.0	21.3	3.0	593.1	
PROMEDIOS	16.6	23.6	38.8	86.0	93.3	92.6	73.8	69.6	56.7	90.2	74.1	20.9	742.2	
PORCENTAJES	2.2	3.2	5.2	11.6	12.6	12.5	9.9	9.4	7.6	12.2	10.0	3.6		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 12. INDICE DE ARNOLDUS = 74.

INDICE DE IRREGULARIDAD INTERANUAL =1.33

DEV. ESTANDAR	14.5	16.3	23.8	31.9	32.8	22.9	25.5	20.1	20.5	43.0	28.8	20.3	82.1
COEF. VARIACION	0.874	0.689	0.612	0.370	0.351	0.247	0.346	0.288	0.361	0.477	0.388	0.756	0.111

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	877.	847.	811.	742.	673.	637.	607.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.960	0.554	0.708	0.240	-0.284	-0.310	0.722	0.840	1.324	0.908	-0.106	1.438	0.057

IMPRESO EN COLOMBIA POR DANARAN.O

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212024	EL VERJON	BOGOTA D.E.	+04 35 00	+074 01 00	3250 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1946	-9.9	-9.9	100.5	70.8	115.7	50.2	177.3	196.1	20.0	48.1	133.2	73.4	-9.9
1947	36.7	29.7	22.5	57.5	66.7	157.0	216.4	97.1	114.5	152.9	30.6	16.6	1038.2
1948	14.7	73.5	36.5	158.0	-9.9	154.0	120.3	104.6	59.8	118.4	106.8	35.3	-9.9
1949	22.7	50.4	143.0	87.5	163.4	114.3	155.4	103.1	76.5	111.6	137.5	52.8	1218.2
1950	107.6	78.9	158.0	82.9	230.7	141.2	168.6	96.2	105.9	79.4	118.1	54.7	1422.2
1951	26.5	106.4	140.7	-9.9	120.5	99.7	184.5	85.0	63.0	171.7	134.0	18.3	-9.9
1952	84.7	10.5	138.3	95.5	139.6	129.3	190.2	123.3	55.4	110.1	218.0	82.5	1377.4
1953	42.0	31.0	73.2	55.3	136.9	144.0	151.5	80.0	82.0	147.7	97.0	59.5	1100.1
1954	61.0	35.0	26.0	162.0	125.0	153.0	192.0	184.5	97.0	180.1	108.5	91.5	1415.6
1955	23.0	46.0	79.3	116.5	73.5	157.4	153.5	79.5	115.5	148.5	105.5	76.5	1174.7
1956	107.0	83.0	106.0	66.0	82.0	158.0	96.0	119.0	104.0	160.2	33.0	150.5	1324.7
1957	17.5	25.5	191.9	107.3	203.0	153.0	140.2	114.2	85.3	168.3	112.0	90.6	1408.8
1958	2.4	64.3	40.8	86.7	95.0	76.0	92.0	144.0	-9.9	128.5	122.5	53.3	-9.9
1959	19.0	4.0	31.9	59.4	127.8	137.1	213.2	106.6	111.3	176.2	97.9	26.5	1110.9
1960	10.0	46.3	99.0	66.5	96.5	82.5	90.5	171.5	91.5	100.0	66.0	65.5	1005.8
1961	16.5	45.0	151.8	79.0	63.0	163.5	180.5	114.5	61.5	167.5	141.5	4.5	1208.8
1962	15.7	15.1	70.5	73.5	99.0	155.5	95.5	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1963	-9.9	54.0	17.6	165.3	166.3	98.5	60.5	71.8	47.0	95.3	148.5	17.5	-9.9
1964	0.0	0.0	2.3	76.0	74.5	82.0	124.0	72.8	49.9	52.6	36.6	57.8	628.5
1965	9.5	7.0	4.6	86.0	115.5	80.6	118.3	41.3	32.9	132.1	169.0	30.2	827.0
1966	3.5	26.2	107.5	45.0	45.0	72.8	89.3	110.8	66.3	67.7	166.8	101.3	902.2
1967	26.5	7.0	149.1	104.2	131.7	156.5	91.0	188.0	47.5	67.0	144.0	107.0	1259.5
1968	2.0	99.0	17.0	163.0	54.5	127.5	189.5	60.5	73.5	95.0	162.5	28.0	1072.0
1969	102.0	8.5	7.5	177.5	88.5	94.0	130.6	115.0	69.5	176.5	90.5	37.0	1097.1
1970	61.0	54.0	47.0	49.0	73.5	95.0	119.0	85.0	134.5	276.0	164.0	5.5	1163.5
1971	48.1	60.0	65.5	126.5	146.0	104.0	119.5	89.0	76.0	87.0	68.0	48.0	1037.6
1972	120.0	36.5	113.5	161.5	121.1	115.0	102.0	62.5	35.0	102.0	98.0	2.0	1069.1
1973	5.0	0.0	19.0	64.0	92.5	89.0	106.5	113.5	150.0	111.0	82.5	173.5	1006.5
1974	46.0	49.0	224.0	60.5	111.5	42.0	67.0	49.5	37.5	134.5	105.5	15.5	942.5
1975	4.0	91.0	48.5	49.5	85.0	96.0	58.0	121.5	48.0	120.0	110.5	144.0	976.0
1976	12.5	24.0	93.5	135.0	136.5	108.0	107.0	90.0	66.5	185.0	53.0	33.0	1048.0
1977	0.0	10.5	38.5	88.0	44.5	52.5	88.0	61.5	102.5	72.0	105.0	20.0	683.0
1978	1.0	3.7	4.1	13.6	12.1	159.0	100.8	183.5	100.1	80.9	54.6	52.9	766.3
1979	19.0	17.1	69.4	167.1	-9.9	192.0	90.9	130.5	72.0	271.7	166.4	86.4	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLCUBE S POR DYNARY

ESTACION X EL VERJON MUNICIPIO DE ECOGIA C.E. PERIODO 1946 - 1979 COEF DE CORRECCION 1.000

N	AN	T /	CU	MGY	ECR	PCAN	F = −3.	−2.	−1.	0.0	+1.	+2.	+3.
1	1978	766.3	766.3	766.3	-1.455	-0.293							
2	1977	683.0	1449.3	724.6	-1.652	-0.664							
3	1976	1048.0	2497.3	832.4	-0.172	-0.657							
4	1975	976.0	3473.3	868.3	-0.512	-0.796							
5	1974	942.5	4415.8	883.2	-0.665	-0.529							
6	1973	1006.5	5422.3	903.7	-0.366	-1.001							
7	1972	1069.1	6491.4	927.3	-0.073	-1.015							
8	1971	1037.6	7529.0	941.1	-0.221	-1.056							
9	1970	1163.5	8692.5	965.8	0.372	-0.586							
10	1969	1097.1	9789.6	979.0	0.155	-0.574							
11	1968	1072.0	10861.6	987.4	-0.055	-0.586							
12	1967	1259.5	12121.1	1010.1	0.824	-0.824							
13	1966	902.2	13023.3	1001.8	-0.655	-0.593							
14	1965	827.0	13850.3	989.3	-1.213	-1.230							
15	1964	628.5	14478.8	965.3	-2.146	-1.651							
16	1961	1208.8	15687.6	980.5	0.565	-1.536							
17	1960	1005.8	16693.4	982.0	-0.371	-1.609							
18	1959	1110.9	17804.3	989.1	0.124	-1.584							
19	1957	1408.8	19213.1	1011.2	1.527	-1.286							
20	1956	1324.7	20537.8	1026.9	1.131	-1.064							
21	1955	1174.7	21712.5	1033.5	0.424	-0.981							
22	1954	1418.6	23126.1	1051.3	1.555	-0.676							
23	1953	1100.1	24228.2	1053.4	0.073	-0.662							
24	1952	1377.4	25605.6	1066.9	1.375	-0.392							
25	1950	1422.2	27027.8	1081.1	1.550	-0.080							
26	1949	1218.2	28246.0	1086.4	0.629	0.043							
27	1947	1038.2	29284.2	1084.6	-0.215	0.0							

N	AN	T /	CU	MGY	ECR	PCAN	F = −3.	−2.	−1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 27 ANOS = 1084.6
DESVIACION ESTANDAR = 212.3
COEFICIENTE DE VARIACION = 0.196

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTCA *** CALCO DE AGROCLIMATOLOGIA *** PROGRAMA CRSTCA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212024	EL VERJON	BOGOTA D.E.	+04 34 57	+074 01 11	3250 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	10.0	46.3	99.0	66.5	56.5	82.5	90.5	171.5	91.5	100.0	66.0	85.5	1005.8	1960
1961	16.5	45.0	151.8	79.0	63.0	163.5	180.5	114.5	61.5	187.5	141.5	4.5	1208.8	1961
1962	15.7	15.1	70.5	73.5	59.0	155.5	95.5	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1962
1963	-9.9	54.0	17.6	165.3	166.3	98.5	60.5	71.8	47.0	95.3	146.5	17.5	-9.9	1963
1964	0.0	0.0	2.3	76.0	74.5	82.0	124.0	72.8	49.9	52.6	36.6	57.8	628.5	1964
1965	9.5	7.0	4.6	86.0	115.5	80.6	118.3	41.3	32.9	132.1	165.0	30.2	827.0	1965
1966	3.5	26.2	107.5	45.0	45.0	72.8	89.3	110.8	66.3	67.7	166.8	101.3	902.2	1966
1967	26.5	7.0	149.1	104.2	131.7	196.5	91.0	188.0	47.5	67.0	144.0	107.0	1259.5	1967
1968	2.0	59.0	17.0	163.0	84.5	127.5	165.5	60.5	73.5	95.0	162.5	28.0	1072.0	1968
1969	102.0	8.5	7.5	177.5	68.5	94.0	130.6	115.0	69.5	176.5	90.5	37.0	1097.1	1969
1970	61.0	54.0	47.0	49.0	73.5	95.0	119.0	85.0	134.5	276.0	164.0	5.5	1163.5	1970
1971	48.1	60.0	65.5	126.5	146.0	104.0	119.5	89.0	76.0	87.0	66.0	48.0	1037.6	1971
1972	120.0	36.5	113.5	161.5	121.1	115.0	102.0	62.5	35.0	102.0	98.0	2.0	1069.1	1972
1973	5.0	0.0	19.0	64.0	92.5	89.0	106.5	113.5	150.0	111.0	82.5	173.5	1006.5	1973
1974	46.0	49.0	224.0	60.5	111.5	42.0	67.0	49.5	37.5	134.5	105.5	15.5	942.5	1974
1975	4.0	91.0	48.5	49.5	85.0	96.0	58.0	121.5	48.0	120.0	110.5	144.0	976.0	1975
1976	12.5	24.0	93.5	135.0	136.5	108.0	107.0	90.0	66.5	189.0	53.0	33.0	1048.0	1976
1977	0.0	10.5	38.5	86.0	44.5	52.5	88.0	61.5	102.5	72.0	105.0	20.0	683.0	1977
1978	1.0	3.7	4.1	13.6	12.1	159.0	100.8	183.5	100.1	80.9	84.6	52.9	766.3	1978
1979	19.0	17.1	69.4	167.1	-9.9	192.0	90.9	130.5	72.0	271.7	166.4	86.4	-9.9	1979
NUMERO DE ANOS	19	20	20	20	19	20	20	19	19	19	19	19	17	
VALOR MAXIMO	120.0	99.0	224.0	177.5	166.3	196.5	189.5	188.0	150.0	276.0	166.0	173.5	1259.5	
CUARTIL SUPERIOR	46.0	51.5	103.3	148.3	121.1	141.5	119.3	121.5	91.5	176.5	162.5	86.4	1084.5	
MEDIANA	12.5	25.1	57.0	82.5	92.5	97.3	101.4	90.0	66.5	102.0	105.5	37.0	1006.5	
CUARTIL INFERIOR	3.5	7.8	17.3	62.3	63.0	82.3	89.9	62.5	47.5	80.9	66.0	17.5	864.6	
VALOR MINIMO	0.0	0.0	2.3	13.6	12.1	42.0	58.0	41.3	32.9	52.6	36.6	2.0	628.5	
PROMEDIOS	26.4	32.7	67.5	97.5	92.5	110.3	106.4	101.7	71.7	127.3	112.3	55.2	982.0	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1001.5	
PORCENTAJES	2.6	3.3	6.7	9.7	9.2	11.0	10.6	10.2	7.2	12.7	11.2	5.5		

TRIMESTRE MAS LLUVIOSO JUN JUL AGO **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 55.

DEV. ESTANDAR	34.7	29.1	60.0	49.2	39.2	42.8	33.5	43.7	32.2	65.1	44.6	48.8	175.3
COEF. VARIACION	1.312	0.891	0.890	0.505	0.424	0.388	0.315	0.429	0.449	0.512	0.397	0.884	0.179
COEF. ASIMETRIA	1.775	0.687	1.022	0.327	-0.089	0.664	1.106	0.708	1.092	1.255	-0.129	1.081	-0.563

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212554	INST.GEG.ANDES	BOGOTA D.E.	+04 38 00	+074 04 00	2600 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1942	42.7	106.6	51.3	90.2	87.5	59.8	18.5	67.0	37.9	205.6	104.1	126.7	997.9
1943	108.1	80.9	101.0	141.5	97.2	100.5	77.3	77.5	63.5	107.7	85.3	161.6	1202.1
1944	67.5	29.5	82.7	149.1	287.1	110.8	35.3	25.4	59.0	256.5	109.2	112.1	1324.2
1945	4.3	66.4	27.2	192.6	251.0	22.6	24.4	21.9	14.8	128.4	211.1	79.8	1044.7
1946	89.8	34.6	46.2	169.7	56.5	27.1	43.0	46.6	1.5	74.9	101.6	116.8	808.3
1947	65.6	32.5	60.7	30.0	31.3	95.0	99.7	89.7	151.0	151.8	46.9	39.5	893.7
1948	11.2	39.5	34.4	251.7	54.4	37.9	40.8	32.3	64.3	94.7	155.1	48.5	864.8
1949	37.4	40.3	101.1	72.9	119.0	66.8	47.6	46.8	47.6	175.1	80.8	25.7	861.1
1950	95.0	154.7	118.7	230.0	197.8	98.1	54.7	48.9	82.8	238.1	103.1	199.1	1621.0
1951	57.3	76.9	104.4	83.0	95.3	30.5	33.4	24.5	17.7	137.4	253.4	42.0	955.8
1952	94.0	88.0	118.4	149.2	147.2	51.3	78.6	22.3	16.8	88.3	310.1	141.6	1305.8
1953	73.5	16.2	61.4	49.1	105.0	67.4	42.7	14.5	126.5	227.9	159.7	15.8	959.7
1954	62.3	98.4	97.1	93.9	122.4	111.2	66.8	80.5	50.2	170.2	193.0	159.9	1305.9
1955	17.4	66.5	45.6	121.8	75.5	128.9	70.7	13.3	90.3	239.4	178.4	148.9	1196.7
1956	51.1	113.0	186.5	45.3	45.0	92.3	27.5	32.7	43.7	236.5	56.3	117.3	1047.2
1957	85.4	27.4	114.5	88.3	138.5	47.3	28.3	19.2	48.1	182.9	118.1	47.0	945.0
1958	11.9	47.7	38.4	41.1	56.3	47.3	18.8	55.2	46.4	108.1	236.8	103.0	811.0
1959	4.5	51.8	14.4	95.4	124.7	61.7	95.4	50.0	46.6	102.4	150.0	53.0	849.9
1960	11.6	44.6	71.0	124.7	62.5	19.6	88.9	71.7	49.6	129.9	56.7	171.4	902.2
1961	45.5	20.2	125.8	81.4	25.6	96.1	48.2	30.2	31.1	151.6	129.4	18.3	803.4
1962	106.9	38.5	86.7	127.8	52.4	103.5	43.4	88.0	22.0	115.2	157.5	129.9	1071.8
1963	58.8	189.7	58.9	93.3	100.7	90.5	25.1	27.0	37.5	100.9	173.3	24.2	939.9
1964	39.9	18.8	8.0	103.7	91.6	76.1	56.2	19.5	32.4	48.9	67.9	59.4	622.4
1965	9.2	32.0	12.3	210.5	148.1	19.3	36.8	26.6	11.7	162.8	164.3	41.8	875.4
1966	3.9	71.9	77.1	55.6	83.3	94.2	35.5	52.1	32.7	128.5	188.4	218.1	1041.3
1967	24.0	36.5	62.6	83.2	99.8	87.0	52.4	30.7	41.1	83.5	212.2	44.2	857.2
1968	14.5	100.1	49.4	264.2	58.7	109.2	39.4	15.7	50.5	151.0	192.9	21.3	1066.9
1969	91.1	50.3	5.2	180.9	84.8	33.0	19.7	42.9	44.1	221.3	74.8	69.1	937.2

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION A 1751.GEL.ANDES MUNICIPIO DE ECCETA C.E. PERIODO 1942 - 1969 COEF DE CORRECCION 1.000

N	AÑO	T A	CO	MCY	ECR	ECAN	F = -3.	-2.	-1.	0.C	+1.	+2.	+3.
1	1965	538.2	537.2	537.2	-C.333	-C.C67				+			
2	1966	1064.5	2004.1	1002.C	C.3C4	-C.CC4				+	.		
3	1967	551.2	2861.3	553.6	-C.765	-C.15C				+			
4	1966	1041.3	3562.6	575.6	C.1EC	-C.113				+	.		
5	1965	675.4	4776.0	555.6	-C.621	-C.241				+			
6	1964	622.4	5400.4	500.1	-1.C43	-C.C21			.	+			
7	1963	535.5	6040.3	505.6	-C.21C	-C.CC5				+	.		
8	1962	1071.6	7412.1	526.5	C.327	-C.C1E				+			
9	1961	603.4	8216.5	512.6	-C.565	-C.C17				+			
10	1960	502.2	9117.7	511.6	-C.452	-C.C15				+	.		
11	1955	695.5	9567.6	506.1	-C.744	-1.C72				+	.		
12	1956	611.C	11778.6	656.2	-C.432	-1.265			+	.			
13	1957	545.C	11723.6	501.6	-C.265	-1.322			+		.		
14	1956	1047.2	12770.6	512.2	C.2CC	-1.28C			+				
15	1955	1156.7	13967.5	531.2	C.531	-1.CEE			+			.	
16	1954	1305.5	15273.4	554.6	1.456	-C.78E				+		.	
17	1953	556.7	16233.1	554.5	-C.214	-C.C36				+	.		
18	1952	1305.6	17556.5	574.4	1.456	-C.531				+		.	
19	1951	561.6	18454.7	573.4	-C.233	-C.C75				+	.		
20	1950	1621.C	20115.7	1005.6	2.5EC	C.C3E					+		.
21	1949	661.1	20576.6	556.5	-C.65C	-C.107				.	+		
22	1948	664.6	21641.6	552.6	-C.472	-C.246				.	+		
23	1947	653.7	22745.4	566.5	-C.533	-C.256				.	+		
24	1946	606.2	23545.6	561.C	-C.545	-C.551				.	+		
25	1945	1044.7	24566.6	563.6	C.157	-C.61C					+		
26	1944	1324.2	25512.6	556.6	1.547	-C.191					+		
27	1943	1202.1	27114.6	1004.2	6.557	C.CC6					+		
28	1942	553.5	28112.6	1004.C	-C.C3C	C.C					+		

N	AÑO	T A	CO	MCY	ECR	ECAN	F = -3.	-2.	-1.	0.C	+1.	+2.	+3.

PROMEDIO DE LOS 28 AÑOS = 1004.C

DESVIACION ESTANDAR = 267.C

COEFICIENTE DE VARIACION = C.2CE

****
* PRUEBAS DE SIMPLE RASA *
****

PROYECTO ICAC-CESTCA *** CALCULO DE AGROCLIMATOLOGIA *** PROGRAMA CESTCA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212554	EST.GEO.ANDES	BOGOTA D.E.	+04 37 51	+074 03 59	2620 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	A
1956	51.1	113.0	186.5	45.3	45.0	92.3	27.5	32.7	43.7	236.5	56.3	117.3	1047.2	19
1957	85.4	27.4	114.5	81.3	138.5	47.3	28.3	19.2	48.1	182.9	116.1	47.0	945.0	19
1958	11.9	47.7	38.4	41.1	56.3	47.3	18.8	55.2	46.4	108.1	236.8	103.0	811.0	19
1959	4.5	51.8	14.4	95.4	124.7	61.7	95.4	50.0	46.6	102.4	150.0	53.0	649.5	19
1960	11.6	44.6	71.0	124.7	62.5	19.6	88.9	71.7	49.6	129.9	56.7	171.4	902.2	19
1961	45.5	20.2	125.8	81.4	25.6	96.1	48.2	30.2	31.1	151.6	129.4	18.3	803.4	19
1962	106.9	30.5	86.7	127.8	52.4	103.5	43.4	88.0	22.0	115.2	157.5	129.9	1071.8	19
1963	58.9	189.7	98.9	93.3	100.7	50.5	25.1	27.0	37.5	100.9	173.3	24.2	939.9	19
1964	39.9	18.8	8.0	103.7	91.6	76.1	56.2	19.5	32.4	48.9	67.9	59.4	622.4	19
1965	9.2	32.0	115.3	210.5	148.1	19.3	36.8	26.6	11.7	162.8	164.3	41.8	875.4	19
1966	3.9	71.9	77.1	55.8	83.3	94.2	35.5	52.1	32.7	128.5	188.4	218.1	1041.3	19
1967	24.0	36.5	62.6	83.2	99.8	87.0	52.4	30.7	41.1	83.5	212.2	44.2	857.2	19
1968	14.5	110.1	49.4	204.2	54.7	109.2	39.4	15.7	50.5	151.0	192.9	21.3	1066.9	19
1969	91.1	111.3	5.2	180.9	84.8	33.0	19.7	42.9	44.1	221.3	74.8	89.1	937.2	19
NUMERO DE ANOS	14	14	14	14	14	14	14	14	14	14	14	14	14	
VALOR MAXIMO	106.9	189.7	186.5	264.2	148.1	109.2	95.4	88.0	50.5	236.5	236.8	218.1	1071.8	
CUARTIL SUPERIOR	58.8	71.9	96.7	127.8	100.7	94.2	52.4	52.1	46.6	162.8	168.4	117.3	1041.3	
MEDIANA	31.9	46.1	60.7	94.3	84.0	68.9	38.1	31.7	42.4	129.2	153.8	56.2	919.7	
CUARTIL INFERIOR	11.6	32.0	14.4	81.4	56.3	47.3	27.5	26.6	32.4	102.4	74.8	41.8	649.5	
VALOR MINIMO	3.9	18.8	5.2	41.1	25.6	19.3	18.8	15.7	11.7	48.9	56.3	18.3	622.4	
PROMEDIOS	39.9	60.2	65.1	114.0	83.7	66.9	44.0	40.1	38.4	137.4	141.3	81.3	912.2	
											TOTAL DE LOS PROMEDIOS MENSUALES =		912.2	
PORCENTAJES	4.4	6.6	7.1	12.5	9.2	7.3	4.8	4.4	4.2	15.1	15.5	8.9		
DEV. ESTANDAR	34.7	46.5	51.7	64.2	36.3	31.1	23.4	21.2	11.3	51.7	59.3	60.3	124.4	
COEF. VARIACION	0.871	0.772	0.794	0.564	0.434	0.465	0.533	0.528	0.295	0.376	0.420	0.742	0.136	
COEF. ASIMETRIA	0.758	1.934	0.942	1.215	0.336	-0.234	1.274	1.024	-1.153	0.456	-0.175	1.076	-0.685	

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 22. INDICE DE ARNOLDUS = 93.

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212061	JARDIN BOTANICO	BOGOTA D.E.	+04 40 00	+074 06 00	2586 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	75.6	68.4	24.6	-9.9
1958	21.6	34.2	48.2	55.1	40.2	18.6	15.0	66.6	33.0	136.0	127.7	100.5	738.7
1959	-9.9	18.9	48.4	76.9	94.1	83.9	70.0	41.4	36.5	61.9	84.4	54.1	-9.9
1960	20.2	24.4	76.2	58.3	51.5	21.3	44.4	92.6	51.2	106.3	29.3	96.5	672.2
1961	45.8	3.4	81.5	83.2	27.8	84.1	37.9	17.8	37.3	180.1	141.8	34.9	775.6
1962	42.6	18.0	42.1	60.2	92.2	102.2	26.7	64.5	27.5	66.7	129.8	43.6	736.1
1963	36.0	78.5	79.6	102.3	111.1	47.2	26.5	22.0	37.7	87.1	137.2	16.3	781.5
1964	21.0	12.3	9.0	122.4	86.6	26.5	68.2	54.1	20.4	72.7	45.7	63.1	604.4
1965	7.2	28.1	15.8	197.3	96.6	15.1	23.6	33.9	11.8	110.9	124.1	33.1	697.5
1966	10.0	37.1	87.2	39.7	93.4	82.7	26.4	45.7	29.7	109.3	174.6	98.9	834.7
1967	26.0	54.0	43.9	79.9	87.3	91.0	46.1	20.3	42.0	85.1	106.5	23.5	705.6
1968	4.0	76.6	59.9	122.2	53.0	112.2	20.1	21.3	86.4	160.2	126.4	31.0	873.3
1969	43.1	29.0	8.9	150.3	60.0	67.6	13.2	26.5	55.0	194.7	59.8	55.3	763.4
1970	16.0	5.3	1.6	4.0	55.2	11.8	7.4	22.0	71.2	209.0	112.4	15.9	531.8
1971	55.3	78.4	106.3	172.3	105.3	52.8	32.9	60.7	87.5	89.1	86.5	100.1	1027.2
1972	76.2	53.0	63.0	133.7	83.6	69.8	26.0	34.6	9.0	-9.9	-9.9	31.0	-9.9
1973	14.9	13.0	76.2	40.7	47.6	57.1	43.7	61.2	124.1	145.5	150.4	130.1	904.5
1974	58.1	103.4	45.4	78.3	87.3	47.7	11.5	42.4	107.0	112.6	149.0	30.6	873.3
1975	3.0	44.0	88.0	118.9	-9.9	36.9	48.6	55.9	62.4	92.9	67.6	133.6	-9.9
1976	33.0	82.5	72.3	94.1	80.2	59.7	5.1	5.5	26.5	107.6	94.2	27.0	687.7
1977	8.6	16.8	87.8	71.0	37.1	16.8	47.2	46.1	104.0	105.6	83.4	38.1	662.5
1978	0.0	40.4	94.5	140.2	103.2	45.8	42.6	12.9	83.5	80.5	70.1	22.0	739.7
1979	44.2	29.0	112.1	160.7	147.6	128.0	58.3	91.2	86.8	131.5	244.6	90.3	1324.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

FFCYECTC IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANEGRAFICO

ESTACION X CES METEC NACIONAL MUNICIPIO DE ECCCIA PERIODO 1957 - 1977 CCEF DE CORRECCION 1.000

ESTACION Y JARDIN BOTANICO MUNICIPIO DE ECCOTA D.E. PERIODO 1957 - 1977 CCEF DE CORRECCION 1.000

N	AN	CLX	CUY	RAN	ECAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1977	617.	665.	1.046	0.033					+ .				
2	1976	1673.	1350.	1.046	0.077					+				
3	1973	2702.	2255.	0.957	0.026				.	+				
4	1971	3786.	3282.	0.890	-0.125				.	+I				
5	1970	4741.	3614.	1.506	0.236					I +				.
6	1969	5660.	4577.	1.035	0.271					I +.				
7	1968	6741.	5450.	1.023	0.256					I +				
8	1967	7476.	6150.	0.875	0.184				.	I+				
9	1966	8364.	6991.	0.893	0.066				.	+				
10	1965	9247.	7686.	1.065	0.126					I+ .				
11	1964	9866.	8293.	0.890	0.037				.	+				
12	1963	10737.	9074.	0.916	-0.060				.	+				
13	1962	11761.	9610.	1.194	0.140					I+		.		
14	1961	12703.	10566.	1.000	0.140					.+				
15	1960	13514.	11256.	1.016	0.154					I+				
16	1958	14264.	11997.	0.844	0.0				.	+				
						F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CLX	CUY	RAN	ECAN	I	I	I	I	I	I	I	I	I
						F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = ESC.S 745.8

RAZONES PROMEDIOS Y/X = 0.842

X/Y = 1.188

****
* PRUEBAS DE CCELE NASA *
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PROYECTO IGAC-CRSTCN *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CRSTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2120el	JARDIN BOTANICO	BOGOTA D.E.	+04 40 14	+074 0E 19	2555 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	75.6	66.4	24.6	-9.9	1957
1958	21.6	34.2	48.2	95.1	40.2	18.6	15.0	66.6	33.0	138.0	127.7	100.5	738.7	1958
1959	-9.9	18.9	48.4	76.9	94.1	83.9	70.0	41.4	36.5	61.9	64.4	54.1	-9.9	1959
1960	20.2	24.4	76.2	58.3	51.5	21.3	44.4	52.6	51.2	106.3	25.3	96.5	672.2	1960
1961	45.8	3.4	81.5	83.2	27.8	84.1	37.9	17.8	37.3	180.1	141.8	34.9	775.6	1961
1962	42.6	18.0	42.1	60.2	92.2	102.2	26.7	64.5	27.5	86.7	129.8	43.6	736.1	1962
1963	30.0	78.5	79.6	102.3	111.1	47.2	26.5	22.0	37.7	87.1	137.2	16.3	781.5	1963
1964	21.0	12.3	9.0	122.4	66.6	28.9	68.2	54.1	20.4	72.7	45.7	63.1	604.4	1964
1965	7.2	28.1	15.8	197.3	96.6	15.1	23.6	33.9	11.8	110.9	124.1	33.1	697.5	1965
1966	10.0	37.1	87.2	39.7	93.4	82.7	26.4	45.7	29.7	109.3	174.6	98.9	834.7	1966
1967	26.0	54.0	43.9	79.9	87.3	91.0	46.1	20.3	42.0	85.1	106.5	23.5	705.6	1967
1968	4.0	70.0	59.9	122.2	83.0	112.2	20.1	21.3	86.4	160.2	126.4	31.0	873.3	1968
1969	43.1	29.0	8.9	150.3	60.0	67.6	13.2	26.5	55.0	194.7	59.8	55.3	763.4	1969
1970														1970
1971	55.3	78.4	106.3	172.3	105.3	52.8	32.9	60.7	87.5	89.1	86.5	100.1	1027.2	1971
1972	76.2	53.0	63.0	133.7	83.6	89.8	26.0	34.6	9.0	-9.9	-9.9	31.0	-9.9	1972
1973	14.9	13.0	76.2	40.7	47.6	57.1	43.7	61.2	124.1	145.5	150.4	130.1	904.5	1973
1974	58.1	103.4	45.4	78.3	87.3	47.7	11.5	42.4	107.0	112.6	149.0	30.6	873.3	1974
1975	3.0	44.0	88.0	118.9	-9.9	36.9	48.6	55.9	62.4	92.9	67.6	133.6	-9.9	1975
1976	33.0	82.5	72.3	94.1	80.2	59.7	5.1	5.5	26.5	107.6	94.2	27.0	687.7	1976
1977	8.6	16.6	87.8	71.0	37.1	16.8	47.2	46.1	104.0	105.6	63.4	38.1	662.5	1977
1978	0.0	40.4	94.5	140.2	103.2	49.8	42.6	12.9	83.5	80.5	70.1	22.0	739.7	1978
1979	44.2	29.0	112.1	160.7	147.6	128.0	58.3	91.2	86.8	131.5	244.6	90.3	1324.3	1979

NUMERO DE ANOS	20	21	21	21	20	21	21	21	21	21	21	22	18
VALOR MAXIMO	76.2	103.4	112.1	197.3	147.6	128.0	70.0	92.6	124.1	194.7	244.6	133.6	1324.3
CUARTIL SUPERIOR	43.6	65.3	87.5	136.9	95.3	86.9	46.6	60.9	86.6	134.8	135.5	96.5	873.3
MEDIANA	23.8	34.2	72.3	95.1	86.9	57.1	32.9	42.4	42.0	106.3	106.5	40.8	751.5
CUARTIL INFERIOR	9.3	18.4	44.6	73.9	52.3	32.9	21.8	21.6	28.6	85.9	69.2	30.6	697.5
VALOR MINIMO	0.0	3.4	8.9	39.7	27.8	15.1	5.1	5.5	9.0	61.9	25.3	16.3	604.4
PROMEDIOS	28.5	41.7	64.1	104.7	79.3	61.6	35.0	43.7	55.2	111.1	109.6	58.1	800.1
											TOTAL DE LOS PROMEDIOS MENSUALES =		792.5
PORCENTAJES	3.6	5.3	8.1	13.2	10.0	7.8	4.4	5.5	7.0	14.0	13.8	7.3	

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 76.

DEV. ESTANDAR	21.2	27.8	29.8	43.4	29.7	33.0	18.1	24.0	33.8	35.6	45.4	37.2	166.0
COEF. VARIACION	0.742	0.666	0.465	0.414	0.375	0.535	0.517	0.550	0.612	0.320	0.451	0.640	0.208
COEF. ASIMETRIA	0.529	0.752	-0.451	0.428	0.105	0.272	0.330	0.461	0.553	0.964	0.817	0.799	2.043

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212059	LA CANDELARIA ELTUNAL	BOGOTA	+04 34 00	+074 09 00	2599 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	CIC	TCTAL
1957	-9.9	-9.9	-9.9	-9.9	75.4	48.2	31.9	10.0	46.8	-9.9	13.4	9.5	-9.9
1958	6.8	10.3	62.4	50.7	28.1	15.6	14.3	40.6	11.3	62.2	88.7	20.9	411.9
1959	-9.9	2.0	7.0	57.3	84.4	49.2	68.7	35.4	27.2	68.9	40.3	15.9	-9.9
1960	5.3	18.5	33.0	52.9	20.2	21.7	36.5	31.4	35.9	51.9	9.5	54.1	370.9
1961	43.0	3.9	54.6	69.6	28.6	61.4	33.9	24.0	19.9	113.9	117.5	8.9	579.2
1962													
1963	9.9	54.5	12.6	60.7	111.7	46.4	16.1	36.9	21.2	56.9	117.6	10.5	555.0
1964	6.2	5.7	2.9	107.4	56.5	62.4	83.2	27.0	34.0	74.6	32.7	34.2	525.8
1965	9.0	8.2	12.9	129.9	112.8	18.0	38.6	24.7	10.3	101.1	96.7	28.9	591.1
1966	0.3	17.8	21.9	20.7	42.3	64.4	29.0	43.4	43.9	40.0	-9.9	79.3	-9.9
1967	20.0	35.8	25.5	84.2	114.0	88.9	51.0	28.8	28.2	72.1	99.7	27.5	675.7
1968	2.6	37.0	21.0	99.0	18.9	75.2	34.9	25.5	42.4	89.6	92.3	8.4	546.8
1969	17.2	41.7	2.2	107.4	51.8	58.7	11.4	48.9	22.4	144.9	30.3	82.7	619.6
1970	12.2	31.7	15.2	50.2	102.6	7.4	31.4	32.6	-9.9	-9.9	74.6	-9.9	-9.9
1971	13.4	25.8	87.6	64.2	84.0	63.5	42.8	40.6	42.0	33.5	60.8	28.0	586.2
1972	39.0	18.8	41.5	130.4	75.3	36.6	52.7	21.4	5.0	59.8	80.8	7.6	568.9
1973	4.0	1.5	18.9	30.6	47.6	41.4	23.9	83.7	92.2	63.2	48.1	61.4	516.5
1974	13.2	59.3	36.3	105.6	70.9	28.3	13.1	14.1	52.5	73.8	60.6	43.9	571.6
1975	6.0	22.1	65.2	65.3	93.5	36.2	23.6	51.0	64.3	98.6	66.8	88.8	681.4
1976	19.1	11.0	29.6	70.6	81.7	41.4	11.2	11.4	45.1	90.3	29.9	25.4	466.7
1977	8.7	4.8	40.6	39.9	11.8	21.3	41.5	21.1	65.8	61.8	66.5	25.1	408.9
1978	0.0	9.3	30.2	89.8	83.4	64.6	40.1	19.6	57.5	56.7	31.2	20.0	502.4
1979	21.7	9.0	33.5	58.8	62.9	88.3	45.9	83.7	43.2	119.4	126.0	12.2	704.6

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARIA

ESTACION X LA CANCELARIA ALTURA.MUNICIPIO DE ECUCTA PERIODO 1957 - 1979 COEF DE CORRECCION 1.000

N	AÑO	T A	CO	MCY	ECR	FCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1979	704.6	704.6	704.6	1.000	0.283	
2	1978	902.4	1207.6	803.5	-0.455	0.158	
3	1977	401.5	1615.5	538.6	-1.500	-0.057	
4	1976	466.7	2082.2	520.6	-0.881	-0.207	
5	1975	881.4	2764.0	552.8	1.416	0.034	
6	1974	571.4	3335.4	555.9	0.241	0.075	
7	1973	516.5	3852.1	550.3	-0.348	0.016	
8	1972	568.5	4421.6	552.8	0.212	0.052	
9	1971	585.2	5007.2	556.4	0.357	0.115	
10	1965	819.4	5826.6	582.7	0.755	0.248	
11	1968	544.6	6371.2	561.2	-0.624	0.244	
12	1967	675.7	6045.3	570.6	1.355	0.474	
13	1965	551.1	7446.4	572.3	0.456	0.551	
14	1964	525.6	7566.2	565.0	-0.245	0.005	
15	1963	556.0	8521.2	566.1	0.083	0.015	
16	1961	575.2	9100.4	568.8	0.322	0.074	
17	1960	376.5	9471.3	557.1	-1.500	0.280	
18	1958	411.5	9883.2	549.1	-1.488	0.0	

N	AÑO	T A	CO	MCY	ECR	FCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 18 AÑOS = 549.1
DESVIACION ESTANDAR = 53.8
COEFICIENTE DE VARIACION = 0.170

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO MAC-CRETA *** CALCO DE PRECIPITACION *** PROGRAMA CRETA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212059	LA CANDELARIA ELTUNAL	BOGOTA	+04 34 44	+074 05 21	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	-9.9	-9.9	-9.9	-9.9	75.4	48.2	31.9	10.0	46.8	-9.9	13.4	9.5	-9.9	1957
1958	6.8	10.3	62.4	50.7	28.1	15.6	19.3	40.6	11.3	62.2	88.7	20.9	411.9	1958
1959	-9.9	2.0	7.0	57.3	84.4	49.2	66.7	35.4	27.2	68.9	40.3	15.9	-9.9	1959
1960														1960
1961	43.0	3.9	54.6	69.6	28.6	61.4	36.9	24.0	19.9	113.9	117.5	8.9	579.2	1961
1962														1962
1963	9.9	54.5	12.6	60.7	111.7	46.4	16.1	36.9	21.2	56.9	117.6	10.5	555.0	1963
1964	6.2	5.7	2.9	107.4	56.5	62.4	83.2	27.0	33.0	74.6	32.7	34.2	525.8	1964
1965	9.0	8.2	12.9	129.9	112.8	18.0	38.6	24.7	10.3	101.1	96.7	28.9	591.1	1965
1966	0.3	17.8	21.9	20.7	42.3	64.4	29.0	43.4	43.9	40.0	-9.9	79.3	-9.9	1966
1967	20.0	35.8	25.5	84.2	114.0	88.9	51.0	28.8	28.2	72.1	99.7	27.5	675.7	1967
1968	2.8	37.0	21.0	99.0	18.9	75.4	34.9	25.5	42.4	89.6	92.3	8.4	546.8	1968
1969	17.2	41.7	2.2	107.4	81.8	53.7	11.4	48.9	22.4	144.9	30.3	82.7	619.6	1969
1970	12.2	31.7	15.2	50.2	102.6	7.4	31.4	32.6	-9.9	-9.9	74.6	-9.9	-9.9	1970
1971	13.4	25.8	87.6	64.2	84.0	54.5	42.8	40.6	42.0	33.5	60.8	28.0	586.2	1971
1972	39.0	18.8	41.5	130.4	75.3	36.6	52.7	21.4	5.0	59.8	80.8	7.6	568.9	1972
1973	4.0	1.5	18.9	30.6	47.6	41.4	23.9	83.7	92.2	63.2	48.1	61.4	516.5	1973
1974	13.2	59.3	36.3	105.6	70.9	28.3	13.1	14.1	52.5	73.8	60.6	43.9	571.6	1974
1975	6.0	22.1	65.2	65.3	93.5	36.2	23.6	51.0	64.3	98.6	66.8	88.8	681.4	1975
1976	19.1	11.0	29.6	70.6	81.7	41.4	11.2	11.4	45.1	90.3	29.9	25.4	466.7	1976
1977	8.7	4.8	40.6	39.9	11.8	21.3	41.5	21.1	65.8	61.8	66.5	25.1	408.9	1977
1978	0.0	9.3	30.2	89.8	83.4	64.6	40.1	19.6	57.5	56.7	31.2	20.0	502.4	1978
1979	21.7	9.0	33.5	58.8	62.9	88.3	45.9	83.7	43.2	119.4	126.0	12.2	704.6	1979
NUMERO DE ANOS	19	20	20	20	21	21	21	21	20	19	20	20	17	
VALOR MAXIMO	43.0	59.3	87.6	130.4	114.0	88.9	83.2	83.7	92.2	144.9	126.0	88.8	704.6	
CUARTIL SUPERIOR	19.1	33.7	41.0	102.3	88.9	63.9	44.3	42.0	49.6	98.6	94.5	39.0	605.3	
MEDIANA	9.9	14.4	27.5	67.4	75.3	48.2	33.9	28.8	42.2	72.1	66.6	25.2	568.9	
CUARTIL INFERIOR	6.0	6.9	14.1	54.0	44.9	32.2	19.8	21.2	21.8	59.8	36.5	11.3	509.4	
VALOR MINIMO	0.0	1.5	2.2	20.7	11.8	7.4	11.2	10.0	5.0	33.5	13.4	7.6	408.9	
PROMEDIOS	13.3	20.5	31.1	74.6	68.5	48.4	35.2	34.5	38.7	78.0	68.7	32.0	559.5	
												TOTAL DE LOS PROMEDIOS MENSUALES =	543.5	
PORCENTAJES	2.4	3.8	5.7	13.7	12.6	8.9	6.5	6.3	7.1	14.3	12.6	5.9		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO ENE FEB MAR

INDICE DE FOURNIER = 11. INDICE DE APARCLOUS = 88.

DEV. ESTANDAR	11.7	17.5	22.5	31.1	30.9	22.8	18.7	20.0	21.6	28.1	33.3	25.9	84.7
COEF. VARIACION	0.879	0.854	0.724	0.417	0.452	0.470	0.531	0.579	0.558	0.361	0.484	0.811	0.151
COEF. ASIMETRIA	1.432	0.926	0.952	0.263	-0.253	0.005	0.863	1.386	0.574	0.730	0.124	1.248	-0.121

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2120559	LA CANDELARIA ELTUNAL	BOGOTA	+04 34 44	+074 09 21	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	6.8	23.7	42.3	87.8	25.9	27.8	46.8	40.6	46.0	66.5	12.2	69.3	475.7	1960
1961	43.0	3.9	54.6	69.6	28.6	61.4	33.9	24.0	19.9	113.9	117.5	8.9	579.2	1961
1962	7.0	17.7	34.8	83.6	71.0	63.9	28.1	42.2	22.5	82.0	65.1	31.7	549.6	1962
1963	9.9	34.5	12.6	60.7	111.7	46.4	16.1	36.9	21.2	56.9	117.6	10.5	555.0	1963
1964	6.2	5.7	2.9	107.4	56.5	62.4	83.2	27.0	33.0	74.6	32.7	34.2	525.8	1964
1965	9.0	8.2	12.9	129.9	112.8	18.0	38.6	24.7	10.3	101.1	96.7	28.9	591.1	1965
1966	0.3	17.8	21.9	20.7	42.3	64.4	29.0	43.4	43.9	40.0	68.7	79.3	471.7	1966
1967	20.0	39.8	25.5	84.2	114.0	88.9	51.0	28.8	28.2	72.1	99.7	27.5	675.7	1967
1968	2.6	37.0	21.0	99.0	18.9	75.2	34.9	25.5	42.4	89.6	92.3	8.4	546.8	1968
1969	17.2	41.7	2.2	107.4	51.8	58.7	11.4	48.9	22.4	144.9	30.3	82.7	619.6	1969
1970	12.2	31.7	15.2	50.2	102.6	7.4	31.4	32.6	50.4	83.3	74.6	8.4	500.0	1970
1971	13.4	25.8	87.6	64.2	84.0	63.5	42.8	40.6	42.0	33.5	60.8	28.0	586.2	1971
1972	39.0	18.8	41.5	130.4	75.3	36.6	52.7	21.4	5.0	59.8	80.8	7.6	568.9	1972
1973	4.0	1.5	18.9	30.6	47.6	41.4	23.9	83.7	92.2	63.2	48.1	61.4	516.5	1973
1974	13.2	59.3	36.3	105.6	70.9	28.3	13.1	14.1	52.5	73.8	60.6	43.9	571.6	1974
1975	6.0	22.1	65.2	65.3	93.5	30.2	23.6	51.0	64.3	98.6	66.8	88.8	681.4	1975
1976	19.1	11.0	29.6	70.6	81.7	41.4	11.2	11.4	45.1	90.3	29.9	25.4	466.7	1976
1977	8.7	4.8	40.6	39.9	11.8	21.3	41.5	21.1	65.8	61.8	66.5	25.1	408.9	1977
1978	0.0	9.3	30.2	89.8	83.4	64.6	40.1	19.6	57.5	56.7	31.2	20.0	502.4	1978
1979	21.7	9.0	33.5	98.8	62.9	88.3	45.9	83.7	43.2	119.4	126.0	12.2	704.6	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	43.0	59.3	87.6	130.4	114.0	88.9	83.2	83.7	92.2	144.9	126.0	88.8	704.6	
CUARTIL SUPERIOR	18.1	33.7	41.0	102.3	88.8	64.1	44.3	42.8	51.4	94.4	94.5	52.6	588.6	
MEDIANA	9.4	18.3	29.9	70.1	70.9	52.5	34.4	30.7	42.8	74.2	66.6	27.8	552.3	
CUARTIL INFERIOR	6.1	8.6	17.0	59.7	44.9	32.2	23.7	22.7	22.4	60.8	40.4	11.3	501.2	
VALOR MINIMO	0.0	1.5	2.2	20.7	11.8	7.4	11.2	11.4	5.0	33.5	12.2	7.6	408.9	
PROMEDIOS	13.0	22.0	31.5	76.8	67.4	49.8	35.0	36.1	40.4	79.1	68.9	35.1	554.9	
PORCENTAJES	2.3	4.0	5.7	13.8	12.1	9.0	6.3	6.5	7.3	14.3	12.4	6.3		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO ENE FEB MAR

INDICE DE FOURNIER = 11. INDICE DE ARNOLDUS = 56.

INDICE DE IRREGULARIDAD INTERANUAL =1.43

DEV. ESTANDAR	11.4	16.8	20.8	30.4	31.6	22.9	17.2	19.7	20.9	27.2	32.4	26.8	76.4
COEF. VARIACION	0.883	0.765	0.660	0.396	0.470	0.459	0.491	0.547	0.518	0.344	0.471	0.763	0.138

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	681.	653.	619.	555.	490.	457.	429.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.511	0.852	1.049	0.084	-0.161	-0.045	0.910	1.374	0.487	0.631	0.122	0.906	0.295

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212066	LA VIEJA	BOGOTA D.E.	+04 39 00	+074 03 00	2720 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1958	-9.9	-9.9	33.2	59.8	73.7	49.6	23.7	67.9	26.6	-9.9	231.8	130.5	-9.9
1959	4.2	63.7	38.0	80.0	81.1	44.5	93.5	53.8	50.9	94.7	143.7	52.1	800.2
1960	46.6	48.0	81.2	141.6	71.2	23.5	77.3	104.0	53.1	125.1	76.8	144.0	992.4
1961	43.4	43.2	185.8	-9.9	-9.9	64.0	44.7	33.2	36.6	175.5	123.5	24.4	-9.9
1962	98.5	45.8	107.8	115.0	98.8	66.2	32.1	67.7	31.8	188.4	137.2	133.8	1143.1
1963	74.0	149.5	97.1	247.0	107.2	51.9	29.7	29.8	26.3	93.4	182.1	25.0	1113.0
1964	29.4	15.5	1.9	143.4	123.6	110.4	76.9	24.8	35.8	76.4	117.9	96.5	852.5
1965	15.9	54.7	20.0	247.9	139.6	37.6	39.8	22.2	12.2	236.0	152.1	63.2	1041.2
1966	24.1	73.0	94.1	-9.9	56.4	56.1	29.5	62.2	29.3	162.4	258.7	258.8	-9.9
1967	65.3	48.9	124.3	121.9	133.7	94.0	69.7	34.1	52.9	63.3	160.0	65.8	1033.9
1968	7.0	88.2	24.9	163.2	71.5	142.2	38.8	23.1	56.8	201.6	171.1	43.9	1032.3
1969	67.8	76.3	2.7	192.3	88.1	31.9	21.1	43.1	42.0	201.4	81.3	95.9	943.9
1970	93.4	132.2	51.4	36.6	114.2	54.0	59.0	39.4	70.0	329.2	147.4	22.8	1149.6
1971	96.8	137.4	124.1	184.9	162.9	55.3	54.5	63.1	92.9	142.4	116.1	80.2	1310.6
1972	179.4	116.9	173.4	258.0	125.1	75.6	51.2	27.5	31.4	178.6	214.6	36.6	1468.3
1973	8.6	4.7	98.0	83.6	47.4	60.3	38.8	87.3	133.6	166.6	141.9	238.1	1110.9
1974	46.2	185.5	90.8	73.0	123.0	13.9	26.1	18.8	97.5	75.0	166.9	67.0	983.7
1975	22.3	79.3	98.7	77.9	131.3	54.6	96.0	66.9	75.7	93.6	120.9	146.3	1063.5
1976	29.6	51.6	205.9	121.7	85.7	50.5	24.7	9.7	74.6	213.8	105.2	98.0	1071.0
1977	0.0	27.4	71.7	149.6	45.3	28.2	75.7	37.5	102.4	51.4	184.7	140.0	913.9
1978	0.0	31.1	96.7	184.4	130.6	59.9	46.6	33.2	84.5	81.6	45.8	57.6	852.0
1979	18.4	56.9	159.2	106.6	116.8	77.4	42.1	161.0	52.4	286.1	214.6	74.0	1365.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR O. NARANJO

ESTACION X 17 VIEJA MUNICIPIO DE BOGOTA D.E. PERIODO 1956 - 1979 COEF DE CORRECCION 1.000

ESTACION Y PTO BLANCO MUNICIPIO DE BOGOTA D.E. PERIODO 1956 - 1979 COEF DE CORRECCION 1.000

					F =	-4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AÑO	COX	COY	RAN	ESCALA	I	I	I	I	I	I	I	I	I
					F =	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1975	13660.	15620.	1.155	0.412					I +		.		
2	1976	2216.	2653.	0.855	0.121				.	I+				
3	1976	3265.	4741.	0.802	-0.130				.	+I				
4	1978	4352.	6316.	0.538	-0.157				.	+I				
5	1974	5336.	7605.	0.506	-0.252				.	+ I				
6	1973	6447.	9256.	0.558	-0.254					+ .				
7	1971	7357.	10618.	1.431	0.061					+				.
8	1976	8567.	12136.	1.048	1.132					I+ .				
9	1965	9561.	13854.	0.856	0.026				.	+				
10	1968	10663.	14682.	1.105	0.124					I+	.			
11	1967	11517.	16424.	0.528	0.048				.	+				
12	1965	12556.	17865.	1.001	0.048					+				
13	1964	13611.	19594.	1.048	0.062					+ .				
14	1963	14524.	20634.	1.140	0.212					I +	.			
15	1962	16467.	21752.	1.125	0.234					I +	.			
16	1960	17655.	23157.	0.578	0.212					. I +				
17	1959	17855.	24716.	0.705	0.0					+				
					F =	-4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AÑO	COX	COY	RAN	ESCALA	I	I	I	I	I	I	I	I	I
					F =	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 16660.5 14564.0

RAZONES PROMEDIOS Y/X = 1.364

X/Y = 0.733

****
* PRUEBAS DE ECELE NASA *
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PROYECTO ICAC-CASTOR *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CASTOR

Ministerio de Hacienda
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2120ee	LA VIEJA	BOGOTA D.E.	+04 38 40	+074 03 18	2720 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	46.6	48.0	81.2	141.6	71.2	23.5	77.3	104.0	53.1	125.1	76.8	144.0	992.4	1960
1961	43.4	43.2	185.8	-9.9	-9.9	84.0	44.7	33.2	36.6	175.5	123.5	24.4	-9.9	1961
1962	98.5	45.8	107.8	115.0	98.8	86.2	32.1	67.7	31.8	188.4	137.2	133.8	1143.1	1962
1963	74.0	149.5	97.1	247.0	107.2	51.9	29.7	29.8	26.3	93.4	182.1	25.0	1113.0	1963
1964	29.4	15.5	1.9	143.4	123.6	110.4	76.9	24.8	35.8	76.4	117.9	96.5	852.5	1964
1965	15.9	54.7	20.0	247.9	139.6	37.6	39.8	22.2	12.2	236.0	152.1	63.2	1041.2	1965
1966	24.1	73.0	94.1	-9.9	56.4	96.1	29.5	62.2	29.3	162.4	258.7	258.8	-9.9	1966
1967	65.3	48.9	124.3	121.9	133.7	94.0	69.7	34.1	52.9	63.3	160.0	65.8	1033.9	1967
1968	7.0	88.2	24.9	163.2	71.5	142.2	38.8	23.1	56.8	201.6	171.1	43.9	1032.3	1968
1969	67.8	70.3	2.7	192.3	88.1	31.9	21.1	43.1	42.0	201.4	81.3	95.9	943.9	1969
1970	93.4	132.2	51.4	36.6	114.2	54.0	59.0	39.4	70.0	329.2	147.4	22.8	1149.6	1970
1971	96.8	137.4	124.1	184.9	162.9	55.3	54.5	63.1	92.9	142.4	116.1	60.2	1310.6	1971
1972														1972
1973	8.6	4.7	98.0	83.6	47.4	60.3	38.8	87.3	133.6	168.6	141.9	238.1	1110.9	1973
1974	46.2	185.5	90.8	73.0	123.0	13.9	26.1	18.8	97.5	75.0	166.9	67.0	983.7	1974
1975	22.3	79.3	98.7	77.9	131.3	54.6	96.0	66.9	75.7	93.6	120.9	146.3	1063.5	1975
1976	29.6	51.6	205.9	121.7	65.7	50.5	24.7	9.7	74.6	213.6	105.2	98.0	1071.0	1976
1977	0.0	27.4	71.7	149.6	45.3	28.2	75.7	37.5	102.4	51.4	184.7	140.0	913.9	1977
1978	0.0	31.1	96.7	184.4	130.6	59.9	46.6	33.2	84.5	81.6	45.8	57.6	852.0	1978
1979	18.4	56.9	159.2	100.6	116.8	77.4	42.1	161.0	52.4	286.1	214.6	74.0	1365.5	1979
NUMERO DE ANOS	19	19	19	17	18	19	19	19	19	19	19	19	17	
VALOR MAXIMO	98.5	185.5	205.9	247.9	162.9	142.2	96.0	161.0	133.6	329.2	258.7	258.8	1365.5	
CUARTIL SUPERIOR	67.8	88.2	124.1	184.6	130.6	86.2	69.7	66.9	84.5	201.6	171.1	140.0	1128.0	
MEDIANA	29.6	54.7	96.7	141.6	110.7	55.3	42.1	37.5	53.1	162.4	141.9	80.2	1041.2	
CUARTIL INFERIOR	15.9	43.2	51.4	95.1	71.5	37.6	29.7	24.8	35.8	81.6	116.1	57.6	963.8	
VALOR MINIMO	0.0	4.7	1.9	36.6	45.3	13.9	21.1	9.7	12.2	51.4	45.8	22.8	852.0	
PROMEDIOS	41.4	71.0	91.4	140.6	102.6	63.8	48.6	50.6	61.1	156.1	142.3	98.7	1057.2	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1068.2	
PORCENTAJES	3.9	6.6	8.6	13.2	9.6	6.0	4.5	4.7	5.7	14.6	13.3	9.2		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 23. INDICE DE ARNOLDUS = 105.

DEV. ESTANDAR	32.7	48.3	56.1	58.7	34.1	32.5	21.5	36.4	31.3	77.9	45.9	65.8	139.2
COEF. VARIACION	0.789	0.681	0.614	0.417	0.332	0.510	0.443	0.719	0.512	0.499	0.351	0.667	0.132
COEF. ASIMETRIA	0.532	1.005	0.206	0.289	-0.264	0.677	0.726	1.770	0.601	0.578	0.214	1.199	0.658

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212058	LABORATORIOS HERMONA	BOGOTA D.E.	+04 41 00	+074 04 00	2590 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1964	53.1	13.5	1.4	135.4	116.1	120.8	54.4	22.5	27.3	63.0	58.9	49.7	716.1
1965	33.1	59.7	14.2	186.1	115.0	16.4	27.7	35.6	23.1	157.9	194.5	57.7	921.0
1966	1.0	53.0	95.6	60.2	94.7	110.6	28.7	53.6	38.0	209.5	261.4	141.9	1148.2
1967	22.0	66.0	75.0	84.7	105.1	90.3	59.6	26.4	25.7	94.0	132.6	48.1	829.5
1968	7.3	94.1	74.7	168.1	81.7	85.4	20.5	37.7	92.6	171.2	208.4	50.2	1091.9
1969	52.4	82.0	15.4	238.2	96.1	48.1	8.5	45.3	43.4	231.6	122.0	116.8	1099.8
1970	48.0	84.1	20.8	37.2	129.4	46.8	55.0	43.9	97.1	203.0	105.2	52.0	930.5
1971	81.0	98.6	142.2	179.9	180.4	46.1	32.5	47.8	96.4	55.4	69.2	45.4	1074.9
1972	62.4	31.3	79.8	245.6	124.0	53.2	51.6	24.3	18.2	137.8	226.0	34.9	1085.1
1973	8.9	20.3	35.7	75.7	74.1	66.4	52.3	69.5	107.4	157.6	104.3	152.1	924.3
1974	79.0	149.2	14.5	87.3	76.6	39.0	11.2	33.6	91.1	106.7	156.1	81.4	925.7
1975	2.7	102.2	95.3	134.9	113.9	32.9	67.4	69.0	109.1	106.8	136.0	152.0	1122.2
1976	31.2	113.6	115.1	127.1	72.8	49.0	8.8	10.3	46.8	237.8	37.2	47.3	897.0
1977	13.4	48.5	84.0	83.0	48.1	17.3	41.0	33.2	83.3	111.4	171.9	79.3	814.4
1978	0.0	37.2	101.4	153.0	92.9	65.1	51.7	12.3	83.3	65.9	38.8	39.6	741.2
1979	27.5	68.8	84.5	154.1	231.0	101.1	73.8	164.0	114.7	164.8	223.5	91.9	1500.1

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

ESTACION : CARACTERES FLORALES MUNICIPIO DE BECERRIL C.E. PERIODO 1964 - 1975 COEF DE CORRECCION 1.000

N	AN	T /	CC	MCY	ECF	FCAN	F = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1975	1500.1	1500.1	1500.1	2.445	0.617				I +			
2	1976	741.2	2241.3	1120.6	-0.781	0.267				I +			
3	1977	814.4	3055.7	1018.6	-0.903	0.090				+			
4	1978	853.0	3908.7	977.2	-0.475	-0.003				+			
5	1975	1122.2	5074.9	1015.0	0.450	0.132				I+			
6	1974	525.7	5600.6	1000.1	-0.327	0.066				+			
7	1973	524.3	6124.9	989.3	-0.334	0.003				+			
8	1972	1485.1	8010.0	1001.2	0.456	0.100				I+			
9	1971	1074.5	9084.5	1009.4	0.445	0.187				I+			
10	1970	931.5	10015.4	1001.5	-0.202	0.128				I+			
11	1969	1095.6	11111.2	1010.5	0.574	0.240				I +			
12	1968	1091.5	12207.1	1017.3	0.733	0.345				I +			
13	1967	825.8	13032.8	1002.6	-0.825	0.183				I+			
14	1966	1148.2	14180.8	1013.2	0.824	0.344				I +			
15	1965	921.0	15105.8	1007.1	-0.381	0.276				I +			
16	1964	716.1	15821.9	966.9	-1.411	0.0				+			

N	AN	T /	CC	MCY	ECF	FCAN	F = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 12 AÑOS = 988.9

DESVIACION ESTANDAR = 193.2

COEFICIENTE DE VARIACION = 0.195

****
* FRESAS DE SIMPLE MASA *
****

PROYECTO ICAC-CRECE *** CENTRO DE AGROCLIMATOLOGIA *** PROGRAMA CRECE

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212058	LABORATORIOS HORMONA	BOGOTA D.E.	+04 40 58	+074 04 10	2590 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	A...
1964	53.1	13.5	1.4	135.4	116.1	120.8	54.4	22.5	27.3	63.0	56.9	49.7	716.1	196...
1965	33.1	59.7	14.2	186.1	115.0	16.4	27.7	35.6	23.1	157.9	194.5	57.7	921.0	1...
1966	1.0	53.0	95.6	60.2	94.7	110.6	28.7	53.6	38.0	209.5	261.4	141.9	1148.2	19...
1967	22.0	66.0	75.0	84.7	105.1	90.3	59.6	26.4	25.7	94.0	132.6	48.1	829.5	196...
1968	7.3	94.1	74.7	168.1	81.7	85.4	20.5	37.7	92.6	171.2	206.4	50.2	1091.9	196...
1969	52.4	82.0	15.4	238.2	96.1	48.1	8.5	45.3	43.4	231.6	122.0	116.8	1099.8	1...
1970	48.0	84.1	28.8	87.2	129.4	46.8	55.0	43.9	97.1	203.0	105.2	52.0	930.5	197...
1971	81.0	98.6	142.2	179.9	180.4	46.1	32.5	47.8	96.4	55.4	69.2	45.4	1074.5	197...
1972	62.4	31.3	75.8	245.6	124.0	53.2	51.6	24.3	18.2	137.8	226.0	34.9	1085.1	197...
1973	8.9	20.3	35.7	75.7	74.1	66.4	52.3	69.5	107.4	157.6	104.3	152.1	924.3	197...
1974	79.0	149.2	14.5	87.3	76.6	39.0	11.2	33.6	91.1	106.7	156.1	81.4	925.7	197...
1975	2.7	102.2	95.3	134.9	113.9	32.9	67.4	69.0	109.1	106.8	136.0	152.0	1122.2	197...
1976	31.2	113.6	115.1	127.1	72.8	49.0	8.8	10.3	46.8	237.8	37.2	47.3	897.0	197...
1977	13.4	48.5	84.0	83.0	48.1	17.3	41.0	33.2	83.3	111.4	171.9	79.3	814.4	197...
1978	0.0	37.2	101.4	153.0	92.9	65.1	51.7	12.3	83.3	65.9	36.8	39.6	741.2	197...
1979	27.5	68.6	84.5	154.1	231.0	101.1	73.8	164.0	114.7	164.8	223.9	91.9	1500.1	1...
NUMERO DE ANOS	16	16	16	16	16	16	16	16	16	16	16	16	16	
VALOR MAXIMO	81.0	149.2	142.2	245.6	231.0	120.8	73.8	164.0	114.7	237.8	261.4	152.1	1500.1	
CUARTIL SUPERIOR	52.7	96.3	95.4	174.0	120.0	87.8	54.7	50.7	96.7	187.1	201.4	104.3	1095.8	
MEDIANA	29.3	67.4	75.4	135.1	100.6	51.1	46.3	36.6	83.3	147.7	134.3	54.8	928.1	
CUARTIL INFERIOR	8.1	42.8	22.1	83.8	79.1	42.5	24.1	25.3	32.6	100.3	66.8	47.7	863.3	
VALOR MINIMO	0.0	13.5	1.4	37.2	48.1	16.4	8.5	10.3	18.2	55.4	37.2	34.9	716.1	
PROMEDIOS	32.7	70.1	65.8	134.4	109.5	61.8	40.3	45.6	68.6	142.1	140.4	77.5	988.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		988.9	
PORCENTAJES	3.3	7.1	6.7	13.6	11.1	6.2	4.1	4.6	6.9	14.4	14.2	7.8		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 20. INDICE DE ARREDONDAS = 100.

DEV. ESTANDAR	27.2	36.6	42.0	60.8	44.3	31.7	21.0	35.9	35.2	59.2	65.9	41.4	193.3
COEF. VARIACION	0.832	0.521	0.638	0.453	0.404	0.514	0.522	0.789	0.513	0.417	0.498	0.533	0.195
COEF. ASIMETRIA	0.477	0.366	-0.073	0.299	1.553	0.452	-0.200	2.582	-0.223	0.126	0.076	0.942	1.027

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600105	LAS SOPAS	BUGOTA D.E.	+04 08 34	+074 12 22	3200 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1965	48.9	16.3	55.0	201.7	187.0	138.8	202.7	190.7	98.9	121.5	221.0	52.0	1534.5
1966	45.5	31.5	113.2	68.4	69.9	122.1	120.5	-9.9	-9.9	-5.5	-9.9	98.7	-9.9
1967	90.4	16.8	53.6	110.7	144.7	256.3	271.3	165.3	121.0	93.0	84.8	55.8	1463.7
1968	18.3	45.9	53.1	171.3	106.5	265.9	254.1	147.8	133.3	126.7	123.2	39.6	1465.7
1969	55.8	36.9	59.2	165.7	143.8	178.0	127.6	143.6	115.4	166.5	69.6	44.9	1307.0
1970	59.4	48.6	65.7	133.8	193.6	218.4	170.2	162.9	172.0	146.2	94.2	36.5	1501.9
1971	46.0	60.8	102.2	123.3	187.8	222.5	199.9	214.7	138.1	94.5	95.5	61.4	1546.7
1972	62.3	35.4	81.3	124.9	275.3	177.3	193.1	129.2	96.8	67.6	110.8	36.8	1390.8
1973	25.9	3.0	34.0	92.8	208.4	201.2	183.1	201.3	189.5	83.7	116.2	61.9	1401.0
1974	61.7	52.5	48.8	155.8	157.7	177.0	260.1	137.9	131.4	120.8	136.7	10.5	1450.9
1975	19.5	32.8	84.2	73.7	177.7	252.7	137.6	174.0	160.1	192.8	80.4	108.1	1533.6
1976	38.1	44.8	79.4	193.8	237.6	236.1	234.0	123.5	79.2	132.0	76.3	38.5	1513.3
1977	0.0	65.5	67.7	123.4	118.6	167.0	203.9	136.5	146.0	116.9	90.5	20.4	1266.4
1978	26.7	38.5	85.4	145.7	128.7	215.3	127.1	174.8	111.7	90.0	52.4	55.9	1252.2
1979	11.8	5.8	68.8	190.9	157.8	165.4	139.2	122.6	105.0	165.6	145.8	52.7	1335.4

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION : LAS SOPAS MUNICIPIO DE BOGOTA D.E. PERIODO 1965 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CO	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	1335.4	1335.4	1335.4	-0.857	-0.064				+			
2	1978	1252.2	2587.6	1293.8	-1.708	-0.187				+I			
3	1977	1266.4	3854.0	1284.7	-1.569	-0.300				+I			
4	1976	1513.3	5367.3	1341.8	0.838	-0.240				+ I			
5	1975	1533.6	6900.9	1380.2	1.036	-0.165				+I			
6	1974	1450.9	8351.8	1392.0	0.229	-0.149				+I			
7	1973	1401.0	9752.8	1393.3	-0.257	-0.167				+I			
8	1972	1390.8	11143.6	1392.9	-0.356	-0.193				+I			
9	1971	1546.7	12690.3	1410.0	1.163	-0.109				+I			
10	1970	1501.9	14192.2	1419.2	0.727	-0.057				+			
11	1969	1307.0	15499.2	1409.0	-1.173	-0.141				+I			
12	1968	1485.7	16984.9	1415.4	0.569	-0.101				+I			
13	1967	1463.7	18448.6	1419.1	0.354	-0.075				+			
14	1965	1534.5	19983.1	1427.4	1.044	0.0				+			

N	AN	T A	CO	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 14 ANOS = 1427.4
DESVIACION ESTANDAR = 102.6
COEFICIENTE DE VARIACION = 0.072

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600105	LAS SOPAS	BOGOTA D.E.	+04 07 34	+074 12 21	3200 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	Años
1965	48.9	16.3	55.0	201.7	187.0	138.8	202.7	190.7	98.9	121.5	221.0	52.0	1534.5	1965
1966	45.5	31.5	113.2	68.4	69.9	122.1	120.5	-9.9	-9.9	-9.9	-9.9	98.7	-9.9	1966
1967	90.4	16.8	53.6	110.7	144.7	256.3	271.3	165.3	121.0	93.0	64.8	55.8	1463.7	1967
1968	18.3	45.9	53.1	171.3	106.5	265.9	254.1	147.8	133.3	126.7	123.2	39.6	1485.7	1968
1969	55.8	36.9	59.2	165.7	143.8	178.0	127.6	143.6	115.4	166.5	69.6	44.9	1307.0	1969
1970	59.4	48.0	65.7	133.8	193.6	218.4	170.2	162.9	172.0	146.2	94.2	36.9	1501.9	1970
1971	46.0	60.8	102.2	123.3	167.8	222.5	199.9	214.7	138.1	94.5	95.5	61.4	1546.7	1971
1972	62.3	35.4	81.3	124.9	275.3	177.3	193.1	129.2	96.8	67.6	110.8	36.8	1390.8	1972
1973	25.9	3.0	34.0	92.8	208.4	201.2	183.1	201.3	189.5	83.7	116.2	61.9	1401.0	1973
1974	61.7	52.5	48.8	155.8	187.7	177.0	260.1	137.9	131.4	120.8	136.7	10.5	1450.9	1974
1975	19.5	32.8	84.2	73.7	177.7	292.7	137.6	174.0	160.1	192.8	80.4	108.1	1533.6	1975
1976	38.1	44.8	79.4	193.8	237.6	236.1	234.0	123.5	79.2	132.0	76.3	38.5	1513.3	1976
1977	0.0	65.5	67.7	123.4	118.6	167.0	203.9	136.5	146.0	116.9	90.5	30.4	1266.4	1977
1978	26.7	38.5	85.4	145.7	128.7	215.3	127.1	174.8	111.7	90.0	82.4	55.9	1252.2	1978
1979	11.8	5.8	68.8	190.9	187.8	165.4	139.2	122.6	105.0	169.6	148.8	52.7	1335.4	1979
NUMERO DE ANOS	15	15	15	15	15	15	15	14	14	14	14	15	14	
VALOR MAXIMO	90.4	65.5	113.2	201.7	275.3	292.7	271.3	214.7	189.5	192.8	221.0	108.1	1546.7	
CUARTIL SUPERIOR	59.4	48.0	84.2	171.3	192.6	236.1	234.0	174.8	146.0	146.2	123.2	61.4	1513.3	
MEDIANA	45.5	36.9	67.7	133.8	167.8	201.2	193.1	155.3	126.2	121.1	94.8	52.0	1457.3	
CUARTIL INFERIOR	19.5	16.8	53.6	110.7	128.7	167.0	137.6	136.5	105.0	93.0	80.4	36.9	1335.4	
VALOR MINIMO	0.0	3.0	34.0	68.4	69.9	122.1	120.5	122.6	79.2	67.6	82.4	10.5	1252.2	
PROMEDIOS	40.7	35.7	70.1	138.4	166.3	202.3	188.3	158.9	128.5	123.0	107.0	52.3	1427.4	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1411.3	
PORCENTAJES	2.9	2.5	5.0	9.8	11.8	14.3	13.3	11.3	9.1	8.7	7.6	3.7		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 29. INDICE DE ARREGUIS = 143.

DEV. ESTANDAR	23.8	18.7	21.1	41.9	52.2	47.8	51.0	29.4	30.9	36.2	41.9	24.8	102.6
COEF. VARIACION	0.585	0.524	0.301	0.303	0.314	0.237	0.271	0.185	0.241	0.294	0.392	0.474	0.072
COEF. ASIMETRIA	0.213	-0.305	0.445	-0.122	0.274	0.224	0.194	0.516	0.459	0.417	1.575	0.978	-0.547

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
6031U5	LAS SOPAS	BOGOTA D.E.	+04 07 34	+074 12 21	3200 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	28.9	30.6	66.1	91.1	213.3	129.8	171.5	160.0	144.5	123.5	117.7	38.3	1321.3	1960
1961	57.2	60.2	86.7	125.0	108.9	245.4	243.0	137.3	94.2	118.8	134.1	60.6	1471.4	1961
1962	63.2	42.2	101.9	110.2	140.9	245.6	253.6	107.5	118.6	147.1	87.6	33.4	1451.8	1962
1963	57.0	49.2	30.3	231.7	205.6	171.3	121.1	130.8	96.1	95.7	139.5	69.9	1398.2	1963
1964	3.0	33.8	35.2	86.3	171.5	244.5	222.4	201.3	137.0	103.0	61.3	50.2	1349.8	1964
1965	48.9	16.3	55.0	201.7	187.0	138.8	202.7	190.7	98.9	121.5	221.0	52.0	1534.5	1965
1966	45.5	31.5	113.2	68.4	69.9	122.1	120.5	176.8	150.1	166.1	151.4	98.7	1314.2	1966
1967	90.4	16.8	53.6	110.7	144.7	256.3	271.3	165.3	121.0	93.0	84.8	55.8	1463.7	1967
1968	18.3	45.9	53.1	171.3	106.5	265.9	254.1	147.8	133.3	126.7	123.2	39.6	1485.7	1968
1969	55.8	30.9	59.2	166.7	143.8	178.0	127.6	143.6	115.4	166.5	69.6	44.9	1307.0	1969
1970	59.4	48.6	65.7	133.8	193.6	218.4	170.2	162.9	172.0	146.2	94.2	36.9	1501.9	1970
1971	46.0	60.8	102.2	123.3	187.8	222.5	199.9	214.7	138.1	94.5	95.5	61.4	1546.7	1971
1972	62.3	35.4	81.3	124.9	275.3	177.3	193.1	129.2	96.8	67.6	110.8	36.8	1390.8	1972
1973	25.9	3.0	34.0	92.8	208.4	201.2	183.1	201.3	189.5	83.7	116.2	61.9	1401.0	1973
1974	61.7	52.5	48.8	155.8	157.7	177.0	260.1	137.9	131.4	120.8	136.7	10.5	1450.9	1974
1975	19.5	32.8	84.2	73.7	177.7	292.7	137.6	174.0	160.1	192.8	80.4	108.1	1533.6	1975
1976	38.1	44.8	79.4	193.8	237.6	236.1	234.0	123.5	79.2	132.0	76.3	38.5	1513.3	1976
1977	0.0	65.5	67.7	123.4	118.6	167.0	203.9	136.5	146.0	116.9	90.5	30.4	1266.4	1977
1978	26.7	38.5	85.4	145.7	128.7	215.3	127.1	174.8	111.7	90.0	52.4	55.9	1252.2	1978
1979	11.8	5.8	68.8	190.9	157.8	165.4	139.2	122.6	105.0	169.6	145.8	52.7	1335.4	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	90.4	65.5	113.2	231.7	275.3	292.7	271.3	214.7	189.5	192.8	221.0	108.1	1546.7	
CUARTIL SUPERIOR	58.3	48.9	84.8	166.5	199.6	244.9	238.5	175.8	145.3	146.6	135.4	61.0	1493.8	
MEDIANA	45.8	37.7	66.9	124.9	164.6	208.2	196.5	153.9	126.2	121.1	103.1	51.1	1425.9	
CUARTIL INFERIOR	22.7	32.1	53.3	101.5	134.8	169.1	138.4	133.6	101.9	95.1	82.6	37.6	1328.3	
VALOR MINIMO	0.0	3.0	30.3	68.4	69.9	122.1	120.5	107.5	79.2	67.6	52.4	10.5	1252.2	
PROMEDIOS	41.0	37.9	68.6	136.0	166.8	203.5	191.8	156.9	126.9	123.8	109.4	51.8	1414.5	
PORCENTAJES	2.9	2.7	4.8	9.6	11.8	14.4	13.6	11.1	9.0	8.8	7.7	3.7		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 29. INDICE DE ARNOLDUS = 144.

INDICE DE IRREGULARIDAD INTERANUAL =1.19

DEV. ESTANDAR	23.5	17.2	23.3	45.4	49.1	48.0	51.0	30.0	28.5	32.9	39.1	22.4	93.7
COEF. VARIACION	0.574	0.454	0.339	0.334	0.295	0.236	0.266	0.191	0.225	0.266	0.357	0.432	0.066

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1569.	1535.	1493.	1414.	1336.	1294.	1260.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	-0.038	-0.505	0.133	0.445	0.184	-0.022	-0.015	0.349	0.405	0.386	1.091	0.989	-0.220

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212523	OBS METEO NACIONAL	BOGOTA	+04 38 00	+074 06 00	2556 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1941	-9.9	-9.9	31.0	60.5	40.0	28.3	16.7	32.1	42.0	71.7	97.4	35.2	-9.9
1942	75.2	85.4	56.8	90.5	128.5	58.9	17.2	42.9	41.9	159.6	78.5	133.9	969.3
1943	94.8	51.7	78.9	130.6	95.0	73.4	51.8	75.2	40.5	104.5	82.8	111.1	990.3
1944	43.0	42.3	54.6	107.9	192.3	69.5	27.6	30.4	42.4	251.9	104.0	97.2	1083.1
1945	3.8	66.9	34.0	167.9	183.6	23.9	25.1	22.8	19.6	117.2	231.1	67.6	963.5
1946	75.5	26.4	40.6	116.9	53.4	20.0	36.1	34.7	23.9	82.3	99.0	60.5	669.3
1947	67.3	45.5	46.4	18.8	72.9	57.0	70.9	66.5	81.3	168.6	47.7	8.8	751.7
1948	14.4	22.6	19.9	173.1	57.8	34.2	25.0	26.3	86.7	78.0	97.0	55.3	690.3
1949	26.7	29.7	59.7	72.2	80.1	54.3	48.6	44.0	34.2	124.8	29.7	26.3	630.3
1950	68.0	120.6	137.4	154.3	178.5	113.5	46.7	69.8	84.4	145.2	91.3	116.2	1325.9
1951	80.8	83.3	80.4	73.6	80.5	21.0	32.9	24.5	23.0	100.9	175.1	16.7	792.7
1952	76.9	22.9	73.8	159.1	144.6	39.2	56.3	24.1	25.8	63.9	259.8	137.3	1083.7
1953	51.1	21.5	100.1	71.6	121.0	82.8	36.4	11.0	134.4	210.7	168.4	14.2	1023.2
1954	37.8	54.4	53.8	94.6	125.7	77.1	50.8	64.3	40.1	214.8	121.3	139.6	1074.3
1955	27.8	50.5	65.7	138.1	105.6	109.2	71.3	13.2	88.1	245.5	157.6	157.2	1229.8
1956	46.3	112.9	100.9	69.2	63.1	81.9	30.6	30.8	62.3	234.6	76.3	102.6	1011.5
1957	33.5	50.3	55.0	113.7	144.9	59.2	31.9	17.8	43.5	212.1	82.0	24.4	868.3
1958	18.1	17.2	33.6	68.8	49.3	40.8	16.4	53.2	28.1	112.4	191.3	111.3	740.5
1959	3.8	25.3	28.5	80.1	128.4	74.6	79.0	44.4	31.2	73.3	121.0	71.9	761.5
1960	8.0	43.6	65.4	90.1	68.1	17.1	72.9	89.0	58.4	105.8	37.8	155.0	811.2
1961	74.6	15.0	117.6	96.7	26.6	58.3	37.0	22.7	29.5	202.9	150.6	50.2	921.7
1962	87.6	27.3	119.5	163.1	123.4	79.7	26.5	67.7	39.0	107.2	125.2	77.8	1044.0
1963	27.9	123.2	92.4	95.4	124.2	40.2	17.2	27.3	26.6	88.4	153.1	34.8	850.7
1964	38.3	29.3	23.2	106.9	86.9	77.6	66.9	25.0	21.4	56.0	37.7	68.1	639.3
1965	5.3	51.9	11.2	211.0	112.8	14.9	25.0	31.5	10.5	170.9	171.7	66.1	882.8
1966	3.0	43.0	80.0	59.6	87.5	81.8	26.2	43.3	34.3	112.0	207.3	107.8	885.8
1967	19.2	71.9	70.0	83.2	89.0	84.6	34.9	17.7	47.0	78.5	110.5	30.1	737.0
1968	13.1	97.5	47.2	240.6	65.1	93.7	30.0	28.0	85.2	162.0	179.2	19.5	1061.1
1969	59.7	49.4	10.0	216.2	84.4	69.2	14.1	38.3	47.4	187.8	63.9	98.4	938.8
1970	61.9	78.2	41.9	36.1	96.4	53.6	39.2	30.9	69.2	283.5	134.0	28.0	952.9
1971	52.0	79.3	130.3	203.9	184.6	35.4	24.8	54.9	60.8	91.7	73.3	75.6	1086.6
1972	155.7	66.8	116.5	158.9	101.0	103.7	48.0	25.6	31.4	113.2	204.3	15.4	1140.5
1973	12.7	3.4	67.9	84.2	52.2	54.7	66.1	98.4	118.7	154.3	187.2	128.9	1028.7
1974	61.5	171.9	-9.9	89.9	104.4	42.4	16.6	20.2	94.8	129.2	135.9	83.1	-9.9
1975	8.5	69.6	76.3	91.1	160.3	38.5	56.0	62.5	79.7	99.7	90.2	144.8	977.2
1976	37.2	78.6	104.0	95.8	86.2	45.4	12.8	17.6	60.5	170.7	115.9	31.6	856.3
1977	8.3	26.2	102.1	81.2	58.4	15.4	54.1	57.4	82.0	132.5	113.7	65.6	816.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAN C

ESTACION X CES NLTEC NACIONAL MUNICIPIO DE ECCCTA PERIODO COEF DE CORRECCION
1941 - 1977 1.000

ESTACION Y APEAPAN SAN FRANCISCO MUNICIPIO DE ECCCTA Lab. PERIODO COEF DE CORRECCION
1941 - 1977 1.000

N	AÑO	C(I)	CUY	MAN	F(AN	F = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
					F :	C.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1977	817.	855.	1.058	0.075					+				
2	1976	1673.	2028.	0.918	-0.003					+				
3	1975	2702.	3040.	1.227	0.201					I +				
4	1974	3842.	4285.	1.103	0.316					I +				
5	1971	4925.	5888.	1.011	0.225					I +				
6	1970	5882.	7657.	0.795	0.000					+				
7	1969	6821.	8689.	1.132	0.183					I+				
8	1968	7882.	9256.	1.054	0.242					I +				
9	1967	8815.	10401.	0.776	0.018					+				
10	1966	9865.	11524.	0.953	-0.031					+				
11	1965	10867.	12896.	1.224	0.143					I+				
12	1964	11827.	13846.	0.876	-0.186					+I				
13	1963	11887.	14821.	0.802	-0.412					+ I				
14	1962	12921.	15941.	1.127	-0.289					+ I				
15	1961	13843.	16955.	1.054	-0.200					+I				
16	1960	14854.	17853.	1.124	-0.109					+I				
17	1959	15816.	18852.	1.124	-0.018					+				
18	1958	16856.	19866.	0.955	-0.045					+				
19	1957	17825.	20861.	0.977	-0.072					+				
20	1956	18836.	21862.	1.018	-0.052					+.				
21	1955	19866.	23100.	1.201	0.165					I+				
22	1954	20946.	24383.	1.013	0.083					I+				
23	1953	21963.	25323.	1.216	0.446					I +				
24	1952	22947.	26561.	1.058	0.311					I +				
25	1951	23946.	27688.	0.858	0.411					I +				
26	1950	24966.	29126.	1.074	0.509					I + .				
27	1948	25956.	29802.	1.233	0.645					I +				
28	1947	26866.	30807.	1.125	0.741					I + .				
29	1946	27888.	31762.	0.700	0.433					I +				
30	1945	27940.	33097.	0.873	0.282					I +				
31	1944	28724.	34511.	0.526	0.185					I+				
32	1943	29714.	36035.	0.784	-0.105					+I				
33	1942	30683.	37092.	1.112	0.000					+				

N AÑO C(I) CUY MAN F(AN F = -4. -3. -2. -1. 0.0 +1. +2. +3. +4.
F : 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4

PROMEDIOS = 525.8 1164.0

RAZONES PROMEDIOS Y/X = 2.205

X/Y = 0.427

********** * PRUEBAS DE ECELE NASA * **********

PROYECTO ICAC-CESTCN *** CALCO DE HIDROCLIMATOLOGIA *** PROGRAMA CESTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212523	OBS METEO NACIONAL	BOGOTA	+04 36 36	+074 04 58	2556 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	18.1	17.2	33.6	68.8	49.3	40.8	16.4	53.2	28.1	112.4	191.3	111.3	740.5	1958
1959	3.8	25.3	28.5	80.1	128.4	74.6	79.0	44.4	31.2	73.3	121.0	71.9	761.5	1959
1960	8.0	43.6	65.4	90.1	68.1	17.1	72.5	89.0	58.4	105.8	37.8	155.0	811.2	1960
1961	74.6	15.0	117.6	96.7	26.6	98.3	37.0	22.7	29.5	202.9	150.6	50.2	921.7	1961
1962	87.6	27.3	119.5	163.1	123.4	79.7	26.5	67.7	39.0	107.2	125.2	77.8	1044.0	1962
1963	27.9	123.2	92.4	95.4	124.2	40.2	17.2	27.3	26.6	88.4	153.1	34.8	850.7	1963
1964	38.3	29.3	23.2	106.9	86.9	77.6	66.9	25.0	21.4	58.0	37.7	68.1	639.3	1964
1965	5.3	51.5	11.2	211.0	112.8	14.5	25.0	31.5	10.5	170.5	171.7	66.1	682.6	1965
1966	3.0	43.0	80.0	59.6	87.5	81.8	26.2	43.3	34.3	112.0	207.3	107.8	885.8	1966
1967	19.2	71.5	70.0	83.2	69.0	84.6	34.9	17.7	47.0	78.9	110.5	30.1	737.0	1967
1968	13.1	97.5	47.2	240.6	85.1	93.7	30.0	28.0	85.2	162.0	175.2	19.5	1061.1	1968
1969	59.7	49.4	10.0	216.2	84.4	69.2	14.1	38.3	47.4	187.8	63.9	98.4	938.8	1969
1970	61.9	78.2	41.9	36.1	96.4	53.6	39.2	30.9	69.2	283.5	134.0	28.0	952.9	1970
1971	52.0	79.3	130.3	203.9	184.6	35.4	24.8	54.9	80.8	91.7	73.3	75.6	1086.6	1971
1972	155.7	66.8	116.5	158.9	101.0	103.7	48.0	25.6	31.4	113.2	204.3	15.4	1140.5	1972
1973	12.7	3.4	67.9	84.2	52.2	54.7	66.1	98.4	118.7	154.3	187.2	128.9	1028.7	1973
1974	61.5	171.9	-9.9	89.9	104.4	42.4	16.6	20.2	94.8	129.2	135.9	83.1	-9.9	1974
1975	8.5	69.6	76.3	91.1	160.3	38.5	56.0	62.5	79.7	99.7	90.2	144.8	977.2	1975
1976	37.2	78.6	104.0	95.8	86.2	45.4	12.8	17.6	60.5	170.7	115.9	31.6	856.3	1976
1977	8.3	20.2	102.1	81.2	58.4	15.4	54.1	57.4	82.0	132.5	113.7	85.6	816.9	1977
NUMERO DE ANOS	20	20	19	20	20	20	20	20	20	20	20	20	19	
VALOR MAXIMO	155.7	171.9	130.3	240.6	184.6	103.7	79.0	98.4	118.7	283.5	207.3	155.0	1140.5	
CUARTIL SUPERIOR	60.6	78.4	104.0	101.0	116.1	80.7	55.0	56.1	80.2	166.3	175.4	103.1	1028.7	
MEDIANA	23.5	50.6	70.0	93.2	88.3	54.1	32.4	34.9	47.2	112.8	129.6	73.7	885.8	
CUARTIL INFERIOR	8.4	26.7	33.6	82.2	66.6	39.3	21.0	25.3	30.3	95.7	100.3	33.2	611.2	
VALOR MINIMO	3.0	3.4	10.0	36.1	26.6	14.9	12.8	17.6	10.5	58.0	37.7	15.4	639.3	
PROMEDIOS	37.8	58.4	70.4	117.6	94.5	58.1	38.2	42.8	53.8	131.7	130.2	74.2	901.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		907.7	
PORCENTAJES	4.2	6.4	7.8	13.0	10.4	6.4	4.2	4.7	5.9	14.5	14.3	8.2		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 50.

DEV. ESTANDAR	38.2	40.6	38.7	58.9	38.0	27.9	21.1	23.2	29.0	53.4	51.7	41.3	134.5
COEF. VARIACION	1.009	0.695	0.550	0.501	0.402	0.481	0.553	0.543	0.539	0.406	0.397	0.557	0.149
COEF. ASIMETRIA	1.696	1.195	-0.079	0.946	0.578	-0.007	0.606	1.064	0.567	1.231	-0.273	0.369	-0.042

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212523	OBS METEO NACIONAL	BOGOTA	+04 38 36	+074 04 58	2556 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	8.0	43.6	65.4	90.1	68.1	17.1	72.9	89.0	58.4	105.8	37.8	155.0	811.2	1960
1961	74.6	15.0	117.6	90.7	26.6	98.3	37.0	22.7	29.5	202.9	150.6	50.2	921.7	1961
1962	87.6	27.3	119.5	103.1	123.4	79.7	26.5	67.7	39.0	107.2	125.2	77.8	1044.0	1962
1963	27.9	123.2	92.4	95.4	124.2	40.2	17.2	27.3	26.6	88.4	153.1	34.8	850.7	1963
1964	38.3	29.3	23.2	106.9	86.9	77.6	66.9	25.0	21.4	58.0	37.7	68.1	639.3	1964
1965	5.3	51.9	11.2	211.0	112.8	14.9	25.0	31.5	10.5	170.9	171.7	66.1	882.8	1965
1966	3.0	43.0	80.0	59.6	87.5	81.8	26.2	43.3	34.3	112.0	207.3	107.8	885.8	1966
1967	19.2	71.9	70.0	83.2	89.0	84.6	34.9	17.7	47.0	78.9	110.5	30.1	737.0	1967
1968	13.1	97.5	47.2	240.6	65.1	93.7	30.0	28.0	85.2	162.0	179.2	19.5	1061.1	1968
1969	59.7	49.4	10.0	210.2	84.4	69.2	14.1	38.3	47.4	187.8	63.9	98.4	938.8	1969
1970	61.9	78.2	41.9	36.1	96.4	53.6	39.2	30.9	69.2	283.5	134.0	28.0	952.9	1970
1971	52.0	79.3	130.3	203.9	184.6	35.4	24.8	54.9	80.8	91.7	73.3	75.6	1086.6	1971
1972	155.7	66.8	116.5	158.9	101.0	103.7	48.0	25.6	31.4	113.2	204.3	15.4	1140.5	1972
1973	12.7	3.4	67.9	84.2	52.2	54.7	66.1	98.4	118.7	154.3	187.2	128.9	1028.7	1973
1974	61.5	171.9	39.1	89.9	104.4	42.4	16.6	20.2	94.8	129.2	135.9	83.1	989.0	1974
1975	8.5	69.6	76.3	91.1	160.3	38.5	56.0	62.5	79.7	99.7	90.2	144.8	977.2	1975
1976	37.2	76.6	104.0	95.8	86.2	45.4	12.8	17.6	60.5	170.7	115.9	31.6	856.3	1976
1977	8.3	20.2	102.1	81.2	58.4	15.4	54.1	57.4	82.0	132.5	113.7	85.6	816.9	1977
1978	10.5	54.7	104.7	151.4	126.2	49.5	48.8	26.8	81.3	88.0	82.8	35.1	859.8	1978
1979	36.0	39.3	87.2	110.0	180.5	127.1	66.7	137.1	50.4	193.8	288.9	81.5	1399.1	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	155.7	171.9	130.3	240.6	184.6	127.1	72.9	137.1	118.7	283.5	288.9	155.0	1399.1	
CUARTIL SUPERIOR	60.6	78.4	104.3	101.0	123.8	83.2	55.0	59.9	81.0	170.8	175.4	92.0	1036.3	
MEDIANA	31.9	53.3	78.1	96.2	92.7	54.1	35.9	31.2	54.4	121.2	129.6	71.8	930.2	
CUARTIL INFERIOR	9.5	34.3	44.5	87.0	76.2	39.3	24.9	25.3	32.8	95.7	86.5	33.2	853.5	
VALOR MINIMO	3.0	3.4	10.0	36.1	26.6	14.9	12.8	17.6	10.5	58.0	37.7	15.4	639.3	
PROMEDIOS	39.0	61.0	75.3	123.3	100.9	61.1	39.2	46.1	57.4	136.5	133.2	70.9	944.0	
PORCENTAJES	4.1	6.5	8.0	13.1	10.7	6.5	4.2	4.9	6.1	14.5	14.1	7.5		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 94.

INDICE DE IRREGULARIDAD INTERANUAL =1.57

DEV. ESTANDAR	37.6	38.9	36.9	57.5	40.9	31.5	19.5	31.7	28.4	54.2	62.5	41.3	162.4
COEF. VARIACION	0.963	0.638	0.489	0.466	0.405	0.516	0.498	0.687	0.495	0.397	0.470	0.582	0.172

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1211.	1152.	1081.	944.	807.	736.	677.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.696	1.235	-0.374	0.755	0.549	0.285	0.333	1.603	0.303	1.018	0.564	0.547	0.874

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212530	PALO BLANCO	BOGOTA D E	+04 31 00	+074 03 00	3256 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1946	60.8	59.2	118.0	194.5	187.4	268.2	379.8	387.7	66.2	55.1	82.5	61.5	1920.9
1947	53.2	20.5	15.0	112.3	78.8	224.0	298.0	210.4	151.9	240.6	45.3	35.0	1485.0
1948	24.0	11.0	59.0	-9.9	-9.9	252.5	168.0	206.0	88.4	106.9	80.6	33.6	-9.9
1949	63.0	43.0	137.1	122.4	212.4	210.0	291.5	127.8	154.9	137.7	109.6	51.7	1661.1
1950	144.4	137.2	153.3	80.0	221.4	164.3	260.9	148.7	175.2	80.7	115.2	56.5	1737.8
1951	30.7	137.3	123.5	114.5	131.2	178.5	322.5	157.5	113.2	138.6	165.0	52.0	1664.9
1952	104.8	29.8	107.0	165.7	183.0	205.0	301.5	191.0	94.5	110.5	219.4	87.0	1799.2
1953	64.0	27.0	125.0	81.5	155.0	215.0	282.0	117.0	121.0	171.5	105.0	41.0	1505.0
1954	60.0	40.0	32.0	136.5	208.0	192.0	328.0	255.0	135.0	225.0	129.3	120.0	1864.8
1955	58.5	79.0	147.0	143.0	65.0	102.4	249.0	144.0	138.0	191.0	203.0	120.0	1639.9
1956	82.0	105.0	55.0	88.5	108.0	231.3	140.6	167.8	180.3	236.5	43.5	64.5	1601.0
1957	20.4	20.5	136.0	76.9	225.6	150.6	109.4	164.1	122.9	171.5	63.8	55.3	1377.2
1958	18.6	23.2	96.8	109.2	87.3	185.0	193.5	212.7	82.5	65.9	119.0	67.0	1208.7
1959	18.0	12.0	36.0	80.4	140.3	212.3	325.7	154.0	157.0	182.5	186.0	56.5	1561.7
1960	34.0	75.0	55.0	76.0	181.0	157.0	136.0	267.0	147.0	120.5	36.3	120.0	1404.8
1961	43.5	25.0	163.0	105.0	93.0	256.0	-9.9	250.0	64.0	126.4	127.1	7.0	-9.9
1962	19.0	28.0	91.0	93.0	121.0	150.0	269.0	212.0	99.0	121.0	93.0	70.5	1406.5
1963	30.0	99.0	17.0	236.0	213.0	205.0	182.5	193.5	56.0	37.0	80.0	2.3	1351.3
1964	0.0	49.0	0.0	73.0	147.5	108.0	217.5	170.5	113.0	94.2	83.6	73.2	1129.5
1965	24.0	16.0	43.0	192.0	206.0	181.5	199.8	105.0	52.5	215.0	144.0	61.5	1440.3
1966	21.0	66.5	24.0	35.5	52.5	110.5	151.5	186.5	96.0	66.0	-9.9	125.0	-9.9
1967	23.0	21.0	65.0	121.0	126.0	253.0	221.0	270.0	81.0	82.5	249.0	29.5	1542.0
1968	7.0	76.5	18.5	167.5	47.0	191.0	319.5	91.5	102.5	124.5	139.0	4.0	1288.5
1969	89.0	17.0	7.0	115.4	140.9	159.0	277.0	138.0	66.0	233.5	118.5	56.5	1457.8
1970	111.5	97.0	61.5	84.0	172.0	106.0	207.0	110.0	138.0	204.0	217.0	10.0	1518.0
1971	51.5	74.0	124.1	147.5	133.5	130.0	256.2	138.2	87.4	28.8	61.8	34.5	1267.5
1972	195.8	40.5	84.5	98.4	163.0	-9.9	164.8	113.2	109.9	121.1	101.9	28.0	-9.9
1973	28.0	0.0	39.0	69.0	216.5	186.0	204.0	237.0	161.5	128.0	140.0	130.0	1541.0
1974	54.0	96.0	152.0	108.0	189.0	115.0	249.2	160.0	100.1	121.3	140.3	14.2	1499.1
1975	18.5	42.7	110.0	60.6	159.4	262.3	108.9	197.9	175.0	142.4	121.0	170.8	1569.5
1976	35.2	22.8	83.2	180.9	249.4	232.1	376.0	188.6	138.9	185.4	95.3	55.8	1847.6
1977	-9.9	26.8	72.7	110.9	81.1	146.5	180.2	130.5	167.3	160.2	140.4	39.9	-9.9
1978	10.1	8.3	53.5	194.8	159.0	229.8	129.3	222.2	116.0	72.2	61.6	54.8	1311.6
1979	15.4	28.8	101.0	208.1	136.7	266.5	117.6	185.2	87.1	202.2	168.3	64.4	1581.7

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DAFANAVIC

ESTACION X PALO BLANCO MUNICIPIO DE BOGOTA D E PERIODO 1946 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1581.7	1581.7	1581.7	0.296	0.038				+			
2	1978	1311.6	2893.3	1446.6	-1.079	-0.101				+			
3	1976	1847.6	4740.9	1580.3	1.650	0.112				+			
4	1975	1569.5	6310.4	1577.6	0.234	0.142				+			
5	1974	1495.1	7805.5	1561.1	-0.125	0.126				+			
6	1973	1541.0	9346.5	1558.4	0.085	0.137				+			
7	1971	1267.5	10613.0	1516.9	-1.304	-0.031				+			
8	1970	1518.0	12130.0	1517.0	-0.028	-0.035				*			
9	1969	1457.3	13593.8	1510.4	-0.335	-0.078				+			
10	1968	1288.5	14882.3	1488.2	-1.197	-0.232				+			
11	1967	1542.0	16424.3	1493.1	0.094	-0.220				+			
12	1965	1440.3	17864.6	1488.7	-0.424	-0.275				+			
13	1964	1129.5	18994.1	1461.1	-2.007	-0.533				+			
14	1964	1351.3	20345.4	1453.2	-0.877	-0.646				+			
15	1962	1406.5	21751.9	1450.1	-0.596	-0.723				+			
16	1960	1404.8	23155.7	1447.3	-0.605	-0.801				+			
17	1959	1561.7	24718.4	1454.0	0.194	-0.776				+			
18	1958	1208.7	25927.1	1440.4	-1.603	-0.983				+			
19	1957	1377.2	27304.3	1437.1	-0.745	-1.079				+			
20	1956	1601.0	28905.3	1445.3	0.394	-1.028				+			
21	1955	1639.9	30545.2	1454.5	0.592	-0.952				+			
22	1954	1864.8	32410.0	1473.2	1.737	-0.728				+			
23	1953	1505.0	33915.0	1474.6	-0.095	-0.740				+			
24	1952	1799.2	35714.2	1488.1	1.403	-0.559				+			
25	1951	1664.9	37379.1	1495.2	0.720	-0.466				+			
26	1950	1737.8	39116.9	1504.5	1.091	-0.326				+			
27	1949	1661.1	40775.0	1510.3	0.700	-0.235				+			
28	1947	1485.0	42260.0	1509.4	-0.196	-0.261				+			
29	1946	1520.9	44183.9	1523.6	2.023	0.0				+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 29 ANOS = 1523.6

DESVIACION ESTANDAR = 196.4

COEFICIENTE DE VARIACION = 0.129

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212530	PALO BLANCO	BOGOTA D E	+04 31 08	+074 03 44	3260 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1955	58.5	79.0	147.0	143.0	65.0	102.4	249.0	144.0	138.0	191.0	203.0	120.0	1639.9	1955
1956	82.0	103.0	55.0	88.5	108.0	331.3	140.6	167.8	180.3	236.5	43.5	64.5	1601.0	1956
1957	20.4	20.5	136.0	76.9	225.6	150.8	169.4	164.1	122.9	171.5	63.8	55.3	1377.2	1957
1958	18.6	23.2	96.8	109.2	67.3	129.0	193.5	212.7	82.5	69.9	119.0	67.0	1208.7	1958
1959	18.0	12.0	36.0	80.4	140.3	212.3	325.7	154.0	157.0	183.5	186.0	56.5	1561.7	1959
1960	34.0	75.0	55.0	76.0	181.0	157.0	136.0	267.0	147.0	120.5	36.3	120.0	1404.8	1960
1961	43.5	25.0	163.0	105.0	93.0	258.0	-9.9	250.0	64.0	126.4	127.1	7.0	-9.9	1961
1962	19.0	28.0	91.0	93.0	121.0	190.0	269.0	212.0	99.0	121.0	93.0	70.5	1406.5	1962
1963	30.0	99.0	17.0	236.0	213.0	205.0	162.5	193.5	56.0	37.0	80.0	2.3	1351.3	1963
1964	0.0	49.0	0.0	73.0	147.5	108.0	217.5	170.5	113.0	94.2	83.6	73.2	1129.5	1964
1965	24.0	16.0	43.0	192.0	206.0	181.5	199.8	105.0	52.5	215.0	144.0	61.5	1440.3	1965
1966	21.0	66.5	24.0	35.5	52.5	110.5	151.5	186.5	96.0	66.0	-9.9	125.0	-9.9	1966
1967	23.0	21.0	65.0	121.0	126.0	253.0	221.0	270.0	61.0	82.5	245.0	29.5	1542.0	1967
1968	7.0	76.5	18.5	167.5	47.0	191.0	319.5	91.5	102.5	124.5	139.0	4.0	1288.5	1968
1969	89.0	17.0	7.0	115.4	140.9	199.0	277.0	138.0	66.0	233.5	118.5	56.5	1457.8	1969
1970	111.5	97.0	61.5	84.0	172.0	106.0	207.0	110.0	138.0	204.0	217.0	10.0	1518.0	1970
1971														1971
1972	195.8	40.5	64.5	98.4	163.0	-9.9	164.8	113.2	109.9	121.1	101.9	28.0	-9.9	1972
1973	28.0	0.0	39.0	69.0	216.5	188.0	204.0	237.0	161.5	128.0	140.0	130.0	1541.0	1973
1974	54.0	96.0	152.0	108.0	189.0	115.0	249.2	160.0	100.1	121.3	140.3	14.2	1499.1	1974
1975	18.5	42.7	110.0	60.6	159.4	262.3	108.9	197.9	175.0	142.4	121.0	170.8	1569.5	1975
1976	35.2	22.8	83.2	180.9	249.4	232.1	376.0	188.6	138.9	189.4	95.3	55.8	1847.6	1976
1977	-9.9	26.8	72.7	110.9	61.1	148.9	180.2	130.5	167.3	160.2	140.4	39.9	-9.9	1977
1978	10.1	8.3	53.5	194.8	159.0	229.8	129.3	222.2	116.0	72.2	61.6	54.8	1311.6	1978
1979	15.4	28.8	101.0	208.1	136.7	266.9	117.6	185.2	67.1	202.2	166.3	64.4	1581.7	1979
NUMERO DE ANOS	23	24	24	24	24	23	23	24	24	24	23	24	20	
VALOR MAXIMO	195.8	103.0	163.0	236.0	249.4	331.3	376.0	270.0	180.3	236.5	249.0	170.8	1847.6	
CUARTIL SUPERIOR	54.0	75.8	98.9	155.3	185.0	232.1	249.2	212.3	142.9	190.2	144.0	71.8	1565.6	
MEDIANA	24.0	28.4	63.3	106.5	144.2	190.0	199.8	177.8	111.4	127.2	121.0	56.5	1478.4	
CUARTIL INFERIOR	18.5	20.8	37.5	78.6	100.5	129.0	151.5	141.0	84.8	107.3	83.6	28.8	1364.2	
VALOR MINIMO	0.0	0.0	0.0	35.5	47.0	102.4	108.9	91.5	52.5	37.0	36.3	2.3	1129.5	
PROMEDIOS	41.6	44.7	71.3	117.8	145.0	188.2	208.2	178.0	114.6	142.2	124.9	61.7	1463.9	
									TOTAL DE LOS PROMEDIOS MENSUALES =				1438.2	
PORCENTAJES	2.9	3.1	5.0	8.2	10.1	13.1	14.5	12.4	8.0	9.9	8.7	4.3		

TRIMESTRE MAS LLUVIOSO JUN JUL AGO **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 30. INDICE DE ARREGUOS = 144.

DEV. ESTANDAR	43.5	32.7	46.6	52.5	56.2	62.3	70.3	50.3	38.2	56.3	54.5	44.3	163.2
COEF. VARIACION	1.047	0.732	0.653	0.445	0.388	0.331	0.338	0.283	0.334	0.396	0.436	0.719	0.112
COEF. ASIMETRIA	2.381	0.618	0.448	0.792	-0.048	0.352	0.736	0.146	0.091	0.013	0.480	0.749	0.056

PROYECTO ICAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
21253J	PALO BLANCO	BOGOTA D E	+04 31 08	+074 03 44	3260 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	34.0	75.0	55.0	76.0	181.0	157.0	136.0	267.0	147.0	120.5	36.3	120.0	1404.8	1960
1961	43.5	25.0	163.0	105.0	93.0	258.0	292.4	250.0	64.0	126.4	127.1	7.0	1554.4	1961
1962	19.0	28.0	91.0	93.0	121.0	190.0	269.0	212.0	99.0	121.0	93.0	70.5	1406.5	1962
1963	30.0	99.0	17.0	236.0	213.0	205.0	182.5	193.5	56.0	37.0	80.0	2.3	1351.3	1963
1964	0.0	49.0	0.0	73.0	147.5	108.0	217.5	170.5	113.0	94.2	83.6	73.2	1129.5	1964
1965	24.0	16.0	43.0	192.0	206.0	181.5	199.8	105.0	52.5	215.0	144.0	61.5	1440.3	1965
1966	21.0	66.5	24.0	35.5	52.5	110.5	151.5	186.5	96.0	66.0	153.2	125.0	1088.2	1966
1967	23.0	21.0	65.0	121.0	126.0	253.0	221.0	270.0	81.0	82.5	249.0	29.5	1542.0	1967
1968	7.0	76.5	18.5	167.5	47.0	191.0	319.5	91.5	102.5	124.5	139.0	4.0	1288.5	1968
1969	89.0	17.0	7.0	115.4	140.9	199.0	277.0	138.0	66.0	233.5	118.5	56.5	1457.8	1969
1970	111.5	97.0	61.5	84.0	172.0	106.0	207.0	110.0	138.0	204.0	217.0	10.0	1518.0	1970
1971	51.5	74.0	124.1	147.5	133.5	130.0	256.2	138.2	87.4	288.0	161.8	34.5	1626.7	1971
1972	195.8	40.6	84.5	98.4	163.0	259.4	164.8	113.2	109.9	121.1	101.9	28.0	1480.6	1972
1973	28.0	0.0	39.0	69.0	216.5	188.0	204.0	237.0	161.5	128.0	140.0	130.0	1541.0	1973
1974	54.0	96.0	152.0	108.0	189.0	115.0	249.2	160.0	100.1	121.3	140.3	14.2	1499.1	1974
1975	18.5	42.7	110.0	60.6	159.4	262.3	108.9	197.9	175.0	142.4	121.0	170.8	1569.5	1975
1976	35.2	22.8	83.2	180.9	249.4	232.1	376.0	188.6	138.9	189.4	95.3	55.8	1847.6	1976
1977	36.8	26.8	72.7	110.9	81.1	148.5	180.2	130.5	167.3	160.2	140.4	39.9	1295.7	1977
1978	10.1	8.3	53.5	194.8	159.0	229.8	129.3	222.2	116.0	72.2	61.6	54.8	1311.6	1978
1979	15.4	28.8	101.0	208.1	136.7	266.9	117.6	185.2	87.1	202.2	168.3	64.4	1581.7	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	195.8	99.0	163.0	236.0	249.4	266.9	376.0	270.0	175.0	288.0	249.0	170.8	1847.6	
CUARTIL SUPERIOR	47.5	74.5	96.0	174.2	185.0	242.5	262.6	217.1	138.4	195.8	148.6	71.8	1548.2	
MEDIANA	29.0	34.7	83.3	109.4	153.3	190.5	205.5	185.8	101.3	125.4	133.0	55.3	1469.2	
CUARTIL INFERIOR	18.8	21.9	31.5	80.0	123.5	139.4	158.1	134.3	84.0	107.3	94.1	21.1	1331.4	
VALOR MINIMO	0.0	0.0	0.0	35.5	47.0	106.0	108.9	91.5	52.5	37.0	36.3	2.3	1088.2	
PROMEDIOS	42.4	45.5	68.3	123.8	149.4	189.6	213.0	178.3	107.9	142.5	128.6	57.6	1446.7	
PORCENTAJES	2.9	3.1	4.7	8.6	10.3	13.1	14.7	12.3	7.5	9.8	8.9	4.0		

TRIMESTRE MAS LLUVIOSO JUN JUL AGO **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 31. INDICE DE ARNOLDUS = 146.

INDICE DE IRREGULARIDAD INTERANUAL =1.36

DEV. ESTANDAR	44.9	31.5	46.1	55.6	53.7	56.4	71.1	54.5	36.8	62.9	49.7	47.1	173.6
COEF. VARIACION	1.060	0.691	0.675	0.449	0.359	0.297	0.334	0.306	0.341	0.441	0.387	0.818	0.120

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1733.	1669.	1593.	1447.	1301.	1224.	1161.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.464	0.489	0.478	0.508	-0.253	-0.143	0.515	0.101	0.322	0.571	0.556	0.940	-0.121

IMPRESO EN COLOMBIA POR DANARVIC

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211928	SAN ANTONIO	BOGOTA D.E.	+04 06 00	+074 20 00	2800 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1972	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	54.0	-9.9	73.0	104.0	128.0	64.0	-9.9
1973	35.0	6.0	28.0	70.0	106.0	107.0	109.0	98.0	252.0	170.0	138.0	175.0	1294.0
1974	22.0	119.0	133.0	201.0	123.0	139.0	42.0	51.0	176.0	216.0	221.0	12.0	1455.0
1975	5.0	65.0	122.0	117.0	129.5	103.0	155.0	59.0	102.0	291.0	178.0	156.0	1482.5
1976	50.0	77.0	120.0	163.0	146.0	139.0	57.0	40.0	25.0	277.0	56.0	33.0	1183.0
1977	2.0	11.0	59.0	87.0	100.0	138.0	104.0	60.0	28.0	60.0	200.0	62.0	911.0
1978	20.0	21.0	89.0	173.0	70.0	127.0	159.0	63.0	25.0	104.0	45.0	47.0	943.0
1979	17.0	6.0	35.0	102.0	68.0	105.0	49.0	121.0	377.0	266.0	169.0	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA PER DANARAVO

ESTACION X EL GUAMO MUNICIPIO DE BOGOTA D.E. PERIODO 1972 - 1979 COEF DE CORRECCION 1.020

ESTACION Y SAN ANTONIO MUNICIPIO DE BOGOTA D.E. PERIODO 1972 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1973	1053.	943.	1.040	0.031					+ .				
2	1977	2029.	1654.	0.998	0.030					*				
3	1976	3434.	3037.	1.106	0.133					I+				
4	1975	5084.	4520.	1.037	0.178					I+ .				
5	1974	6391.	5975.	0.837	-0.018					+				
6	1971	7809.	7269.	1.017	0.0					+.				

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 1300.7 1211.4

RAZONES PROMEDIOS Y/X = 0.931
X/Y = 1.074

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211923	SAN ANTONIO	BOGOTA D.E.	+04 05 52	+074 15 57	3400 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1972	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	54.0	-9.9	73.0	104.0	126.0	64.0	-9.9	1972
1973	35.0	0.0	28.0	70.0	106.0	107.0	109.0	98.0	252.0	170.0	136.0	175.0	1294.0	1973
1974	22.0	119.0	133.0	201.0	123.0	139.0	42.0	51.0	176.0	216.0	221.0	12.0	1455.0	1974
1975	5.0	65.0	122.0	117.0	129.5	103.0	155.0	59.0	102.0	291.0	176.0	156.0	1482.5	1975
1976	50.0	77.0	120.0	163.0	146.0	139.0	57.0	40.0	25.0	277.0	56.0	33.0	1183.0	1976
1977	2.0	11.0	59.0	87.0	100.0	138.0	104.0	60.0	28.0	60.0	200.0	62.0	911.0	1977
1978	20.0	21.0	89.0	173.0	70.0	127.0	159.0	63.0	25.0	104.0	45.0	47.0	943.0	1978
1979	17.0	0.0	35.0	102.0	68.0	105.0	49.0	121.0	377.0	266.0	169.0	-9.9	-9.9	1979
NUMERO DE ANOS	7	7	7	7	7	7	8	7	8	8	8	7	6	
VALOR MAXIMO	50.0	119.0	133.0	201.0	146.0	139.0	159.0	121.0	377.0	291.0	221.0	175.0	1482.5	
MEDIANA	20.0	21.0	89.0	117.0	106.0	127.0	80.5	60.0	87.5	193.0	153.5	62.0	1238.5	
VALOR MINIMO	2.0	0.0	28.0	70.0	68.0	103.0	42.0	40.0	25.0	60.0	45.0	12.0	911.0	
PROMEDIOS	21.6	43.0	83.7	130.4	106.1	122.6	91.1	70.3	132.3	186.0	141.9	78.4	1211.4	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1207.9	
PORCENTAJES	1.8	3.6	6.9	10.8	8.8	10.1	7.5	5.8	10.9	15.4	11.7	6.5		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 29. INDICE DE ARNOLDUS = 119.

DEV. ESTANDAR	16.7	44.1	43.5	49.0	29.5	17.0	47.7	28.6	127.9	89.6	64.0	62.3	246.1
COEF. VARIACION	0.773	1.012	0.519	0.375	0.278	0.139	0.523	0.407	0.967	0.482	0.451	0.794	0.203
COEF. ASIMETRIA	0.666	0.883	-0.227	0.269	-0.191	-0.192	0.822	1.133	1.150	-0.174	-0.572	0.909	-0.233

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212023	SAN DIEGO	BOGOTA D.E.	+04 37 00	+074 04 00	2700 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1946	66.6	37.3	50.2	185.4	67.5	33.7	45.4	46.5	-9.9	-9.9	-9.9	25.3	-9.9
1947	-9.9	-9.9	-9.9	-9.9	41.2	52.2	66.2	29.1	105.9	120.8	34.7	7.2	-9.9
1948	4.0	48.1	105.5	-9.9	67.9	51.0	47.5	34.0	67.0	96.5	172.7	36.5	-9.9
1949	31.7	72.5	140.7	30.5	152.2	69.1	51.0	37.5	48.0	146.5	52.1	27.4	865.2
1950	104.6	164.8	135.5	213.8	187.5	107.4	68.2	55.0	86.2	277.0	70.4	189.5	1659.9
1951	24.7	90.5	89.0	107.0	99.2	39.0	58.3	35.5	25.7	141.0	283.0	51.2	1044.1
1952	90.0	76.0	122.5	181.5	150.6	54.0	98.0	43.0	29.0	88.0	267.7	165.0	1365.3
1953	72.0	20.0	65.0	48.0	115.6	72.4	47.0	14.0	125.0	244.0	133.0	17.0	973.0
1954	51.0	64.0	124.0	97.0	124.0	106.0	69.0	45.0	61.0	-9.9	217.0	151.0	-9.9
1955	45.0	69.0	45.0	121.5	58.0	116.2	84.0	24.0	83.0	231.5	160.0	137.0	1174.2
1956	53.0	133.0	94.1	34.5	40.9	76.8	24.5	25.0	35.6	167.0	51.5	106.0	841.9
1957	65.3	37.3	119.6	118.7	232.7	36.7	35.1	27.6	40.9	154.4	116.0	47.3	1031.6
1958	12.9	25.7	39.2	24.2	55.8	35.3	7.2	41.5	31.3	120.5	278.5	92.0	764.1
1959	10.0	62.0	17.0	95.0	106.5	22.2	75.5	39.6	39.0	111.2	178.9	43.6	741.5
1960	11.7	45.2	75.9	118.9	17.7	26.0	60.4	66.5	63.1	112.8	50.0	-9.9	-9.9
1961	44.0	28.5	142.9	87.5	31.0	106.0	52.0	33.0	29.0	191.0	155.0	22.0	923.9
1962	118.5	39.0	112.0	115.0	104.0	99.0	41.0	59.0	26.5	162.5	164.5	128.5	1169.5
1963	42.0	240.5	70.0	149.0	140.0	61.0	24.0	27.0	38.5	112.0	202.0	16.0	1122.0
1964	11.0	10.5	6.0	106.0	101.5	63.5	69.5	16.6	19.8	45.5	58.7	89.0	617.6
1965	5.0	34.0	12.0	204.0	177.0	24.0	43.1	24.0	10.0	175.3	164.0	25.5	897.9
1966	3.0	93.5	73.0	52.5	85.5	123.5	34.0	46.5	42.5	102.0	232.0	-9.9	-9.9
1967	26.0	39.0	81.0	86.5	72.5	89.5	61.0	32.0	61.0	89.5	225.0	57.0	920.0
1968	5.0	89.5	38.5	257.5	37.5	98.5	45.0	14.5	55.0	160.5	194.5	49.5	1045.5
1969	148.0	54.5	3.0	169.0	88.0	42.0	24.0	46.0	76.0	208.0	66.0	68.0	952.5
1970	82.0	92.0	44.0	32.0	91.0	40.0	36.0	27.0	64.0	312.3	113.0	11.0	944.3
1971	49.5	85.0	142.5	244.0	193.0	70.0	45.2	59.4	107.6	109.6	125.8	108.1	1339.7
1972	200.9	108.6	133.5	245.0	-9.9	-9.9	-9.9	31.4	32.3	113.4	168.3	17.5	-9.9
1973	18.5	6.6	54.6	93.2	55.7	56.8	58.7	96.9	130.3	150.4	135.4	128.7	985.8
1974	34.6	193.8	113.9	115.8	117.6	31.3	38.8	22.4	57.0	114.8	220.4	31.7	1092.1
1975	14.9	92.0	75.9	110.3	173.8	49.4	118.1	75.8	73.0	143.5	98.8	158.2	1183.7
1976	21.9	41.9	155.5	104.1	114.2	56.3	41.9	40.1	83.0	220.6	119.4	57.4	1056.3
1977	15.7	-9.9	-9.9	-9.9	-9.9	36.3	60.6	39.2	113.1	96.7	229.0	86.2	-9.9
1978	0.5	61.5	80.7	190.9	114.3	75.5	49.2	42.6	71.4	126.8	110.1	66.0	989.5
1979	38.2	109.2	149.7	139.4	85.7	107.6	111.8	117.9	61.8	195.8	261.9	45.1	1432.1

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANEBASIC

ESTACION X EL DELIFIC MUNICIPIO DE BOGOTA D.E. PERIODO 1946 - 1979 COEF DE CORRECCION 1.000

ESTACION Y SAN DIEGO MUNICIPIO DE BOGOTA D.E. PERIODO 1946 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	CUY	RAN	FCAN	F = -4. I F : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	1134.	1432.	0.679	-0.437					+ I				
2	1978	2108.	2422.	0.844	-0.564				.	+ I				
3	1976	3470.	3478.	1.106	-0.478					+ I	.			
4	1975	4640.	4662.	0.848	-0.645				.	+ I				
5	1974	5758.	5754.	0.878	-0.776				.	+ I				
6	1973	6758.	6739.	0.905	-0.866					.+ I				
7	1971	8116.	8079.	0.844	-1.064				.	+ I				
8	1970	9411.	9023.	1.177	-0.505					+ I		.		
9	1969	10550.	10016.	0.984	-0.520					+ .I				
10	1968	11679.	11061.	1.090	-0.630					+ I	.			
11	1967	13346.	11961.	1.370	-0.507					+ I				.
12	1964	14426.	12595.	1.495	-0.213					+ I				.
13	1963	15779.	13721.	1.033	-0.176					+I .				
14	1962	17129.	14891.	0.987	-0.152					+I				
15	1961	18246.	15814.	1.041	-0.156					+I .				
16	1959	19454.	16556.	1.444	0.157					I+				.
17	1958	20566.	17320.	1.204	0.206					I +		.		
18	1957	21643.	18352.	1.061	0.365					I + .				
19	1956	23154.	19194.	1.236	0.434					I +				
20	1955	24446.	20366.	0.944	0.571					. I +				
21	1953	25743.	21341.	1.143	0.704					I +	.			
22	1952	27276.	22705.	0.963	0.656					. I +				
23	1951	28317.	23750.	0.858	0.512				.	I +				
24	1950	29506.	25410.	0.822	0.231				.	I +				
25	1949	30634.	26275.	0.715	0.0			.		+				

N	AN	CLX	CUY	RAN	FCAN	F = -4. I F : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 1225.3 1051.0

RAZONES PROMEDIOS Y/X = 0.858

X/Y = 1.166

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-CASTOR *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CASTOR

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212023	SAN DIEGO	BOGOTA D.E.	+04 36 36	+074 04 00	2700 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1971	49.5	85.0	142.5	244.0	193.0	70.0	45.2	59.4	107.6	109.6	125.8	108.1	1339.7	1971
1972	200.5	108.6	133.5	245.0	-9.9	-9.9	-9.9	31.4	32.3	113.4	166.3	17.5	-9.9	1972
1973	18.5	6.6	54.6	93.2	55.7	56.8	58.7	96.9	130.3	150.4	135.4	128.7	985.6	1973
1974	34.6	193.6	113.9	115.8	117.6	31.3	38.8	22.4	57.0	114.6	220.4	31.7	1092.1	1974
1975	14.9	92.0	75.9	110.3	173.8	49.4	118.1	75.8	73.0	143.5	98.8	158.2	1183.7	1975
1976	21.9	41.9	155.5	104.1	114.2	56.3	41.9	40.1	63.0	220.6	119.4	57.4	1056.3	1976
1977	15.7	-9.9	-9.9	-9.9	-9.9	36.3	60.6	39.2	113.1	96.7	229.0	86.2	-9.9	1977
1978	0.5	61.5	80.7	190.9	114.3	75.5	49.2	42.6	71.4	126.8	110.1	66.0	989.5	1978
1979	38.2	109.2	149.7	139.4	65.7	107.6	111.8	117.9	61.8	199.8	261.9	49.1	1432.1	1979
NUMERO DE ANOS	9	8	8	8	7	8	8	9	9	9	9	9	7	
VALOR MAXIMO	200.9	193.8	155.5	245.0	193.0	107.6	118.1	117.9	130.3	220.6	261.9	158.2	1432.1	
MEDIANA	21.9	68.5	123.7	127.6	114.3	56.5	53.9	42.6	73.0	126.8	135.4	66.0	1092.1	
VALOR MINIMO	0.5	6.6	54.6	93.2	65.7	31.3	38.8	22.4	32.3	96.7	98.8	17.5	985.6	
PROMEDIOS	43.9	87.3	113.3	155.3	122.0	60.4	65.5	58.4	81.1	141.7	163.2	78.1	1154.2	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1170.3	
PORCENTAJES	3.7	7.5	9.7	13.3	10.4	5.2	5.6	5.0	6.9	12.1	13.9	6.7		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 23. INDICE DE ARREGUDS = 113.

DEV. ESTANDAR	60.7	55.5	38.3	62.7	47.6	24.3	31.5	32.2	30.9	42.5	59.6	46.3	173.9
COEF. VARIACION	1.383	0.635	0.338	0.403	0.390	0.402	0.480	0.552	0.381	0.300	0.365	0.593	0.151
COEF. ASIMETRIA	2.675	0.659	-0.448	0.720	0.336	0.924	1.215	0.909	0.176	1.078	0.650	0.506	0.773

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211927	SAN JUAN	BOGOTA D.E.	+04 02 00	+074 19 00	2900 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1972	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	93.0	63.0	99.0	170.0	252.0	86.0	-9.9
1973	8.0	1.0	170.0	102.0	102.0	108.0	95.0	109.0	192.0	138.0	115.0	108.0	1242.0
1974	64.0	71.5	78.0	59.5	37.0	38.0	17.0	25.0	51.0	75.0	61.0	10.0	587.0
1975	2.0	46.0	90.0	66.0	81.0	72.0	80.0	95.0	117.0	147.0	181.0	89.0	1066.0
1976	27.0	21.0	101.0	77.0	83.0	61.0	37.0	1.0	-9.9	54.0	81.0	40.0	-9.9
1977	3.0	38.0	36.0	69.0	100.0	56.0	50.0	72.0	99.0	150.0	153.0	80.0	908.0
1978	0.0	21.0	214.0	339.0	241.0	174.0	92.0	130.0	163.0	126.0	167.0	262.0	1929.0
1979	30.0	24.0	126.1	186.8	111.0	193.2	112.6	150.3	130.8	246.7	194.8	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAPAP

ESTACION X SAN JUAN MUNICIPIO DE BOGOTA D.E. PERIODO 1972 - 1979 COEF DE CORRECCION 1.000

ESTACION Y EL CHOCHAL LOS AMARILLOS MUNICIPIO DE BOGOTA D.E. PERIODO 1972 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R = 0.5	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1973	1929.	1054.	2.066	0.868					I +				.
2	1977	2837.	2154.	0.907	0.787				.	I +				
3	1975	3903.	3629.	0.834	0.602				.	I +				
4	1974	4490.	5093.	0.463	-0.017				.	+				
5	1976	5732.	5473.	1.016	0.0					+.				

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R = 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

2 PROMEDIOS = 1146.4 1294.7

RAZONES 2 PROMEDIOS Y/X = 1.129

X/Y = 0.885

********** * PRUEBAS DE DOBLE MASA * **********

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212063	SAN LUIS	BOGOTA	+04 38 00	+074 02 00	2900 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1936	-9.9	69.1	61.5	72.2	196.5	75.7	14.4	25.4	18.2	171.8	82.6	113.5	-9.9
1937	23.0	61.4	37.0	29.4	26.2	9.9	21.0	8.8	10.0	10.7	18.2	8.4	266.0
1938	9.1	57.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	141.5	-9.9
1939	39.9	2.1	110.7	67.7	50.5	31.6	43.8	41.7	36.4	170.0	156.3	66.8	817.5
1940	94.3	47.8	6.3	109.6	70.9	63.9	44.8	36.4	25.2	75.5	186.5	113.2	874.4
1941	25.1	20.8	51.2	71.4	94.3	35.9	36.8	27.8	47.5	131.2	152.7	34.0	734.7
1942	58.8	87.4	47.8	199.7	58.9	70.6	0.0	49.5	17.0	205.5	68.5	25.3	889.0
1943	67.1	44.4	82.4	85.2	26.9	68.3	71.9	78.8	12.4	15.2	25.8	19.1	601.5
1944	26.0	1.2	25.2	29.0	33.7	21.4	9.2	10.1	8.1	15.2	26.8	18.9	228.8
1945	2.5	8.8	5.3	20.1	63.8	3.5	22.2	23.5	9.3	48.8	68.8	12.0	289.0
1946	0.0	51.3	65.1	104.6	80.9	84.6	79.6	139.2	0.0	12.9	225.0	198.9	1042.1
1947	98.9	40.1	42.4	33.3	64.2	83.9	111.4	46.7	156.2	107.1	28.7	9.1	822.0
1948	12.3	54.4	15.9	209.8	98.6	82.4	51.0	52.0	66.0	93.0	185.0	52.0	952.4
1949	30.7	36.0	95.0	101.0	118.0	74.0	78.0	50.0	59.0	157.0	50.0	42.0	850.7
1950	131.0	158.0	137.0	168.0	191.0	104.0	71.0	91.0	90.7	180.1	109.8	100.1	1531.7
1951	13.2	87.8	134.0	66.9	106.3	50.9	0.0	40.9	27.3	185.5	159.6	21.1	897.5
1952	118.7	83.4	122.5	181.0	167.0	68.8	105.6	63.7	30.5	80.3	282.8	113.5	1417.8
1953	43.8	9.3	72.6	68.9	88.2	75.0	73.9	18.6	106.2	205.5	139.6	21.7	931.3
1954	65.9	67.0	40.1	182.0	156.2	109.3	89.4	104.8	64.7	222.5	218.9	163.8	1484.6
1955	23.7	99.8	105.7	133.9	39.5	102.4	97.8	22.5	129.8	201.4	141.4	114.0	1211.9
1956	60.3	134.7	124.5	56.8	61.7	109.3	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1957	58.2	22.7	221.6	108.4	265.3	98.3	63.6	47.0	51.3	210.5	86.0	106.4	1299.3
1958	38.8	47.2	43.9	44.5	48.9	40.6	32.7	67.4	28.3	142.4	287.6	116.1	938.4
1959	5.4	33.4	42.7	62.8	158.2	69.2	117.0	75.6	60.0	107.7	131.5	80.1	913.6
1960	37.7	73.3	77.6	129.5	81.9	37.0	81.6	110.1	69.3	117.2	91.4	165.0	1071.6
1961	45.9	66.0	163.4	98.6	40.2	126.6	63.0	49.6	45.7	185.6	132.0	16.0	1032.6
1962	72.6	66.4	108.5	89.8	66.2	111.0	51.0	70.8	41.6	151.2	133.8	136.6	1139.5
1963	91.1	147.5	45.6	271.9	124.5	56.9	45.8	48.5	38.7	118.6	177.9	31.6	1198.6
1964	4.4	18.7	1.8	133.4	131.8	132.7	92.5	36.3	40.3	106.5	63.7	117.6	879.7
1965	11.1	29.8	22.2	211.2	138.1	50.0	71.7	37.5	16.2	238.9	149.5	-9.9	-9.9
1966	7.7	11.8	104.5	82.3	67.0	60.2	40.9	59.8	57.4	105.9	318.9	255.5	1146.3
1967	60.8	27.9	159.9	147.2	113.8	110.1	62.5	49.8	61.2	86.6	226.9	73.8	1180.5
1968	41.9	97.5	17.7	160.6	65.1	145.6	69.1	33.5	58.6	187.7	229.2	69.9	1200.4
1969	51.7	72.1	4.4	230.0	105.6	47.1	38.5	58.4	54.0	202.6	104.3	60.1	1028.8
1970	72.1	182.0	59.9	37.2	113.2	65.6	70.8	52.8	63.0	293.6	186.1	11.4	1207.7
1971	61.2	105.9	184.0	159.4	134.3	83.9	55.5	82.6	54.3	55.8	124.0	78.8	1149.7
1972	185.1	96.1	120.8	224.3	121.6	86.2	63.8	36.2	24.4	160.2	187.2	34.0	1339.9
1973	3.8	1.1	51.1	86.1	51.9	62.2	38.4	83.1	129.6	147.4	131.1	218.4	1004.2
1974	45.9	170.5	73.3	74.5	116.8	24.0	42.2	26.3	66.0	75.5	152.2	30.7	897.5
1975	9.0	105.2	87.4	66.2	125.4	72.5	89.5	69.1	67.5	100.0	159.6	173.0	1134.4
1976	40.4	44.8	153.1	125.0	90.9	60.6	39.4	23.2	65.4	255.5	88.0	86.0	1076.7
1977	0.0	17.0	60.5	158.6	32.1	38.5	71.3	47.8	82.2	64.4	178.1	102.7	853.2
1978	0.0	36.6	93.0	234.5	104.3	82.0	60.4	34.3	79.4	83.3	54.4	120.2	982.4
1979	73.0	46.8	130.0	121.4	120.6	106.0	42.9	89.4	60.7	264.4	259.1	52.0	1366.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA - FOR DANANEL

ESTACION X SAN LUIS MUNICIPIO DE BOGOTA PERIODO 1936 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN
1	1979	1366.3	1366.3	1366.3	1.281	0.369
2	1978	982.4	2348.7	1174.3	-0.053	0.353
3	1977	853.2	3201.9	1067.3	-0.493	0.208
4	1976	1076.7	4278.6	1069.6	0.267	0.287
5	1975	1134.4	5413.0	1082.6	0.463	0.423
6	1974	897.9	6310.9	1051.8	-0.341	0.323
7	1973	1004.2	7315.1	1045.0	0.021	0.325
8	1972	1339.9	8655.0	1081.9	1.152	0.671
9	1971	1149.7	9804.7	1089.4	0.815	0.823
10	1970	1207.7	11012.4	1101.2	0.712	1.033
11	1969	1028.8	12041.2	1094.7	0.104	1.064
12	1968	1200.4	13241.6	1103.5	0.688	1.267
13	1967	1180.5	14422.1	1109.4	0.620	1.445
14	1966	1146.3	15568.4	1112.0	0.504	1.598
15	1964	879.7	16448.1	1096.5	-0.402	1.475
16	1963	1198.6	17646.7	1102.9	0.281	1.680
17	1962	1139.5	18786.2	1105.1	0.481	1.822
18	1961	1032.6	19818.8	1101.0	0.117	1.856
19	1960	1071.6	20890.4	1099.5	0.250	1.930
20	1959	913.6	21804.0	1090.2	-0.287	1.845
21	1958	938.4	22742.4	1083.0	-0.203	1.785
22	1957	1295.3	24041.7	1092.8	1.024	2.087
23	1955	1211.9	25253.6	1098.0	0.727	2.301
24	1954	1484.6	26738.2	1114.1	1.653	2.789
25	1953	931.3	27669.5	1106.8	-0.227	2.722
26	1952	1417.8	29087.3	1118.7	1.426	3.142
27	1951	897.5	29984.8	1110.5	-0.242	3.041
28	1950	1531.7	31516.5	1125.6	1.814	3.576
29	1949	890.7	32407.2	1117.5	-0.365	3.466
30	1948	952.4	33359.6	1112.0	-0.185	3.423
31	1947	822.0	34181.6	1102.6	-0.595	3.246
32	1946	1042.1	35223.7	1100.7	0.149	3.290
33	1945	289.0	35512.7	1076.1	-2.410	2.680
34	1944	228.8	35741.4	1051.2	-2.615	1.809
35	1943	601.5	36342.9	1038.4	-1.348	1.412
36	1942	889.0	37231.9	1034.2	-0.371	1.302
37	1941	734.7	37966.6	1026.1	-0.695	1.038
38	1940	874.4	38841.0	1022.1	-0.420	0.914
39	1939	817.5	39658.5	1016.9	-0.614	0.733
40	1937	266.0	39924.5	998.1	-2.488	0.0

F = -3. -2. -1. 0.0 +1. +2. +3.

N AN T A CU MOY ECR PCAN

PROMEDIO DE LOS 40 ANOS = 998.1
DESVIACION ESTANDAR = 294.2
COEFICIENTE DE VARIACION = 0.295

****
* PRUEBAS DE SIMPLE MASA *
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Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212063	SAN LUIS	EGGCTA	+04 37 47	+074 02 36	2900 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1946	0.0	51.3	65.1	104.6	80.9	84.6	79.6	139.2	0.0	12.9	225.0	198.9	1042.1	1946
1947	98.9	40.1	42.4	33.3	64.2	83.9	111.4	46.7	156.2	107.1	28.7	9.1	822.0	1947
1948	12.3	54.4	15.9	209.8	98.6	62.4	51.0	52.0	66.0	93.0	165.0	52.0	952.4	1948
1949	30.7	36.0	95.0	101.0	118.0	74.0	78.0	50.0	59.0	157.0	50.0	42.0	890.7	1949
1950	131.0	158.0	137.0	168.0	191.0	104.0	71.0	91.0	90.7	180.1	109.8	100.1	1531.7	1950
1951	13.2	87.8	134.0	60.9	106.3	50.9	0.0	40.9	27.3	189.5	159.6	21.1	697.5	1951
1952	118.7	83.4	122.5	181.0	167.0	68.8	105.6	63.7	30.5	80.3	282.8	113.5	1417.8	1952
1953	43.8	9.3	72.6	68.9	88.2	79.0	73.9	18.6	106.2	209.5	139.6	21.7	931.3	1953
1954	65.9	67.0	40.1	182.0	156.2	109.3	89.4	104.8	64.7	222.5	218.9	163.8	1484.6	1954
1955	23.7	99.8	105.7	133.9	39.5	102.4	97.8	22.5	129.8	201.4	141.4	114.0	1211.9	1955
1956	60.3	134.7	124.5	56.8	61.7	109.3	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1956
1957	58.2	22.7	221.6	108.4	265.3	58.3	63.6	47.0	51.3	210.5	86.0	106.4	1299.3	1957
1958	38.8	47.2	43.9	44.5	48.9	40.6	32.7	67.4	28.3	142.4	287.6	116.1	938.4	1958
1959	5.4	33.4	42.7	62.8	158.2	69.2	117.0	75.6	60.0	107.7	131.5	50.1	913.6	1959
1960	37.7	73.3	77.6	129.5	81.9	37.0	81.6	110.1	69.3	117.2	91.4	165.0	1071.6	1960
1961	45.9	66.0	163.4	98.6	40.2	126.6	63.0	49.6	45.7	185.6	122.0	16.0	1032.6	1961
1962	72.6	66.4	108.5	89.8	66.2	111.0	51.0	70.8	41.6	191.2	133.8	136.6	1139.5	1962
1963	91.1	147.5	45.6	271.9	124.5	56.9	45.8	48.5	38.7	118.6	177.9	31.6	1198.6	1963
1964	4.4	18.7	1.8	133.4	131.8	132.7	92.5	36.3	40.3	106.5	63.7	117.6	879.7	1964
1965	11.1	29.8	22.2	211.2	138.1	50.0	71.7	37.5	16.2	238.9	149.5	-9.9	-9.9	1965
1966	7.7	11.8	104.5	52.3	67.0	60.2	40.9	59.8	57.4	109.9	318.9	255.9	1146.3	1966
1967	60.8	27.9	159.9	147.2	113.8	110.1	62.5	49.8	61.2	86.6	226.9	73.8	1180.5	1967
1968	41.9	97.5	17.7	180.6	65.1	149.6	69.1	33.5	58.6	187.7	229.2	69.9	1200.4	1968
1969	51.7	72.1	4.4	230.0	105.6	47.1	38.5	58.4	54.0	202.6	104.3	60.1	1028.8	1969
1970	72.1	182.0	59.9	37.2	113.2	65.6	70.8	52.8	63.0	293.6	186.1	11.4	1207.7	1970
1971	61.2	105.5	184.0	159.4	134.3	53.9	55.5	82.6	54.3	55.8	124.0	78.8	1149.7	1971
1972	185.1	96.1	120.8	224.3	121.6	86.2	63.8	36.2	24.4	160.2	187.2	34.0	1339.9	1972
1973	3.8	1.1	51.1	86.1	81.9	62.2	38.4	83.1	129.6	147.4	131.1	218.4	1004.2	1973
1974	45.9	170.5	73.3	74.5	116.8	24.0	42.2	26.3	66.0	75.5	152.2	30.7	697.9	1974
1975	9.0	105.2	97.4	60.2	125.4	72.5	89.5	69.1	67.5	100.0	159.6	173.0	1134.4	1975
1976	40.4	44.8	153.1	125.0	90.9	60.6	39.4	23.2	65.4	259.9	66.0	86.0	1076.7	1976
1977	0.0	17.0	60.5	158.6	32.1	38.5	71.3	47.8	82.2	64.4	178.1	102.7	853.2	1977
1978	0.0	36.6	93.0	234.5	104.3	82.0	60.4	34.3	79.4	83.3	54.4	120.2	982.4	1978
1979	73.0	46.8	130.0	121.4	120.6	106.0	42.9	89.4	60.7	264.4	259.1	52.0	1366.3	1979

*** CARACTERISTICAS PLUVIOMETRICAS MENSUALES Y ANUALES DE LA PAGINA ANTERIOR ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
NUMERO DE ANOS	34	34	34	34	34	34	33	33	33	33	33	32	32
VALOR MAXIMO	185.1	182.0	221.6	271.9	265.3	149.6	117.0	139.2	156.2	293.6	316.9	255.9	1531.7
CUARTIL SUPERIOR	65.9	97.5	124.5	180.6	125.4	104.0	80.6	73.2	68.4	202.0	203.0	118.9	1204.0
MEDIANA	42.8	60.2	85.3	123.2	105.9	70.8	63.8	50.0	60.0	147.4	149.5	82.4	1074.1
CUARTIL INFERIOR	11.1	33.4	43.9	68.9	66.2	56.9	44.3	36.9	40.9	96.5	107.0	38.0	934.8
VALOR MINIMO	0.0	1.1	1.8	33.3	22.1	24.0	0.0	18.6	0.0	12.9	28.7	9.1	822.0
PROMEDIOS	47.5	68.9	88.0	128.0	105.6	77.3	65.5	58.1	62.0	150.4	157.4	92.0	1100.7
									TOTAL DE LOS PROMEDIOS MENSUALES =				1100.7
PORCENTAJES	4.3	6.3	8.0	11.6	9.6	7.0	6.0	5.3	5.6	13.7	14.3	8.4	

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 22. INDICE DE ARNOLDUS = 105.

DEV. ESTANDAR	42.2	47.9	54.0	64.4	48.1	30.0	25.1	27.4	32.8	67.9	71.1	63.8	190.2
COEF. VARIACION	0.887	0.695	0.614	0.503	0.456	0.388	0.384	0.472	0.528	0.451	0.452	0.693	0.173
COEF. ASIMETRIA	1.285	0.814	0.404	0.430	1.052	0.508	-0.082	1.012	0.990	0.178	0.383	0.778	0.591

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212063	SAN LUIS	BOGOTA	+04 37 47	+074 02 36	2900 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	37.7	73.3	77.6	149.5	81.9	37.0	81.6	110.1	69.3	117.2	91.4	165.0	1071.6	1960
1961	45.9	66.0	163.4	98.6	40.2	126.6	63.0	49.6	45.7	185.6	132.0	16.0	1032.6	1961
1962	72.6	66.4	108.5	89.8	66.2	111.0	51.0	70.8	41.6	191.2	133.8	136.6	1139.5	1962
1963	91.1	147.5	45.6	271.9	124.5	56.9	45.8	48.5	38.7	118.6	177.9	31.6	1198.6	1963
1964	4.4	18.7	1.8	133.4	131.8	132.7	92.5	36.3	40.3	106.5	63.7	117.6	879.7	1964
1965	11.1	29.8	22.2	211.2	138.1	50.0	71.7	37.5	16.2	238.9	149.2	77.9	1053.8	1965
1966	7.7	11.8	104.5	52.3	67.0	60.2	40.9	59.8	57.4	109.9	318.9	255.9	1146.3	1966
1967	60.8	27.9	159.9	147.2	113.8	110.1	62.5	49.8	61.2	86.6	226.9	73.8	1180.5	1967
1968	41.9	97.5	17.7	180.9	65.1	149.6	69.1	33.5	58.6	187.7	229.2	69.9	1200.4	1968
1969	51.7	72.1	4.4	230.0	105.6	47.1	38.5	58.4	54.0	202.6	104.3	60.1	1028.8	1969
1970	72.1	182.0	59.9	37.2	113.2	65.6	70.8	52.8	63.0	293.6	186.1	11.4	1207.7	1970
1971	61.2	105.9	184.0	159.4	134.3	53.9	55.5	82.6	54.3	55.8	124.0	78.8	1149.7	1971
1972	185.1	96.1	120.8	224.3	121.6	86.2	63.8	36.2	24.4	160.2	187.2	34.0	1339.9	1972
1973	3.8	1.1	51.1	80.1	51.9	62.2	38.4	83.1	129.6	147.4	131.1	218.4	1004.2	1973
1974	45.9	170.5	73.3	74.5	116.8	24.0	42.2	26.3	66.0	75.5	152.2	30.7	897.9	1974
1975	9.0	105.2	97.4	66.2	125.4	72.5	89.5	69.1	67.5	100.0	159.6	173.0	1134.4	1975
1976	40.4	44.8	153.1	125.0	50.9	60.6	39.4	23.2	65.4	259.9	88.0	86.0	1076.7	1976
1977	0.0	17.0	60.5	158.6	32.1	38.5	71.3	47.8	82.2	64.4	178.1	102.7	853.2	1977
1978	0.0	36.6	93.0	234.5	104.3	82.0	60.4	34.3	79.4	83.3	54.4	120.2	982.4	1978
1979	73.0	46.8	130.8	121.4	120.6	106.0	42.9	89.4	60.7	264.4	259.1	52.0	1366.3	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	185.1	182.0	184.0	271.9	138.1	149.6	92.5	110.1	129.6	293.6	318.9	255.9	1366.3	
CUARTIL SUPERIOR	66.6	101.3	125.4	195.9	123.0	108.0	71.0	69.9	66.8	196.9	186.6	128.4	1189.5	
MEDIANA	43.9	66.2	85.3	131.4	109.4	63.9	61.4	49.7	59.6	133.0	150.7	78.3	1105.5	
CUARTIL INFERIOR	6.3	28.6	48.3	87.9	66.6	51.9	42.5	36.2	43.6	93.3	114.1	43.0	1016.5	
VALOR MINIMO	0.0	1.1	1.8	37.2	32.1	24.0	38.4	23.2	16.2	55.8	54.4	11.4	853.2	
PROMEDIOS	45.8	70.8	86.4	141.6	97.3	76.6	59.5	55.0	58.8	152.5	157.4	95.6	1097.2	
PORCENTAJES	4.2	6.5	7.9	12.9	8.9	7.0	5.4	5.0	5.4	13.9	14.3	8.7		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 23. INDICE DE ARNOLDUS = 107.

INDICE DE IRREGULARIDAD INTERANUAL =1.38

DEV. ESTANDAR	43.5	52.3	54.6	66.8	33.0	35.1	17.0	23.1	23.6	72.2	66.3	66.9	137.6
COEF. VARIACION	0.950	0.738	0.632	0.472	0.339	0.458	0.286	0.420	0.401	0.474	0.421	0.699	0.125

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1324.	1274.	1213.	1097.	981.	921.	871.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.694	0.765	0.115	0.332	-0.658	0.613	0.388	0.784	1.072	0.513	0.658	0.946	0.058

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212052	SANTA LUCIA	BOGOTA D.E.	+04 34 00	+074 07 00	2630 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1956	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	16.2	15.4	32.5	111.0	24.5	36.4	-9.9
1957	10.5	8.4	36.3	69.1	91.1	61.5	17.8	9.9	30.4	84.6	53.0	9.6	472.8
1958	8.6	34.8	48.1	41.5	19.8	6.5	13.8	21.9	13.9	56.0	96.4	14.5	377.8
1959	8.4	13.2	9.0	46.3	28.2	-9.9	75.3	47.0	23.0	59.3	53.6	21.3	-9.9
1960	6.0	34.0	36.6	60.3	-9.9	-9.9	-9.9	-9.9	29.1	50.5	33.8	70.2	-9.9
1961	48.5	2.0	50.0	70.3	24.0	61.6	-9.9	15.0	17.5	119.1	8.6	19.4	-9.9
1962	15.0	8.8	61.4	70.5	93.0	70.0	21.0	39.0	22.0	80.2	86.5	43.0	560.4
1963	9.5	60.5	15.0	54.0	119.5	29.5	14.0	20.7	24.4	64.5	149.5	2.0	563.1
1964	0.0	4.4	2.0	76.8	47.0	61.5	67.5	23.3	25.0	64.4	15.5	30.0	417.4
1965	7.0	8.5	10.0	135.0	127.5	13.0	15.5	15.0	3.9	125.2	84.5	31.1	576.2
1966	0.0	49.0	22.8	34.0	42.8	60.8	26.2	20.7	26.3	45.9	-9.9	81.7	-9.9
1967	15.0	29.5	18.9	55.0	75.0	54.0	31.5	21.5	36.0	73.0	99.0	27.2	535.6
1968	0.0	28.5	6.5	74.5	18.5	66.5	12.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1969	26.0	19.0	3.5	96.0	68.0	60.4	35.1	32.0	21.0	132.0	38.5	69.5	591.0
1970	-9.9	-9.9	-9.9	31.5	130.0	34.0	50.0	27.0	49.0	69.0	68.0	6.0	-9.9
1971	43.0	34.0	90.0	78.0	124.5	55.5	25.0	47.0	54.0	50.0	101.0	46.3	748.7
1972	54.1	29.2	63.5	132.3	96.7	50.7	44.1	34.1	10.0	87.5	82.8	13.5	698.9
1973	2.9	1.6	17.7	43.0	74.7	55.1	56.5	86.2	109.8	116.3	91.3	82.9	740.0
1974	15.1	105.5	32.1	114.1	70.0	38.6	17.3	17.8	53.5	116.5	109.3	43.7	735.5
1975	5.8	29.6	56.6	96.8	84.1	40.8	37.6	53.0	54.5	83.4	106.2	92.1	740.5
1976	8.6	16.6	61.0	105.3	85.2	46.1	16.7	17.7	47.9	130.8	38.5	26.8	603.2
1977	15.1	6.7	74.2	52.2	18.0	13.9	43.8	33.4	77.3	175.9	63.4	27.9	605.8
1978	2.5	18.2	48.5	121.2	91.5	69.2	43.5	27.4	55.6	42.4	40.8	11.7	592.5
1979	6.2	21.3	57.4	131.0	91.2	58.3	53.8	87.0	51.0	133.6	143.3	15.7	890.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR IMPRES

ESTACION : SANTA LUCIA MUNICIPIO DE : BOCOTA D.E. PERIODO 1956 - 1975 COEF DE CORRECCION 1.000

N	AN	T /	CO	MCY	ECR	FCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1975	650.0	650.0	650.0	2.151	0.448	
2	1976	552.5	1402.5	741.3	-0.176	0.407	
3	1977	604.6	2006.3	656.1	-0.077	0.391	
4	1978	603.2	2651.5	672.5	-0.056	0.370	
5	1979	741.5	3432.0	686.4	0.091	0.373	
6	1974	735.5	4167.5	694.6	0.513	0.367	
7	1973	741.0	4907.5	701.1	0.547	0.565	
8	1972	698.5	5606.0	700.8	0.034	1.104	
9	1971	748.7	6355.1	706.1	2.013	1.315	
10	1965	651.0	6946.1	694.6	-0.150	1.275	
11	1967	535.6	7481.7	680.2	-0.212	1.145	
12	1966	576.2	8057.5	671.5	-0.302	1.084	
13	1964	418.4	8475.8	651.5	-1.514	0.762	
14	1963	663.1	9038.4	645.6	-0.402	0.976	
15	1962	586.4	9616.8	641.3	-0.270	0.815	
16	1968	373.8	9990.6	624.6	-1.618	0.232	
17	1969	472.8	10463.4	615.6	-1.051	0.0	

N	AN	T /	CO	MCY	ECR	FCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 17 AÑOS = 615.6

DESVIACION ESTANDAR = 231.1

COEFICIENTE DE VARIACION = 0.213

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO ICAC-CRESTA *** CALCULO DE HIDROCLIMATOLOGIA *** PROGRAMA CRESTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212052	SANTA LUCIA	BOGOTA D.E.	+04 34 42	+074 07 30	2560 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1969	26.0	19.0	3.5	96.0	68.0	50.4	25.1	32.0	21.0	132.0	36.5	69.5	591.0	1969
1970	-9.9	-9.9	-9.9	31.5	130.0	34.0	50.0	27.0	49.0	89.0	66.0	6.0	-9.9	1970
1971	43.0	34.0	90.0	78.0	124.5	55.9	25.0	47.0	54.0	50.0	101.0	46.3	748.7	1971
1972	54.1	29.2	63.5	132.3	96.7	50.7	44.1	34.1	10.0	87.9	62.8	13.5	698.9	1972
1973	2.9	1.6	17.7	43.0	74.7	55.1	56.5	86.2	109.8	118.3	91.3	82.9	740.0	1973
1974	15.1	105.5	32.1	114.1	70.0	38.6	17.3	17.8	53.5	118.5	109.3	43.7	735.5	1974
1975	5.8	29.6	56.6	96.8	84.1	40.8	37.6	53.0	54.5	83.4	106.2	92.1	740.5	1975
1976	8.6	10.6	61.0	105.3	65.2	48.1	16.7	17.7	47.9	130.8	36.5	26.8	603.2	1976
1977	15.1	6.7	74.2	52.2	18.0	13.9	43.8	33.4	77.3	179.9	63.4	27.9	605.8	1977
1978	2.5	18.2	48.5	121.2	91.5	89.2	43.5	27.4	55.6	42.4	40.8	11.7	592.5	1978
1979	0.2	21.3	57.4	131.0	91.2	98.3	53.8	87.0	51.0	133.8	143.3	15.7	890.0	1979
NUMERO DE ANOS	10	10	10	11	11	11	11	11	11	11	11	11	10	
VALOR MAXIMO	54.1	105.5	90.0	132.3	130.0	98.3	56.5	87.0	109.8	179.9	143.3	92.1	890.0	
MEDIANA	11.8	20.1	57.0	96.8	65.2	50.4	43.5	33.4	53.5	118.3	62.8	27.9	717.2	
VALOR MINIMO	2.5	1.6	3.5	31.5	18.0	13.9	16.7	17.7	10.0	42.4	36.5	6.0	591.0	
PROMEDIOS	17.9	28.2	50.4	91.0	84.9	52.3	38.5	42.1	53.1	106.0	80.3	39.6	694.6	
									TOTAL DE LOS PROMEDIOS MENSUALES =				684.3	
PORCENTAJES	2.6	4.1	7.4	13.3	12.4	7.6	5.6	6.1	7.8	15.5	11.7	5.8		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 69.

DEV. ESTANDAR	17.8	29.0	26.1	35.4	29.9	23.8	13.8	24.4	26.0	40.2	34.0	30.1	96.8
COEF. VARIACION	0.993	1.028	0.517	0.389	0.352	0.455	0.358	0.581	0.490	0.379	0.423	0.759	0.139
COEF. ASIMETRIA	1.286	2.461	-0.514	-0.566	-0.701	0.738	-0.514	1.178	0.586	0.012	0.276	0.705	0.647

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Biblioteca Luis Ángel Arango

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212052	SANTA LUCIA	BOOGTA D.E.	+04 34 42	+074 07 30	2560 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	7.2	40.8	43.9	72.4	87.4	35.8	52.5	66.2	34.9	60.6	40.6	84.2	626.5	1960
1961	67.9	2.8	70.0	98.4	33.6	86.2	68.4	21.0	24.5	166.7	12.0	27.2	678.7	1961
1962	16.0	10.6	73.8	84.7	111.7	84.1	25.2	46.8	26.4	60.3	103.9	51.7	697.2	1962
1963	10.2	68.4	17.0	61.1	135.6	33.4	15.8	23.4	27.6	72.9	169.0	2.3	636.7	1963
1964	0.0	5.9	2.7	103.4	63.3	82.8	90.9	31.4	33.7	86.7	20.9	40.4	562.1	1964
1965	8.5	10.3	12.1	163.2	154.1	15.7	18.7	18.1	4.7	151.3	102.1	37.6	696.4	1965
1966	0.0	58.8	27.4	40.8	51.4	97.0	31.4	24.8	31.6	55.1	109.9	98.0	626.2	1966
1967	20.6	40.6	26.0	75.6	103.1	74.2	43.3	29.6	49.5	100.4	136.1	37.4	736.4	1967
1968	0.0	37.0	8.5	96.9	24.1	86.5	15.6	40.5	78.1	186.4	120.2	22.3	716.1	1968
1969	26.0	19.0	3.5	96.0	68.0	50.4	35.1	32.0	21.0	132.0	38.5	69.5	591.0	1969
1970	37.3	42.7	53.5	31.5	130.0	34.0	50.0	27.0	49.0	89.0	68.0	6.0	618.0	1970
1971	43.0	34.0	90.0	78.0	124.5	55.9	25.0	47.0	54.0	50.0	101.0	46.3	748.7	1971
1972	54.1	29.2	63.5	132.3	56.7	50.7	44.1	34.1	10.0	87.9	82.8	13.5	698.9	1972
1973	2.9	1.6	17.7	43.0	74.7	55.1	56.5	86.2	109.8	118.3	91.3	82.9	740.0	1973
1974	15.1	105.5	32.1	114.1	70.0	38.6	17.3	17.8	53.5	118.5	109.3	43.7	735.5	1974
1975	5.8	29.6	56.6	96.8	84.1	40.8	37.6	53.0	54.5	83.4	106.2	92.1	740.5	1975
1976	8.6	16.6	61.0	105.3	85.2	48.1	16.7	17.7	47.9	130.8	38.5	26.8	603.2	1976
1977	15.1	6.7	74.2	52.2	18.0	13.9	43.8	33.4	77.3	179.9	63.4	27.9	605.8	1977
1978	2.5	18.2	48.5	121.2	91.5	89.2	43.5	27.4	55.6	42.4	40.8	11.7	592.5	1978
1979	6.2	21.3	57.4	131.0	91.2	98.3	53.8	87.0	51.0	133.8	143.3	15.7	890.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	67.9	105.5	90.0	163.2	154.1	98.3	90.9	87.0	109.8	186.4	169.0	98.0	890.0	
CUARTIL SUPERIOR	23.3	40.7	62.3	109.7	107.4	85.1	51.3	46.9	54.3	132.9	109.6	60.6	735.9	
MEDIANA	9.4	25.2	46.2	90.4	66.3	52.9	40.4	31.7	48.4	94.7	96.1	37.5	687.5	
CUARTIL INFERIOR	4.3	10.4	17.3	66.7	65.6	37.2	21.8	24.1	27.0	66.7	40.7	19.0	611.9	
VALOR MINIMO	0.0	1.6	2.7	31.5	18.0	13.9	15.6	17.7	4.7	42.4	12.0	2.3	562.1	
PROMEDIOS	17.4	30.0	42.0	89.9	84.9	58.5	39.3	38.2	44.7	105.3	84.9	41.9	677.0	
PORCENTAJES	2.6	4.4	6.2	13.3	12.5	8.6	5.8	5.6	6.6	15.6	12.5	6.2		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 69.

INDICE DE IRREGULARIDAD INTERANUAL =1.35

DEV. ESTANDAR	19.1	25.6	26.6	34.0	36.5	26.7	19.7	20.8	24.8	43.9	43.1	29.3	78.4
COEF. VARIACION	1.097	0.852	0.633	0.379	0.429	0.457	0.503	0.544	0.554	0.417	0.508	0.701	0.116

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	806.	778.	743.	677.	611.	577.	548.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.457	1.492	0.014	0.125	-0.089	0.003	0.847	1.383	0.798	0.383	-0.005	0.644	0.842

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600107	STA ROSA CARRETERA	BOGOTA D.E.	+04 14 15	+074 11 40	3430 METROS

AÑO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1965	222.0	71.0	152.5	833.5	828.5	437.0	383.0	177.0	99.0	111.0	188.0	43.0	3545.5
1966	68.7	44.7	295.0	76.5	64.5	42.0	83.0	52.0	37.0	25.0	25.0	45.0	862.4
1967	86.5	30.0	81.0	146.0	222.5	326.0	351.0	209.0	118.0	157.0	177.0	58.0	1962.0
1968													
1969	85.0	44.0	20.5	56.0	76.0	65.0	59.7	38.0	14.0	35.4	15.5	4.0	537.1
1970													
1971	22.0	28.0	45.0	124.7	126.7	202.6	254.7	186.8	126.1	97.4	107.4	53.7	1375.3
1972	89.7	44.4	80.8	140.3	214.9	156.4	202.0	158.9	92.4	90.1	106.4	30.0	1406.3
1973	28.9	9.8	51.4	82.2	174.2	167.6	162.6	185.9	187.4	106.4	125.3	98.9	1380.6
1974	60.6	67.5	45.6	104.4	161.8	147.1	257.1	132.9	82.2	106.3	106.5	15.5	1307.5
1975	22.3	35.3	67.7	74.4	160.9	165.5	129.2	168.2	127.6	138.3	94.5	156.6	1340.5
1976	37.9	38.3	82.4	148.9	196.6	266.1	275.6	136.3	103.7	137.7	101.6	43.4	1570.5
1977	0.0	68.1	63.2	108.6	95.0	162.1	194.3	124.5	149.1	112.0	112.1	27.6	1216.6
1978	12.1	5.3	67.2	116.5	142.6	209.0	119.2	123.6	106.6	77.8	24.0	56.0	1059.9
1979	17.6	20.6	88.2	159.9	100.8	161.6	86.6	121.8	82.1	185.5	155.8	75.0	1255.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9).

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANILEY

ESTACION X STA ROSA CARRETERA MUNICIPIO DE BOGOTA D.E. PERIODO 1965 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	1255.5	1255.5	1255.5	-0.269	-0.133				.+I			
2	1978	1059.9	2315.4	1157.7	-0.542	-0.401				.+ I			
3	1977	1216.6	3532.0	1177.3	-0.523	-0.560				+ . I			
4	1976	1570.5	5102.5	1275.6	0.172	-0.475				+ I.			
5	1975	1340.5	6443.0	1288.6	-0.150	-0.549				+ .I			
6	1974	1307.5	7750.5	1291.7	-0.196	-0.646				+ .I			
7	1973	1380.6	9131.1	1304.4	-0.094	-0.693				+ .			
8	1972	1406.3	10537.4	1317.2	-0.058	-0.721				+ .			
9	1971	1375.3	11912.7	1323.6	-0.101	-0.771				+ .I			
10	1969	537.1	12449.8	1245.0	-1.273	-1.400			+ .	I			
11	1967	1962.0	14411.8	1310.2	0.719	-1.045			+	I	.		
12	1966	862.4	15274.2	1272.3	-0.819	-1.445			+ .	I			
13	1965	3545.5	18819.7	1447.7	2.934	0.0				+			.
N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 13 ANOS = 1447.7
DESVIACION ESTANDAR = 715.0
COEFICIENTE DE VARIACION = 0.494

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600107	STA ROSA CARRETERA	BOGOTA D.E.	+04 14 15	+074 11 30	3450 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1971	22.0	28.0	45.0	124.7	126.7	202.6	254.7	186.8	126.1	97.4	107.4	53.7	1375.3	1971
1972	89.7	44.4	80.8	140.3	214.9	156.4	202.0	158.9	92.4	90.1	106.4	30.0	1406.3	1972
1973	28.9	9.8	51.4	82.2	174.2	167.6	162.6	185.9	187.4	106.4	125.3	98.9	1380.6	1973
1974	80.6	67.3	45.6	104.4	161.8	147.1	257.1	132.9	82.2	106.3	106.5	15.5	1307.5	1974
1975	22.3	35.3	67.7	74.4	160.9	165.5	129.2	168.2	127.6	138.3	94.5	156.6	1340.5	1975
1976	37.9	36.3	82.4	148.9	196.6	268.1	275.6	136.3	103.7	137.7	101.6	43.4	1570.5	1976
1977	0.0	68.1	63.2	108.6	95.0	162.1	194.3	124.5	149.1	112.0	112.1	27.6	1216.6	1977
1978	12.1	5.3	67.2	116.5	142.6	209.0	119.2	123.6	106.6	77.8	24.0	56.0	1059.9	1978
1979	17.6	20.6	88.2	159.9	100.8	161.6	66.6	121.8	82.1	185.5	155.8	75.0	1255.5	1979
NUMERO DE ANOS	9	9	9	9	9	9	9	9	9	9	9	9	9	
VALOR MAXIMO	89.7	68.1	88.2	159.9	214.9	268.1	275.6	186.8	187.4	185.5	155.8	156.6	1570.5	
MEDIANA	22.3	35.3	67.2	116.5	160.9	165.5	194.3	136.3	106.6	106.4	106.5	53.7	1340.5	
VALOR MINIMO	0.0	5.3	45.0	74.4	95.0	147.1	66.6	121.8	82.1	77.8	24.0	15.5	1059.9	
PROMEDIOS	34.6	35.3	65.7	117.8	152.6	182.2	186.8	148.8	117.5	116.8	103.7	61.9	1323.6	
PORCENTAJES	2.6	2.7	5.0	8.9	11.5	13.8	14.1	11.2	8.9	8.8	7.8	4.7	TOTAL DE LOS PROMEDIOS MENSUALES = 1323.6	

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 26. INDICE DE ARREGUDS = 133.

DEV. ESTANDAR	30.6	22.4	16.1	29.0	40.6	38.3	67.3	26.6	34.5	32.5	34.9	43.7	141.4
COEF. VARIACION	0.886	0.636	0.244	0.246	0.266	0.210	0.360	0.179	0.293	0.279	0.336	0.707	0.107
COEF. ASIMETRIA	1.141	0.325	-0.022	-0.086	-0.025	1.644	-0.083	0.502	1.051	1.187	-1.350	1.392	-0.230

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600103	SANTA ROSA(LOS PUENTES)	BOGOTA D E	+04 11 50	+074 11 40	3160 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	63.0	44.0	190.0	38.0	57.0	110.0	105.0	95.0	72.0	35.0	33.0	50.0	892.0
1967	65.0	0.0	15.0	111.0	115.0	162.0	208.0	168.0	108.0	125.0	249.0	104.0	1430.0
1968	118.0	119.0	192.0	239.0	151.0	220.0	173.0	113.0	143.0	200.0	202.0	62.0	1892.0
1969	88.0	67.0	118.0	168.0	284.0	227.0	230.0	204.0	137.0	195.0	147.0	116.0	1981.0
1970	112.5	141.0	167.0	181.0	159.0	105.0	191.0	211.0	127.0	61.0	120.0	141.0	1716.5
1971	115.0	117.0	175.0	179.0	225.0	249.0	325.0	254.0	147.3	152.0	102.0	127.0	2167.3
1972	119.0	51.0	113.0	156.0	166.0	221.0	219.0	130.0	123.0	100.0	90.0	63.0	1551.0
1973	76.0	2.0	72.0	82.0	152.0	217.0	207.0	191.0	207.0	163.0	106.0	88.0	1565.0
1974	163.0	146.0	71.0	245.0	296.0	200.0	270.0	225.0	123.0	107.0	84.0	13.0	1943.0
1975	28.0	20.0	32.0	76.0	127.0	245.0	179.0	141.0	114.0	140.0	106.0	143.0	1361.0
1976	37.0	16.0	69.0	140.0	210.0	285.0	287.0	130.0	114.0	101.0	69.0	106.0	1564.0
1977	13.0	51.0	119.0	223.0	195.0	461.0	436.0	261.0	253.0	184.0	136.0	26.0	2360.0
1978	62.0	75.0	121.0	163.0	181.0	284.0	163.0	150.0	128.0	126.0	49.0	101.0	1603.0
1979	15.0	17.0	72.0	191.9	186.8	269.9	151.3	172.6	80.0	134.0	130.0	47.0	1467.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

ESTACION X SANTA ROSA (LOS ANDES) MUNICIPIO DE BOGOTA D.E. PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1467.5	1467.5	1467.5	-0.566	-0.125							
2	1978	1603.0	3070.5	1535.3	-0.203	-0.170							
3	1977	2360.0	5430.5	1810.2	1.840	0.236							
4	1976	1564.0	6994.5	1748.6	-0.308	0.168							
5	1975	1361.0	8355.5	1671.1	-0.656	-0.021							
6	1974	1943.0	10298.5	1716.4	0.715	0.137							
7	1973	1565.0	11863.5	1694.8	-0.305	0.070							
8	1972	1551.0	13414.5	1676.8	-0.243	-0.006							
9	1971	2167.3	15581.8	1731.3	1.320	0.285							
10	1970	1716.5	17298.3	1729.8	0.104	0.208							
11	1969	1581.0	19279.3	1752.7	0.817	0.485							
12	1968	1892.0	21171.3	1764.3	0.577	0.616							
13	1967	1430.0	22601.3	1738.6	-0.669	0.468							
14	1966	892.0	23493.3	1678.1	-2.121	0.0							

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 14 AÑOS = 1678.1
DESVIACION ESTANDAR = 370.8
COEFICIENTE DE VARIACION = 0.221

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO IDAL-CRSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCN

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600103	SANTA ROSA(LOS PUENTES)	BOGOTA D E	+04 11 40	+074 11 34	3160 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) *

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1967	65.0	0.0	15.0	111.0	115.0	162.0	208.0	168.0	108.0	125.0	249.0	104.0	1430.0	1967
1968	118.0	119.0	152.0	239.0	151.0	220.0	173.0	113.0	143.0	200.0	202.0	62.0	1892.0	1968
1969	88.0	67.0	118.0	108.0	284.0	227.0	230.0	204.0	137.0	195.0	147.0	116.0	1981.0	1969
1970	112.5	141.0	167.0	181.0	159.0	105.0	191.0	211.0	127.0	61.0	120.0	141.0	1716.5	1970
1971	115.0	117.0	175.0	179.0	225.0	249.0	325.0	254.0	147.3	152.0	102.0	127.0	2167.3	1971
1972	119.0	51.0	113.0	156.0	166.0	221.0	219.0	130.0	123.0	100.0	90.0	63.0	1551.0	1972
1973	76.0	2.0	72.0	82.0	152.0	217.0	207.0	191.0	207.0	163.0	106.0	88.0	1565.0	1973
1974	163.0	146.0	71.0	245.0	256.0	200.0	270.0	225.0	123.0	107.0	84.0	13.0	1943.0	1974
1975	28.0	20.0	42.0	76.0	127.0	245.0	179.0	141.0	114.0	140.0	106.0	143.0	1361.0	1975
1976	37.0	16.0	69.0	140.0	210.0	285.0	287.0	130.0	114.0	101.0	69.0	106.0	1564.0	1976
1977														1977
1978	62.0	75.0	121.0	163.0	161.0	284.0	163.0	150.0	128.0	126.0	49.0	101.0	1603.0	1978
1979	15.0	17.0	72.0	191.9	166.8	269.9	151.3	172.6	80.0	134.0	120.0	47.0	1467.5	1979
NUMERO DE ANOS	12	12	12	12	12	12	12	12	12	12	12	12	12	
VALOR MAXIMO	163.0	146.0	175.0	245.0	256.0	285.0	325.0	254.0	207.0	200.0	249.0	143.0	2167.3	
CUARTIL SUPERIOR	116.5	118.0	136.5	186.4	217.5	259.4	250.0	207.5	140.0	157.5	136.5	121.5	1917.5	
MEDIANA	82.0	59.0	92.5	165.5	173.5	224.0	207.5	170.3	125.0	130.0	107.0	102.5	1584.0	
CUARTIL INFERIOR	49.5	16.5	70.0	125.5	151.5	208.5	176.0	135.5	114.0	104.0	87.0	62.5	1509.3	
VALOR MINIMO	15.0	0.0	15.0	76.0	115.0	105.0	151.3	113.0	80.0	61.0	49.0	13.0	1361.0	
PROMEDIOS	83.2	64.3	98.9	161.0	187.7	223.7	216.9	174.1	129.3	133.7	121.3	92.6	1686.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1686.8	
PORCENTAJES	4.9	3.8	5.9	9.5	11.1	13.3	12.9	10.3	7.7	7.9	7.2	5.5		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB
INDICE DE FOURNIER = 30. INDICE DE ARNOLDUS = 156.

DEV. ESTANDAR	44.1	54.5	50.2	53.3	57.1	51.5	53.1	43.5	30.2	40.1	56.1	39.6	252.6
COEF. VARIACION	0.530	0.855	0.507	0.331	0.304	0.230	0.245	0.250	0.234	0.300	0.463	0.428	0.150
COEF. ASIMETRIA	0.068	0.328	0.055	-0.093	0.872	-1.080	0.845	0.359	1.350	0.131	1.236	-0.621	0.631

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA CRSTCM

Biblioteca de Hacienda y Crédito

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
6031D3	SANTA ROSA(LOS PUENTES)	BOGOTA D E	+04 11 40	+074 11 34	3160 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	115.2	110.2	80.5	186.8	166.8	172.0	209.9	214.7	128.6	129.4	32.7	125.0	1677.8	1960
1961	74.5	113.6	80.1	87.6	212.1	233.0	226.3	119.3	90.6	140.5	97.7	71.2	1546.5	1961
1962	68.9	42.1	65.6	104.3	231.7	213.8	242.7	197.6	114.7	108.2	146.5	25.5	1021.6	1962
1963	109.9	138.9	142.2	219.4	246.0	260.9	198.1	219.3	134.0	123.1	161.2	75.1	2028.0	1963
1964	63.7	80.3	80.5	205.0	263.9	132.3	159.9	120.0	119.4	98.8	100.4	97.1	1521.3	1964
1965	32.9	21.8	22.9	187.4	229.7	205.0	255.2	123.7	111.7	125.2	108.3	68.6	1492.4	1965
1966	15.6	98.7	149.5	120.3	166.4	166.6	176.1	239.7	144.7	134.5	223.9	102.2	1738.2	1966
1967	65.0	0.0	15.0	111.0	115.0	162.0	208.0	168.0	108.0	125.0	249.0	104.0	1430.0	1967
1968	118.0	119.0	152.0	239.0	151.0	220.0	173.0	113.0	143.0	200.0	202.0	62.0	1892.0	1968
1969	88.0	67.0	118.0	168.0	284.0	227.0	230.0	204.0	137.0	195.0	147.0	116.0	1981.0	1969
1970	112.5	141.0	167.0	181.0	159.0	105.0	191.0	211.0	127.0	61.0	120.0	141.0	1716.5	1970
1971	115.0	117.0	175.0	179.0	225.0	249.0	325.0	254.0	147.3	152.0	102.0	127.0	2167.3	1971
1972	119.0	51.0	113.0	150.0	166.0	221.0	219.0	130.0	123.0	100.0	90.0	63.0	1551.0	1972
1973	76.0	2.0	72.0	82.0	152.0	217.0	207.0	191.0	207.0	163.0	108.0	88.0	1565.0	1973
1974	163.0	146.0	71.0	245.0	296.0	200.0	270.0	225.0	123.0	107.0	84.0	13.0	1943.0	1974
1975	28.0	20.0	42.0	76.0	127.0	245.0	179.0	141.0	114.0	140.0	106.0	143.0	1301.0	1975
1976	37.0	16.0	69.0	140.0	210.0	285.0	287.0	130.0	114.0	101.0	69.0	106.0	1504.0	1976
1977	19.4	79.9	108.9	145.6	168.4	165.8	217.7	144.9	182.0	130.5	92.7	109.0	1564.8	1977
1978	62.0	75.0	121.0	163.0	181.0	284.0	163.0	150.0	128.0	126.0	49.0	101.0	1603.0	1978
1979	15.0	17.0	72.0	191.9	186.8	269.9	151.3	172.6	80.0	134.0	130.0	47.0	1467.5	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	163.0	146.0	175.0	245.0	296.0	285.0	325.0	254.0	207.0	200.0	249.0	143.0	2167.3	
CUARTIL SUPERIOR	113.8	115.3	131.6	189.6	230.7	247.0	236.3	212.8	140.0	140.3	146.8	112.5	1815.1	
MEDIANA	71.7	77.4	83.5	166.1	183.9	218.5	208.9	170.3	125.0	127.7	107.0	99.0	1584.0	
CUARTIL INFERIOR	34.9	20.9	70.0	130.1	162.5	169.3	177.5	130.0	114.0	107.6	91.3	65.8	1533.9	
VALOR MINIMO	15.0	0.0	15.0	70.0	115.0	105.0	151.3	113.0	80.0	61.0	32.7	13.0	1361.0	
PROMEDIOS	74.9	72.8	96.2	162.4	196.9	211.7	214.5	173.4	128.8	129.7	121.0	89.2	1671.6	
PORCENTAJES	4.5	4.4	5.8	9.7	11.8	12.7	12.8	10.4	7.7	7.8	7.2	5.3		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 28. INDICE DE ARNOLDUS = 157.

INDICE DE IRREGULARIDAD INTERANUAL =1.41

DEV. ESTANDAR	42.1	49.1	45.8	48.8	50.7	49.1	45.0	45.1	28.3	32.1	54.9	35.8	220.1
COEF. VARIACION	0.561	0.674	0.476	0.301	0.258	0.232	0.210	0.260	0.220	0.247	0.454	0.401	0.132

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	2034.	1954.	1857.	1672.	1486.	1389.	1309.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.192	-0.049	0.069	-0.236	0.409	-0.445	0.808	0.209	1.148	0.444	0.877	-0.512	0.867

IMPRESO EN COLOMBIA POR DANRANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212521	TECHO	BOGOTA D E	+04 38 00	+074 09 00	2550 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1941	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	14.2	155.0	41.5	32.1	-9.9
1942	83.2	88.1	8.1	66.9	81.0	27.0	9.3	28.9	16.7	14.9	4.1	23.4	451.6
1943	18.0	3.0	36.2	92.3	55.6	46.8	33.5	78.1	28.3	94.3	42.3	132.3	660.7
1944	10.7	8.6	47.0	47.4	149.7	76.8	18.3	26.5	21.5	46.8	34.7	29.6	519.6
1945	1.6	30.8	7.2	141.0	126.5	15.9	25.0	14.7	10.1	73.5	155.6	30.8	632.7
1946	11.8	28.1	73.5	56.5	8.0	6.1	9.4	6.3	2.0	25.5	54.4	34.6	316.2
1947	19.6	25.4	26.9	28.3	28.5	63.6	67.5	44.2	59.7	140.4	34.1	4.7	542.9
1948	3.1	18.8	11.8	79.9	34.0	28.5	25.8	23.5	53.1	72.2	56.8	19.2	426.7
1949	5.6	0.1	52.0	69.7	64.8	24.9	35.5	20.6	15.3	76.7	20.0	1.0	386.2
1950	35.9	39.2	49.3	63.8	126.0	120.1	37.9	46.7	49.4	35.5	75.2	20.9	699.9
1951	16.3	39.0	27.4	52.3	63.0	9.2	11.8	4.9	14.6	45.0	97.8	2.8	384.1
1952	5.2	3.5	4.6	32.7	45.4	37.2	50.1	33.8	38.2	25.2	133.3	66.3	475.5
1953	10.5	20.2	21.5	31.1	95.1	49.7	9.8	3.5	43.7	84.3	46.7	40.0	456.1
1954	28.0	4.1	14.4	106.1	32.2	97.7	43.7	59.7	29.5	187.3	82.7	50.8	736.2
1955	7.5	15.7	70.2	71.9	26.2	58.0	78.1	35.6	68.3	158.8	93.6	86.9	770.8
1956	53.2	40.2	53.3	73.8	81.7	58.5	30.6	19.7	30.1	140.6	76.2	28.7	686.6
1957	2.0	1.7	35.1	66.2	352.7	26.4	21.0	10.3	71.1	45.4	18.0	5.1	655.0
1958	7.7	12.3	26.5	56.2	16.9	10.9	7.0	22.8	13.6	24.7	87.0	26.5	312.1
1959	6.8	1.6	9.3	44.9	76.5	50.1	63.7	49.4	22.0	32.6	47.4	-9.9	-9.9
1960	6.9	17.0	39.1	45.4	41.1	20.2	60.7	34.8	34.5	95.2	37.1	100.6	536.6
1961	37.6	10.4	58.3	42.4	25.9	57.6	43.1	14.7	16.6	119.1	-9.9	14.6	-9.9
1962	26.4	3.8	64.9	78.0	77.5	70.5	24.0	43.5	19.6	41.4	68.4	14.4	532.4
1963	21.9	42.4	61.3	48.0	100.4	66.8	25.0	25.7	25.1	53.0	129.9	6.5	606.0
1964	11.0	18.0	17.8	86.6	60.9	68.3	87.7	32.1	20.6	52.1	60.1	47.1	582.3
1965	2.6	9.3	12.0	182.2	87.6	15.3	20.3	24.6	10.4	116.5	116.3	28.4	625.5
1966	0.3	21.0	53.3	31.7	52.3	73.3	30.0	45.5	33.0	-9.9	88.4	62.1	-9.9
1967	23.3	28.9	31.8	35.6	96.9	60.8	56.2	37.6	15.9	58.0	49.1	28.4	542.5
1968	3.3	47.3	58.5	79.5	40.0	79.3	17.2	25.3	57.0	89.4	83.9	12.4	593.1
1969	28.5	11.5	22.2	104.6	43.7	55.5	9.8	32.6	52.5	153.9	30.8	27.4	573.0
1970	51.1	14.5	17.7	22.4	108.4	64.4	46.6	-9.9	-9.9	92.6	42.0	31.2	-9.9
1971	75.8	32.6	90.7	122.9	113.1	49.8	39.9	36.6	16.6	57.1	126.8	69.5	831.4
1972	63.9	44.3	49.6	120.4	81.3	66.1	59.4	29.8	22.6	119.0	79.2	19.1	756.7
1973	1.3	9.5	24.5	32.6	53.2	41.1	50.8	69.7	83.2	66.8	47.3	89.0	589.0
1974	23.4	53.2	30.4	61.7	73.1	31.9	15.5	14.7	69.0	72.3	88.0	17.1	550.3
1975	4.4	72.9	85.5	33.8	72.6	38.5	29.6	59.2	56.4	76.8	86.4	65.8	681.9
1976	10.8	51.4	61.8	88.4	81.9	45.8	5.2	14.9	35.1	107.7	43.7	25.6	572.3
1977	4.7	13.8	44.0	47.3	26.6	18.7	58.6	61.0	27.5	89.7	56.6	56.0	504.5
1978	1.6	28.7	57.5	80.0	53.8	66.5	47.6	31.6	62.4	68.9	51.5	15.8	565.9
1979	8.2	22.0	67.8	95.5	86.3	37.8	31.3	36.1	30.3	104.2	153.7	24.4	697.6

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAPAJO

ESTACION X TECPC MUNICIPIO DE BOGOTA D.E PERIODO 1941 - 1975 COEF DE CORRECCION 1.000

N	AN	I A	CO	MCY	ECR	FCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1975	692.6	692.6	692.6	0.557	0.215	
2	1976	666.5	1358.1	679.0	-0.159	0.208	
3	1977	604.8	1962.9	654.3	-0.538	0.150	
4	1978	672.3	2635.2	658.8	0.001	0.150	
5	1979	681.5	3316.7	663.3	0.672	0.282	
6	1974	666.3	3982.9	663.8	-0.174	0.244	
7	1973	665.0	4647.9	663.9	0.134	0.273	
8	1972	756.7	5404.6	675.8	1.467	0.456	
9	1971	681.4	6085.9	676.2	0.001	1.045	
10	1965	673.0	6758.9	675.8	0.003	1.050	
11	1968	656.1	7414.9	674.1	0.166	1.087	
12	1967	642.6	8057.5	671.5	-0.234	1.035	
13	1965	625.5	8683.0	669.5	0.424	1.126	
14	1964	682.3	9365.3	668.9	0.001	1.146	
15	1963	666.0	9972.0	666.1	0.265	1.205	
16	1962	632.4	10604.4	662.8	-0.316	1.135	
17	1961	636.6	11241.0	661.8	-0.265	1.173	
18	1958	312.1	11553.1	641.8	-2.008	0.215	
19	1957	655.0	12208.1	640.2	0.655	0.763	
20	1956	666.6	12874.7	639.7	0.510	0.563	
21	1955	870.8	13745.5	637.5	1.575	1.311	
22	1954	736.2	14501.7	643.7	1.304	1.597	
23	1953	656.1	14957.8	640.6	-0.523	1.364	
24	1952	675.5	15633.3	640.4	-0.765	1.225	
25	1951	564.1	16817.4	632.7	-1.455	0.697	
26	1950	699.5	16517.3	636.4	1.015	1.120	
27	1949	586.2	17503.5	635.0	-0.475	0.795	
28	1948	426.7	18340.2	633.2	-1.157	0.541	
29	1947	642.9	18983.1	631.6	-0.233	0.465	
30	1946	516.2	19499.3	629.0	-2.038	0.042	
31	1945	632.7	20122.0	624.9	0.481	0.148	
32	1944	519.6	20641.6	623.2	-0.416	0.056	
33	1943	660.7	21302.3	621.6	0.704	0.211	
34	1942	461.4	21963.9	622.2	-0.595	0.0	

F = -3. -2. -1. 0.0 +1. +2. +3.

N	AN	I A	CO	MCY	ECR	FCAN

PROMEDIO DE LOS 34 AÑOS = 672.2
DESVIACION ESTANDAR = 125.8
COEFICIENTE DE VARIACION = 0.220

****
* PEARSON III *
****

PROYECTO IDEAM-CRITICA *** CALCULO DE PRECIPITACIONES *** PROGRAMA CRITICA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212521	TECHO	BOGOTA D E	+04 37 50	+074 05 10	2550 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) **

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANO
1954	28.0	4.1	14.4	100.1	32.2	97.7	43.7	59.7	29.5	187.3	82.7	50.8	736.2	1954
1955	7.5	15.7	70.2	71.9	26.2	58.0	78.1	35.6	68.3	158.8	93.6	86.9	770.8	1955
1956	53.2	40.2	53.3	73.8	81.7	58.5	30.6	19.7	30.1	140.6	76.2	28.7	686.6	1956
1957	2.0	1.7	35.1	66.2	352.7	26.4	21.0	10.3	71.1	45.4	18.0	5.1	655.0	1957
1958														1958
1959	6.8	1.6	9.3	44.9	76.5	90.1	63.7	49.4	22.0	32.6	47.4	-9.9	-9.9	1959
1960	6.9	17.0	39.1	45.4	41.1	20.2	60.7	34.8	34.5	99.2	37.1	100.6	536.6	1960
1961	37.6	10.4	58.3	42.4	25.9	57.6	43.1	14.7	16.6	119.1	-9.9	14.6	-9.9	1961
1962	26.4	3.6	64.9	78.0	77.5	70.5	24.0	43.5	19.6	41.4	66.4	14.4	532.4	1962
1963	21.9	42.4	61.3	48.0	100.4	66.8	25.0	25.7	25.1	53.0	125.9	6.5	606.0	1963
1964	11.0	18.0	17.8	86.6	60.9	88.3	67.7	32.1	20.6	52.1	60.1	47.1	582.3	1964
1965	2.6	9.3	12.0	182.2	67.6	15.3	20.3	24.6	10.4	116.5	116.3	28.4	625.5	1965
1966	3.3	21.0	53.3	31.7	52.3	73.3	30.0	45.5	33.0	-9.9	88.4	62.1	-9.9	1966
1967	23.3	28.9	31.8	35.6	96.9	80.8	56.2	37.6	15.9	58.0	49.1	28.4	542.5	1967
1968	3.3	47.3	58.5	79.5	40.0	79.3	17.2	25.3	57.0	89.4	83.9	12.4	593.1	1968
1969	28.5	11.5	22.2	104.6	43.7	55.5	9.8	32.6	52.5	153.9	30.8	27.4	573.0	1969
1970	51.1	14.3	17.7	22.4	108.4	64.4	46.6	-9.9	-9.9	92.6	42.0	31.2	-9.9	1970
1971	75.8	32.6	90.7	122.9	113.1	49.8	39.9	36.6	16.6	57.1	126.8	69.5	831.4	1971
1972	63.9	44.3	49.6	120.4	61.3	68.1	59.4	29.8	22.6	119.0	79.2	19.1	756.7	1972
1973	1.3	9.5	24.5	32.0	83.2	41.1	50.8	69.7	83.2	86.8	47.3	89.0	589.0	1973
1974	23.4	53.2	30.4	61.7	73.1	31.9	15.5	14.7	69.0	72.3	88.0	17.1	550.3	1974
1975	4.4	72.9	85.5	33.8	72.6	38.5	29.6	59.2	56.4	76.8	86.4	65.8	681.9	1975
1976	10.8	51.4	61.8	88.4	81.9	45.8	5.2	14.9	35.1	107.7	43.7	25.6	572.3	1976
1977	4.7	13.8	44.0	47.3	26.6	18.7	58.6	61.0	27.5	89.7	56.6	56.0	504.5	1977
1978	1.6	28.7	57.5	80.0	83.8	66.5	47.6	31.6	62.4	68.9	51.5	15.8	565.9	1978
1979	8.2	22.0	67.8	95.5	86.3	37.8	31.3	36.1	30.3	104.2	153.7	24.4	697.6	1979
NUMERO DE ANOS	25	25	25	25	25	25	25	24	24	24	24	24	21	
VALOR MAXIMO	75.8	72.9	90.7	182.2	352.7	97.7	67.7	69.7	83.2	187.3	153.7	100.6	831.4	
CUARTIL SUPERIOR	28.3	41.3	61.5	91.9	86.9	71.9	57.4	44.5	56.7	117.8	88.2	59.0	692.1	
MEDIANA	10.8	18.0	49.6	71.9	73.1	58.0	39.9	33.7	30.2	89.5	72.3	28.4	593.1	
CUARTIL INFERIOR	3.8	9.9	23.3	43.0	42.4	38.1	22.5	24.9	21.3	57.5	47.3	16.4	558.1	
VALOR MINIMO	0.3	1.6	9.3	22.4	25.9	15.3	5.2	10.3	10.4	32.6	18.0	5.1	504.5	
PROMEDIOS	20.2	24.6	45.2	72.1	77.8	56.0	39.8	35.2	37.9	92.6	73.2	38.6	628.1	
											TOTAL DE LOS PROMEDIOS MENSUALES =		613.3	
PORCENTAJES	3.3	4.0	7.4	11.8	12.7	9.1	6.5	5.7	6.2	15.1	11.9	6.3		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 14. INDICE DE ARNOLDUS = 61.

DEV. ESTANDAR	21.3	18.9	23.0	36.8	62.9	23.1	21.2	16.0	21.2	40.2	34.0	27.7	90.4
COEF. VARIACION	1.056	0.768	0.509	0.511	0.808	0.413	0.532	0.455	0.560	0.434	0.464	0.718	0.144
COEF. ASIMETRIA	1.279	0.844	0.103	1.110	3.666	-0.130	0.427	0.502	0.720	0.613	0.657	0.871	0.746

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Biblioteca Nacional de Colombia

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212521	TECHO	BOGOTA D E	+04 37 50	+074 09 10	2550 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	6.9	17.0	39.1	45.4	41.1	20.2	60.7	34.8	34.5	99.2	37.1	100.6	536.6	1960
1961	37.6	10.4	58.3	42.4	25.9	57.6	43.1	14.7	16.6	119.1	99.7	14.6	540.0	1961
1962	26.4	3.8	64.9	78.0	77.5	70.5	24.0	43.5	19.6	41.4	68.4	14.4	532.4	1962
1963	21.9	42.4	61.3	48.0	100.4	66.8	25.0	25.7	25.1	53.0	129.9	6.5	606.0	1963
1964	11.0	18.0	17.8	86.6	60.9	88.3	87.7	32.1	20.6	52.1	60.1	47.1	582.3	1964
1965	2.6	9.3	12.0	182.2	87.6	15.3	20.3	24.6	10.4	116.5	116.3	28.4	625.5	1965
1966	0.3	21.0	53.3	31.7	52.3	73.3	30.0	45.5	33.0	74.3	88.4	62.1	565.2	1966
1967	23.3	28.9	31.8	35.6	96.9	80.8	56.2	37.6	15.9	58.0	49.1	28.4	542.5	1967
1968	3.3	47.3	58.5	79.5	40.0	79.3	17.2	25.3	57.0	89.4	83.9	12.4	593.1	1968
1969	28.5	11.5	22.2	104.6	43.7	55.5	9.8	32.6	52.5	153.9	30.8	27.4	573.0	1969
1970	51.1	14.5	17.7	22.4	108.4	64.4	46.6	44.4	47.8	92.6	42.0	31.2	583.1	1970
1971	75.8	32.6	90.7	122.9	113.1	49.8	39.9	36.6	16.6	57.1	126.8	69.5	831.4	1971
1972	63.9	44.3	49.6	120.4	81.3	68.1	59.4	29.8	22.6	119.0	79.2	19.1	756.7	1972
1973	1.3	9.5	24.5	32.6	53.2	41.1	50.8	69.7	83.2	86.8	47.3	89.0	589.0	1973
1974	23.4	53.2	30.4	61.7	73.1	31.9	15.5	14.7	69.0	72.3	88.0	17.1	550.3	1974
1975	4.4	72.9	85.5	33.8	72.6	38.5	29.6	59.2	56.4	76.8	86.4	65.8	681.9	1975
1976	10.8	51.4	61.8	88.4	81.9	45.8	5.2	14.9	35.1	107.7	43.7	25.6	572.3	1976
1977	4.7	13.8	44.0	47.3	26.6	18.7	58.6	61.0	27.5	89.7	56.6	56.0	504.5	1977
1978	1.6	28.7	57.5	80.0	53.8	66.5	47.6	31.6	62.4	68.9	51.5	15.8	565.9	1978
1979	8.2	22.0	67.8	95.5	86.3	37.8	31.3	36.1	30.3	104.2	153.7	24.4	697.6	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	75.8	72.9	90.7	182.2	113.1	88.3	87.7	69.7	83.2	153.9	153.7	100.6	831.4	
CUARTIL SUPERIOR	27.4	43.3	61.5	91.9	86.9	69.3	53.5	43.9	54.4	105.9	94.0	59.0	615.8	
MEDIANA	10.9	21.3	51.4	69.8	72.8	56.5	35.6	33.7	31.6	88.1	73.8	27.9	577.6	
CUARTIL INFERIOR	3.8	12.6	27.4	39.0	48.0	38.1	22.1	25.5	20.1	63.4	48.2	16.4	546.4	
VALOR MINIMO	0.3	3.8	12.0	22.4	25.9	15.3	5.2	14.7	10.4	41.4	30.8	6.5	504.5	
PROMEDIOS	20.3	27.6	47.4	71.9	68.8	53.5	37.9	35.7	36.8	86.6	76.9	37.8	601.5	
PORCENTAJES	3.4	4.6	7.9	12.0	11.4	8.9	6.3	5.9	6.1	14.4	12.8	6.3		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 12. INDICE DE ARNOLDUS = 58.

INDICE DE IRREGULARIDAD INTERANUAL =1.42

DEV. ESTANDAR	21.8	18.7	22.5	40.1	26.2	21.7	20.8	15.1	20.5	28.4	34.6	27.1	81.7
COEF. VARIACION	1.073	0.675	0.474	0.558	0.381	0.406	0.549	0.421	0.558	0.328	0.450	0.718	0.136

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	736.	706.	670.	601.	533.	497.	467.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.359	0.866	0.129	1.100	-0.028	-0.306	0.485	0.667	0.757	0.474	0.681	1.031	1.616

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212524	VITELMA	BOGOTA D.E.	+04 34 00	+074 04 00	2800 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1941	-9.9	-9.9	-9.9	-9.9	-9.9	30.0	66.4	43.6	96.0	78.4	82.0	35.5	-9.9
1942	25.8	45.1	58.8	89.5	63.9	64.0	34.8	56.7	14.7	143.3	137.7	112.4	846.7
1943	70.7	85.4	128.3	154.2	88.2	61.7	124.1	117.5	25.5	83.5	91.0	144.0	1174.1
1944	51.0	25.5	57.5	148.5	235.7	140.5	46.0	27.5	49.5	198.5	114.0	43.5	1131.7
1945	12.0	77.5	19.3	201.7	178.0	28.5	59.0	30.3	14.5	51.8	161.8	70.0	944.4
1946	86.0	35.0	61.6	86.9	45.5	83.8	65.4	52.2	55.9	41.5	109.6	226.0	949.4
1947	41.8	-9.9	-9.9	-9.9	26.8	62.4	117.4	65.7	100.6	172.4	74.8	0.0	-9.9
1948	7.0	28.2	32.8	143.7	47.7	84.0	40.0	61.0	64.0	99.5	135.0	25.0	767.9
1949	83.0	47.0	109.0	103.0	150.0	64.0	65.5	46.5	62.0	115.6	77.1	41.5	968.2
1950	71.2	184.7	155.7	127.6	153.2	99.5	94.0	41.0	84.8	117.0	92.3	162.0	1383.0
1951	24.0	81.3	75.5	75.5	92.0	58.0	131.0	45.0	25.0	201.5	257.0	28.5	1094.3
1952	78.8	49.0	150.0	144.0	131.0	86.0	139.5	50.5	29.8	76.0	232.6	140.0	1307.2
1953	82.1	20.0	81.5	47.5	81.0	78.0	90.0	40.0	118.0	158.0	132.0	36.0	1004.1
1954	45.0	47.0	133.0	119.0	91.0	129.0	-9.9	111.0	59.0	219.0	139.0	140.0	-9.9
1955	47.0	41.0	96.0	118.2	52.0	119.5	97.0	27.0	94.0	195.0	207.0	96.0	1189.7
1956	48.5	124.0	61.2	38.5	48.1	97.6	49.3	38.7	67.1	182.0	55.0	58.0	868.0
1957	25.3	21.3	111.8	69.4	146.6	35.6	33.2	37.4	44.4	181.1	85.3	60.8	872.4
1958	29.3	20.1	55.8	60.9	42.0	84.0	50.5	70.9	30.5	119.0	153.0	117.0	773.0
1959	43.0	42.0	9.0	54.0	94.0	60.0	113.0	48.0	50.0	116.0	140.0	53.0	822.0
1960	11.0	54.0	62.0	87.0	51.0	30.0	67.0	129.0	60.0	112.0	47.0	124.0	834.0
1961	70.0	26.0	132.0	-9.9	13.5	45.0	-9.9	-9.9	10.0	121.0	96.0	20.0	-9.9
1962	81.0	54.0	82.0	74.0	66.0	64.0	58.0	101.8	27.0	122.0	142.5	106.0	980.3
1963	9.0	91.0	31.0	156.0	167.0	74.0	47.0	53.0	35.0	35.0	130.0	23.0	855.0
1964	26.0	10.0	7.0	111.0	86.0	46.0	77.0	9.5	12.5	46.0	31.0	27.5	489.5
1965	11.0	27.0	9.0	199.0	167.0	46.5	48.5	6.0	9.0	-9.5	-9.9	35.0	-9.9
1966	3.5	74.5	122.5	76.5	88.6	108.4	-9.9	-9.9	41.0	74.0	-9.9	-9.9	-9.9
1967	26.0	36.0	62.0	126.0	131.0	82.0	46.0	67.0	38.0	73.5	212.5	30.0	930.0
1968	7.0	64.0	37.5	215.5	18.5	54.0	60.0	21.5	72.5	71.0	105.5	50.5	777.5
1969	71.0	46.0	9.0	128.0	67.0	39.0	67.0	63.5	69.0	127.4	130.2	64.0	881.1
1970	52.5	62.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	74.0	63.0	38.0	-9.9
1971	24.5	99.3	182.8	180.6	186.6	66.5	77.5	66.4	88.3	52.0	73.3	107.5	1225.3
1972	164.2	94.4	-9.9	204.8	-9.9	99.4	108.7	43.2	48.6	86.3	124.6	30.5	-9.9
1973	19.6	5.4	52.5	97.4	74.6	44.4	59.7	101.8	134.3	151.0	79.6	128.5	949.2
1974	42.5	165.3	133.6	126.7	110.6	46.5	65.9	41.5	66.2	-9.9	144.3	87.3	-9.9
1975	2.8	44.1	73.5	108.2	122.0	-9.9	83.0	60.7	-9.9	135.7	118.9	165.3	-9.9
1976	37.2	-9.9	96.1	111.2	133.0	-9.9	-9.9	61.0	-9.9	-9.9	-9.9	67.6	-9.9
1977	5.1	37.3	48.9	88.9	40.0	42.1	61.6	42.6	125.7	81.5	102.0	51.0	726.7
1978	0.0	27.7	76.2	141.8	102.4	44.8	39.5	104.3	61.8	60.7	93.3	89.3	811.8
1979	45.9	33.1	133.6	151.6	80.6	126.4	73.2	124.7	59.7	174.5	179.9	70.1	1255.7

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-OFSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR BANAVEN

ESTACION : SISTEMA MUNICIPIO DE ESTADO D.F. PERIODO 1941 - 1975 COEF DE CORRECCION 1.000

N	AÑO	T/A	CO	MEDIA	ESC	ESCAL
1	1975	1256.7	1256.7	1256.7	1.483	0.311
2	1974	811.6	2067.5	1033.7	-0.725	0.155
3	1973	724.7	2792.2	931.4	-0.148	-0.082
4	1972	945.2	3740.4	935.1	-0.042	-0.051
5	1971	1225.3	4965.7	993.1	1.332	0.185
6	1970	881.1	5846.8	974.5	-0.326	0.105
7	1969	771.3	6617.3	945.8	-0.156	-0.075
8	1968	931.0	7548.3	944.7	-0.137	-0.108
9	1967	465.5	8013.8	891.1	-2.322	-0.557
10	1966	855.0	8868.8	886.8	-0.510	-0.704
11	1965	561.3	9430.1	856.4	0.113	-0.466
12	1964	834.0	10264.1	855.3	-0.015	-0.809
13	1963	622.0	10886.1	837.5	-0.674	-0.951
14	1962	773.0	11659.1	832.8	-0.518	-1.144
15	1961	872.4	12531.5	835.4	-0.224	-1.232
16	1960	868.0	13399.5	837.4	-0.246	-1.326
17	1959	1165.7	14565.2	856.8	1.165	-1.084
18	1958	1004.1	15569.3	864.9	0.231	-1.035
19	1957	1302.2	16872.5	888.0	1.135	-0.870
20	1956	1054.3	17926.8	896.3	0.440	-0.827
21	1955	1363.0	19289.8	918.5	1.116	-0.683
22	1954	966.2	20255.0	920.5	0.453	-0.772
23	1953	762.5	21785.5	946.3	-0.544	-0.270
24	1952	945.4	22715.3	946.5	-0.041	-0.278
25	1951	944.4	23659.7	946.4	-0.006	-0.292
26	1950	1131.7	24791.4	953.5	0.466	-0.116
27	1949	1174.1	25965.5	961.7	1.037	0.116
28	1948	846.7	26812.2	957.6	-0.552	0.0

F =	-3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 28 AÑOS = 957.6
DESVIACION ESTANDAR = 201.0
COEFICIENTE DE VARIACION = 0.210

****
* FREEAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRESTA *** CURSO DE AGROCLIMATOLOGIA *** PROGRAMA CRESTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212524	VITELMA	BOGOTA D.E.	+04 34 44	+074 04 22	2750 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANO
1956	48.5	124.0	61.2	38.5	48.1	97.6	49.3	38.7	67.1	182.0	55.0	58.0	868.0	195
1957	25.3	21.3	111.8	89.4	146.6	35.8	33.2	37.4	44.4	181.1	85.3	60.8	872.4	195
1958	29.3	20.1	55.8	60.9	42.0	24.0	50.5	70.9	30.5	119.0	153.0	117.0	773.0	195
1959	43.0	42.0	9.0	54.0	54.0	60.0	113.0	48.0	50.0	116.0	140.0	53.0	822.0	195
1960	11.0	54.0	62.0	87.0	51.0	30.0	67.0	129.0	60.0	112.0	47.0	124.0	834.0	196
1961	70.0	20.0	132.0	-9.9	13.5	45.0	-9.9	-9.9	10.0	121.0	96.0	20.0	-9.9	196
1962	81.0	54.0	82.0	74.0	66.0	64.0	58.0	101.8	27.0	122.0	142.5	108.0	980.3	196
1963	9.0	91.0	31.0	156.0	167.0	74.0	47.0	53.0	35.0	39.0	130.0	23.0	855.0	196
1964														196
1965	11.0	27.0	9.0	199.0	167.0	46.5	48.5	6.0	9.0	-9.9	-9.9	35.0	-9.9	196
1966	3.5	74.5	122.5	76.5	88.6	108.4	-9.9	-9.9	41.0	74.0	-9.9	-9.9	-9.9	196
1967	26.0	36.0	62.0	126.0	131.0	82.0	46.0	67.0	38.0	73.5	212.5	30.0	930.0	196
1968	7.0	64.0	37.5	215.5	18.5	54.0	60.0	21.5	72.5	71.0	105.5	50.5	777.5	196
1969	71.0	46.0	9.0	126.0	67.0	39.0	67.0	63.5	69.0	127.4	130.2	64.0	881.1	196
1970	52.5	62.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	74.0	63.0	38.0	-9.9	197
1971	24.5	99.3	182.8	180.6	166.6	86.5	77.5	66.4	88.3	52.0	73.3	107.5	1225.3	197
1972	164.2	94.4	-9.9	204.8	-9.9	99.4	108.7	43.2	48.6	86.3	124.6	30.5	-9.9	197
1973	19.6	5.4	52.5	97.4	74.6	44.4	59.7	101.8	134.3	151.0	79.6	128.9	949.2	197
1974	42.5	165.3	133.6	128.7	110.6	46.9	65.9	41.5	66.2	-9.9	144.3	57.3	-9.9	197
1975	2.8	44.1	73.5	108.2	122.0	-9.9	83.0	60.7	-9.9	135.7	116.9	189.3	-9.9	197
1976	37.2	-9.9	96.1	111.2	133.0	-9.9	-9.9	61.0	-9.9	-9.9	-9.9	67.6	-9.9	197
1977	5.1	37.3	48.9	88.9	40.0	42.1	61.6	42.6	125.7	81.5	102.0	51.0	726.7	197
1978	0.0	27.7	76.2	141.6	102.4	44.8	39.5	104.3	61.8	60.7	93.3	59.3	611.8	197
1979	45.9	33.1	133.6	151.6	80.6	128.4	73.2	124.7	89.7	174.9	179.9	70.1	1255.7	197
NUMERO DE ANOS	23	22	21	21	21	20	19	20	20	20	20	22	15	
VALOR MAXIMO	164.2	165.3	182.8	215.5	166.6	128.4	113.0	129.0	134.3	182.0	212.5	189.3	1255.7	
CUARTIL SUPERIOR	48.5	74.5	117.1	153.8	132.0	84.3	73.2	86.3	68.0	131.5	141.3	107.5	949.2	
MEDIANA	26.0	45.0	62.0	111.2	88.6	50.4	60.0	60.8	54.8	114.0	112.2	58.6	868.0	
CUARTIL INFERIOR	9.0	27.7	43.2	81.8	49.5	43.2	48.5	42.0	36.5	73.8	82.4	38.0	611.8	
VALOR MINIMO	0.0	5.4	9.0	38.5	13.5	24.0	33.2	6.0	9.0	39.0	47.0	20.0	726.7	
PROMEDIOS	36.1	56.8	75.3	119.9	92.9	62.8	63.6	64.1	56.9	107.7	113.8	70.1	904.1	
											TOTAL DE LOS PROMEDIOS MENSUALES =		919.9	
PORCENTAJES	3.9	6.2	8.2	13.0	10.1	6.8	6.9	7.0	6.2	11.7	12.4	7.6		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARAOLOUS = 85.

DEV. ESTANDAR	36.5	38.4	47.1	50.7	49.9	28.9	21.0	33.1	32.3	42.9	42.2	42.2	152.5
COEF. VARIACION	1.012	0.676	0.625	0.423	0.538	0.462	0.330	0.515	0.567	0.399	0.371	0.602	0.169
COEF. ASIMETRIA	2.095	1.314	0.487	0.415	0.243	0.811	1.089	0.518	0.949	0.319	0.477	1.257	1.518

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212558	VIVERO DISTRITAL	BOGOTA	+04 36 00	+074 04 00	2725 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JJL	AGO	SEP	OCT	NOV	DIC	TOTAL
1965	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	170.0	168.6	48.1	-9.9
1966	2.4	83.7	87.1	72.7	93.4	-9.9	-9.9	61.5	-9.9	82.8	237.1	243.6	-9.9
1967	19.1	31.3	105.5	126.0	113.8	122.7	69.5	59.5	70.4	77.2	207.5	66.5	1069.0
1968	10.2	-9.9	33.9	239.4	35.6	112.0	80.6	33.3	78.7	163.6	176.9	39.5	-9.9
1969	61.9	57.4	5.1	33.4	63.9	63.9	60.9	65.1	75.7	211.2	86.5	127.4	912.4
1970	105.7	113.5	45.2	33.0	108.0	835.5	80.4	37.8	75.2	266.5	149.5	-9.9	-9.9
1971	41.7	101.9	179.0	186.7	183.3	68.4	48.8	71.3	86.2	93.5	95.9	154.7	1311.4
1972	112.5	96.3	88.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	103.6	134.2	20.1	-9.9
1973	27.8	5.5	43.5	108.0	63.5	60.1	64.0	99.5	136.4	141.0	124.9	129.8	1004.0
1974	49.9	140.5	90.1	110.3	98.7	31.3	47.3	29.3	56.9	126.4	196.4	36.3	1013.4
1975	8.5	89.5	75.8	107.4	154.6	53.9	121.4	79.4	75.2	136.9	132.5	182.3	1217.4
1976	22.8	-9.9	-9.9	-9.9	-9.9	69.4	70.6	49.8	88.6	-9.9	-9.9	61.3	-9.9
1977	10.2	42.4	75.4	158.3	54.9	58.5	73.0	46.3	124.1	-9.9	233.7	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARAJO

ESTACION X VIVERO DISTRITAL MUNICIPIO DE BOGOTA PERIODO 1965 - 1977 COEF DE CORRECCION 1.000

N	AN	T /	CO	MOY	ECR	ECAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1975	1217.4	1217.4	1217.4	0.071	0.115				+			
2	1974	1013.4	2230.8	1115.4	-0.151	0.152				+			
3	1973	1004.0	3234.8	1078.3	-0.165	-0.027				+			
4	1971	1311.4	4546.2	1136.5	1.503	0.175				+			
5	1969	912.4	5458.6	1091.7	-0.181	0.017				+			
6	1967	1069.0	6527.6	1087.9	-0.127	0.0				+			

N	AN	T /	CO	MOY	ECR	ECAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 6 ANOS = 1087.9

DESVIACION ESTANDAR = 148.0

COEFICIENTE DE VARIACION = 0.137

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IDEAM-CESTA *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CESTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212558	VIVERO DISTRITAL	BOGOTA	+04 35 58	+074 03 53	2725 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1965	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	170.0	166.6	48.1	-9.9	1965
1966	2.4	83.7	87.1	72.7	93.4	-9.9	-9.9	61.5	-9.9	82.8	237.1	243.6	-9.9	1966
1967	19.1	31.3	105.5	126.0	113.8	122.7	69.5	59.5	70.4	77.2	207.5	66.5	1069.0	1967
1968	10.2	-9.9	33.9	239.4	35.6	112.0	80.6	33.3	78.7	163.6	176.9	39.5	-9.9	1968
1969	61.9	57.4	5.1	33.4	63.9	63.9	60.9	65.1	75.7	211.2	66.5	127.4	912.4	1969
1970	105.7	113.5	45.2	33.0	108.0	835.5	80.4	37.8	75.2	266.5	149.5	-9.9	-9.9	1970
1971	41.7	101.9	179.0	186.7	183.3	68.4	48.8	71.3	86.2	93.5	95.9	154.7	1311.4	1971
1972	112.5	96.3	88.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	103.6	134.2	20.1	-9.9	1972
1973	27.8	5.5	43.5	108.0	83.5	60.1	64.0	99.5	136.4	141.0	124.9	129.8	1004.0	1973
1974	49.9	140.5	90.1	110.3	98.7	31.3	47.3	29.3	56.9	126.4	196.4	36.3	1013.4	1974
1975	8.5	89.5	75.8	107.4	154.6	53.9	121.4	79.4	75.2	136.9	132.5	182.3	1217.4	1975
1976	22.8	-9.9	-9.9	-9.9	-9.9	69.4	70.6	49.8	88.6	-9.9	-9.9	61.3	-9.9	1976
1977	10.2	42.4	75.4	156.3	84.9	58.5	73.0	46.3	124.1	-9.9	233.7	-9.9	-9.9	1977
NUMERO DE ANOS	12	10	11	10	10	10	10	11	10	11	12	11	6	
VALOR MAXIMO	112.5	140.5	179.0	239.4	183.3	835.5	121.4	99.5	136.4	266.5	237.1	243.6	1311.4	
CUARTIL SUPERIOR	55.9	*****	*****	*****	*****	*****	*****	*****	*****	*****	201.9	*****	******	
MEDIANA	25.3	86.6	75.8	109.1	96.0	66.1	70.0	59.5	77.2	136.9	159.0	66.5	1041.2	
CUARTIL INFERIOR	10.2	*****	*****	*****	*****	*****	*****	*****	*****	*****	126.7	*****	******	
VALOR MINIMO	2.4	5.5	5.1	33.0	35.6	31.3	47.3	29.3	56.9	77.2	66.5	20.1	912.4	
PROMEDIOS	39.4	76.2	75.4	117.5	97.0	147.6	71.6	57.5	86.7	143.0	162.0	100.9	1087.9	
PORCENTAJES	3.4	6.5	6.4	10.0	8.3	12.6	6.1	4.9	7.4	12.2	13.8	8.6	TOTAL DE LOS PROMEDIOS MENSUALES = 1174.8	

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO ENE FEB MAR

INDICE DE FOURNIER = 22. INDICE DE ARNOLDUS = 111.

	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
DEV. ESTANDAR	37.2	41.3	45.6	64.8	45.9	243.2	20.9	21.1	24.7	57.7	50.0	71.7	148.6
COEF. VARIACION	0.944	0.542	0.604	0.552	0.473	1.648	0.292	0.367	0.284	0.404	0.309	0.711	0.137
COEF. ASIMETRIA	1.168	-0.284	0.861	0.468	0.664	3.091	1.469	0.534	1.284	0.979	0.099	0.785	0.630

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212075	BOJACA	BOJACA	+04 44 00	+074 20 00	2603 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	10.0	18.1	46.4	41.3	34.8	43.7	58.7	23.8	64.6	3.3	53.8	-9.9
1961	38.6	4.2	57.2	63.2	12.0	80.0	41.0	17.5	11.0	154.3	98.4	30.1	577.5
1962	10.1	2.8	71.3	57.4	55.1	60.8	35.2	18.5	41.4	78.7	59.0	18.7	509.0
1963	11.2	55.8	25.0	65.7	146.2	25.8	27.2	26.8	19.2	163.3	98.0	16.0	680.2
1964	2.6	17.3	7.4	112.2	112.2	72.0	37.2	46.8	28.3	55.0	25.8	17.7	534.5
1965	25.6	3.5	9.8	249.0	135.0	49.0	20.5	38.1	26.1	92.0	125.0	33.8	811.4
1966	2.0	4.5	107.5	76.4	151.8	63.0	33.6	71.8	59.2	63.5	68.6	77.0	778.9
1967	26.0	37.7	43.4	141.6	138.0	110.1	9.3	44.3	20.6	151.5	97.5	37.0	857.0
1968	27.4	24.7	5.9	104.3	45.0	86.2	22.2	32.6	84.2	83.0	67.5	6.0	589.0
1969	72.0	7.0	19.9	77.0	88.0	18.4	16.0	28.0	107.5	180.0	67.5	20.5	701.8
1970	15.2	11.5	15.0	27.3	59.5	79.5	33.0	36.3	29.5	71.3	100.5	12.5	491.1
1971	37.5	38.0	72.1	51.1	96.2	33.5	40.6	39.3	88.1	76.4	42.6	55.6	671.0
1972	52.6	38.2	49.6	136.9	115.9	54.4	36.5	47.7	36.8	43.0	73.0	30.6	715.2
1973	4.7	1.4	55.3	49.8	52.6	36.1	61.6	53.2	119.6	57.3	99.7	50.9	642.2
1974	55.3	34.0	77.2	71.2	39.1	25.0	8.7	44.0	57.5	67.5	82.1	11.4	573.0
1975	6.9	30.9	60.3	21.9	80.9	70.3	65.2	49.5	56.8	91.9	59.4	75.0	669.0
1976	15.4	44.8	75.1	79.4	93.7	68.6	17.0	6.5	63.4	89.5	70.1	35.0	658.5
1977	23.2	23.0	54.4	57.3	32.3	41.1	34.0	31.8	65.0	150.5	98.5	6.0	617.1
1978	0.0	23.0	79.0	71.0	75.0	55.0	22.0	5.5	21.5	86.0	66.0	17.0	521.0
1979	18.0	4.0	37.0	86.0	89.5	72.8	41.0	57.5	82.0	189.0	95.5	44.0	816.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAF

ESTACION X ECUACA MUNICIPIO DE ECUACA PERIODO COEF DE CORRECCION

1960 - 1979 1.000

ESTACION Y LA RANADA MUNICIPIO DE FLORIDA PERIODO COEF DE CORRECCION

1960 - 1979 1.000

N	AN	CLX	CUY	RAN	RCAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	816.	804.	1.127	0.141					I+				
2	1978	1337.	1446.	0.896	-0.150				.	+				
3	1977	1554.	2081.	1.082	0.122					I+				
4	1975	2623.	2930.	0.875	-0.124				.	+				
5	1974	3156.	3670.	0.859	-0.166				.	+I				
6	1973	3639.	4392.	0.988	-0.160					*I				
7	1972	4554.	5150.	1.047	-0.131					+I	.			
8	1971	5225.	6015.	0.857	-0.302				.	+ I				
9	1970	5716.	6786.	0.711	-0.606				+	I				
10	1969	6418.	7601.	0.956	-0.657				+	. I				
11	1968	7007.	8325.	0.903	-0.755				. +	I				
12	1967	7884.	8947.	1.530	-0.300				+	I				.
13	1966	8643.	9601.	1.322	-0.005					+			.	
14	1965	9454.	10270.	1.346	0.310					I +				.
15	1964	9555.	10985.	0.830	0.142				.	I+				
16	1963	10665.	11646.	1.143	0.272					I +	.			
17	1962	11178.	12318.	0.841	0.125				.	I+				
18	1961	11755.	13050.	0.876	0.0				.	+				

N	AN	CLX	CUY	RAN	RCAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 653.1 725.0

RAZONES PROMEDIOS Y/X = 1.110

X/Y = 0.901

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAL-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212075	BOJACA	BOJACA	+04 44 03	+074 20 43	2603 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1968	27.4	24.7	5.9	104.3	45.0	86.2	22.2	32.6	64.2	83.0	67.5	6.0	589.0	1968
1969	72.0	7.0	19.9	77.0	88.0	18.4	16.0	28.0	107.5	180.0	67.5	20.5	701.8	1969
1970	15.2	11.5	15.0	27.3	59.5	79.5	33.0	36.3	29.5	71.3	100.5	12.5	491.1	1970
1971	37.5	36.0	72.1	51.1	96.2	33.5	40.6	39.3	88.1	76.4	42.6	55.6	671.0	1971
1972	52.6	38.2	49.6	136.9	115.9	54.4	36.5	47.7	36.8	43.0	73.0	30.6	715.2	1972
1973	4.7	1.4	55.3	49.8	52.6	36.1	61.6	53.2	119.6	57.3	99.7	50.9	642.2	1973
1974	55.3	34.0	77.2	71.2	39.1	25.0	8.7	44.0	57.5	67.5	82.1	11.4	573.0	1974
1975	6.9	30.9	60.3	21.9	80.9	70.3	65.2	49.5	56.8	91.9	59.4	75.0	669.0	1975
1976	15.4	44.2	75.1	79.4	93.7	68.6	17.0	6.5	63.4	89.5	70.1	35.0	658.5	1976
1977	23.2	23.0	54.4	57.3	32.3	41.1	34.0	31.8	65.0	150.5	98.5	6.0	617.1	1977
1978	0.0	23.0	79.0	71.0	75.0	55.0	22.0	5.5	21.5	86.0	66.0	17.0	521.0	1978
1979	18.0	4.0	37.0	88.0	89.5	72.8	41.0	57.5	82.0	189.0	95.5	44.0	816.3	1979
NUMERO DE ANOS	12	12	12	12	12	12	12	12	12	12	12	12	12	
VALOR MAXIMO	72.0	44.8	79.0	136.9	115.9	86.2	65.2	57.5	119.6	189.0	100.5	75.0	816.3	
CUARTIL SUPERIOR	45.0	36.0	73.6	82.7	91.6	71.5	40.8	48.6	66.1	121.2	97.0	47.4	686.4	
MEDIANA	20.6	23.6	54.8	71.1	77.9	54.7	33.5	37.8	64.2	84.5	71.5	25.5	650.3	
CUARTIL INFERIOR	11.1	9.3	28.4	50.4	48.8	34.8	19.5	29.9	46.8	69.4	66.8	11.9	581.0	
VALOR MINIMO	0.0	1.4	5.9	21.9	32.3	18.4	8.7	5.5	21.5	43.0	42.6	6.0	491.1	
PROMEDIOS	27.3	23.4	50.1	69.4	72.3	53.4	33.1	36.0	67.7	98.8	76.9	30.4	638.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		638.8	
PORCENTAJES	4.3	3.7	7.8	10.9	11.3	8.4	5.2	5.6	10.6	15.5	12.0	4.8		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 63.

DEV. ESTANDAR	22.5	14.6	25.4	31.8	26.2	22.4	17.5	16.6	30.1	47.7	18.5	22.2	88.8
COEF. VARIACION	0.824	0.623	0.507	0.458	0.362	0.420	0.527	0.462	0.445	0.483	0.240	0.729	0.139
COEF. ASIMETRIA	0.790	-0.216	-0.580	0.536	-0.091	-0.117	0.619	-0.828	0.135	1.100	-0.121	0.715	0.169

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Biblioteca Central

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212075	BOJACA	BOJACA	+04 44 03	+074 20 43	2603 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	28.1	19.0	25.4	65.1	58.0	48.9	61.3	82.4	33.4	90.7	4.6	75.5	587.4	1960
1961	41.5	4.5	61.0	68.0	12.9	53.8	44.1	18.8	11.8	166.1	105.9	32.4	621.4	1961
1962	12.0	3.5	88.7	71.4	68.5	75.6	43.8	23.0	51.5	97.9	73.4	23.3	633.2	1962
1963	11.2	55.8	25.0	65.7	146.2	25.8	27.2	26.8	19.2	163.3	98.0	16.0	680.2	1963
1964	2.0	17.3	7.4	112.2	149.8	72.0	37.2	46.8	28.3	55.0	25.8	17.7	572.1	1964
1965	22.7	3.1	8.7	132.1	119.7	43.4	18.2	33.8	23.1	81.6	114.3	30.0	630.7	1965
1966	1.7	3.9	93.4	66.4	131.9	54.7	29.2	62.4	51.4	55.2	59.6	66.9	676.7	1966
1967	20.5	29.7	34.2	111.7	108.9	86.8	7.3	34.9	16.2	119.5	76.9	29.2	675.8	1967
1968	27.4	24.7	5.9	104.3	45.0	86.2	22.2	32.6	84.2	83.0	67.5	6.0	589.0	1968
1969	72.0	7.0	19.9	77.0	88.0	18.4	16.0	28.0	107.5	180.0	67.5	20.5	701.8	1969
1970	15.2	11.5	15.0	27.3	59.5	79.5	33.0	36.3	29.5	71.3	100.5	12.5	491.1	1970
1971	37.5	38.0	72.1	51.1	56.2	33.5	40.6	39.3	88.1	76.4	42.6	55.6	671.0	1971
1972	52.6	38.2	49.6	130.9	115.9	54.4	36.5	47.7	36.8	43.0	72.0	30.6	715.2	1972
1973	4.7	1.4	55.3	49.8	52.6	36.1	61.6	53.2	119.6	57.3	99.7	50.9	642.2	1973
1974	55.3	34.0	77.2	71.2	39.1	25.0	8.7	44.0	57.5	67.5	82.1	11.4	573.0	1974
1975	6.9	30.9	60.3	21.9	80.9	70.3	65.2	49.5	56.8	91.9	59.4	75.0	669.0	1975
1976	15.4	44.8	75.1	79.4	93.7	68.6	17.0	6.5	63.4	89.5	70.1	35.0	658.5	1976
1977	23.2	23.0	54.4	57.3	32.3	41.1	34.0	31.8	65.0	150.5	98.5	6.0	617.1	1977
1978	0.0	23.0	79.0	71.0	75.0	55.0	22.0	5.5	21.5	86.0	66.0	17.0	521.0	1978
1979	18.0	4.0	37.0	86.0	89.5	72.8	41.0	57.5	82.0	189.0	95.5	44.0	816.3	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	72.0	55.8	93.4	130.9	149.8	86.8	65.2	82.4	119.6	189.0	114.3	75.5	816.3	
CUARTIL SUPERIOR	32.8	32.4	73.6	95.1	112.4	72.4	42.4	48.6	73.5	135.0	98.3	47.4	676.2	
MEDIANA	19.3	20.1	52.0	71.1	84.4	54.5	33.5	35.6	51.4	87.8	73.2	29.6	637.7	
CUARTIL INFERIOR	9.1	4.3	22.4	61.2	55.3	38.6	20.1	27.4	25.7	69.4	62.8	16.5	588.2	
VALOR MINIMO	0.0	1.4	5.9	21.9	12.9	18.4	7.3	5.5	11.8	43.0	4.6	6.0	491.1	
PROMEDIOS	23.5	20.6	47.3	76.3	83.2	55.1	33.3	38.0	52.3	100.7	74.0	32.8	637.1	
PORCENTAJES	3.7	3.2	7.4	12.0	13.1	8.6	5.2	6.0	8.2	15.8	11.6	5.1		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 64.

INDICE DE IRREGULARIDAD INTERANUAL =1.34

DEV. ESTANDAR	19.6	16.1	28.5	30.6	38.1	20.9	16.8	18.5	31.3	44.9	27.6	21.9	72.0
COEF. VARIACION	0.836	0.782	0.604	0.401	0.458	0.380	0.504	0.486	0.598	0.445	0.372	0.667	0.113

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	756.	729.	698.	637.	576.	545.	519.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.028	0.533	0.002	0.380	0.090	-0.140	0.394	0.339	0.646	0.829	-0.877	0.789	0.200

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212054	LA MERCED	BOJACA	+04 38 00	+074 19 00	2680 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1957	10.5	-9.9	-9.9	49.6	159.8	45.6	13.5	8.5	44.8	94.4	16.9	7.8	-9.9
1958	24.4	11.2	40.0	47.9	25.2	25.8	6.8	48.1	10.1	47.2	35.8	23.7	346.2
1959	12.4	8.4	71.8	50.5	98.6	50.1	54.1	33.1	32.5	132.5	68.3	16.5	630.8
1960	42.9	34.7	16.0	63.3	69.4	23.1	49.4	41.3	26.2	85.7	22.6	81.4	556.0
1961	36.8	22.2	46.0	39.4	18.6	49.3	43.9	17.7	8.1	148.1	144.4	9.8	584.3
1962	11.6	19.0	66.5	54.5	75.3	35.7	17.8	29.6	31.6	72.4	104.6	19.6	542.2
1963	35.0	51.8	38.0	108.7	195.3	43.8	24.0	28.4	16.4	153.2	146.4	40.8	881.8
1964	5.8	42.3	10.8	74.0	92.2	81.8	42.0	26.4	20.0	52.4	44.8	112.6	605.1
1965	15.6	4.4	8.8	160.8	96.6	5.0	9.9	16.1	21.9	83.3	113.8	57.2	613.4
1966	1.6	10.2	75.3	53.8	89.0	8.2	7.9	30.8	41.9	46.0	87.0	54.3	506.0
1967	14.2	20.3	77.4	73.7	114.2	92.0	31.3	10.8	14.3	40.1	122.8	93.4	704.5
1968	20.8	51.6	13.7	165.3	66.6	88.0	16.0	30.2	97.9	93.9	119.8	20.8	784.6
1969	95.7	8.6	19.1	81.4	85.5	53.5	6.3	38.2	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS CRIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PRCYECTO IGAC-ORSTCM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X LA MERCED MUNICIPIO DE BOJACA PERIODO COEF DE CORRECCION

1957 - 1969 1.000

N	AN	T /	CU	MOY	ECR	PCAN	P = -3. -2. -1. 0.0 +1. +2. +3.
1	1968	784.6	784.6	784.6	1.195	0.276	
2	1967	704.5	1489.1	744.5	0.636	0.425	
3	1966	506.0	1995.1	665.0	-0.760	0.249	
4	1965	613.4	2608.5	652.1	-0.005	0.248	
5	1964	605.1	3213.6	642.7	-0.063	0.233	
6	1963	681.6	4095.4	682.6	1.663	0.669	
7	1962	542.2	4637.6	662.5	-0.506	0.552	
8	1961	584.3	5221.9	652.7	-0.205	0.504	
9	1960	556.0	5777.9	642.0	-0.406	0.405	
10	1959	630.8	6408.7	640.5	0.116	0.436	
11	1958	346.2	6754.9	614.1	-1.664	0.000	

N	AN	T /	CU	MOY	ECR	PCAN	P = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 11 ANOS = 614.1

DEVIACION ESTANDAR = 142.2

COEFICIENTE DE VARIACION = 0.232

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212054	LA MERCED	BOJACA	+04 38 25	+074 1E 35	2680 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	10.5	-9.9	-9.9	49.6	159.8	49.6	13.5	6.5	44.6	94.4	16.9	7.8	-9.9	1957
1958														1958
1959	12.4	8.4	71.8	90.5	98.6	50.1	54.1	33.1	32.5	132.5	68.3	18.5	630.8	1959
1960	42.9	34.7	10.0	83.3	69.4	23.1	49.4	41.3	26.2	85.7	22.6	81.4	556.0	1960
1961	30.8	22.2	46.0	39.4	18.6	49.3	43.9	17.7	8.1	148.1	144.4	9.8	584.3	1961
1962	11.6	19.8	66.5	54.5	75.3	39.7	17.8	29.6	31.6	72.4	104.6	19.6	542.2	1962
1963														1963
1964	5.8	42.3	10.8	74.0	92.2	81.8	42.0	26.4	20.0	52.4	44.8	112.6	605.1	1964
1965	15.6	4.4	8.8	180.8	96.6	5.0	9.9	16.1	21.9	83.3	113.8	57.2	613.4	1965
1966	1.6	10.2	75.3	53.8	69.0	8.2	7.9	30.8	41.9	46.0	87.0	54.3	506.0	1966
1967	14.2	20.3	77.4	73.7	114.2	92.0	31.3	10.8	14.3	40.1	122.8	93.4	704.5	1967
1968	20.8	51.6	13.7	105.3	66.6	88.0	16.0	30.2	97.9	93.9	119.8	20.8	784.6	1968
1969	95.7	8.6	19.1	81.4	85.5	53.5	6.3	38.2	-9.9	-9.9	-9.9	-9.9	-9.9	1969
NUMERO DE ANOS	11	10	10	11	11	11	11	11	10	10	10	10	9	
VALOR MAXIMO	95.7	51.6	77.4	180.8	159.8	92.0	54.1	41.3	97.9	148.1	144.4	112.6	784.6	
MEDIANA	14.2	19.6	32.5	63.3	69.0	49.6	17.8	29.6	28.9	84.5	95.8	37.5	605.1	
VALOR MINIMO	1.6	4.4	8.8	39.4	18.6	5.0	6.3	8.5	8.1	40.1	16.9	7.8	506.0	
PROMEDIOS	24.4	22.2	40.5	80.6	87.8	49.1	26.6	25.7	33.9	84.9	84.5	47.5	614.1	
											TOTAL DE LOS PROMEDIOS MENSUALES =		607.6	
PORCENTAJES	4.0	3.6	6.7	13.3	14.4	8.1	4.4	4.2	5.6	14.0	13.9	7.8		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 13. INDICE DE ARNOLDUS = 63.

DEV. ESTANDAR	26.7	15.9	29.7	47.5	34.4	29.7	18.0	10.9	25.2	35.2	44.5	38.0	85.7
COEF. VARIACION	1.097	0.717	0.732	0.590	0.392	0.605	0.678	0.425	0.744	0.415	0.526	0.798	0.140
COEF. ASIMETRIA	2.210	0.800	0.202	1.648	0.134	-0.001	0.385	-0.316	2.022	0.564	-0.417	0.584	0.982

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212525	LA LUMBRE	BOSA	+04 38 00	+074 12 00	2540 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1950	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	51.5	50.5	72.5	67.0	42.5	-9.9
1951	25.0	34.0	67.5	109.5	38.0	24.5	17.0	17.5	14.5	72.0	71.5	27.5	518.5
1952	10.5	13.0	29.0	123.0	95.5	43.5	60.5	15.5	74.0	35.5	135.5	62.0	697.5
1953	18.5	25.5	20.5	105.0	95.5	65.5	18.5	7.0	92.5	104.0	104.0	19.5	676.0
1954	23.5	16.5	29.0	97.0	52.5	72.0	37.0	57.5	42.0	100.5	77.0	41.5	646.0
1955	27.0	16.5	76.5	70.5	47.2	62.0	73.4	11.0	95.2	148.5	71.5	81.0	780.3
1956	9.0	55.0	40.0	80.5	64.5	67.5	23.0	28.7	90.0	201.5	49.0	28.0	736.7
1957	4.0	5.0	32.0	33.5	111.5	18.0	20.5	11.0	53.0	76.5	45.0	-9.9	-9.9
1958	11.5	30.0	51.5	66.0	24.5	18.0	8.0	54.0	24.0	61.0	80.0	16.5	445.0
1959	10.0	12.0	24.0	108.0	71.5	75.0	69.5	35.0	19.5	45.5	40.5	30.5	541.0
1960	4.0	20.0	60.5	71.1	66.0	25.5	35.0	25.0	24.5	63.0	44.0	67.5	506.1
1961	11.5	5.0	57.5	55.0	7.0	44.0	30.5	9.0	20.5	127.5	110.0	0.0	477.5
1962	20.5	6.0	62.5	54.0	76.0	45.0	23.5	30.9	30.5	35.5	59.3	0.0	443.7
1963	15.0	34.5	19.5	43.0	67.5	63.5	38.0	28.5	37.5	43.0	117.5	0.0	527.5
1964	0.0	0.0	25.0	53.4	59.0	67.5	34.5	38.9	0.0	43.0	23.0	1.5	365.8
1965	-9.9	-9.9	-9.9	-9.9	73.5	-9.9	9.5	15.0	9.5	11.0	166.5	12.5	-9.9
1966	0.0	27.5	42.5	47.0	48.5	53.5	32.0	16.0	40.0	82.5	39.0	18.0	446.9
1967	19.5	22.1	40.5	54.2	107.5	104.5	47.8	23.3	15.3	90.0	93.8	49.3	667.8
1968	0.0	46.5	52.0	56.0	20.0	57.5	5.0	0.0	80.0	14.0	48.5	0.0	379.5
1969	66.0	21.4	28.5	115.8	37.7	55.7	18.6	46.0	57.0	131.9	45.9	33.6	658.1
1970	28.0	27.5	6.5	36.0	78.0	63.0	59.0	30.0	66.0	30.5	32.5	0.0	457.0
1971	116.0	35.0	170.0	104.5	83.0	44.5	51.0	56.5	63.0	120.0	125.0	56.0	1024.5
1972	50.0	55.0	72.0	141.0	155.0	43.0	6.0	7.0	6.0	87.0	144.0	10.0	776.0
1973	0.0	0.0	67.0	82.0	69.5	72.5	64.0	101.0	120.5	113.0	55.5	90.5	835.5
1974	33.0	56.0	26.0	86.0	56.5	35.5	9.0	10.0	68.0	62.0	92.5	19.0	553.5
1975	6.0	50.0	80.5	45.0	109.5	41.5	36.0	67.5	53.0	59.0	67.5	98.0	713.5
1976	15.0	45.0	60.5	59.0	116.5	41.5	4.0	29.5	51.0	75.5	32.5	23.5	553.5
1977	0.0	11.0	40.5	45.0	7.0	6.5	46.5	59.0	57.5	99.0	92.0	35.5	499.5
1978	0.0	12.0	20.0	155.5	92.5	65.0	25.5	10.0	50.0	66.0	12.5	9.0	518.0
1979	3.0	7.0	49.5	89.0	61.5	57.5	27.5	53.0	47.5	122.5	180.0	0.0	698.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAPAPEL

ESTACION X LA LUMBRE MUNICIPIO DE BOSA PERIODO COEF DE CORRECCION

1950 - 1979 1.000

N	AN	I /	CU	MOY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1979	698.0	698.0	698.0	0.647	0.167	
2	1978	516.0	1214.0	607.0	-0.517	0.034	
3	1977	495.5	1709.5	569.8	-0.636	-0.131	
4	1976	553.5	2263.0	565.8	-0.287	-0.208	
5	1975	713.5	2976.5	595.3	0.748	-0.012	
6	1974	553.5	3530.0	588.3	-0.287	-0.086	
7	1973	836.5	4366.5	623.8	1.537	0.312	
8	1972	776.0	5142.5	642.8	1.152	0.610	
9	1971	1024.5	6167.0	685.7	2.759	1.323	
10	1970	457.0	6624.0	662.4	-0.511	1.087	
11	1969	658.1	7282.1	662.0	0.385	1.186	
12	1968	375.5	7657.6	638.1	-1.412	0.823	
13	1967	667.8	8325.4	640.8	0.452	0.940	
14	1966	446.9	8772.3	626.6	-0.576	0.687	
15	1964	365.8	9138.1	609.2	-1.501	0.295	
16	1963	527.5	9665.6	604.1	-0.455	0.181	
17	1962	443.7	10109.3	595.2	-0.597	-0.077	
18	1961	477.5	10586.8	588.7	-0.776	-0.278	
19	1960	506.1	11092.9	584.3	-0.554	-0.431	
20	1959	541.0	11633.9	582.1	-0.366	-0.527	
21	1958	445.0	12078.9	575.6	-0.585	-0.782	
22	1956	736.7	12815.6	582.5	0.658	-0.550	
23	1955	788.3	13604.9	591.5	1.180	-0.245	
24	1954	646.0	14250.9	593.8	0.311	-0.164	
25	1953	676.0	14926.9	597.1	0.505	-0.034	
26	1952	697.5	15624.4	600.9	0.644	0.133	
27	1951	518.5	16142.9	597.9	-0.513	0.0	

N	AN	I /	CU	MOY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 27 ANOS = 597.9

DEVIACION ESTANDAR = 154.6

COEFICIENTE DE VARIACION = 0.259

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* PRUEBAS DE SIMPLE MASA *

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PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211909	CABRERA	CABRERA	+03 59 00	+074 27 00	1900 METROS

AND	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1959	9.0	19.0	129.0	91.0	148.0	142.0	91.0	75.0	36.0	145.0	93.0	46.0	1024.0
1960	68.0	41.0	79.0	115.0	130.0	109.0	78.0	33.0	56.0	80.0	107.0	94.0	990.0
1961	9.0	46.0	113.0	122.0	42.0	58.0	46.0	56.5	39.0	243.0	200.0	17.0	991.5
1962	21.0	48.0	81.0	108.0	89.0	77.0	30.0	68.0	46.0	172.0	126.0	75.0	942.0
1963	38.0	128.0	49.0	123.0	123.0	64.0	65.0	41.0	52.0	218.0	135.0	25.0	1061.0
1964	10.0	31.0	21.0	59.0	102.0	130.0	93.0	75.0	47.0	85.0	142.0	41.0	836.0
1965	-9.9	12.0	11.0	87.0	59.0	24.0	21.0	43.0	66.0	136.0	193.0	37.0	-9.9
1966	13.0	14.0	33.0	19.0	62.0	91.0	31.0	46.0	34.0	37.0	31.0	20.0	431.0
1967	13.0	30.0	85.0	172.0	107.0	101.0	58.0	33.0	62.0	122.0	157.0	81.0	1021.0
1968	51.0	58.0	37.0	210.0	132.0	104.0	37.0	51.0	100.0	118.0	115.0	68.0	1081.0
1969	67.0	50.0	44.0	99.0	151.0	86.0	34.0	58.0	85.0	210.0	103.0	61.0	1048.0
1970	66.0	28.0	56.0	97.0	123.0	76.0	70.0	89.0	98.5	154.5	140.0	39.0	1037.0
1971	144.0	71.0	154.0	153.0	204.0	124.0	885.0	114.5	122.0	223.5	210.0	124.0	2529.0
1972	150.0	69.0	94.0	190.0	329.0	137.0	83.0	62.0	48.0	126.0	179.0	32.0	1499.0
1973	8.0	8.0	104.0	84.0	109.0	111.0	90.0	115.0	143.0	134.0	104.0	72.0	1082.0
1974	132.0	115.0	137.0	122.0	59.0	63.0	27.0	43.0	43.0	107.0	106.0	6.0	960.0
1975	-9.9	183.0	179.0	157.0	228.0	-9.9	-9.9	55.0	89.0	75.0	76.0	52.0	-9.9
1976	0.0	86.0	138.0	105.0	53.0	33.0	23.0	26.0	91.0	142.0	88.0	35.0	820.0
1977	3.0	35.0	97.0	124.0	88.0	85.0	38.0	47.0	116.0	155.0	145.0	50.0	983.0
1978	21.0	47.0	138.0	184.0	169.0	86.0	54.0	58.0	103.0	263.0	-9.9	61.0	-9.9
1979	23.0	48.0	138.0	-9.9	99.0	78.0	71.0	80.0	176.0	195.0	130.0	45.0	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR D'VINNI

ESTACION K CABRERA MUNICIPIO DE CABRERA PERIODO 1959 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN
1	1977	983.0	983.0	983.0	-0.225	-0.089
2	1976	820.0	1803.0	901.5	-0.608	-0.328
3	1974	960.0	2763.0	921.0	-0.279	-0.438
4	1973	1082.0	3845.0	961.3	0.008	-0.435
5	1972	1499.0	5344.0	1068.8	0.989	-0.045
6	1971	2529.0	7873.0	1312.2	3.412	1.300
7	1970	1037.0	8910.0	1272.9	-0.098	1.261
8	1969	1048.0	9958.0	1244.8	-0.072	1.233
9	1968	1081.0	11039.0	1226.6	0.006	1.235
10	1967	1021.0	12060.0	1206.0	-0.135	1.182
11	1966	431.0	12491.0	1135.5	-1.523	0.581
12	1964	836.0	13327.0	1110.6	-0.571	0.356
13	1963	1061.0	14388.0	1106.8	-0.041	0.340
14	1962	942.0	15330.0	1095.0	-0.321	0.213
15	1961	991.5	16321.5	1088.1	-0.205	0.133
16	1960	990.0	17311.5	1082.0	-0.208	0.051
17	1959	1024.0	18335.5	1078.6	-0.128	0.0

P = -3. -2. -1. 0.0 +1. +2. +3.

N AN T A CU MOY ECR PCAN

P = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 17 ANOS = 1078.6
DEVIACION ESTANDAR = 425.2
COEFICIENTE DE VARIACION = 0.394

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
21190?	CABRERA	CABRERA	+03 59 30	+074 25 10	1900 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1959	9.0	19.0	129.0	91.0	148.0	142.0	91.0	75.0	36.0	145.0	93.0	46.0	1024.0	1959
1960	68.0	41.0	79.0	115.0	130.0	109.0	78.0	33.0	56.0	80.0	107.0	94.0	990.0	1960
1961	9.0	46.0	113.0	122.0	42.0	58.0	46.0	56.5	39.0	243.0	200.0	17.0	991.5	1961
1962	21.0	48.0	81.0	108.0	89.0	77.0	30.0	68.0	46.0	173.0	126.0	75.0	942.0	1962
1963	38.0	126.0	49.0	123.0	123.0	64.0	65.0	41.0	52.0	218.0	135.0	25.0	1061.0	1963
1964	10.0	31.0	21.0	59.0	102.0	130.0	93.0	75.0	47.0	85.0	142.0	41.0	836.0	1964
1965														1965
1966														1966
1967	13.0	30.0	85.0	172.0	107.0	101.0	58.0	33.0	62.0	122.0	157.0	81.0	1021.0	1967
1968	51.0	58.0	37.0	210.0	132.0	104.0	37.0	51.0	100.0	118.0	115.0	68.0	1081.0	1968
1969	67.0	50.0	44.0	99.0	151.0	86.0	34.0	58.0	85.0	210.0	103.0	61.0	1048.0	1969
1970	66.0	28.0	56.0	97.0	123.0	76.0	70.0	89.0	58.5	154.5	140.0	39.0	1037.0	1970
1971														1971
1972														1972
1973	8.0	8.0	104.0	84.0	109.0	111.0	90.0	115.0	143.0	134.0	104.0	72.0	1082.0	1973
1974	132.0	115.0	137.0	122.0	59.0	63.0	27.0	43.0	43.0	107.0	106.0	6.0	960.0	1974
1975	-9.9	183.0	179.0	157.0	228.0	-9.9	-9.9	55.0	89.0	75.0	76.0	52.0	-9.9	1975
1976	0.0	80.0	138.0	105.0	53.0	33.0	23.0	26.0	91.0	142.0	86.0	35.0	820.0	1976
1977	3.0	35.0	97.0	124.0	88.0	85.0	38.0	47.0	116.0	155.0	145.0	50.0	983.0	1977
1978	21.0	47.0	138.0	184.0	169.0	86.0	54.0	58.0	103.0	263.0	-9.9	61.0	-9.9	1978
1979	23.0	48.0	138.0	-9.9	59.0	78.0	71.0	80.0	176.0	195.0	130.0	45.0	-9.9	1979
NUMERO DE ANOS	16	17	17	16	17	16	16	17	17	17	16	17	14	
VALOR MAXIMO	132.0	183.0	179.0	210.0	228.0	142.0	93.0	115.0	176.0	263.0	200.0	94.0	1082.0	
CUARTIL SUPERIOR	58.5	72.0	137.5	140.5	140.0	106.5	74.5	75.0	101.5	202.5	141.0	70.0	1048.0	
MEDIANA	21.0	47.0	97.0	118.5	109.0	85.5	56.0	56.5	85.0	145.0	120.5	50.0	1006.3	
CUARTIL INFERIOR	9.0	30.5	82.5	98.0	88.5	70.0	35.5	42.0	46.5	112.5	103.5	37.0	960.0	
VALOR MINIMO	0.0	8.0	21.0	59.0	42.0	33.0	23.0	26.0	36.0	75.0	76.0	6.0	820.0	
PROMEDIOS	33.7	58.9	95.6	123.3	114.8	87.7	56.6	59.0	81.3	154.1	122.9	51.1	991.2	
									TOTAL DE LOS PROMEDIOS MENSUALES =				1038.9	
PORCENTAJES	3.2	5.7	9.2	11.9	11.1	8.4	5.4	5.7	7.8	14.8	11.8	4.9		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 23. INDICE DE ARNOLDUS = 101.

DEV. ESTANDAR	35.3	44.9	44.4	39.5	45.4	27.8	24.0	22.8	39.4	56.3	30.7	23.3	81.0
COEF. VARIACION	1.048	0.763	0.465	0.320	0.395	0.317	0.424	0.386	0.485	0.365	0.250	0.456	0.082
COEF. ASIMETRIA	1.602	1.671	-0.002	0.781	0.654	0.154	0.186	0.816	0.913	0.429	0.657	-0.113	-1.156

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211909	CABRERA	CABRERA	+03 59 30	+074 29 10	1900 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	68.0	41.0	79.0	115.0	130.0	109.0	78.0	33.0	56.0	80.0	107.0	94.0	990.0	1960
1961	9.0	40.0	113.0	122.0	42.0	58.0	46.0	56.5	39.0	243.0	200.0	17.0	991.5	1961
1962	21.0	48.0	81.0	108.0	89.0	77.0	30.0	68.0	46.0	173.0	126.0	75.0	942.0	1962
1963	38.0	128.0	49.0	123.0	123.0	64.0	65.0	41.0	52.0	218.0	135.0	25.0	1061.0	1963
1964	10.0	31.0	21.0	59.0	102.0	130.0	93.0	75.0	47.0	85.0	142.0	41.0	836.0	1964
1965	44.7	15.7	14.4	114.4	77.6	31.5	27.6	56.5	66.8	178.9	253.9	48.6	950.6	1965
1966	30.6	33.2	78.3	45.1	147.0	215.8	73.5	109.1	80.6	87.7	73.5	47.4	1022.0	1966
1967	13.0	30.0	85.0	172.0	107.0	101.0	58.0	33.0	62.0	122.0	157.0	81.0	1021.0	1967
1968	51.0	58.0	37.0	210.0	132.0	104.0	37.0	51.0	100.0	118.0	115.0	68.0	1081.0	1968
1969	67.0	50.0	44.0	99.0	151.0	86.0	34.0	58.0	85.0	210.0	103.0	61.0	1048.0	1969
1970	66.0	28.0	56.0	97.0	123.0	76.0	70.0	89.0	98.5	154.5	140.0	39.0	1037.0	1970
1971	88.2	43.5	94.3	93.7	125.0	75.9	52.0	70.1	74.7	136.9	128.7	75.9	1058.9	1971
1972	101.2	46.5	63.4	128.2	222.1	92.5	56.0	41.8	32.4	85.0	120.8	21.6	1011.5	1972
1973	8.0	8.0	104.0	84.0	109.0	111.0	90.0	115.0	143.0	134.0	104.0	72.0	1082.0	1973
1974	132.0	115.0	137.0	122.0	59.0	63.0	27.0	43.0	43.0	107.0	106.0	6.0	960.0	1974
1975	8.0	183.0	179.0	157.0	228.0	43.0	100.0	55.0	89.0	75.0	76.0	52.0	1245.0	1975
1976	0.0	86.0	138.0	105.0	53.0	33.0	23.0	26.0	91.0	142.0	88.0	35.0	820.0	1976
1977	3.0	35.0	97.0	124.0	88.0	85.0	38.0	47.0	116.0	155.0	145.0	50.0	983.0	1977
1978	21.0	47.0	138.0	184.0	169.0	86.0	54.0	58.0	103.0	163.0	103.0	61.0	1187.0	1978
1979	23.0	48.0	138.0	186.0	99.0	78.0	71.0	80.0	176.0	195.0	130.0	45.0	1269.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	132.0	183.0	179.0	210.0	228.0	215.8	100.0	115.0	176.0	243.0	253.9	94.0	1269.0	
CUARTIL SUPERIOR	66.5	54.0	125.0	142.6	139.5	102.5	72.3	72.5	99.3	175.9	141.0	70.0	1071.0	
MEDIANA	20.9	46.3	83.0	118.5	116.0	81.5	55.0	56.5	82.8	139.4	123.4	49.3	1021.5	
CUARTIL INFERIOR	9.5	32.1	52.3	98.0	88.5	63.5	35.5	42.4	49.5	97.3	103.5	37.0	971.5	
VALOR MINIMO	0.0	8.0	14.4	45.1	42.0	31.5	23.0	26.0	32.4	75.0	73.5	6.0	820.0	
PROMEDIOS	40.1	56.0	87.3	122.4	118.8	86.0	56.2	60.3	81.0	143.1	127.7	50.8	1029.8	
PORCENTAJES	3.9	5.4	8.5	11.9	11.5	8.3	5.5	5.9	7.9	13.9	12.4	4.9		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 59.

INDICE DE IRREGULARIDAD INTERANUAL =1.33

DEV. ESTANDAR	36.7	42.0	44.1	41.9	49.0	39.9	23.5	24.0	36.5	49.5	41.6	23.1	112.9
COEF. VARIACION	0.914	0.749	0.505	0.342	0.412	0.464	0.418	0.398	0.450	0.346	0.325	0.455	0.110

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1216.	1175.	1125.	1030.	935.	885.	844.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.058	1.887	0.215	0.390	0.747	1.719	0.308	0.896	0.948	0.352	1.629	-0.103	0.389

IMPRESO EN COLOMBIA POR DANARAJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211912	ESPERANZA 1	CABRERA	+03 59 00	+074 22 00	2800 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	43.0	26.0	67.0	41.0	48.0	116.0	38.0	370.0	270.0	473.0	184.0	174.0	1852.0
1967	73.0	43.0	73.0	167.0	132.0	122.0	58.0	46.0	55.0	88.0	125.0	71.0	1053.0
1968	11.0	21.0	24.0	107.0	99.0	131.0	70.0	47.0	53.0	135.0	144.0	42.0	884.0
1969	42.0	14.0	25.0	131.0	105.0	91.0	31.0	48.0	56.0	188.0	85.0	52.0	868.0
1970	21.0	36.0	24.0	46.0	87.0	66.0	29.0	24.0	90.0	104.0	76.5	14.5	618.0
1971	66.0	27.0	43.0	110.0	89.0	42.0	40.0	45.0	22.0	97.0	59.0	35.0	675.0
1972	48.0	15.0	34.0	75.0	89.0	25.0	-9.9	-9.9	54.0	44.0	93.0	30.0	-9.9
1973	5.0	0.0	17.0	9.0	10.0	25.0	18.0	69.0	101.0	104.0	108.0	127.0	597.0
1974	78.0	83.0	133.0	117.0	65.0	105.0	59.0	66.0	93.0	117.0	139.0	4.0	1059.0
1975	0.0	54.0	79.0	62.0	83.0	64.0	60.0	56.0	73.0	111.0	96.0	157.0	895.0
1976	31.0	28.0	98.0	176.0	150.0	97.0	67.0	9.0	24.0	195.0	95.0	36.0	1006.0
1977	5.0	3.0	25.0	106.0	83.0	96.0	72.0	77.0	59.0	145.0	122.0	29.0	826.0
1978	31.0	14.0	74.0	140.0	58.0	79.0	48.0	61.0	81.0	78.0	88.0	93.0	845.0
1979	18.0	3.0	61.0	167.0	83.0	126.0	40.0	84.0	86.0	182.0	194.0	71.0	1117.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR EMPRAL

ESTACION X ESPERANZA 1 MUNICIPIO DE CABRERA PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN.	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1117.0	1117.0	1117.0	0.637	0.181	I	I	I	I+	I	I	I
2	1978	845.0	1962.0	981.0	-0.316	0.075	I	I	I	+	I	I	I
3	1977	826.0	2788.0	929.3	-0.376	-0.052	I	I	I	+	I	I	I
4	1976	1006.0	3794.0	948.5	0.189	0.012	I	I	I	+.	I	I	I
5	1975	895.0	4689.0	937.8	-0.159	-0.042	I	I	I	.+	I	I	I
6	1974	1059.0	5748.0	958.0	0.355	0.078	I	I	I	+ .	I	I	I
7	1973	597.0	6345.0	906.4	-1.095	-0.291	I	I	.	+ I	I	I	I
8	1971	675.0	7020.0	877.5	-0.850	-0.577	I	I	. +	I	I	I	I
9	1970	518.0	7538.0	848.7	-1.029	-0.924	I	I	.+	I	I	I	I
10	1969	868.0	8405.0	850.6	-0.244	-1.006	I	I	+	. I	I	I	I
11	1968	884.0	9289.0	853.6	-0.194	-1.072	I	I	+	.I	I	I	I
12	1967	1053.0	10343.0	870.3	0.337	-0.958	I	I	+	I .	I	I	I
13	1966	1352.0	11695.0	945.8	2.845	0.000	I	I	I	+	I	I	I
							P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
N	AN.	T A	CU	MOY	ECR	PCAN	I	I	I	I	I	I	I

PROMEDIO DE LOS 13 ANOS = 945.8
DESVIACION ESTANDAR = 318.6
COEFICIENTE DE VARIACION = 0.337

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO IMAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211512	ESPERANZA 1	CABRERA	+03 58 21	+074 22 06	2800 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1974	78.0	83.0	133.0	117.0	65.0	105.0	59.0	66.0	93.0	117.0	139.0	4.0	1059.0	1974
1975	0.0	54.0	79.0	62.0	83.0	64.0	60.0	56.0	73.0	111.0	96.0	157.0	895.0	1975
1976	31.0	28.0	98.0	176.0	150.0	97.0	67.0	9.0	24.0	195.0	95.0	36.0	1006.0	1976
1977	5.0	3.0	25.0	106.0	83.0	96.0	72.0	77.0	59.0	149.0	122.0	29.0	826.0	1977
1978	31.0	14.0	74.0	140.0	88.0	79.0	48.0	61.0	81.0	78.0	88.0	93.0	845.0	1978
1979	18.0	3.0	61.0	167.0	83.0	128.0	40.0	84.0	86.0	182.0	154.0	71.0	1117.0	1979
NUMERO DE ANOS	6	6	6	6	6	6	6	6	6	6	6	6	6	
VALOR MAXIMO	78.0	83.0	133.0	176.0	150.0	128.0	72.0	84.0	93.0	195.0	154.0	157.0	1117.0	
MEDIANA	24.5	21.0	76.5	128.5	83.0	96.5	59.5	63.5	77.0	133.0	109.0	53.5	950.5	
VALOR MINIMO	0.0	3.0	25.0	62.0	58.0	64.0	40.0	9.0	24.0	78.0	88.0	4.0	826.0	
PROMEDIOS	27.2	30.8	78.3	126.0	87.0	94.8	57.7	58.8	69.3	138.7	122.3	65.0	958.0	
												TOTAL DE LOS PROMEDIOS MENSUALES =	958.0	
PORCENTAJES	2.8	3.2	8.2	13.4	9.1	9.9	6.0	6.1	7.2	14.5	12.8	6.8		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 95.

DEV. ESTANDAR	28.0	31.9	36.2	42.3	32.7	22.0	11.9	26.5	25.1	44.9	40.1	55.0	120.0
COEF. VARIACION	1.032	1.036	0.462	0.330	0.376	0.232	0.206	0.450	0.362	0.324	0.328	0.847	0.125
COEF. ASIMETRIA	1.360	0.981	0.089	-0.508	1.845	0.120	-0.475	-1.636	-1.419	0.022	1.367	0.905	0.201

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211612	LA PRADERA	CABRERA	+03 51 00	+074 37 00	3500 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1973	17.0	2.0	43.0	75.0	66.0	123.0	126.0	132.0	192.0	142.0	176.0	134.0	1228.0
1974	142.0	131.0	56.0	201.0	117.0	145.0	124.0	185.0	197.0	305.0	201.0	10.0	1814.0
1975	7.0	74.0	43.0	78.0	99.0	136.0	132.0	149.0	109.0	123.0	131.0	162.0	1243.0
1976	46.0	47.0	128.0	181.0	194.0	135.0	195.0	68.0	70.0	170.0	83.0	44.0	1361.0
1977	1.0	51.0	48.0	98.0	83.0	126.0	112.0	89.0	96.0	122.0	115.0	37.0	978.0
1978	14.0	18.0	91.0	189.0	94.0	99.0	69.0	122.0	51.0	114.0	108.0	53.0	1062.0
1979	18.0	4.0	97.0	197.0	87.0	162.0	80.0	124.0	115.0	130.0	176.0	59.0	1249.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

HERISO EN COLOMBIA POR DANAGRAVO

ESTACION X LA PRADERA MUNICIPIO DE CABRERA PERIODO 1973 - 1979 COEF DE CORRECCION 1.000

N	AN.	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1249.0	1249.0	1249.0	-0.102	-0.021				.+			
2	1978	1062.0	2311.0	1155.5	-0.796	-0.189				+I			
3	1977	978.0	3289.0	1096.3	-1.108	-0.423			+	I			
4	1976	1361.0	4650.0	1162.5	0.314	-0.357			+I	.			
5	1975	1243.0	5893.0	1178.6	-0.124	-0.383			+I				
6	1974	1814.0	7707.0	1284.5	1.996	0.038			+		.		
7	1973	1228.0	8935.0	1276.4	-0.180	0.0			.+				

N	AN.	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 7 ANOS = 1276.4

DESVIACION ESTANDAR = 269.4

COEFICIENTE DE VARIACION = 0.211

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO ISAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211612	LA PRADERA	CABRERA	+03 51 26	+074 23 11	3430 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1973	17.0	2.0	43.0	75.0	66.0	123.0	126.0	132.0	152.0	142.0	176.0	134.0	1228.0	1973
1974														1974
1975	7.0	74.0	43.0	78.0	99.0	136.0	132.0	149.0	109.0	123.0	131.0	162.0	1243.0	1975
1976	46.0	47.0	128.0	181.0	154.0	135.0	155.0	68.0	70.0	170.0	83.0	44.0	1361.0	1976
1977	1.0	51.0	48.0	98.0	83.0	126.0	112.0	89.0	96.0	122.0	115.0	37.0	978.0	1977
1978	14.0	18.0	91.0	189.0	94.0	99.0	69.0	122.0	51.0	114.0	106.0	93.0	1062.0	1978
1979	13.0	4.0	97.0	197.0	87.0	162.0	80.0	124.0	115.0	130.0	176.0	59.0	1249.0	1979
NUMERO DE ANOS	6	6	6	6	6	6	6	6	6	6	6	6	6	
VALOR MAXIMO	46.0	74.0	128.0	197.0	154.0	162.0	155.0	149.0	152.0	170.0	176.0	162.0	1361.0	
MEDIANA	15.5	32.5	69.5	139.5	90.5	130.5	119.0	123.0	102.5	126.5	123.0	76.0	1235.5	
VALOR MINIMO	1.0	2.0	43.0	75.0	66.0	99.0	69.0	68.0	51.0	114.0	83.0	37.0	978.0	
PROMEDIOS	17.2	32.7	75.0	136.3	103.8	130.2	119.0	114.0	105.5	133.5	131.5	88.2	1186.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1186.8	
PORCENTAJES	1.4	2.8	6.3	11.5	8.7	11.0	10.0	9.6	8.9	11.2	11.1	7.4		
DEV. ESTANDAR	15.5	29.1	35.6	58.5	45.6	20.5	44.9	29.8	48.8	20.2	37.8	51.0	140.2	
COEF. VARIACION	0.905	0.890	0.474	0.429	0.439	0.158	0.377	0.262	0.463	0.151	0.287	0.578	0.118	
COEF. ASIMETRIA	1.493	0.295	0.523	-0.041	2.100	0.064	0.853	-0.708	1.138	1.425	0.249	0.575	-0.581	

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO ENE FEB MAR

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 113.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211920	PEÑAS BLANCAS	CABRERA	+03 58 00	+074 27 00	2025 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1970	-9.9	-9.9	-9.9	-9.9	-9.9	39.6	34.4	22.6	70.4	250.4	165.0	62.0	-9.9
1971	115.8	82.8	105.8	132.0	110.5	43.3	40.6	62.9	37.4	135.7	161.5	123.7	1152.0
1972	80.1	42.7	72.7	162.4	228.6	51.0	25.9	52.6	35.1	90.6	140.0	61.9	1043.6
1973	4.0	9.4	79.5	99.8	44.6	114.3	78.3	86.5	105.2	98.0	91.8	104.5	875.9
1974	129.7	83.5	92.2	104.0	86.1	63.7	14.4	26.2	100.6	140.3	133.1	15.0	988.8
1975	10.5	117.4	72.4	117.9	126.0	75.3	71.2	27.2	67.6	117.5	122.3	172.5	1097.8
1976	46.8	55.0	112.0	126.7	103.3	44.9	9.7	6.9	51.2	175.7	70.7	43.9	846.8
1977	3.3	14.1	67.1	100.0	79.1	35.9	37.9	37.1	86.8	197.0	107.1	47.2	812.6
1978	46.4	46.6	98.0	95.5	54.8	63.4	30.0	35.0	111.0	90.7	78.8	46.6	796.8
1979	-9.9	34.6	112.1	145.9	68.6	103.2	-9.9	73.6	76.9	183.4	111.3	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARAVIO

ESTACION X PEÑAS BLANCAS MUNICIPIO DE CABRERA PERIODO 1970 - 1979 COEF DE CORRECCION 1.000

ESTACION Y EL CHOCHAL LOS AMARILLOS MUNICIPIO DE BOGOTA D.E. PERIODO 1970 - 1979 COEF DE CORRECCION 1.000

					P =	-4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CUX	CUY	RAN	RCAN	I	I	I	I	I	I	I	I	I
					R =	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1978	797.	1054.	1.032	0.063					+	.			
2	1977	1609.	2184.	1.030	0.088					+	.			
3	1976	2456.	3362.	0.826	-0.099					+				
4	1975	3554.	5056.	1.088	-0.005					+	.			
5	1974	4543.	6551.	0.967	-0.041					+				
6	1973	5419.	7941.	0.909	-0.134					+I				
7	1972	6462.	9300.	1.100	-0.034					+	.			
8	1971	7614.	10993.	1.029	0.0					+	.			

					P =	-4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CUX	CUY	RAN	RCAN	I	I	I	I	I	I	I	I	I
					R =	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 951.8 1362.9

RAZONES PROMEDIOS Y/X = 1.432

X/Y = 0.698

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211920	PEÑAS BLANCAS	CABRERA	+03 57 55	+074 26 27	2050 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1970	-9.9	-9.9	-9.9	-9.9	-9.9	39.6	34.4	22.6	70.4	250.4	165.0	62.0	-9.9	1970
1971	115.8	82.8	105.8	132.0	110.5	43.3	40.6	62.9	37.4	135.7	161.5	123.7	1152.0	1971
1972	80.1	42.7	72.7	162.4	228.6	51.0	25.9	52.6	35.1	90.6	140.0	61.9	1043.6	1972
1973	4.0	9.4	79.5	59.8	44.6	114.3	78.3	86.5	105.2	98.0	91.8	104.5	675.9	1973
1974	129.7	83.5	92.2	104.0	86.1	63.7	14.4	26.2	100.6	140.3	133.1	15.0	988.8	1974
1975	10.5	117.4	72.4	117.9	126.0	75.3	71.2	27.2	67.6	117.5	122.3	172.5	1097.8	1975
1976	46.8	55.0	112.0	126.7	103.3	44.9	9.7	6.9	51.2	175.7	70.7	43.9	846.8	1976
1977	3.3	14.1	67.1	100.0	79.1	35.9	37.9	37.1	86.8	197.0	107.1	47.2	812.6	1977
1978	46.4	46.6	98.0	95.5	84.8	63.4	30.0	35.0	111.0	90.7	78.8	46.6	796.8	1978
1979	-9.9	34.6	112.1	145.9	68.6	103.2	-9.9	73.6	76.9	183.4	111.3	-9.9	-9.9	1979
NUMERO DE ANOS	8	9	9	9	9	10	9	10	10	10	10	9	8	
VALOR MAXIMO	129.7	117.4	112.1	162.4	228.6	114.3	78.3	86.5	111.0	250.4	165.0	172.5	1152.0	
MEDIANA	46.6	46.6	92.2	117.9	86.1	57.2	34.4	36.0	73.6	138.0	116.8	61.9	932.3	
VALOR MINIMO	3.3	9.4	67.1	59.8	44.6	35.9	9.7	6.9	35.1	90.6	70.7	15.0	796.8	
PROMEDIOS	54.6	54.0	90.2	116.0	100.2	63.5	38.0	43.1	74.2	147.9	118.2	75.3	951.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		975.1	
PORCENTAJES	5.6	5.5	9.3	11.9	10.3	6.5	3.9	4.4	7.6	15.2	12.1	7.7		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 22. INDICE DE ARNOLDUS = 54.

DEV. ESTANDAR	49.7	35.1	17.8	30.4	54.8	27.0	23.2	25.1	27.2	52.8	32.4	49.0	137.0
COEF. VARIACION	0.911	0.650	0.197	0.262	0.547	0.425	0.610	0.583	0.366	0.357	0.274	0.652	0.144
COEF. ASIMETRIA	0.495	0.530	0.016	-0.345	1.780	1.027	0.813	0.473	-0.156	0.687	0.042	1.034	0.292

* PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240102	CARMEN DE CARUPA	CARMEN DE CARUPA	+05 21 00	+073 54 00	2960 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1962	24.5	48.2	77.5	85.0	119.1	63.0	32.5	46.7	38.4	71.8	201.1	12.0	820.4
1963	10.6	-9.9	-9.9	82.5	135.7	48.7	37.0	55.2	23.1	58.5	60.9	10.1	-9.9
1964	57.9	29.4	34.1	150.1	89.0	107.7	24.6	25.8	18.1	76.9	81.7	23.3	718.6
1965	10.3	15.1	13.6	212.2	64.4	13.5	39.1	38.7	-9.9	131.6	202.7	29.5	-9.9
1966	-9.9	14.5	49.6	-9.9	7.1	75.8	33.7	44.3	88.0	153.1	94.2	44.4	-9.9
1967	40.3	44.2	71.6	-9.9	76.8	90.2	26.8	37.3	22.9	55.3	102.4	66.8	-9.9
1968	14.0	32.7	59.6	190.5	94.4	100.8	27.7	19.6	82.4	111.2	87.6	22.4	843.5
1969	26.6	39.8	38.2	167.4	78.2	58.7	17.5	24.5	104.6	89.4	69.7	43.1	753.7
1970	42.2	40.1	16.6	82.0	81.4	43.9	37.5	25.0	40.1	119.8	95.0	18.4	642.0
1971	75.2	89.9	95.9	127.5	124.5	46.2	46.4	34.8	100.3	102.2	115.4	95.3	1053.6
1972	90.2	31.9	64.4	217.4	104.0	56.9	56.3	48.0	29.5	43.6	102.1	39.7	884.0
1973	4.7	23.0	33.1	55.3	70.9	69.5	51.3	54.9	105.5	97.2	146.1	55.4	766.9
1974	17.6	65.0	79.8	117.9	77.0	58.7	20.0	24.8	127.7	121.6	129.9	42.7	882.7
1975	2.6	93.4	91.7	104.0	88.4	58.5	87.3	46.8	56.8	82.0	96.7	96.9	905.1
1976	28.5	81.3	94.1	104.6	83.5	48.0	24.6	18.5	66.3	106.8	82.6	21.5	820.5
1977	18.2	3.6	51.0	60.5	8.1	36.1	22.1	47.6	106.3	141.8	134.3	4.7	634.3
1978	15.1	30.2	125.7	141.3	81.2	49.7	20.4	12.6	64.5	121.2	63.7	36.8	762.4
1979	31.7	34.8	127.6	105.5	135.5	68.5	25.7	85.8	44.3	183.7	106.4	82.7	1032.2

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

ESTACION K CARMEN DE CARUPA MUNICIPIO DE CARMEN DE CARUPA PERIODO 1962 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1032.2	1032.2	1032.2	1.678	0.254				I +	.		
2	1978	762.4	1794.6	897.3	-0.485	0.181			.	I+			
3	1977	634.3	2428.9	809.6	-1.511	-0.048			.	+			
4	1976	820.5	3249.4	812.3	-0.019	-0.051				*			
5	1975	905.1	4154.5	830.9	0.659	0.049				+	.		
6	1974	882.7	5037.2	839.5	0.480	0.122				I+	.		
7	1973	766.9	5804.1	829.2	-0.448	0.054			.	+			
8	1972	884.0	6688.1	836.0	0.490	0.128				I+	.		
9	1971	1053.6	7741.7	860.2	1.850	0.408				I	+	.	
10	1970	642.0	8383.7	838.4	-1.450	0.189			.	I+			
11	1969	753.7	9137.4	830.7	-0.554	0.105			.	I+			
12	1968	843.5	9980.9	831.7	0.106	0.130				I*			
13	1964	718.6	10699.5	823.0	-0.836	0.003			.	+			
14	1962	820.4	11519.9	822.8	-0.020	0.000				*			
N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 14 ANOS = 822.8

DEVIACION ESTANDAR = 124.7

COEFICIENTE DE VARIACION = 0.152

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240102	CARMEN DE CARUPA	CARMEN DE CARUPA	+05 21 00	+073 54 06	2960 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1962	24.5	48.2	77.5	85.6	119.1	63.0	32.5	46.7	38.4	71.6	201.1	12.0	820.4	1962
1963	10.6	-9.9	-9.9	82.5	135.7	48.7	37.0	55.2	23.1	58.5	60.9	10.1	-9.9	1963
1964	57.9	25.4	34.1	150.1	89.0	107.7	24.6	25.8	18.1	76.9	81.7	23.3	718.6	1964
1965	10.5	15.1	13.6	212.2	64.4	13.5	39.1	38.7	-9.9	131.6	202.7	29.5	-9.9	1965
1966	-9.9	14.5	49.6	-9.9	7.1	75.8	33.7	44.3	88.0	153.1	94.2	44.4	-9.9	1966
1967	40.3	44.2	71.6	-9.9	76.8	90.2	26.8	37.3	22.9	55.3	102.4	66.8	-9.9	1967
1968	14.6	32.7	59.6	190.5	94.4	100.8	27.7	19.6	82.4	111.2	87.6	22.4	843.5	1968
1969	26.6	39.8	38.2	167.4	78.2	58.7	17.5	24.5	104.6	89.4	65.7	43.1	753.7	1969
1970	42.2	40.1	16.6	82.0	81.4	43.9	37.5	25.0	40.1	119.8	95.0	18.4	642.0	1970
1971	73.2	89.9	95.9	127.5	124.5	46.2	46.4	34.8	100.3	102.2	115.4	95.3	1053.6	1971
1972	90.2	31.9	64.4	217.4	104.0	56.9	56.3	48.0	29.5	43.6	102.1	39.7	884.0	1972
1973	4.7	23.0	33.1	55.3	70.9	69.5	51.3	54.9	105.5	97.2	146.1	55.4	766.9	1973
1974	17.6	65.0	79.8	117.9	77.0	58.7	20.0	24.8	127.7	121.6	129.9	42.7	882.7	1974
1975	2.6	93.4	91.7	104.0	88.4	58.5	87.3	46.8	56.8	82.0	96.7	96.9	905.1	1975
1976	28.5	81.3	94.1	164.6	83.5	48.0	24.6	18.5	66.3	106.6	82.8	21.5	820.5	1976
1977	18.2	3.0	51.0	60.3	8.1	36.1	22.1	47.6	106.3	141.8	134.3	4.7	634.3	1977
1978	15.1	30.2	125.7	141.3	81.2	49.7	20.4	12.6	64.5	121.2	63.7	36.8	762.4	1978
1979	31.7	34.8	127.6	105.5	135.5	68.5	25.7	85.8	44.3	183.7	106.4	82.7	1032.2	1979
NUMERO DE ANOS	17	17	17	16	18	18	18	18	17	18	18	18	14	
VALOR MAXIMO	90.2	93.4	127.6	217.4	135.7	107.7	87.3	85.8	127.7	183.7	202.7	96.9	1053.6	
CUARTIL SUPERIOR	41.2	56.6	92.9	166.0	104.0	69.5	39.1	47.6	102.4	121.6	129.9	55.4	884.0	
MEDIANA	24.5	34.8	64.4	122.7	82.4	58.6	30.1	38.0	64.5	104.5	95.4	38.2	820.4	
CUARTIL INFERIOR	14.8	20.2	36.1	84.0	76.8	48.0	24.6	24.8	33.9	76.9	82.8	21.5	753.7	
VALOR MINIMO	2.6	3.0	13.6	55.3	7.1	13.5	17.5	12.6	18.1	43.6	60.9	4.7	634.3	
PROMEDIOS	30.4	42.2	66.1	129.0	84.4	60.8	35.0	38.4	65.8	103.8	109.4	41.4	822.8	
										TOTAL DE LOS PROMEDIOS MENSUALES =			806.7	
PORCENTAJES	3.8	5.2	8.2	16.0	10.5	7.5	4.3	4.8	8.2	12.9	13.6	5.1		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 21. INDICE DE ARNOLDUS = 82.

DEV. ESTANDAR	24.3	26.1	34.1	51.3	35.3	22.8	17.1	17.7	35.1	36.4	41.0	28.2	124.8	
COEF. VARIACION	0.799	0.619	0.516	0.398	0.418	0.375	0.487	0.460	0.534	0.350	0.375	0.681	0.152	
COEF. ASIMETRIA	1.315	0.808	0.203	0.322	-0.807	0.351	1.865	0.934	0.195	0.321	1.256	0.814	0.366	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Biblioteca Nacional

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
24012	CARMEN DE CARUPA	CARMEN DE CARUPA	+05 21 00	+073 54 06	2960 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	24.1	30.0	63.5	120.5	80.9	57.5	29.5	37.3	63.3	102.1	107.4	40.7	756.8	1960
1961	30.0	12.7	58.2	120.9	81.2	57.8	34.5	37.8	63.6	102.5	98.0	37.6	734.8	1961
1962	24.5	48.2	77.5	85.6	119.1	63.0	32.5	46.7	38.4	71.8	201.1	12.0	820.4	1962
1963	10.6	48.1	92.0	82.5	135.7	48.7	37.0	55.2	23.1	58.5	60.9	10.1	662.4	1963
1964	57.9	29.4	34.1	150.1	89.0	107.7	24.6	25.8	18.1	76.9	81.7	23.3	718.6	1964
1965	16.5	15.1	13.6	212.2	64.4	13.5	39.1	38.7	97.3	131.6	202.7	29.5	874.2	1965
1966	14.3	14.5	49.6	100.0	7.1	75.8	33.7	44.3	88.0	153.1	94.2	44.4	719.0	1966
1967	40.3	44.2	71.6	105.6	76.8	90.2	26.8	37.3	22.9	55.3	102.4	66.8	740.2	1967
1968	14.6	32.7	59.6	190.5	94.4	100.8	27.7	19.6	82.4	111.2	87.6	22.4	843.5	1968
1969	20.6	39.8	38.2	107.4	78.2	58.7	17.5	24.5	104.6	89.4	65.7	43.1	753.7	1969
1970	42.2	40.1	16.6	82.0	81.4	43.9	37.5	25.0	40.1	119.8	95.0	18.4	642.0	1970
1971	75.2	89.9	95.9	127.5	124.5	46.2	46.4	34.8	100.3	102.2	115.4	95.3	1053.6	1971
1972	90.2	31.9	64.4	217.4	104.0	56.9	56.3	48.0	29.5	43.6	102.1	39.7	884.0	1972
1973	4.7	23.0	33.1	55.3	70.9	69.5	51.3	54.9	105.5	97.2	146.1	55.4	766.9	1973
1974	17.6	65.0	79.8	117.9	77.0	58.7	20.0	24.8	127.7	121.6	129.9	42.7	882.7	1974
1975	2.6	93.4	91.7	104.0	88.4	58.5	87.3	46.8	56.8	82.0	96.7	96.9	905.1	1975
1976	28.5	81.3	94.1	104.9	83.5	48.0	24.6	18.5	66.3	106.8	82.8	21.5	820.5	1976
1977	18.2	4.6	51.0	60.5	8.1	36.1	22.1	47.6	106.3	141.8	134.3	4.7	634.3	1977
1978	15.1	30.2	125.7	141.3	81.2	49.7	20.4	12.6	64.5	121.2	62.7	36.8	762.4	1978
1979	31.7	34.8	127.6	105.5	135.5	68.5	25.7	85.8	44.3	183.7	106.4	82.7	1032.2	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	90.2	93.4	127.6	217.4	135.7	107.7	87.3	85.8	127.7	183.7	202.7	96.9	1053.6	
CUARTIL SUPERIOR	36.0	48.1	91.8	157.3	99.2	69.0	38.3	47.2	98.8	121.4	122.6	49.9	878.4	
MEDIANA	24.3	33.7	63.9	119.2	81.3	58.1	31.0	37.5	64.0	102.3	100.0	38.6	764.6	
CUARTIL INFERIOR	14.8	26.2	43.9	92.8	76.9	48.3	24.6	24.9	39.2	79.4	85.2	21.9	726.9	
VALOR MINIMO	2.6	3.6	13.6	55.3	7.1	13.5	17.5	12.6	18.1	43.6	60.9	4.7	634.3	
PROMEDIOS	29.3	40.4	66.9	125.6	84.1	60.5	34.7	38.3	67.1	103.6	108.7	41.2	800.4	
PORCENTAJES	3.7	5.0	8.4	15.7	10.5	7.6	4.3	4.8	8.4	12.9	13.6	5.1		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 81.

INDICE DE IRREGULARIDAD INTERANUAL =1.45

	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
DEV. ESTANDAR	22.6	25.0	31.9	46.4	33.4	21.6	16.2	16.7	33.0	34.4	38.8	26.7	114.8
COEF. VARIACION	0.773	0.620	0.477	0.369	0.397	0.357	0.466	0.436	0.491	0.332	0.357	0.648	0.143

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	989.	948.	897.	800.	704.	653.	611.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
COEF. ASIMETRIA	1.492	0.895	0.215	0.562	-0.808	0.414	1.991	0.992	0.109	0.349	1.359	0.877	0.711

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240135	EL HATO	CARMEN DE CARUPA	+05 18 00	+073 54 00	2850 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1962	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	208.5	24.0	-9.9
1963	17.8	60.0	90.0	75.5	178.0	49.0	29.5	36.5	4.0	101.5	139.4	10.0	791.2
1964	35.0	25.0	5.0	168.0	117.0	166.5	9.0	44.0	46.0	57.5	167.0	52.0	594.0
1965	10.0	17.0	23.0	241.2	113.2	11.0	52.0	34.0	17.0	146.0	264.9	28.0	957.3
1966	0.0	7.7	11.7	24.2	58.4	78.5	87.0	63.2	58.3	175.2	229.4	129.5	927.1
1967	0.0	26.9	70.7	145.1	86.9	63.1	29.4	40.4	47.0	51.0	113.7	48.4	722.6
1968	9.1	46.7	62.0	178.4	44.0	105.6	40.2	30.9	50.5	63.1	43.7	9.4	683.6
1969	31.5	33.3	35.9	139.4	100.5	38.7	21.2	22.5	67.7	140.3	32.6	18.6	662.2
1970	24.0	28.2	34.2	83.8	70.6	40.3	42.6	30.9	36.5	133.4	128.0	4.7	657.2
1971	63.1	76.5	106.5	126.1	37.2	35.7	43.5	33.9	92.6	71.1	86.4	55.7	832.3
1972	122.6	15.9	40.9	141.4	47.1	35.0	61.6	58.2	27.2	40.6	73.8	29.9	698.2
1973	12.5	20.7	21.6	39.2	46.9	44.5	35.4	57.1	71.3	76.2	128.3	40.0	594.1
1974	31.2	34.1	101.4	92.0	53.5	29.5	19.1	33.9	131.7	74.3	67.6	18.1	686.4
1975	3.7	64.4	41.4	54.4	46.3	42.0	40.0	50.3	50.6	125.6	82.6	153.5	756.8
1976	12.2	62.6	93.8	142.6	74.1	45.6	17.7	34.3	93.8	117.1	57.7	25.1	776.6
1977	8.5	15.9	81.5	83.5	33.1	31.3	23.2	33.5	66.2	55.7	158.4	34.9	625.7
1978	0.3	29.1	105.7	-9.9	-9.9	-9.9	22.9	14.6	42.3	106.0	65.8	15.7	-9.9
1979	18.4	30.9	137.5	124.9	104.5	79.0	18.5	67.5	29.8	160.2	118.4	53.6	963.2

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARAVIO

ESTACION X EL HATO MUNICIPIO DE CARMEN DE CARUPA PERIODO 1962 - 1979 COEF DE CORRECCION 1.000

N	AN	T_A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	963.2	963.2	963.2	1.496	0.247				I +	.		
2	1977	629.7	1592.9	796.4	-1.116	0.063			.	+			
3	1976	776.6	2369.5	789.8	0.035	0.069				*			
4	1975	758.8	3128.3	782.1	-0.105	0.051				.+			
5	1974	686.4	3814.7	762.9	-0.672	-0.060			.	+			
6	1973	594.1	4408.8	734.8	-1.394	-0.290		.		+ I			
7	1972	698.2	5107.0	729.6	-0.575	-0.386			.	+ I			
8	1971	832.3	5939.3	742.4	0.471	-0.308				+ I	.		
9	1970	657.2	6596.5	732.9	-0.500	-0.457			.	+ I			
10	1969	682.2	7278.7	727.9	-0.704	-0.574			. +	I			
11	1968	683.6	7962.3	723.8	-0.693	-0.688			*	I			
12	1967	722.6	8684.9	723.7	-0.388	-0.752			+ .	I			
13	1966	927.1	9612.0	739.4	1.213	-0.552			+	I	.		
14	1965	957.3	10569.3	754.9	1.450	-0.312			+	I		.	
15	1964	994.0	11563.3	770.9	1.737	-0.025				+			.
16	1963	791.2	12354.5	772.2	0.145	0.0				+ .			

N	AN	T_A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 16 ANOS = 772.2

DESVIACION ESTANDAR = 127.7

COEFICIENTE DE VARIACION = 0.165

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240135	EL HATO	CARMEN DE CARUPA	+05 17 35	+073 54 32	2900 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1963	17.8	60.0	90.0	75.5	178.0	49.0	29.5	36.5	4.0	101.5	139.4	10.0	791.2	1963
1964														1964
1965														1965
1966														1966
1967	0.0	26.9	70.7	145.1	66.9	63.1	29.4	40.4	47.0	51.0	113.7	48.4	722.6	1967
1968	9.1	46.7	62.0	178.4	44.0	105.6	40.2	30.9	50.5	63.1	43.7	9.4	683.6	1968
1969	31.5	33.3	35.9	139.4	100.5	38.7	21.2	22.5	67.7	140.3	32.6	18.6	682.2	1969
1970	24.0	28.2	34.2	83.8	70.6	40.3	42.6	30.9	36.5	133.4	126.0	4.7	657.2	1970
1971	63.1	76.5	106.5	126.1	37.2	35.7	43.5	33.9	92.6	71.1	66.4	59.7	832.3	1971
1972	122.6	15.9	40.9	141.4	47.1	39.0	61.6	58.2	27.2	40.6	73.8	29.9	698.2	1972
1973	12.5	20.7	21.6	39.2	46.9	44.9	35.4	57.1	71.3	76.2	126.3	40.0	594.1	1973
1974	31.2	34.1	101.4	92.0	53.5	29.5	19.1	33.9	131.7	74.3	67.6	18.1	686.4	1974
1975	3.7	64.4	41.4	54.4	46.3	42.0	40.0	50.3	50.6	129.6	82.6	153.5	758.8	1975
1976	12.2	62.6	93.8	142.6	74.1	45.6	17.7	34.3	93.8	117.1	57.7	25.1	776.6	1976
1977	8.5	15.9	81.5	83.5	33.1	31.3	23.2	33.5	66.2	59.7	156.4	34.9	629.7	1977
1978	0.3	29.1	105.7	-9.9	-9.9	-9.9	22.9	14.6	42.3	106.0	66.8	19.7	-9.9	1978
1979	18.4	30.9	137.5	124.9	104.5	79.0	18.5	67.5	29.8	180.2	116.4	53.6	963.2	1979
NUMERO DE ANOS	14	14	14	13	13	13	14	14	14	14	14	14	13	
VALOR MAXIMO	122.6	76.5	137.5	178.4	178.0	105.6	61.6	67.5	131.7	180.2	156.4	153.5	963.2	
CUARTIL SUPERIOR	31.2	60.0	101.4	142.0	53.7	56.0	40.2	50.3	71.3	129.6	126.0	48.4	783.9	
MEDIANA	15.1	32.1	76.1	124.9	53.5	42.0	29.4	34.1	50.5	88.8	84.5	27.5	698.2	
CUARTIL INFERIOR	8.5	26.9	40.9	79.5	45.1	37.2	21.2	30.9	36.5	63.1	65.8	18.1	669.7	
VALOR MINIMO	0.0	15.9	21.6	39.2	33.1	29.5	17.7	14.6	4.0	40.6	32.6	4.7	594.1	
PROMEDIOS	25.3	38.9	73.1	109.7	71.0	49.5	31.8	38.9	57.9	96.0	92.6	37.5	728.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		722.3	
PORCENTAJES	3.5	5.4	10.1	15.2	9.8	6.9	4.4	5.4	8.0	13.3	12.8	5.2		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 72.

DEV. ESTANDAR	32.4	19.6	34.7	41.1	39.9	21.6	12.7	14.5	32.6	40.3	36.4	37.4	97.0	
COEF. VARIACION	1.280	0.503	0.475	0.375	0.562	0.433	0.401	0.374	0.563	0.420	0.415	0.997	0.133	
COEF. ASIMETRIA	2.411	0.682	0.136	-0.185	1.760	1.833	0.911	0.521	0.694	0.556	0.135	2.522	1.107	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240135	EL HATO	CARMEN DE CARUPA	+05 17 35	+073 54 32	2900 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	5.5	29.1	62.2	132.6	53.1	43.4	31.1	41.3	53.5	101.0	87.3	41.9	682.0	1960
1961	23.5	13.9	85.7	118.3	47.4	36.7	30.1	31.9	58.5	71.8	83.9	28.1	631.8	1961
1962	49.0	37.7	53.6	123.5	49.5	40.5	28.9	38.5	49.8	94.1	81.3	39.2	685.6	1962
1963	17.8	60.0	90.0	75.5	178.0	49.0	29.5	36.5	4.0	101.5	139.4	10.0	791.2	1963
1964	25.1	17.9	3.6	120.3	83.8	134.7	6.4	31.5	32.9	69.8	119.6	65.9	711.5	1964
1965	7.5	12.8	17.3	181.5	85.3	8.3	39.2	25.6	12.8	110.0	199.5	21.1	720.9	1965
1966	0.0	6.0	9.1	18.9	45.6	61.3	68.0	49.4	45.5	140.0	179.2	101.1	724.1	1966
1967	0.0	20.9	70.7	145.1	86.9	63.1	29.4	40.4	47.0	51.0	113.7	48.4	722.6	1967
1968	9.1	46.7	62.0	178.4	44.0	105.6	40.2	30.9	50.5	63.1	43.7	9.4	683.6	1968
1969	31.5	33.3	35.9	139.4	100.5	38.7	21.2	22.5	67.7	140.3	32.6	18.6	682.2	1969
1970	24.0	28.2	34.2	83.8	70.6	40.3	42.6	30.9	36.5	133.4	128.0	4.7	657.2	1970
1971	63.1	76.5	106.5	126.1	37.2	35.7	43.5	33.9	92.6	71.1	86.4	59.7	832.3	1971
1972	122.6	15.9	40.9	141.4	47.1	39.0	61.6	58.2	27.2	40.6	73.8	29.9	698.2	1972
1973	12.5	20.7	21.6	39.2	46.9	44.9	35.4	57.1	71.3	76.2	128.3	40.0	594.1	1973
1974	31.2	34.1	101.4	92.0	53.5	29.5	19.1	33.9	131.7	74.3	67.6	18.1	686.4	1974
1975	3.7	64.4	41.4	54.4	46.3	42.0	40.0	50.3	50.6	129.6	82.6	153.5	758.8	1975
1976	12.2	62.6	93.8	142.6	74.1	45.6	17.7	34.3	93.8	117.1	57.7	25.1	776.6	1976
1977	6.5	15.9	81.5	83.5	33.1	31.3	23.2	33.5	66.2	59.7	158.4	34.9	629.7	1977
1978	0.3	29.1	105.7	175.6	70.4	57.5	22.9	14.6	42.3	106.0	65.8	19.7	709.9	1978
1979	18.4	30.9	137.5	124.9	104.5	79.0	18.5	67.5	29.8	180.2	118.4	53.6	963.2	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	122.6	76.5	137.5	181.5	178.0	134.7	68.0	67.5	131.7	180.2	199.5	153.5	963.2	
CUARTIL SUPERIOR	28.1	42.2	91.9	142.0	84.5	59.4	40.1	45.3	66.9	123.3	128.1	51.0	741.4	
MEDIANA	15.1	29.1	62.1	124.2	53.3	42.7	29.8	34.1	50.1	97.5	86.8	32.4	704.0	
CUARTIL INFERIOR	6.5	16.9	35.0	83.6	46.6	38.7	22.0	31.2	34.7	70.4	70.7	19.1	682.1	
VALOR MINIMO	0.0	6.0	3.6	18.9	33.1	8.3	6.4	14.6	4.0	40.6	32.6	4.7	594.1	
PROMEDIOS	23.3	33.1	62.7	114.8	67.9	51.4	32.4	38.1	53.2	96.5	102.4	41.1	717.1	
PORCENTAJES	3.2	4.6	8.7	16.0	9.5	7.2	4.5	5.3	7.4	13.5	14.3	5.7		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 18. INDICE DE ARNOLDUS = 74.

INDICE DE IRREGULARIDAD INTERANUAL =1.34

DEV. ESTANDAR	28.6	19.5	37.1	45.0	33.4	28.0	14.7	12.8	29.3	36.0	44.2	34.9	80.9
COEF. VARIACION	1.228	0.590	0.592	0.392	0.492	0.544	0.454	0.337	0.551	0.372	0.432	0.849	0.113

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	850.	821.	785.	717.	649.	613.	584.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.500	0.847	0.138	-0.516	2.019	1.734	0.814	0.637	0.912	0.532	0.585	2.054	1.495

IMPRESO EN COLOMBIA POR DANANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240152	EL_PATO_N1	CARMEN_DE_CARUPA	+05_17_00	+073_55_00	2985 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1973	5.0	26.0	64.0	82.0	55.0	54.0	46.0	76.0	162.0	93.0	199.0	83.0	945.0
1974	35.0	82.0	125.0	133.0	77.0	40.0	25.0	41.0	141.0	141.0	181.0	44.0	1065.0
1975	2.0	56.0	91.0	108.0	92.0	72.0	106.0	54.0	76.0	186.0	117.0	203.0	1163.0
1976	30.0	72.0	173.0	244.0	116.0	78.0	53.0	45.0	96.0	205.0	111.0	42.0	1269.0
1977	23.0	27.0	124.0	158.0	37.0	50.0	34.0	44.0	88.0	100.0	190.0	26.0	901.0
1978	0.0	36.0	131.0	140.0	108.0	32.0	25.0	17.0	54.0	124.0	70.0	8.0	745.0
1979	25.0	28.0	130.0	177.0	159.0	57.0	21.0	121.0	13.0	186.0	126.0	93.0	1138.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAF

ESTACION X EL HATO N1 MUNICIPIO DE CARMEN DE CARUPA PERIODO 1973 - 1979 COEF DE CORRECCION 1.000

ESTACION Y EL HATO No. MUNICIPIO DE CARMEN DE CARUPA PERIODO 1973 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	CUY	RAN	ECAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	1138.	1220.	1.117	0.116					I+				
2	1978	1883.	2235.	0.889	0.025					+				
3	1977	2784.	3374.	0.952	-0.018					+				
4	1976	4053.	4968.	0.958	-0.072					+				
5	1975	5216.	6257.	1.086	0.017					+				
6	1974	6281.	7471.	1.056	0.072					+				
7	1973	7226.	8698.	0.927	0.0					+				
N	AN	CLX	CUY	RAN	ECAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 1032.3 1242.6

RAZONES PROMEDIOS Y/X = 1.204

X/Y = 0.831

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240152	EL HATO NI	CARMEN DE CARUPA	+05 17 45	+073 55 36	2985 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1973	5.0	20.0	64.0	82.0	55.0	54.0	46.0	76.0	162.0	93.0	199.0	63.0	945.0	1973
1974	35.0	82.0	125.0	133.0	77.0	40.0	25.0	41.0	141.0	141.0	161.0	44.0	1065.0	1974
1975	2.0	56.0	91.0	108.0	92.0	72.0	106.0	54.0	76.0	186.0	117.0	203.0	1163.0	1975
1976	30.0	72.0	173.0	244.0	116.0	78.0	53.0	45.0	96.0	209.0	111.0	42.0	1269.0	1976
1977	23.0	27.0	124.0	158.0	37.0	50.0	34.0	44.0	88.0	100.0	190.0	26.0	901.0	1977
1978	0.0	36.0	131.0	140.0	108.0	32.0	25.0	17.0	54.0	124.0	70.0	8.0	745.0	1978
1979	25.0	28.0	130.0	177.0	159.0	57.0	21.0	121.0	13.0	188.0	126.0	93.0	1138.0	1979
NUMERO DE ANOS	7	7	7	7	7	7	7	7	7	7	7	7	7	
VALOR MAXIMO	35.0	82.0	173.0	244.0	159.0	78.0	106.0	121.0	162.0	209.0	199.0	203.0	1269.0	
MEDIANA	23.0	36.0	125.0	140.0	92.0	54.0	34.0	45.0	88.0	141.0	126.0	44.0	1065.0	
VALOR MENIMO	0.0	20.0	64.0	82.0	37.0	32.0	21.0	17.0	13.0	93.0	70.0	8.0	745.0	
PROMEDIOS	17.1	46.7	119.7	148.9	92.0	54.7	44.3	56.9	90.0	148.7	142.0	71.3	1032.3	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1032.3	
PORCENTAJES	1.7	4.5	11.6	14.4	8.9	5.3	4.3	5.5	8.7	14.4	13.8	6.9		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 21. INDICE DE ARNOLDUS = 106.

DEV. ESTANDAR	14.4	23.3	34.3	52.3	40.7	16.3	29.7	33.3	50.4	46.0	48.5	65.3	179.2
COEF. VARIACION	0.842	0.498	0.286	0.351	0.442	0.299	0.670	0.585	0.560	0.310	0.341	0.917	0.174
COEF. ASIMETRIA	-0.139	0.078	-0.247	0.837	0.340	0.149	1.856	1.268	0.000	0.066	-0.139	1.594	-0.404

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240153	EL HATO N2	CARMEN DE CARUPA	+05 16 00	+073 55 00	2974 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1973	3.0	20.0	40.0	69.0	49.0	49.0	31.0	63.0	142.0	87.0	196.0	52.0	801.0
1974	17.0	91.0	114.0	107.0	61.0	20.0	5.0	25.0	125.0	102.0	168.0	46.0	882.0
1975	0.0	39.0	81.0	95.0	84.0	43.0	63.0	26.0	48.0	161.0	75.0	141.0	856.0
1976	35.0	72.0	121.0	159.0	103.0	50.0	30.0	43.0	71.0	235.0	90.0	41.0	1094.0
1977	27.0	24.0	140.0	108.0	30.0	42.0	26.0	41.0	94.0	65.0	144.0	35.0	776.0
1978	0.0	38.0	115.0	164.0	130.0	37.0	9.0	9.0	49.0	97.0	83.0	21.0	752.0
1979	49.0	30.0	97.0	148.0	111.0	110.0	29.0	106.0	28.0	222.0	131.0	71.0	1132.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARA C

ESTACION X EL HATO N2 MUNICIPIO DE CARMEN DE CARUPA PERIODO 1973 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1132.0	1132.0	1132.0	1.521	0.259				I +			
2	1978	752.0	1884.0	942.0	-0.560	0.096				+			
3	1977	776.0	2660.0	886.7	-0.803	-0.041				+			
4	1976	1094.0	3754.0	938.5	1.273	0.176				I+			
5	1975	856.0	4610.0	922.0	-0.281	0.128				I+			
6	1974	882.0	5492.0	915.3	-0.111	0.109				I+			
7	1973	801.0	6293.0	899.0	-0.640	0.0				+			
N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 7 ANOS = 899.0
DESVIACION ESTANDAR = 153.2
COEFICIENTE DE VARIACION = 0.170

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240153	EL PATC N2	CARMEN DE CARUPA	+05 16 28	+073 55 34	2975 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1973	3.0	20.0	40.0	69.0	49.0	49.0	31.0	63.0	142.0	87.0	196.0	52.0	801.0	1973
1974	17.0	91.0	114.0	107.0	61.0	20.0	5.0	25.0	125.0	103.0	168.0	46.0	882.0	1974
1975	0.0	39.0	81.0	95.0	84.0	43.0	63.0	26.0	48.0	161.0	75.0	141.0	856.0	1975
1976	35.0	72.0	121.0	199.0	103.0	50.0	30.0	43.0	71.0	239.0	90.0	41.0	1094.0	1976
1977	27.0	24.0	140.0	108.0	30.0	42.0	26.0	41.0	94.0	65.0	144.0	35.0	776.0	1977
1978	0.0	38.0	115.0	164.0	130.0	37.0	9.0	9.0	49.0	97.0	83.0	21.0	752.0	1978
1979	49.0	30.0	97.0	148.0	111.0	110.0	29.0	106.0	28.0	222.0	131.0	71.0	1132.0	1979
NUMERO DE ANOS	7	7	7	7	7	7	7	7	7	7	7	7	7	
VALOR MAXIMO	49.0	91.0	140.0	199.0	130.0	110.0	63.0	106.0	142.0	239.0	196.0	141.0	1132.0	
MEDIANA	17.0	38.0	114.0	108.0	84.0	43.0	29.0	41.0	71.0	103.0	131.0	46.0	856.0	
VALOR MINIMO	0.0	20.0	40.0	69.0	30.0	20.0	5.0	9.0	28.0	65.0	75.0	21.0	752.0	
PROMEDIOS	18.7	44.9	101.1	127.1	81.1	50.1	27.6	44.7	79.6	139.1	126.7	58.1	899.0	
											TOTAL DE LOS PROMEDIOS MENSUALES =		899.0	
PORCENTAJES	2.1	5.0	11.3	14.1	9.0	5.6	3.1	5.0	8.9	15.5	14.1	6.5		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 22. INDICE DE ARREDONDOS = 55.

DEV. ESTANDAR	19.2	26.5	32.7	45.0	36.1	28.2	18.8	31.9	42.5	69.1	46.1	39.6	153.2	
COEF. VARIACION	1.024	0.591	0.323	0.354	0.445	0.563	0.684	0.714	0.534	0.496	0.364	0.682	0.170	
COEF. ASIMETRIA	0.520	1.126	-1.103	0.475	-0.106	1.907	0.928	1.264	0.432	0.640	0.326	1.875	0.907	

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240155	EL HATO N4	CARMEN DE CARUPA	+05 13 00	+073 57 00	3465 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1973	10.0	7.0	49.0	82.0	110.0	119.0	91.0	129.0	212.0	135.0	190.0	114.0	1248.0
1974	75.0	134.0	105.0	144.0	127.0	62.0	58.0	81.0	185.0	118.0	259.0	78.0	1426.0
1975	3.0	79.0	103.0	110.0	65.0	58.0	88.0	87.0	89.0	154.0	163.0	158.0	1197.0
1976	63.0	90.0	109.0	214.0	183.0	67.0	107.0	80.0	129.0	179.0	128.0	77.0	1446.0
1977	37.0	39.0	163.0	167.0	90.0	113.0	102.0	75.0	185.0	101.0	132.0	51.0	1255.0
1978	0.0	31.0	169.0	167.0	103.0	103.0	70.0	87.0	88.0	115.0	74.0	50.0	1061.0
1979	0.0	36.0	111.0	173.0	146.0	114.0	99.0	54.0	35.0	75.0	98.0	61.0	1002.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DIANA

ESTACION X EL HATO Nº MUNICIPIO DE CARMEN DE CARUPA PERIODO 1973 - 1979 COEF DE CORRECCION 1.000

ESTACION Y EL HATO Nº MUNICIPIO DE CARMEN DE CARUPA PERIODO 1973 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	COY	RAN	RCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	1002.	1226.	0.823	-0.174					+I				
2	1978	2063.	2235.	1.059	-0.126					+I				
3	1977	3318.	3374.	1.110	-0.026					+				
4	1976	4764.	4968.	0.914	-0.136					+I				
5	1975	5961.	6257.	0.935	-0.203					+ I				
6	1974	7387.	7471.	1.183	-0.024					+				
7	1973	8635.	8698.	1.025	0.0					+				
						P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CLX	COY	RAN	RCAN									
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 1233.6 1242.6

RAZONES PROMEDICS Y/X = 1.007 X/Y = 0.993

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240155	EL PATO N4	CARMEN DE CARUPA	+05 13 52	+073 57 56	3465 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1973	10.0	7.0	49.0	82.0	110.0	119.0	91.0	129.0	212.0	135.0	190.0	114.0	1248.0	1973
1974	75.0	134.0	105.0	144.0	127.0	62.0	58.0	81.0	185.0	118.0	255.0	78.0	1426.0	1974
1975	3.0	79.0	103.0	110.0	65.0	98.0	88.0	87.0	89.0	154.0	163.0	158.0	1197.0	1975
1976	63.0	90.0	109.0	214.0	163.0	87.0	107.0	80.0	129.0	179.0	128.0	77.0	1446.0	1976
1977	37.0	39.0	163.0	167.0	90.0	113.0	102.0	75.0	185.0	101.0	132.0	51.0	1255.0	1977
1978	0.0	31.0	169.0	167.0	103.0	103.0	70.0	87.0	88.0	119.0	74.0	50.0	1061.0	1978
1979	0.0	36.0	111.0	173.0	146.0	114.0	99.0	54.0	35.0	75.0	98.0	61.0	1002.0	1979
NUMERO DE ANOS	7	7	7	7	7	7	7	7	7	7	7	7	7	
VALOR MAXIMO	75.0	134.0	169.0	214.0	163.0	119.0	107.0	129.0	212.0	179.0	255.0	158.0	1446.0	
MEDIANA	10.0	39.0	109.0	167.0	110.0	103.0	91.0	81.0	129.0	119.0	132.0	77.0	1248.0	
VALOR MINIMO	0.0	7.0	49.0	82.0	65.0	62.0	58.0	54.0	35.0	75.0	74.0	50.0	1002.0	
PROMEDIOS	26.9	59.4	115.6	151.0	117.7	99.4	87.9	84.7	131.9	125.9	149.1	84.1	1233.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1233.6	
PORCENTAJES	2.2	4.8	9.4	12.2	9.5	8.1	7.1	6.9	10.7	10.2	12.1	6.8		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 18. INDICE DE ARNOLDUS = 115.

DEV. ESTANDAR	31.7	43.6	40.6	43.7	28.7	19.8	17.8	22.5	64.8	34.2	61.8	39.2	167.1
COEF. VARIACION	1.180	0.734	0.351	0.289	0.328	0.199	0.203	0.266	0.492	0.272	0.415	0.466	0.135
COEF. ASIMETRIA	0.754	0.789	-0.138	-0.360	0.526	-1.241	-0.864	1.159	-0.220	0.145	0.814	1.315	-0.046

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Biblioteca de Facultad
Ciencias Básicas

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240150	EL PATC AS	CARMEN DE CARUPA	+05 13 00	+073 57 00	3360 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1973	6.0	6.0	84.0	135.0	145.0	182.0	94.0	243.0	331.0	246.0	390.0	107.0	1971.0
1974	56.0	153.0	162.0	131.0	170.0	35.0	49.0	74.0	197.0	143.0	122.0	51.0	1363.0
1975	26.0	107.0	312.0	304.0	171.0	302.0	260.0	235.0	178.0	305.0	215.0	259.0	2714.0
1976	75.0	150.0	201.0	342.0	209.0	245.0	198.0	143.0	124.0	277.0	124.0	107.0	2219.0
1977	40.0	46.0	126.0	239.0	112.0	86.0	52.0	55.0	163.0	146.0	155.0	46.0	1256.0
1978	0.0	51.0	159.0	129.0	181.0	145.0	78.0	68.0	101.0	172.0	86.0	50.0	1260.0
1979	34.0	42.0	127.0	176.0	70.0	115.0	99.0	54.0	33.0	226.0	244.0	35.0	1259.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR CARVAJAL

ESTACION X EL HATO N5 MUNICIPIO DE CARMEN DE CARUPA PERIODO 1973 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I
1	1979	1259.0	1259.0	1259.0	-0.793	-0.269				+ I			
2	1978	1260.0	2519.0	1259.5	-0.792	-0.538				+ I			
3	1977	1256.0	3775.0	1258.3	-0.799	-0.809				+ I			
4	1976	2219.0	5994.0	1498.5	0.848	-0.521				+ I			
5	1975	2714.0	8708.0	1741.6	1.694	0.054				+			
6	1974	1383.0	10091.0	1681.8	-0.581	-0.144				+ I			
7	1973	1971.0	12062.0	1723.1	0.424	0.0				+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I

PROMEDIO DE LOS 7 ANOS = 1723.1
DESVIACION ESTANDAR = 584.9
COEFICIENTE DE VARIACION = 0.339

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240157	EL HATO N6	CARMEN DE CARUPA	+05 14 00	+073 56 00	3105 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1973	11.0	29.0	54.0	83.0	114.0	141.0	70.0	138.0	227.0	124.0	146.0	90.0	1227.0
1974	65.0	145.0	79.0	111.0	118.0	60.0	57.0	72.0	144.0	111.0	135.0	97.0	1214.0
1975	14.0	82.0	151.0	86.0	123.0	85.0	66.0	103.0	70.0	185.0	144.0	180.0	1289.0
1976	44.0	66.0	145.0	248.0	193.0	107.0	104.0	82.0	96.0	269.0	155.0	85.0	1594.0
1977	19.0	35.0	99.0	218.0	92.0	74.0	102.0	50.0	152.0	101.0	131.0	66.0	1139.0
1978	0.0	20.0	114.0	160.0	96.0	107.0	49.0	123.0	98.0	105.0	85.0	52.0	1009.0
1979	35.0	49.0	84.0	149.0	118.0	156.0	94.0	94.0	22.0	145.0	210.0	70.0	1226.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR EDIMAYA

ESTACION X EL HATO N6 MUNICIPIO DE CARMEN DE CARUPA PERIODO 1973 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	1226.0	1226.0	1226.0	-0.093	-0.013				*			
2	1978	1009.0	2235.0	1117.5	-1.305	-0.201				+ I			
3	1977	1139.0	3374.0	1124.7	-0.579	-0.285				+ I			
4	1976	1594.0	4968.0	1242.0	1.563	-0.002				+			
5	1975	1289.0	6257.0	1251.4	0.259	0.036				+.			
6	1974	1214.0	7471.0	1245.2	-0.160	0.013				.+			
7	1973	1227.0	8698.0	1242.6	-0.087	0.0				*			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 7 ANOS = 1242.6

DESVIACION ESTANDAR = 179.0

COEFICIENTE DE VARIACION = 0.144

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2401s7	EL HATC NE	CARMEN DE CARUPA	+05 14 09	+073 5E 2S	3105 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEMALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1973	11.0	29.0	54.0	83.0	114.0	141.0	70.0	136.0	227.0	124.0	146.0	90.0	1227.0	1973
1974	65.0	145.0	79.0	111.0	118.0	80.0	57.0	72.0	144.0	111.0	135.0	97.0	1214.0	1974
1975	14.0	62.0	151.0	86.0	123.0	85.0	66.0	103.0	70.0	185.0	144.0	180.0	1289.0	1975
1976	44.0	66.0	145.0	248.0	193.0	107.0	104.0	82.0	96.0	269.0	155.0	85.0	1594.0	1976
1977	19.0	35.0	99.0	218.0	92.0	74.0	102.0	50.0	152.0	101.0	131.0	66.0	1139.0	1977
1978	0.0	20.0	114.0	160.0	96.0	107.0	49.0	123.0	98.0	105.0	85.0	52.0	1009.0	1978
1979	35.0	49.0	84.0	149.0	118.0	156.0	94.0	94.0	22.0	145.0	210.0	70.0	1226.0	1979
NUMERO DE ANOS	7	7	7	7	7	7	7	7	7	7	7	7	7	
VALOR MAXIMO	65.0	145.0	151.0	248.0	193.0	156.0	104.0	138.0	227.0	269.0	210.0	180.0	1594.0	
MEDIANA	19.0	49.0	99.0	149.0	118.0	107.0	70.0	94.0	98.0	124.0	144.0	85.0	1226.0	
VALOR MINIMO	0.0	20.0	54.0	83.0	92.0	74.0	49.0	50.0	22.0	101.0	85.0	52.0	1009.0	
PROMEDIOS	26.9	60.9	103.7	150.7	122.0	107.1	77.4	94.6	115.6	148.6	143.7	91.4	1242.6	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1242.6	
PORCENTAJES	2.2	4.9	8.3	12.1	9.8	8.6	6.2	7.6	9.3	12.0	11.6	7.4		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 18. INDICE DE ARREDONDO = 116.

DEV. ESTANDAR	22.4	42.9	35.4	63.8	33.5	31.2	22.3	30.1	65.9	60.6	37.0	42.0	179.0
COEF. VARIACION	0.835	0.705	0.342	0.423	0.274	0.292	0.289	0.318	0.570	0.406	0.257	0.459	0.144
COEF. ASIMETRIA	0.727	1.435	0.165	0.523	1.549	0.674	0.099	0.030	0.430	1.613	0.404	1.913	1.203

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240158	EL HATO N7	CARMEN DE CARUPA	+05 14 00	+073 55 00	3271 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1973	20.0	21.0	53.0	82.0	100.0	207.0	123.0	119.0	286.0	124.0	178.0	102.0	1415.0
1974	51.0	93.0	92.2	151.0	118.0	65.0	53.0	127.0	209.0	84.0	213.0	34.0	1290.2
1975	4.0	93.0	135.0	131.0	110.0	112.0	105.0	55.0	69.0	187.0	106.0	136.0	1243.0
1976	25.0	79.0	132.0	199.0	164.0	52.0	88.0	62.0	76.0	262.0	158.5	65.0	1402.5
1977	27.0	20.0	102.0	149.0	55.0	78.0	65.0	68.0	140.0	80.0	170.0	51.0	1005.0
1978	0.0	37.0	146.0	210.0	148.0	72.0	79.0	68.0	75.0	160.0	56.0	67.0	1118.0
1979	42.0	39.0	107.0	196.0	175.0	115.0	45.0	132.0	28.0	222.0	138.0	67.0	1306.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR BENAVIDES

ESTACION X EL HATO N7 MUNICIPIO DE CARMEN DE CARUPA PERIODO 1973 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1306.0	1306.0	1306.0	0.348	0.041				+			
2	1978	1116.0	2424.0	1212.0	-0.516	-0.067				+			
3	1977	1005.0	3429.0	1143.0	-1.677	-0.266				+			
4	1976	1402.5	4831.5	1207.9	0.597	-0.148				+			
5	1975	1243.0	6074.5	1214.9	-0.076	-0.157				+			
6	1974	1290.2	7364.7	1227.4	0.242	-0.128				+			
7	1973	1415.0	8779.7	1254.2	1.081	0.0				+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 7 ANOS = 1254.2

DESVIACION ESTANDAR = 146.7

COEFICIENTE DE VARIACION = 0.119

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
24015d	EL HATO N7	CARMEN DE CARUPA	+05 14 56	+073 55 23	3270 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1973	20.0	21.0	53.0	82.0	100.0	207.0	123.0	119.0	286.0	124.0	176.0	102.0	1415.0	1973
1974	51.0	93.0	92.2	151.0	118.0	65.0	53.0	127.0	209.0	84.0	213.0	34.0	1290.2	1974
1975	4.0	93.0	135.0	131.0	110.0	112.0	105.0	55.0	69.0	187.0	106.0	136.0	1243.0	1975
1976	25.0	79.0	132.0	199.0	164.0	92.0	88.0	62.0	76.0	262.0	156.5	65.0	1402.5	1976
1977	27.0	20.0	102.0	149.0	85.0	78.0	65.0	68.0	140.0	80.0	170.0	51.0	1005.0	1977
1978	0.0	37.0	146.0	210.0	148.0	72.0	79.0	68.0	75.0	160.0	56.0	67.0	1118.0	1978
1979	42.0	39.0	107.0	196.0	175.0	115.0	45.0	132.0	28.0	222.0	136.0	67.0	1306.0	1979
NUMERO DE ANOS	7	7	7	7	7	7	7	7	7	7	7	7	7	
VALOR MAXIMO	51.0	93.0	146.0	210.0	175.0	207.0	123.0	132.0	286.0	262.0	213.0	136.0	1415.0	
MEDIANA	25.0	39.0	107.0	151.0	118.0	92.0	79.0	68.0	76.0	160.0	156.5	67.0	1290.2	
VALOR MINIMO	0.0	20.0	53.0	82.0	85.0	65.0	45.0	55.0	28.0	80.0	56.0	34.0	1005.0	
PROMEDIOS	24.1	54.6	109.6	159.7	124.3	105.9	79.7	90.1	126.1	159.9	145.6	74.6	1254.2	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1254.2	
PORCENTAJES	1.9	4.4	8.7	12.7	9.9	8.4	6.4	7.2	10.1	12.7	11.6	5.9		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 120.

DEV. ESTANDAR	18.5	32.7	31.7	45.5	41.5	48.5	28.0	34.0	91.9	68.9	51.7	34.0	148.7
COEF. VARIACION	0.767	0.600	0.290	0.285	0.334	0.459	0.352	0.378	0.728	0.431	0.355	0.456	0.119
COEF. ASIMETRIA	0.102	0.265	-0.812	-0.641	-0.468	1.846	0.357	0.355	0.983	0.239	-0.723	1.014	-0.743

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2401S9	EL PATC N8	CARMEN DE CARUPA	+05 16 00	+073 54 00	2563 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1973	23.0	12.0	39.0	136.0	75.0	130.0	69.0	146.0	260.0	144.0	224.0	222.0	1480.0
1974	82.0	67.0	157.0	243.0	103.8	57.0	44.0	52.0	140.0	104.5	292.0	26.0	1408.3
1975	7.0	94.0	74.0	127.0	127.0	90.0	102.0	85.0	101.0	202.0	108.0	214.0	1351.0
1976	12.0	40.0	124.0	152.0	167.0	66.0	35.0	77.0	87.0	151.0	162.0	57.0	1216.0
1977	46.0	35.0	135.0	144.0	52.0	52.0	53.0	66.0	114.0	76.0	213.0	30.0	1018.0
1978	0.0	56.0	114.0	276.0	113.0	57.0	49.0	10.0	37.0	121.0	55.0	41.0	929.0
1979	33.0	12.0	178.0	196.0	237.0	82.0	25.0	70.0	35.0	281.0	230.0	100.0	1479.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM #40 GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DAVARANJO

ESTACION X EL HATO N2 MUNICIPIO DE CARMEN DE CARUPA PERIODO 1973 - 1979 COEF DE CORRECCION 1.000

ESTACION Y EL HATO N8 MUNICIPIO DE CARMEN DE CARUPA PERIODO 1973 - 1979 COEF DE CORRECCION 1.000

					P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CLX	CUY	RAN	FCAN	I	I	I	I	I	I	I	I	I
					R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	1132.	1479.	1.085	0.099				+	.			
2	1978	1884.	2408.	1.148	0.206				I +	.			
3	1977	2660.	3426.	1.081	0.271				I +	.			
4	1976	3754.	4842.	1.275	0.533				I	+	.		
5	1975	4610.	6033.	0.872	0.394			.	I +				
6	1974	5492.	7441.	0.888	0.270			.	I +				
7	1973	6291.	8921.	0.767	0.0			.	+				
					P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CLX	CUY	RAN	FCAN	I	I	I	I	I	I	I	I	I
					R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 899.0 1274.5

RAZONES PROMEDICS Y/X = 1.418

X/Y = 0.705

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240137	SOCOTA	CARMEN DE CARUPA	+05 25 00	+073 55 00	3000 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1963	18.5	51.0	94.5	111.0	140.0	52.0	35.5	33.5	26.5	76.5	149.0	19.5	807.5
1964	27.5	42.0	39.0	119.0	78.5	108.0	41.5	36.0	53.5	141.0	113.0	52.0	851.0
1965	18.5	9.5	23.0	176.0	76.0	9.5	30.5	41.5	31.5	212.0	269.5	26.5	924.0
1966	5.0	15.5	55.5	56.0	134.0	79.5	39.5	53.5	64.5	160.5	145.0	105.0	913.5
1967	27.0	84.5	115.5	247.5	98.0	55.2	32.5	35.0	52.5	93.5	151.0	87.5	1119.7
1968	58.5	66.0	55.0	243.0	116.0	126.5	20.0	40.0	102.0	135.0	163.5	24.5	1150.0
1969	61.0	48.5	35.5	164.0	108.5	60.5	18.5	14.0	104.0	306.5	131.0	31.0	1083.0
1970	69.5	28.0	23.5	85.5	95.0	44.5	37.0	23.5	77.5	195.0	178.0	54.5	911.5
1971	113.0	78.5	142.5	136.5	165.0	40.0	31.5	38.0	86.5	105.0	140.5	62.5	1159.5
1972	110.0	48.0	108.5	380.0	186.5	64.5	70.5	47.0	34.0	58.0	77.5	114.5	1299.0
1973	6.0	53.0	48.0	62.0	108.0	115.0	99.0	62.0	119.5	187.5	238.0	190.5	1288.5
1974	63.5	78.0	183.0	141.5	76.0	70.0	23.5	45.0	145.5	135.0	123.0	25.0	1109.0
1975	3.0	93.0	75.0	88.0	95.0	96.5	101.5	52.0	64.0	120.0	207.9	240.0	1195.9
1976	92.0	90.0	104.5	184.5	89.0	94.0	31.5	15.5	94.0	189.5	115.0	99.0	1118.5
1977	10.0	7.0	46.0	110.0	44.0	38.5	46.0	40.5	80.5	135.0	166.0	11.5	735.0
1978	21.0	51.0	161.0	174.0	97.5	48.5	29.5	12.0	43.5	152.5	63.5	81.0	975.0
1979	39.5	25.0	130.5	178.5	146.5	130.5	37.5	94.5	64.5	314.5	231.5	164.0	1577.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X SIMIJACA MUNICIPIO DE SIMIJACA PERIODO COEF DE CORRECCION

1963 - 1979 1.000

ESTACION Y SOCUTA MUNICIPIO DE CARMEN DE CARUPA PERIODO COEF DE CORRECCION

1963 - 1979 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1978	819.	975.	0.943	-0.053					• +				
2	1977	1508.	1710.	1.053	-0.016					+ •				
3	1976	2343.	2829.	0.839	-0.190				•	+I				
4	1975	3389.	4024.	0.982	-0.210					+•I				
5	1973	4544.	5013.	1.007	-0.202					+ •				
6	1972	5457.	6012.	0.790	-0.466				•	+ I				
7	1971	6624.	7771.	1.130	-0.320					+ I	•			
8	1970	7293.	8683.	0.824	-0.475				•	+ I				
9	1969	8132.	9766.	0.870	-0.611				•	+ I				
10	1968	9198.	10916.	1.041	-0.566					+ I •				
11	1967	10142.	12036.	0.947	-0.623					+• I				
12	1966	10927.	12949.	0.965	-0.654					+ • I				
13	1965	11754.	13873.	1.005	-0.649					+ •				
14	1964	12754.	14724.	1.320	-0.386					+ I			•	
15	1963	13829.	15532.	1.495	0.000					+				•
						P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CUX	CUY	RAN	PCAN	I	I	I	I	I	I	I	I	I
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 921.9 1035.4

RAZONES PROMEDIOS Y/X = 1.123

X/Y = 0.890

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240137	SOCOTA	CARMEN DE CARUPA	+05 24 39	+073 55 16	3080 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1965	18.5	9.5	23.0	170.0	76.0	9.5	30.5	41.5	31.5	212.0	269.5	26.5	924.0	1965
1966	5.0	15.5	55.5	56.0	134.0	79.5	39.5	53.5	64.5	160.5	145.0	105.0	913.5	1966
1967	27.0	64.5	115.5	247.5	58.0	95.2	32.5	35.0	52.5	93.5	151.0	87.5	1119.7	1967
1968	58.5	66.0	55.0	243.0	116.0	126.5	20.0	40.0	102.0	135.0	163.5	24.5	1150.0	1968
1969	61.0	48.5	35.5	164.0	108.5	60.5	18.5	14.0	104.0	306.5	131.0	31.0	1083.0	1969
1970	69.5	26.0	23.5	85.5	95.0	44.5	37.0	23.5	77.5	195.0	176.0	54.5	911.5	1970
1971	113.0	78.5	142.5	136.5	165.0	40.0	31.5	36.0	66.5	105.0	140.5	82.5	1159.5	1971
1972	110.0	48.0	108.5	380.0	186.5	64.5	70.5	47.0	34.0	58.0	77.5	114.5	1299.0	1972
1973	6.0	53.0	48.0	62.0	108.0	115.0	99.0	62.0	119.5	187.5	236.0	190.5	1288.5	1973
1974	63.5	78.0	183.0	141.5	76.0	70.0	23.5	45.0	145.5	135.0	123.0	25.0	1109.0	1974
1975	3.0	93.0	75.0	88.0	55.0	56.5	101.5	52.0	64.0	120.0	207.9	240.0	1195.9	1975
1976	92.0	90.0	104.5	184.5	89.0	54.0	31.5	15.5	94.0	189.5	115.0	59.0	1118.5	1976
1977	10.0	7.0	46.0	110.0	44.0	38.5	46.0	40.5	80.5	135.0	166.0	11.5	735.0	1977
1978	21.0	51.0	161.0	174.0	97.5	48.5	29.5	12.0	43.5	192.5	63.5	81.0	975.0	1978
1979	39.5	25.0	130.5	178.5	146.5	130.5	37.5	94.5	64.5	314.5	231.5	184.0	1577.0	1979
NUMERO DE ANOS	15	15	15	15	15	15	15	15	15	15	15	15	15	
VALOR MAXIMO	113.0	93.0	183.0	380.0	186.5	130.5	101.5	94.5	145.5	314.5	269.5	240.0	1577.0	
CUARTIL SUPERIOR	69.5	78.5	130.5	184.5	134.0	95.2	46.0	52.0	102.0	195.0	207.9	114.5	1195.9	
MEDIANA	39.5	51.0	75.0	164.0	98.0	60.5	32.5	40.5	77.5	160.5	151.0	81.0	1118.5	
CUARTIL INFERIOR	10.0	25.0	46.0	88.0	89.0	44.5	29.5	23.5	52.5	120.0	123.0	26.5	924.0	
VALOR MINIMO	3.0	7.0	23.0	56.0	44.0	9.5	18.5	12.0	31.5	58.0	63.5	11.5	735.0	
PROMEDIOS	46.5	51.7	87.1	161.8	109.0	68.9	43.2	40.9	77.6	169.3	160.1	87.8	1103.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1103.9	
PORCENTAJES	4.2	4.7	7.9	14.7	9.9	6.2	3.9	3.7	7.0	15.3	14.5	8.0		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 26. INDICE DE ARNOLDUS = 115.

DEV. ESTANDAR	37.9	29.6	51.7	84.0	36.5	34.6	26.2	21.1	32.0	71.7	57.9	69.0	201.6
COEF. VARIACION	0.816	0.572	0.593	0.519	0.335	0.503	0.606	0.514	0.413	0.424	0.362	0.786	0.183
COEF. ASIMETRIA	0.530	-0.134	0.429	1.165	0.567	0.500	1.585	0.891	0.455	0.770	0.265	1.027	0.486

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240137	SUCOTA	CARMEN DE CARUPA	+05 24 39	+073 55 16	3080 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	34.4	28.0	82.0	95.7	123.7	23.1	53.5	89.9	106.9	217.8	73.3	164.6	1092.9	1960
1961	14.3	20.4	114.4	124.2	19.4	62.0	26.7	19.6	63.9	254.7	185.2	49.4	954.2	1961
1962	54.6	60.0	94.1	117.5	130.2	104.9	11.2	76.9	59.0	164.3	191.9	77.1	1147.7	1962
1963	24.9	68.5	127.0	149.2	188.2	69.9	47.7	45.0	35.6	102.8	200.3	26.2	1085.3	1963
1964	30.0	50.5	52.4	160.0	105.6	145.2	55.8	48.4	71.9	189.6	152.0	69.9	1143.3	1964
1965	18.5	9.5	23.0	176.0	76.0	9.5	30.5	41.5	31.5	212.0	269.5	26.5	924.0	1965
1966	5.0	15.5	55.5	56.0	134.0	79.5	39.5	53.5	64.5	160.5	145.0	105.0	913.5	1966
1967	27.0	84.5	115.5	247.5	98.0	95.2	32.5	35.0	52.5	93.5	151.0	87.5	1119.7	1967
1968	58.5	66.0	55.0	243.0	116.0	126.5	20.0	40.0	102.0	135.0	163.5	24.5	1150.0	1968
1969	61.0	48.5	35.5	164.0	108.5	60.5	18.5	14.0	104.0	306.5	131.0	31.0	1083.0	1969
1970	99.5	28.0	23.5	85.5	95.0	44.5	37.0	23.5	77.5	195.0	178.0	54.5	911.5	1970
1971	113.0	78.5	142.5	136.5	165.0	40.0	31.5	38.0	86.5	105.0	140.5	82.5	1159.5	1971
1972	110.0	48.0	108.5	380.0	186.5	64.5	70.5	47.0	34.0	58.0	77.5	114.5	1299.0	1972
1973	6.0	53.0	48.0	62.0	108.0	115.0	99.0	62.0	119.5	187.5	238.0	190.5	1288.5	1973
1974	63.5	78.0	183.0	141.5	76.0	70.0	23.5	45.0	145.5	135.0	123.0	25.0	1109.0	1974
1975	3.0	93.0	75.0	88.0	95.0	56.5	101.5	52.0	64.0	120.0	207.9	240.0	1195.9	1975
1976	92.0	90.0	104.5	184.5	89.0	54.0	31.5	15.5	94.0	189.5	115.0	59.0	1118.5	1976
1977	10.0	7.0	46.0	110.0	44.0	38.5	46.0	40.5	80.5	135.0	166.0	11.5	735.0	1977
1978	21.0	51.0	161.0	174.0	97.5	48.5	29.5	12.0	43.5	192.5	63.5	81.0	975.0	1978
1979	39.5	25.0	130.5	178.5	146.5	130.5	37.5	94.5	64.5	314.5	231.5	184.0	1577.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	113.0	93.0	183.0	380.0	188.2	145.2	101.5	94.5	145.5	314.5	269.5	240.0	1577.0	
CUARTIL SUPERIOR	62.3	73.3	121.3	177.3	132.1	100.0	50.6	52.8	98.0	203.5	196.1	109.8	1154.8	
MEDIANA	35.2	52.0	88.0	145.3	106.8	63.3	34.8	43.3	68.2	175.9	157.8	73.5	1113.8	
CUARTIL INFERIOR	16.4	26.5	50.2	102.8	92.0	46.5	28.1	29.3	55.8	127.5	127.0	28.8	964.6	
VALOR MINIMO	3.0	7.0	23.0	56.0	19.4	9.5	11.2	12.0	31.5	58.0	63.5	11.5	735.0	
PROMEDIOS	43.1	50.7	88.8	153.7	110.1	71.9	42.2	44.7	75.1	173.4	160.2	85.2	1099.1	
PORCENTAJES	3.9	4.6	8.1	14.0	10.0	6.5	3.8	4.1	6.8	15.8	14.6	7.8		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 27. INDICE DE ARNOLDUS = 114.

INDICE DE IRREGULARIDAD INTERANUAL =1.52

DEV. ESTANDAR	33.8	27.4	46.4	74.5	42.1	36.9	24.3	23.1	30.3	67.3	55.1	64.2	176.9
COEF. VARIACION	0.785	0.540	0.522	0.485	0.382	0.513	0.575	0.517	0.403	0.388	0.344	0.753	0.161

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1390.	1326.	1248.	1099.	950.	872.	808.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.799	-0.106	0.321	1.490	0.020	0.478	1.425	0.665	0.539	0.541	0.022	1.078	0.568

IMPRESO EN COLOMBIA POR BANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
241515	CARRIZAL	CUCUNUBA	+05 28 00	+073 44 00	2860 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	-9.9	-9.9	-9.9	28.6	27.9	43.9	57.3	45.5	109.7	28.3	109.2	-9.9
1961	31.3	5.9	89.0	59.4	19.8	71.4	31.6	39.9	16.0	124.2	72.7	2.2	563.4
1962	24.0	5.8	57.4	15.1	124.0	75.8	53.6	46.9	21.0	124.4	60.6	35.6	648.2
1963	12.6	59.9	81.7	60.7	157.9	37.4	62.4	26.7	199.5	-9.9	-9.9	-9.9	-9.9
1964	0.0	22.6	1.8	95.0	102.4	70.8	43.0	24.4	28.5	107.9	30.0	31.1	557.5
1965	24.5	5.4	15.2	230.3	82.8	35.9	73.5	48.8	14.6	119.1	100.3	14.7	765.1
1966	1.0	12.8	126.3	35.5	58.0	53.8	36.7	35.3	27.6	48.2	141.6	88.5	665.3
1967	19.5	13.6	133.9	78.8	46.6	76.9	56.3	50.7	38.2	70.6	144.4	35.7	765.2
1968	51.7	38.7	34.2	120.5	23.6	129.0	84.9	53.2	58.8	47.1	80.4	9.9	732.0
1969	68.8	31.2	1.5	191.6	65.0	37.8	51.3	34.5	23.3	187.9	102.6	21.5	817.0
1970	33.0	63.8	24.5	28.1	78.9	88.9	57.0	25.3	44.9	125.5	79.9	10.2	634.0
1971	74.4	27.4	56.1	69.9	97.3	52.2	65.2	34.9	66.4	34.9	87.0	77.9	743.6
1972	89.1	20.5	57.3	155.0	47.4	69.6	88.3	42.5	34.1	56.3	124.0	12.1	796.2
1973	11.7	41.1	11.9	30.5	41.8	67.3	53.1	71.8	91.9	98.7	55.2	75.3	647.3
1974	36.5	55.6	51.3	77.6	87.0	31.2	48.3	27.3	68.9	99.2	107.0	70.9	720.8
1975	5.8	92.9	24.2	52.2	49.1	97.8	39.9	35.5	31.0	126.9	58.8	132.2	706.3
1976	35.4	32.6	111.1	94.4	73.4	88.4	70.7	45.0	45.3	133.9	78.0	29.1	837.3
1977	1.7	4.1	22.2	142.0	38.0	33.2	36.7	76.9	-9.9	-9.9	93.1	22.1	-9.9
1978	0.0	23.4	43.5	129.6	51.1	88.3	38.7	54.2	38.7	73.3	29.3	36.9	577.0
1979	10.1	28.6	132.6	123.5	86.2	74.8	31.3	67.1	13.7	207.7	110.6	57.1	943.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARAN.O

ESTACION X EL HATILLO MUNICIPIO DE SUESCA PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

ESTACION Y CARRIZAL MUNICIPIO DE CUCUNUBA PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	1143.	943.	0.984	-0.021					+				
2	1976	2200.	1781.	1.025	0.007					+	.			
3	1975	3081.	2487.	1.013	0.020					+	.			
4	1974	3950.	3208.	0.866	-0.113				.	+	I			
5	1973	4661.	3855.	1.017	-0.098					+	.			
6	1972	5666.	4651.	1.025	-0.070					+	.			
7	1971	6602.	5395.	1.022	-0.048					+	.			
8	1970	7402.	6029.	1.024	-0.027					+	.			
9	1969	8331.	6846.	0.924	-0.114				.	+	I			
10	1968	9148.	7578.	0.906	-0.209				.	+	I			
11	1967	10086.	8343.	0.995	-0.214					+	.			
12	1966	10928.	9008.	1.027	-0.189					+	I	.		
13	1965	11870.	9773.	1.000	-0.189					+	.			
14	1964	12542.	10331.	0.978	-0.206					*	I			
15	1962	13408.	10979.	1.085	-0.130					+	I	.		
16	1961	14217.	11542.	1.166	0.0					+		.		
N	AN	CUX	CUY	RAN	PCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 888.6 721.4

RAZONES PROMEDIOS Y/X = 0.812

X/Y = 1.232

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
24151	CARRIZAL	CUCUNUBA	+05 12 27	+073 46 17	2860 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	-9.9	-9.9	-9.9	28.6	27.9	43.9	57.3	45.5	109.7	28.3	109.2	-9.9	1960
1961	31.3	5.9	89.0	59.4	19.8	71.4	31.6	39.9	16.0	124.2	72.7	2.2	563.4	1961
1962	24.0	5.6	57.4	19.1	124.0	75.8	53.6	46.9	21.0	124.4	60.6	39.6	648.2	1962
1963	12.6	59.9	81.7	60.7	157.9	37.4	62.4	26.7	99.5	-9.9	-9.9	-9.9	-9.9	1963
1964	0.0	22.6	1.6	95.0	102.4	70.6	43.0	24.4	28.5	107.9	30.0	31.1	557.5	1964
1965	24.5	5.4	15.2	230.3	62.8	35.9	73.5	48.8	14.6	119.1	100.3	14.7	765.1	1965
1966	1.0	12.6	126.3	35.5	58.0	53.6	36.7	35.3	27.6	48.2	141.6	88.5	665.3	1966
1967	19.5	13.6	133.9	78.8	46.6	76.9	56.3	50.7	38.2	70.6	144.4	35.7	765.2	1967
1968	51.7	38.7	34.2	120.5	23.6	129.0	64.9	53.2	58.8	47.1	80.4	9.9	732.0	1968
1969	68.8	31.2	1.5	191.6	65.0	37.8	51.2	34.5	23.3	187.9	108.6	21.5	817.0	1969
1970	33.0	63.8	24.5	28.1	78.9	58.9	57.0	25.3	44.9	129.5	79.9	10.2	634.0	1970
1971	74.4	27.4	56.1	69.9	97.3	52.2	65.2	34.9	66.4	34.9	87.0	77.9	743.6	1971
1972	89.1	20.5	57.3	155.0	47.4	69.6	88.3	42.5	34.1	56.3	124.0	12.1	796.2	1972
1973	11.7	41.1	11.9	30.5	41.8	67.3	53.1	71.8	91.9	95.7	55.2	75.3	647.3	1973
1974	36.5	55.6	51.3	77.6	87.0	31.2	48.3	27.3	68.9	59.2	107.0	70.9	720.8	1974
1975	5.8	92.9	24.2	52.2	49.1	57.8	39.9	35.5	31.0	126.9	58.8	132.2	706.3	1975
1976	35.4	32.6	111.1	94.4	73.4	88.4	70.7	45.0	46.2	133.9	76.0	29.1	837.3	1976
1977	1.7	4.1	22.2	142.0	28.0	33.2	36.7	76.9	-9.9	-9.9	93.1	22.1	-9.9	1977
1978	0.0	23.4	43.5	129.6	81.1	58.3	38.7	54.2	38.7	73.3	29.3	36.9	577.0	1978
1979	10.1	26.6	132.6	123.5	66.2	74.8	31.3	67.1	13.7	207.7	110.6	57.1	943.3	1979
NUMERO DE ANOS	19	19	19	19	20	20	20	20	19	18	19	19	17	
VALOR MAXIMO	89.1	92.9	133.9	230.3	157.9	129.0	88.3	76.9	99.5	207.7	144.4	132.2	943.3	
CUARTIL SUPERIOR	36.5	41.1	89.0	129.6	66.6	73.1	63.8	53.7	58.8	126.9	107.0	75.3	780.7	
MEDIANA	24.0	27.4	51.3	78.8	61.5	58.6	52.2	43.8	38.2	108.8	80.4	35.7	720.8	
CUARTIL INFERIOR	5.8	12.8	22.2	52.2	44.2	37.6	39.3	34.7	23.3	59.2	56.8	14.7	640.6	
VALOR MINIMO	0.0	4.1	1.5	15.1	19.8	27.9	31.3	24.4	13.7	34.9	28.3	2.2	557.5	
PROMEDIOS	28.0	30.8	56.6	94.2	67.9	60.4	53.3	44.9	42.5	103.1	83.4	46.1	712.9	
									TOTAL DE LOS PROMEDIOS MENSUALES =				711.3	
PORCENTAJES	3.9	4.3	8.0	13.2	9.6	8.5	7.5	6.3	6.0	14.5	11.7	6.5		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 66.

DEV. ESTANDAR	26.5	23.6	44.1	57.8	35.1	24.0	16.7	15.3	24.8	47.6	34.7	36.8	104.6
COEF. VARIACION	0.950	0.766	0.779	0.614	0.516	0.398	0.313	0.341	0.582	0.461	0.417	0.798	0.147
COEF. ASIMETRIA	1.013	1.113	0.606	0.787	0.884	1.011	0.685	0.567	1.030	0.570	0.017	0.934	0.332

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Biblioteca Hacienda
Catastrales

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
241515	CARRIZAL	CUCUNUBA	+05 12 27	+073 46 17	2860 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	22.7	10.2	53.2	131.8	28.6	27.9	43.9	57.3	45.5	109.7	28.3	109.2	674.3	1960
1961	31.3	5.9	89.0	59.4	19.8	71.4	31.6	39.9	16.0	124.2	72.7	2.2	563.4	1961
1962	24.0	5.8	57.4	15.1	124.0	75.8	53.6	46.9	21.0	124.4	60.6	39.6	648.2	1962
1963	12.6	59.9	81.7	60.7	157.9	37.4	62.4	26.7	99.5	62.2	91.3	17.2	769.5	1963
1964	0.0	22.6	1.8	95.0	102.4	70.8	43.0	24.4	28.5	107.9	30.0	31.1	557.5	1964
1965	24.5	5.4	15.2	230.3	82.8	35.9	73.5	48.8	14.6	119.1	100.3	14.7	765.1	1965
1966	1.0	12.8	126.3	35.5	58.0	53.8	36.7	35.3	27.6	48.2	141.6	88.5	665.3	1966
1967	19.5	13.6	133.9	78.8	46.6	76.9	56.3	50.7	38.2	70.6	144.4	35.7	765.2	1967
1968	51.7	38.7	34.2	120.5	23.6	129.0	84.9	53.2	58.8	47.1	80.4	9.9	732.0	1968
1969	68.8	31.2	1.5	191.6	65.0	37.8	51.3	34.5	23.3	187.9	102.6	21.5	817.0	1969
1970	33.0	63.8	24.5	28.1	78.9	58.9	57.0	25.3	44.9	129.5	79.9	10.2	634.0	1970
1971	74.4	27.4	56.1	69.9	97.3	52.2	65.2	34.9	66.4	34.9	87.0	77.9	743.6	1971
1972	89.1	20.3	57.3	155.0	47.4	69.6	88.3	42.5	34.1	56.3	124.0	12.1	796.2	1972
1973	11.7	41.1	11.9	30.3	41.8	67.3	53.1	71.8	91.9	95.7	55.2	75.3	647.3	1973
1974	36.5	55.6	51.3	77.6	87.0	31.2	48.3	27.3	68.9	59.2	107.0	70.9	720.8	1974
1975	5.8	92.9	24.2	52.2	49.1	57.8	39.9	35.5	31.0	126.9	58.8	132.2	706.3	1975
1976	35.4	32.6	111.1	94.4	73.4	88.4	70.7	45.0	45.3	133.9	78.0	29.1	837.3	1976
1977	1.7	4.1	22.2	142.0	38.0	33.2	30.7	76.9	33.4	64.6	93.1	22.1	568.0	1977
1978	0.0	23.4	43.5	129.6	51.1	58.3	38.7	54.2	38.7	73.3	29.3	36.9	577.0	1978
1979	10.1	28.6	132.6	123.5	86.2	74.8	31.3	67.1	13.7	207.7	110.6	57.1	943.3	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	89.1	92.9	133.9	230.3	157.9	129.0	88.3	76.9	99.5	207.7	144.4	132.2	943.3	
CUARTIL SUPERIOR	35.9	39.9	85.3	130.7	86.6	73.1	63.8	53.7	52.1	125.6	104.8	73.1	767.3	
MEDIANA	23.3	25.4	52.2	86.6	61.5	58.6	52.2	43.8	36.1	101.8	83.7	33.4	713.5	
CUARTIL INFERIOR	7.9	13.2	23.2	55.8	44.2	37.6	39.3	34.7	25.4	60.7	59.7	15.9	640.6	
VALOR MINIMO	0.0	4.1	1.5	15.1	19.8	27.9	31.3	24.4	13.7	34.9	28.3	2.2	557.5	
PROMEDIOS	27.7	30.1	56.4	96.1	67.9	60.4	53.3	44.9	42.1	99.2	83.8	44.7	706.6	
PORCENTAJES	3.9	4.3	8.0	13.6	9.6	8.6	7.5	6.4	6.0	14.0	11.9	6.3		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 14. INDICE DE ARNOLDUS = 66.

INDICE DE IRREGULARIDAD INTERANUAL =1.46

DEV. ESTANDAR	25.9	23.2	42.9	50.9	35.1	24.0	16.7	15.3	24.2	46.6	33.9	36.4	102.6	
COEF. VARIACION	0.934	0.772	0.760	0.592	0.516	0.398	0.313	0.341	0.575	0.470	0.404	0.815	0.145	

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	875.	838.	793.	707.	620.	575.	538.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.065	1.193	0.632	0.684	0.884	1.011	0.659	0.567	1.100	0.747	-0.021	1.013	0.339	

IMPRESO EN COLOMBIA POR DANARIO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240114	CUCUNUEA	CUCUNUBA	+05 15 00	+073 46 00	2650 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1958	-9.9	25.0	75.0	71.0	33.0	73.0	31.0	84.0	12.0	48.0	87.0	15.0	-9.9
1959	33.0	30.0	26.0	32.0	84.0	60.0	58.0	18.0	0.0	146.0	77.0	30.0	554.0
1960	24.0	29.0	142.0	66.0	14.0	5.0	33.0	46.0	45.0	93.0	69.0	103.0	669.0
1961	78.0	42.0	83.0	59.0	8.0	51.0	19.0	28.0	7.0	103.0	83.0	9.0	570.0
1962	41.0	33.0	65.0	87.0	85.0	71.0	18.0	28.0	14.0	107.0	99.0	28.0	676.0
1963	6.0	40.0	26.0	134.0	167.0	62.0	33.0	15.0	8.0	103.0	141.0	21.0	756.0
1964	4.0	14.0	2.0	181.0	125.0	111.0	42.0	26.0	39.0	88.0	42.0	54.0	728.0
1965	0.0	35.0	7.0	212.0	108.0	30.0	41.0	43.0	12.0	119.0	124.0	15.0	746.0
1966	0.0	0.0	128.0	54.0	41.0	72.0	34.0	14.0	11.0	74.0	208.0	116.0	752.0
1967	28.0	13.0	102.0	108.0	46.0	57.0	42.0	51.0	31.0	56.0	148.0	20.0	782.0
1968	42.0	66.0	12.0	98.0	24.0	104.0	15.0	49.0	37.0	53.0	41.0	9.0	550.0
1969	56.0	44.0	0.0	98.0	69.0	30.0	18.0	0.0	55.0	106.0	69.0	15.0	560.0
1970	44.0	33.0	20.0	29.0	75.0	20.0	38.0	27.0	82.0	116.0	85.0	13.0	592.0
1971	99.0	56.0	123.0	80.0	106.0	39.0	73.0	29.0	64.0	72.0	125.0	52.0	918.0
1972	86.0	19.0	72.0	132.0	52.0	56.0	100.0	45.0	23.0	33.0	97.0	9.0	724.0
1973	14.0	54.0	25.0	28.0	37.0	122.0	37.0	33.0	131.0	109.0	73.0	70.0	733.0
1974	27.0	95.0	47.0	84.0	53.0	19.0	34.0	1.0	41.0	81.0	118.0	45.0	645.0
1975	0.0	69.0	62.0	28.0	59.0	45.0	24.0	49.0	23.0	200.0	38.0	115.0	712.0
1976	0.0	63.0	168.0	106.0	86.0	46.0	33.0	8.0	34.0	161.0	153.0	35.0	897.0
1977	14.0	2.0	48.0	113.0	23.0	33.0	27.0	33.0	74.0	58.0	64.0	12.0	501.0
1978	0.0	60.0	40.0	170.0	103.0	56.0	20.0	28.0	12.0	156.0	28.0	47.0	724.0
1979	18.0	34.0	136.0	190.0	118.0	44.0	15.0	93.0	28.0	225.0	204.0	64.0	1165.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANES

ESTACION X CUCUNUBA MUNICIPIO DE CUCUNUBA PERIODO COEF DE CORRECCION

1960 - 1979 1.000

ESTACION Y LA BOYERA MUNICIPIO DE UBATE PERIODO COEF DE CORRECCION

1960 - 1979 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	1169.	1122.	1.087	0.129					I+	•			
2	1978	1893.	1853.	1.034	0.162					I+	•			
3	1977	2394.	2436.	0.896	0.081				•	+				
4	1976	3291.	3334.	1.041	0.131					I+	•			
5	1975	4003.	4143.	0.919	0.043				•	+				
6	1974	4648.	4779.	1.057	0.092					+	•			
7	1973	5381.	5548.	0.995	0.087					*				
8	1972	6105.	6339.	0.954	0.038					+				
9	1971	7023.	7286.	1.012	0.053					+.				
10	1970	7615.	7965.	0.909	-0.029				•	+				
11	1969	8175.	8755.	0.739	-0.302			•		+ I				
12	1968	8725.	9526.	0.745	-0.563			•		+ I				
13	1967	9507.	10201.	1.208	-0.376					+ I			•	
14	1966	10259.	10906.	1.112	-0.271					+ I	•			
15	1965	11005.	11553.	1.203	-0.097					+			•	
16	1964	11733.	12187.	1.198	0.069					+			•	
17	1963	12489.	12878.	1.142	0.199					I+		•		
18	1962	13165.	13686.	0.873	0.063				•	+				
19	1961	13735.	14327.	0.926	0.0				•	+				
N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 722.9 754.1

RAZONES PROMEDIOS Y/X = 1.043

X/Y = 0.959

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* PRUEBAS DE DOBLE MASA *

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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240114	CUCUNUBA	CUCUNUBA	+05 15 03	+073 46 08	2595 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	-9.9	25.0	75.0	71.0	33.0	73.0	31.0	84.0	12.0	48.0	87.0	15.0	-9.9	1958
1959	33.0	30.0	26.0	32.0	84.0	60.0	58.0	18.0	0.0	146.0	77.0	30.0	594.0	1959
1960	24.0	29.0	142.0	66.0	14.0	5.0	33.0	46.0	45.0	93.0	69.0	103.0	669.0	1960
1961	78.0	42.0	83.0	59.0	8.0	51.0	19.0	28.0	7.0	103.0	83.0	9.0	570.0	1961
1962	41.0	33.0	65.0	87.0	85.0	71.0	18.0	28.0	14.0	107.0	99.0	28.0	676.0	1962
1963	6.0	40.0	26.0	134.0	167.0	62.0	33.0	15.0	8.0	103.0	141.0	21.0	756.0	1963
1964	4.0	14.0	2.0	181.0	125.0	111.0	42.0	26.0	39.0	88.0	42.0	54.0	728.0	1964
1965	0.0	35.0	7.0	212.0	108.0	30.0	41.0	43.0	12.0	119.0	124.0	15.0	746.0	1965
1966	0.0	0.0	128.0	54.0	41.0	72.0	34.0	14.0	11.0	74.0	208.0	116.0	752.0	1966
1967	28.0	13.0	102.0	108.0	46.0	97.0	42.0	51.0	31.0	96.0	148.0	20.0	782.0	1967
1968														1968
1969														1969
1970	44.0	33.0	20.0	29.0	75.0	30.0	38.0	27.0	62.0	116.0	88.0	13.0	592.0	1970
1971	99.0	56.0	123.0	80.0	106.0	39.0	73.0	29.0	64.0	72.0	125.0	52.0	918.0	1971
1972	86.0	19.0	72.0	132.0	52.0	56.0	100.0	45.0	23.0	33.0	97.0	9.0	724.0	1972
1973	14.0	54.0	25.0	28.0	37.0	122.0	37.0	33.0	131.0	109.0	73.0	70.0	733.0	1973
1974	27.0	55.0	47.0	84.0	53.0	19.0	34.0	1.0	41.0	81.0	118.0	45.0	645.0	1974
1975	0.0	69.0	62.0	28.0	59.0	45.0	24.0	49.0	23.0	200.0	36.0	115.0	712.0	1975
1976	0.0	63.0	168.0	106.0	86.0	46.0	33.0	8.0	34.0	161.0	153.0	39.0	897.0	1976
1977	14.0	2.0	48.0	113.0	23.0	33.0	27.0	33.0	74.0	58.0	64.0	12.0	501.0	1977
1978	0.0	60.0	40.0	170.0	103.0	58.0	20.0	28.0	12.0	158.0	28.0	47.0	724.0	1978
1979	18.0	34.0	136.0	190.0	118.0	44.0	15.0	93.0	28.0	225.0	204.0	64.0	1169.0	1979
NUMERO DE ANOS	19	20	20	20	20	20	20	20	20	20	20	20	19	
VALOR MAXIMO	99.0	95.0	168.0	212.0	167.0	122.0	100.0	93.0	131.0	225.0	208.0	116.0	1169.0	
CUARTIL SUPERIOR	41.0	55.0	112.5	133.0	104.5	71.5	41.5	45.5	43.0	132.5	133.0	59.0	756.0	
MEDIANA	18.0	33.5	63.5	85.5	67.0	53.5	33.5	28.5	25.5	103.0	92.0	34.5	724.0	
CUARTIL INFERIOR	0.0	22.0	26.0	56.5	39.0	36.0	25.5	22.0	12.0	77.5	71.0	15.0	645.0	
VALOR MINIMO	0.0	0.0	2.0	28.0	8.0	5.0	15.0	1.0	0.0	33.0	28.0	9.0	501.0	
PROMEDIOS	27.2	37.3	69.8	98.2	71.1	56.2	37.6	34.9	34.5	109.5	103.1	43.8	730.9	
									TOTAL DE LOS PROMEDIOS MENSUALES =				723.5	
PORCENTAJES	3.8	5.2	9.7	13.6	9.8	7.8	5.2	4.8	4.8	15.1	14.3	6.1		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 74.

DEV. ESTANDAR	30.6	23.6	49.0	56.7	41.7	29.4	20.0	22.8	32.1	48.5	49.8	34.5	147.2
COEF. VARIACION	1.126	0.633	0.701	0.578	0.586	0.523	0.532	0.652	0.930	0.443	0.483	0.787	0.201
COEF. ASIMETRIA	1.273	0.565	0.499	0.561	0.459	0.658	1.907	1.190	1.676	0.832	0.650	1.056	1.415

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Material Protegido
Derechos Reservados

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240114	CUCUNUBA	CUCUNUBA	+05 15 03	+073 46 08	2595 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	24.0	29.0	142.0	66.0	14.0	5.0	33.0	46.0	45.0	93.0	69.0	103.0	669.0	1960
1961	78.0	42.0	83.0	59.0	8.0	51.0	19.0	28.0	7.0	103.0	83.0	9.0	570.0	1961
1962	41.0	33.0	65.0	87.0	85.0	71.0	18.0	28.0	14.0	107.0	99.0	28.0	676.0	1962
1963	6.0	40.0	26.0	134.0	167.0	62.0	33.0	15.0	8.0	103.0	141.0	21.0	756.0	1963
1964	4.0	14.0	2.0	181.0	125.0	111.0	42.0	26.0	39.0	88.0	42.0	54.0	728.0	1964
1965	0.0	33.0	7.0	212.0	108.0	30.0	41.0	43.0	12.0	119.0	124.0	15.0	746.0	1965
1966	0.0	0.0	128.0	54.0	41.0	72.0	34.0	14.0	11.0	74.0	208.0	116.0	752.0	1966
1967	28.0	13.0	102.0	108.0	46.0	97.0	42.0	51.0	31.0	96.0	148.0	20.0	782.0	1967
1968	57.5	90.3	16.4	134.2	32.8	142.4	20.5	67.1	50.6	72.5	56.1	12.3	752.7	1968
1969	69.7	54.8	0.0	122.1	86.0	37.3	22.4	0.0	68.5	132.1	86.0	18.6	697.5	1969
1970	44.0	33.0	20.0	29.0	75.0	30.0	38.0	27.0	82.0	116.0	85.0	13.0	592.0	1970
1971	99.0	56.0	123.0	80.0	106.0	39.0	73.0	29.0	64.0	72.0	126.0	52.0	918.0	1971
1972	86.0	19.0	72.0	132.0	52.0	56.0	100.0	45.0	23.0	33.0	97.0	9.0	724.0	1972
1973	14.0	54.0	25.0	28.0	37.0	122.0	37.0	33.0	131.0	109.0	73.0	70.0	733.0	1973
1974	27.0	95.0	47.0	84.0	53.0	19.0	34.0	1.0	41.0	81.0	116.0	45.0	645.0	1974
1975	0.0	69.0	62.0	28.0	59.0	45.0	24.0	49.0	23.0	200.0	38.0	115.0	712.0	1975
1976	0.0	63.0	168.0	106.0	86.0	46.0	33.0	8.0	34.0	161.0	153.0	39.0	897.0	1976
1977	14.0	2.0	48.0	113.0	23.0	33.0	27.0	33.0	74.0	58.0	64.0	12.0	501.0	1977
1978	0.0	60.0	40.0	170.0	103.0	58.0	20.0	28.0	12.0	158.0	28.0	47.0	724.0	1978
1979	18.0	34.0	130.0	190.0	118.0	44.0	15.0	93.0	28.0	225.0	204.0	64.0	1169.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	99.0	95.0	168.0	212.0	167.0	142.4	100.0	93.0	131.0	225.0	208.0	116.0	1169.0	
CUARTIL SUPERIOR	50.8	58.0	112.5	134.1	104.5	71.5	39.5	45.5	57.3	125.5	133.0	59.0	754.3	
MEDIANA	21.0	37.5	55.0	107.0	67.0	48.5	33.0	28.5	32.5	103.0	91.5	33.5	726.0	
CUARTIL INFERIOR	2.0	24.0	22.5	62.5	39.0	35.1	21.4	20.5	13.0	77.5	66.5	14.0	672.5	
VALOR MINIMO	0.0	0.0	0.0	28.0	8.0	5.0	15.0	0.0	7.0	33.0	28.0	9.0	501.0	
PROMEDIOS	30.5	41.8	65.6	105.9	71.2	58.5	35.3	33.2	39.9	110.0	102.1	43.1	737.2	
PORCENTAJES	4.1	5.7	8.9	14.4	9.7	7.9	4.8	4.5	5.4	14.9	13.8	5.9		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 75.

INDICE DE IRREGULARIDAD INTERANUAL =1.64

DEV. ESTANDAR	31.9	26.3	51.8	54.6	41.7	35.4	19.9	22.2	31.4	46.8	50.6	35.0	139.9
COEF. VARIACION	1.045	0.628	0.789	0.516	0.586	0.605	0.565	0.668	0.788	0.425	0.496	0.811	0.190

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	968.	917.	855.	737.	619.	558.	507.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.896	0.353	0.522	0.290	0.450	0.987	2.187	0.893	1.401	0.976	0.652	1.055	1.456

IMPRESO EN COLOMBIA POR DANAR/NJR

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212550	EL RHIN	CHIA	+04 53 00	+074 02 00	2600 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1958	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	104.0	86.5	66.7	-9.9
1959	11.0	8.0	47.0	43.0	85.2	42.2	79.7	32.9	47.5	82.9	91.6	-9.9	-9.9
1960	-9.9	24.2	46.5	61.3	50.5	34.7	65.9	40.3	21.3	65.3	11.2	73.0	-9.9
1961	54.0	3.5	65.5	67.0	11.0	74.2	34.3	23.5	47.5	165.0	93.0	0.0	638.5
1962	96.7	37.0	91.2	57.4	98.5	-9.9	-9.9	77.0	30.5	57.0	195.0	30.0	-9.9
1963	84.5	86.0	51.0	116.0	114.0	37.8	26.8	21.5	21.3	46.5	130.5	17.0	752.9
1964	19.5	30.2	9.0	108.3	99.1	86.5	49.0	12.8	14.0	48.5	40.8	39.4	557.1
1965	14.9	8.6	30.0	201.5	72.5	12.7	18.5	16.4	12.8	139.4	130.3	10.0	667.6
1966	6.0	16.9	38.4	20.6	71.9	44.2	37.8	37.0	38.5	67.2	121.3	103.8	603.6
1967	20.5	45.0	75.0	62.7	51.1	72.5	26.5	23.4	18.3	16.4	17.3	11.9	440.6

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAN

ESTACION X EL RHIN MUNICIPIO DE CHIA PERIODO 1958 - 1967 COEF DE CORRECCION 1.000

N	AN	T.A	CU	MOY	ECR	PCAN	E = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1967	440.6	440.6	440.0	-1.600	-0.278				+ I			
2	1966	603.6	1044.2	522.1	-0.061	-0.288				+ .			
3	1965	667.6	1711.8	570.6	0.543	-0.194				+I .			
4	1964	557.1	2268.9	567.2	-0.500	-0.281				. + I			
5	1963	752.9	3021.8	604.4	1.349	-0.047				+ .			
6	1961	638.5	3660.3	610.0	0.269	0.0				+ .			

N	AN	T.A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 6 ANOS = 610.0

DEVIACION ESTANDAR = 105.9

COEFICIENTE DE VARIACION = 0.174

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212550	EL RHIN	CHIA	+04 53 00	+074 02 00	2550 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	104.0	66.5	66.7	-9.9	1958
1959	11.0	8.0	47.0	43.0	65.2	42.2	79.7	32.9	47.5	82.9	91.6	-9.9	-9.9	1959
1960	-9.9	24.2	46.5	61.3	50.5	34.7	65.9	40.3	21.3	65.3	11.2	73.0	-9.9	1960
1961	54.0	3.5	65.5	67.0	11.0	74.2	34.3	23.5	47.5	165.0	93.0	0.0	638.5	1961
1962	96.7	37.0	91.2	57.4	58.5	-9.9	-9.9	77.0	30.5	57.0	195.0	30.0	-9.9	1962
1963	84.5	86.0	51.0	110.0	114.0	37.8	26.8	21.5	21.3	46.5	130.5	17.0	752.9	1963
1964	19.5	30.2	9.0	108.3	99.1	86.5	49.0	12.8	14.0	48.5	40.8	39.4	557.1	1964
1965	14.9	8.0	30.0	201.5	72.5	12.7	18.5	16.4	12.8	139.4	130.3	10.0	667.6	1965
1966	6.0	10.5	38.4	20.6	71.9	44.2	37.8	37.0	38.5	67.2	121.3	103.8	603.6	1966
NUMERO DE ANOS	7	8	8	8	8	7	7	8	8	9	9	8	5	
VALOR MAXIMO	96.7	86.0	91.2	201.5	114.0	86.5	79.7	77.0	47.5	165.0	195.0	103.8	752.9	
MEDIANA	19.5	20.5	46.8	64.1	78.8	42.2	37.8	28.2	25.9	67.2	93.0	34.7	638.5	
VALOR MINIMO	6.0	3.5	9.0	20.6	11.0	12.7	18.5	12.8	12.8	46.5	11.2	0.0	557.1	
PROMEDIOS	40.9	26.8	47.3	84.4	75.3	47.5	44.6	32.7	29.2	86.2	100.0	42.5	643.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		657.4	
PORCENTAJES	6.2	4.1	7.2	12.8	11.5	7.2	6.8	5.0	4.4	13.1	15.2	6.5		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 65.

DEV. ESTANDAR	37.5	26.6	24.3	56.9	32.7	25.0	21.8	20.4	14.1	41.9	53.6	35.8	73.5
COEF. VARIACION	0.916	0.993	0.513	0.674	0.434	0.526	0.489	0.624	0.482	0.486	0.536	0.842	0.114
COEF. ASIMETRIA	0.714	1.245	0.378	1.330	-1.077	0.459	0.638	1.646	0.292	1.071	0.011	0.598	0.620

*** PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Biblioteca Hacienda
Casa Pueblo

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600109	CHIPAQUE	CHIPAQUE	+04 27 00	+074 03 00	2400 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1955	50.0	50.0	79.0	69.5	54.0	84.0	107.0	-9.9	85.0	93.0	129.0	57.5	-9.9
1956	48.5	45.0	34.5	43.6	103.4	176.3	79.9	76.6	99.2	102.3	33.0	50.0	892.3
1957	3.5	4.0	89.0	59.0	122.5	-9.9	117.6	74.1	90.0	52.3	42.7	15.4	-9.9
1958	2.5	11.9	111.4	90.2	52.7	44.0	64.0	-9.9	-9.9	60.0	71.5	56.0	-9.9
1959	0.0	0.0	37.0	86.1	64.5	148.0	191.7	128.0	-9.9	-9.9	-9.9	-9.9	-9.9
1960	-9.9	24.0	22.0	94.0	105.0	120.0	89.0	74.0	93.0	64.0	87.5	51.5	-9.9
1961	19.5	39.8	45.0	115.0	105.0	132.0	125.0	55.0	46.0	152.0	95.0	4.0	933.3
1962	7.0	28.0	97.0	70.0	82.0	143.0	156.5	89.5	69.5	77.0	50.0	2.5	872.0
1963	11.0	39.5	11.5	116.0	151.0	95.0	57.0	-9.9	59.5	43.0	63.5	15.0	-9.9
1964	0.0	22.5	3.5	101.0	137.5	118.0	125.5	94.5	85.5	59.0	67.5	17.5	832.0
1965	4.0	6.0	28.0	180.0	128.0	95.8	86.0	58.3	42.5	-9.9	121.5	16.2	-9.9
1966	9.5	13.5	-9.9	-9.9	29.6	120.3	87.0	103.7	57.5	71.0	140.8	91.5	-9.9
1967	11.0	13.0	69.0	122.0	131.0	177.0	155.0	99.5	61.0	37.0	75.5	27.5	978.5
1968	6.0	59.0	6.0	143.0	56.0	162.0	122.0	60.5	85.5	93.5	52.5	14.0	860.0
1969	50.5	19.0	20.5	138.0	102.5	129.5	82.0	102.5	60.0	120.0	46.0	23.0	893.5
1970	25.0	45.0	51.0	96.0	165.0	127.0	111.0	115.0	67.0	164.0	93.0	9.0	1072.0
1971	30.0	36.0	64.5	114.0	120.5	142.5	168.0	104.0	118.0	93.0	43.0	20.0	1053.5
1972	74.0	18.0	68.0	136.0	175.0	83.0	74.5	88.5	21.0	76.0	101.0	16.0	931.0
1973	11.0	-9.9	18.0	51.0	59.0	125.0	80.0	153.0	150.0	70.0	79.5	41.0	-9.9
1974	24.0	46.5	60.0	98.5	169.5	74.5	101.0	68.0	48.0	92.0	100.0	2.0	884.0
1975	6.0	28.0	44.0	22.0	44.0	38.0	20.0	68.0	9.0	21.0	0.0	14.0	314.0
1976	0.0	0.0	0.0	0.0	34.0	103.0	105.0	79.0	35.6	25.5	38.0	16.0	440.5
1977	0.0	19.0	8.0	74.0	58.0	84.0	108.0	69.4	90.0	77.0	72.0	12.0	641.4
1978	4.0	17.0	48.0	86.0	146.0	142.0	66.9	91.3	75.0	59.7	34.0	26.3	796.2
1979	14.5	0.8	53.6	128.0	47.7	134.5	85.6	106.4	58.3	105.6	102.6	27.4	865.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR BANARAJO

ESTACION X CHIPAQUE MUNICIPIO DE CHIPAQUE PERIODO 1955 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1974	865.0	865.0	865.0	0.178	0.044				+	.		
2	1973	796.2	1661.2	830.6	-0.160	0.005				.	+		
3	1977	641.4	2302.6	767.5	-0.521	-0.221			.	+	I		
4	1976	440.5	2743.1	685.8	-1.508	-0.690			+	I			
5	1975	314.0	3057.1	611.4	-2.530	-1.311		.		I			
6	1974	884.0	3941.1	656.8	0.272	-1.244		+		I	.		
7	1972	931.0	4872.1	696.0	0.503	-1.121		+		I	.		
8	1971	1053.5	5925.6	740.7	1.105	-0.850			+	I	.		
9	1970	1072.0	6997.6	777.5	1.196	-0.556			+	I	.		
10	1969	893.5	7891.1	789.1	0.319	-0.478			+	I	.		
11	1968	860.0	8751.1	795.6	0.154	-0.440			+	I	.		
12	1967	578.5	9329.6	810.8	0.736	-0.259				+ I	.		
13	1964	832.0	10161.6	312.4	0.016	-0.255				+	.		
14	1962	872.0	11433.6	816.7	0.213	-0.203				+ I	.		
15	1961	933.3	12366.9	824.5	0.514	-0.077				+	.		
16	1956	892.3	13259.2	828.7	0.313	0.0				+	.		

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 16 ANOS = 828.7

DESVIACION ESTANDAR = 203.4

COEFICIENTE DE VARIACION = 0.245

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600109	CHIPAQUE	CHIPAQUE	+04 26 37	+074 02 55	2400 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1955	50.0	50.0	79.0	69.5	84.0	84.0	107.0	-9.9	85.0	93.0	129.0	57.5	-9.9	1955
1956	48.5	45.0	34.5	43.6	103.4	176.3	79.9	76.6	99.2	102.3	33.0	50.0	892.3	1956
1957	3.5	4.0	89.0	99.0	122.5	-9.9	117.6	74.1	90.0	52.3	42.7	15.4	-9.9	1957
1958	2.5	11.9	111.4	90.2	82.7	44.0	64.0	-9.9	-9.9	60.0	71.5	58.0	-9.9	1958
1959	0.0	0.0	37.0	86.1	64.5	148.0	191.7	128.0	-9.9	-9.9	-9.9	-9.9	-9.9	1959
1960	-9.9	24.0	22.0	94.0	105.0	120.0	89.0	74.0	93.0	64.0	87.5	51.5	-9.9	1960
1961	19.5	39.6	45.0	115.0	105.0	132.0	125.0	55.0	46.0	152.0	95.0	4.0	933.3	1961
1962	7.0	28.0	97.0	70.0	82.0	143.0	156.5	89.5	69.5	77.0	50.0	2.5	872.0	1962
1963	11.0	35.5	11.5	116.0	191.0	95.0	57.0	-9.9	59.5	43.0	63.5	15.0	-9.9	1963
1964	0.0	22.5	3.5	101.0	137.5	118.0	125.5	94.5	85.5	59.0	67.5	17.5	832.0	1964
1965	4.0	6.0	28.0	180.0	128.0	95.6	86.0	58.3	42.5	-9.9	121.5	16.2	-9.9	1965
1966	9.5	13.5	-9.9	-9.9	29.6	120.3	67.0	103.7	57.5	71.0	140.8	91.5	-9.9	1966
1967	11.0	13.0	69.0	122.0	131.0	177.0	155.0	99.5	61.0	37.0	75.5	27.5	978.5	1967
1968	6.0	59.0	6.0	143.0	56.0	162.0	122.0	60.5	65.5	93.5	52.5	14.0	860.0	1968
1969	50.5	19.0	20.5	138.0	102.5	129.5	82.0	102.5	60.0	120.0	46.0	23.0	893.5	1969
1970	25.0	45.0	51.0	96.0	169.0	127.0	111.0	115.0	67.0	164.0	93.0	9.0	1072.0	1970
1971	30.0	36.0	64.5	114.0	120.5	142.5	168.0	104.0	118.0	93.0	43.0	20.0	1053.5	1971
1972	74.0	18.0	68.0	136.0	175.0	83.0	74.5	88.5	21.0	76.0	101.0	16.0	931.0	1972
1973	11.0	-9.9	18.0	51.0	89.0	125.0	80.0	153.0	150.0	70.0	79.5	41.0	-9.9	1973
1974	24.0	46.5	60.0	98.5	169.5	74.5	101.0	68.0	48.0	92.0	100.0	2.0	884.0	1974
1975														1975
1976														1976
1977	0.0	19.0	8.0	74.0	58.0	54.0	108.0	69.4	50.0	77.0	72.0	12.0	641.4	1977
1978	4.0	17.0	48.0	86.0	146.0	142.0	66.9	91.3	75.0	59.7	34.0	26.3	796.2	1978
1979	14.5	0.8	53.6	128.0	47.7	134.5	85.6	106.4	58.3	105.6	102.6	27.4	865.0	1979
NUMERO DE ANOS	22	22	22	22	23	22	23	20	21	21	22	22	14	
VALOR MAXIMO	74.0	59.0	111.4	180.0	175.0	177.0	191.7	153.0	150.0	164.0	140.8	91.5	1072.0	
CUARTIL SUPERIOR	25.0	39.6	68.0	122.0	137.5	142.5	125.0	103.8	90.0	97.9	100.0	41.0	933.3	
MEDIANA	11.0	20.8	46.5	97.3	105.0	126.0	101.0	90.4	69.5	77.0	73.8	18.8	888.1	
CUARTIL INFERIOR	4.0	13.0	20.5	74.0	88.0	95.0	80.0	71.7	57.9	59.8	50.0	14.0	860.0	
VALOR MINIMO	0.0	0.0	3.5	43.6	29.6	44.0	57.0	55.0	21.0	37.0	33.0	2.0	641.4	
PROMEDIOS	18.4	25.3	46.6	100.5	103.0	119.4	106.1	90.6	74.4	83.9	77.3	27.1	893.2	
												TOTAL DE LOS PROMEDIOS MENSUALES =	872.7	
PORCENTAJES	2.1	2.9	5.3	11.5	11.8	13.7	12.2	10.4	8.5	9.6	8.9	3.1		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 88.

DEV. ESTANDAR	20.3	17.3	30.9	33.3	44.1	35.9	35.3	24.8	28.3	32.4	30.8	22.4	106.3
COEF. VARIACION	1.103	0.681	0.663	0.331	0.429	0.301	0.333	0.273	0.381	0.387	0.399	0.824	0.119
COEF. ASIMETRIA	1.418	0.300	0.407	0.364	0.045	-0.454	0.867	0.702	0.745	1.032	0.377	1.356	-0.497

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600108	CHOACHI	CHOACHI	+04 32 00	+073 56 00	1927 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1955	15.0	43.5	58.2	24.0	0.0	42.9	112.1	73.0	104.7	84.6	95.3	47.6	700.9
1956	43.3	38.6	60.2	74.2	82.6	177.5	88.6	94.0	114.5	123.6	74.1	55.9	1027.1
1957	3.2	8.0	73.3	144.3	116.6	67.6	95.5	-9.9	90.4	54.8	32.6	41.9	-9.9
1958	0.0	21.2	54.5	77.9	96.2	59.0	74.2	118.4	38.3	79.4	78.6	17.2	714.9
1959	1.8	6.0	30.3	61.0	84.5	145.1	201.9	119.2	101.8	74.1	62.2	34.1	922.0
1960	5.1	35.0	19.4	55.7	77.9	91.4	80.9	100.4	92.5	66.2	50.9	66.1	741.5
1961	3.9	10.5	52.2	100.0	60.7	69.2	81.2	36.0	41.6	175.0	100.5	3.2	734.0
1962	1.1	16.0	103.6	58.7	122.3	167.6	158.7	123.0	67.2	89.2	53.8	11.2	992.4
1963	7.8	35.1	10.7	88.1	135.8	101.6	84.0	78.0	67.5	82.4	103.4	15.9	810.3
1964	0.0	12.3	4.5	102.2	122.4	106.0	100.0	100.0	85.8	93.4	63.4	39.4	829.4
1965	10.5	4.5	20.7	111.6	172.0	89.5	105.5	82.0	50.8	91.7	146.8	13.5	899.1
1966	5.8	20.8	55.4	82.7	48.8	96.6	88.0	152.2	84.6	-9.9	-9.9	94.7	-9.9
1967	18.2	13.8	37.9	128.9	130.4	159.2	116.0	98.0	56.7	70.6	45.2	26.5	941.4
1968	22.6	54.3	11.4	178.0	60.3	174.2	133.3	56.0	89.6	118.0	71.0	32.7	1001.4
1969	32.7	22.5	24.4	146.6	111.6	177.9	90.9	141.9	69.1	163.5	62.3	43.7	1087.1
1970	42.5	20.7	44.4	91.5	165.0	115.8	119.2	167.2	102.2	122.4	87.9	17.4	1096.2
1971	73.1	24.0	57.0	129.3	189.0	135.9	164.0	133.9	97.4	76.7	60.9	16.7	1157.9
1972	62.0	38.2	92.5	85.0	168.4	114.4	99.8	92.3	25.8	91.0	71.8	3.6	944.8
1973	0.7	0.8	28.0	56.2	114.8	133.1	93.8	183.8	174.5	83.7	74.1	42.1	985.6
1974	23.8	39.7	53.0	95.6	133.2	70.3	87.1	66.4	74.4	141.3	87.5	33.2	905.5
1975	7.2	42.5	61.2	64.6	105.9	134.6	69.6	141.1	108.1	87.8	65.8	76.3	964.7
1976	10.5	8.4	55.1	121.3	177.7	143.4	95.5	67.1	47.7	104.1	-9.9	10.2	-9.9
1977	0.0	28.2	11.0	80.0	66.1	67.6	127.4	105.9	-9.9	44.1	49.9	5.2	-9.9
1978	1.1	14.0	70.4	72.9	122.8	133.8	105.9	75.1	67.2	54.6	26.0	17.6	761.4
1979	32.6	1.2	59.2	81.1	63.4	117.8	105.4	78.6	49.6	77.3	75.6	50.5	792.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAN

ESTACION X CHOACHI MUNICIPIO DE CHOACHI PERIODO 1955 - 1979 COEF DE CORRECCION 1.000

ESTACION Y LA REGADERA MUNICIPIO DE USME PERIODO 1955 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	792.	1003.	0.894	-0.103					+I				
2	1978	1554.	1840.	1.020	-0.079					+ .				
3	1975	2518.	2980.	0.959	-0.125				.	+I				
4	1974	3424.	3929.	1.081	-0.050					+ .				
5	1973	4409.	4952.	1.092	0.042					+ .				
6	1972	5354.	6055.	0.988	0.029					.+				
7	1971	6512.	7219.	1.108	0.153					I+ .				
8	1970	7608.	8385.	1.065	0.227					I + .				
9	1969	8695.	9593.	1.221	0.445					I + .				
10	1968	9697.	10416.	1.109	0.554					I + .				
11	1967	10638.	11512.	0.973	0.525				.	I +				
12	1965	11537.	12484.	1.047	0.570					I .+				
13	1964	12367.	13409.	1.016	0.584					I. +				
14	1963	13177.	14405.	0.923	0.510				.	I +				
15	1962	14169.	15479.	1.049	0.561					I .+				
16	1961	14903.	16574.	0.756	0.299				.	I +				
17	1960	15645.	17458.	0.957	0.257				.	I +				
18	1959	16567.	18484.	1.018	0.274					I.+				
19	1958	17282.	19259.	1.046	0.309					I +.				
20	1956	18309.	20469.	0.981	0.263				.	I +				
21	1955	19010.	21533.	0.747	0.0					+				

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 905.2 1025.4

RAZONES PROMEDIOS Y/X = 1.133

X/Y = 0.883

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
6001J8	CHUACHI	CHUACHI	+04 32 00	+073 55 32	1930 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1962	1.1	16.0	103.6	58.7	122.3	187.6	158.7	123.0	67.2	89.2	53.8	11.2	992.4	1962
1963	7.6	35.1	10.7	88.1	135.8	101.6	84.0	78.0	67.5	82.4	103.4	15.9	810.3	1963
1964	0.0	12.3	4.5	102.2	122.4	106.0	100.0	100.0	85.8	93.4	63.4	39.4	829.4	1964
1965	10.5	4.5	20.7	111.6	172.0	89.5	105.5	82.0	50.8	91.7	146.8	13.5	899.1	1965
1966	5.8	20.8	55.4	62.7	48.8	98.6	88.0	152.2	84.6	-9.9	-9.9	94.7	-9.9	1966
1967	18.2	13.8	37.9	128.9	130.4	199.2	116.0	98.0	56.7	70.6	45.2	26.5	941.4	1967
1968	22.6	54.3	11.4	178.0	60.3	174.2	133.3	56.0	89.6	118.0	71.0	32.7	1001.4	1968
1969	32.7	22.5	24.4	146.6	111.6	177.9	90.9	141.9	69.1	163.5	62.3	43.7	1087.1	1969
1970	42.5	20.7	44.4	91.5	165.0	115.8	119.2	167.2	102.2	122.4	87.9	17.4	1096.2	1970
1971	73.1	24.0	57.0	129.3	189.0	135.9	164.0	133.9	97.4	76.7	60.9	16.7	1157.9	1971
1972	62.0	38.2	92.5	85.0	168.4	114.4	99.8	92.3	25.8	91.0	71.8	3.6	944.8	1972
1973	0.7	0.8	28.0	96.2	114.8	133.1	93.8	183.8	174.5	83.7	74.1	42.1	985.6	1973
1974	23.8	39.7	53.0	95.6	133.2	70.3	87.1	66.4	74.4	141.3	87.5	33.2	905.5	1974
1975	7.2	42.5	61.2	64.6	105.9	134.6	69.6	141.1	108.1	87.8	65.8	76.3	964.7	1975
1976	10.5	8.4	55.1	121.3	177.7	143.4	95.5	67.1	47.7	104.1	-9.9	10.2	-9.9	1976
1977	0.0	28.2	11.0	80.0	66.1	87.6	127.4	105.9	-9.9	44.1	49.9	5.2	-9.9	1977
1978	1.1	14.0	70.4	72.9	122.8	133.8	105.9	75.1	67.2	54.6	26.0	17.6	761.4	1978
1979	32.6	1.2	59.2	81.1	63.4	117.8	105.4	78.6	49.6	77.3	75.6	50.5	792.3	1979
NUMERO DE ANOS	18	18	18	18	18	18	18	18	17	17	16	18	15	
VALOR MAXIMO	73.1	54.3	103.6	178.0	189.0	199.2	164.0	183.8	174.5	163.5	146.8	94.7	1157.9	
CUARTIL SUPERIOR	32.6	35.1	59.2	121.3	165.0	143.4	119.2	141.1	93.5	111.0	81.5	42.1	1001.4	
MEDIANA	10.5	20.7	48.7	89.8	122.6	125.4	102.7	99.0	69.1	89.2	68.4	22.0	944.8	
CUARTIL INFERIOR	1.1	12.3	20.7	80.0	105.9	101.6	90.9	78.0	53.7	77.0	57.3	13.5	829.4	
VALOR MINIMO	0.0	0.8	4.5	56.2	48.8	70.3	69.6	56.0	25.8	44.1	26.0	3.6	761.4	
PROMEDIOS	19.6	22.1	44.5	98.6	122.8	129.0	108.0	107.9	77.5	93.6	71.6	30.6	944.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		925.7	
PORCENTAJES	2.1	2.4	4.8	10.6	13.3	13.9	11.7	11.7	8.4	10.1	7.7	3.3		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 56.

DEV. ESTANDAR	21.7	15.1	28.4	32.2	42.4	36.4	25.0	37.9	33.1	29.6	27.2	24.5	115.9	
COEF. VARIACION	1.110	0.686	0.638	0.327	0.346	0.282	0.231	0.351	0.426	0.316	0.380	0.802	0.123	
COEF. ASIMETRIA	1.323	0.485	0.423	0.926	-0.257	0.493	0.989	0.535	1.463	0.773	1.270	1.369	0.138	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212548	LA IBERIA	CHOCONTA	+05 02 00	+073 43 00	2760 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1956	30.7	29.6	93.4	45.3	86.5	160.4	114.9	143.9	141.5	135.2	82.4	79.0	1162.8
1957	0.4	27.6	73.8	96.8	178.4	94.6	120.6	75.7	88.1	111.5	69.0	11.7	948.6
1958	4.4	4.6	49.5	45.4	72.6	76.6	107.6	96.6	41.8	33.4	34.8	28.1	595.4
1959	6.3	11.5	30.9	35.6	88.2	104.0	192.0	127.1	98.5	97.3	69.6	22.5	883.5
1960	17.1	25.4	54.2	63.8	69.6	73.2	116.5	71.0	76.8	69.0	31.4	74.8	742.8
1961	8.4	0.4	46.4	96.2	36.0	167.8	75.6	93.2	50.2	104.7	96.2	12.0	787.1
1962	12.7	28.6	48.7	40.6	138.9	140.4	139.6	102.8	55.2	93.5	82.9	33.4	917.3
1963	5.9	32.0	4.2	125.6	198.6	52.2	112.9	103.5	60.4	51.0	110.8	12.8	909.9
1964	0.0	5.6	7.7	107.0	143.8	55.6	86.4	54.0	55.6	62.4	42.2	34.6	698.9
1965	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	113.4	39.4	62.9	77.8	12.8	-9.9
1966	5.8	6.4	94.6	41.0	36.2	77.6	89.5	84.3	40.2	62.9	132.9	54.1	725.5
1967	18.5	2.8	78.0	130.9	93.7	141.5	89.0	143.2	60.7	71.6	60.3	31.0	921.6
1968	17.6	15.7	26.1	201.0	59.0	158.6	170.9	82.2	51.3	65.6	44.9	13.1	910.0
1969	67.8	18.1	9.1	131.0	101.5	72.0	109.5	61.2	47.1	172.7	75.0	21.0	886.0
1970	44.5	32.2	35.6	67.0	110.0	136.4	110.8	64.2	102.2	85.2	55.7	14.5	862.3
1971	22.2	23.9	51.9	90.2	114.7	104.7	132.3	90.8	53.8	23.2	44.4	41.1	793.2
1972	59.8	12.7	35.9	142.1	163.7	161.5	114.0	71.0	59.0	40.0	40.0	6.0	905.7
1973	2.0	41.0	1.0	82.0	85.0	85.0	114.0	112.0	97.0	53.0	126.0	31.0	829.0
1974	28.0	36.0	91.0	90.0	80.0	71.0	110.0	90.0	52.0	67.0	41.0	2.0	758.0
1975	17.0	13.2	43.0	57.9	95.0	155.0	22.0	86.0	84.0	112.0	42.0	101.0	828.1
1976	10.0	25.0	101.0	132.0	105.0	254.0	198.1	74.2	87.5	67.2	52.7	18.0	1124.7
1977	7.9	15.1	20.1	85.9	45.1	73.5	130.0	106.3	86.2	86.1	58.6	15.9	670.7
1978	0.3	19.0	34.0	109.1	73.0	160.2	95.0	108.1	98.4	54.0	14.5	47.5	853.1
1979	30.2	40.7	44.2	22.9	88.1	120.7	60.1	62.7	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

ESTACION X LA IBERIA MUNICIPIO DE CHOCONTA PERIODO 1956 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. -2. -1. 0.0 +1. +2. +3.
1	1978	853.1	853.1	853.1	0.019	0.003	
2	1977	670.7	1523.8	761.9	-1.358	-0.209	
3	1976	1124.7	2648.5	882.8	2.068	0.114	
4	1975	628.1	3276.6	819.1	-0.170	0.087	
5	1974	758.0	4234.6	846.9	-0.699	-0.022	
6	1973	829.0	5063.6	843.9	-0.163	-0.047	
7	1972	905.7	5969.3	852.8	0.415	0.017	
8	1971	793.2	6762.5	845.3	-0.433	-0.050	
9	1970	862.3	7624.8	847.2	0.088	-0.036	
10	1969	886.0	8510.8	851.1	0.267	0.005	
11	1968	910.0	9420.8	856.4	0.448	0.075	
12	1967	921.6	10342.4	861.9	0.535	0.158	
13	1966	725.5	11067.9	851.4	-0.544	0.011	
14	1964	698.9	11766.8	840.5	-1.145	-0.167	
15	1963	909.9	12676.7	845.1	0.447	-0.098	
16	1962	917.3	13594.0	849.6	0.503	-0.019	
17	1961	787.1	14381.1	845.9	-0.479	-0.094	
18	1960	742.8	15123.9	840.2	-0.814	-0.221	
19	1959	883.5	16007.4	842.5	0.248	-0.182	
20	1958	595.4	16602.8	830.1	-1.926	-0.482	
21	1957	948.6	17551.4	835.8	0.739	-0.367	
22	1956	1162.8	18714.2	850.6	2.355	0.0	

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 22 ANOS = 850.6

DEVIACION ESTANDAR = 132.5

COEFICIENTE DE VARIACION = 0.156

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212548	LA IBERIA	CHOCONTA	+05 02 04	+073 43 15	2760 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	0.4	27.6	73.8	96.8	178.4	94.6	120.6	75.7	68.1	111.5	65.0	11.7	948.6	1957
1958	4.4	4.6	49.5	45.4	72.6	76.6	107.6	96.6	41.8	33.4	34.8	28.1	595.4	1958
1959	6.3	11.5	30.9	35.6	88.2	104.0	192.0	127.1	98.5	97.3	65.6	22.5	883.5	1959
1960	17.1	25.4	54.2	63.8	69.6	73.2	116.5	71.0	76.8	69.0	31.4	74.8	742.8	1960
1961	8.4	0.4	46.4	96.2	36.0	167.8	75.6	93.2	50.2	104.7	96.2	12.0	787.1	1961
1962	12.7	28.6	48.7	40.6	138.9	140.4	139.6	102.8	55.2	93.5	82.9	33.4	917.3	1962
1963	5.9	32.0	4.2	125.6	198.6	92.2	112.9	103.5	60.4	51.0	110.8	12.8	909.9	1963
1964	0.0	5.6	7.7	107.0	143.8	99.6	86.4	54.0	55.6	62.4	42.2	34.6	698.9	1964
1965	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	113.4	39.4	62.9	77.8	12.8	-9.9	1965
1966	5.8	6.4	94.6	41.0	36.2	77.6	89.5	84.3	40.2	62.9	132.9	54.1	725.9	1966
1967	18.5	2.8	78.0	130.9	93.7	141.9	89.0	143.2	60.7	71.6	60.3	31.0	921.6	1967
1968	17.6	15.7	26.1	201.0	59.0	158.6	170.9	82.2	51.3	69.6	44.9	13.1	910.0	1968
1969	67.8	18.1	9.1	131.0	101.5	72.0	109.5	61.2	47.1	172.7	75.0	21.0	886.0	1969
1970	44.5	32.2	35.6	67.0	110.0	136.4	110.8	64.2	102.2	89.2	55.7	14.5	862.3	1970
1971	22.2	23.9	51.9	90.2	114.7	104.7	132.3	90.8	53.8	23.2	44.4	41.1	793.2	1971
1972	59.8	12.7	35.9	142.1	163.7	161.5	114.0	71.0	59.0	40.0	40.0	6.0	905.7	1972
1973	2.0	41.0	1.0	82.0	65.0	85.0	114.0	112.0	97.0	53.0	126.0	31.0	829.0	1973
1974	28.0	36.0	91.0	90.0	60.0	71.0	110.0	90.0	52.0	67.0	41.0	2.0	758.0	1974
1975	17.0	13.2	43.0	57.9	95.0	155.0	22.0	86.0	84.0	112.0	42.0	101.0	828.1	1975
1976	10.0	25.0	101.0	132.0	105.0	254.0	198.1	74.2	67.5	67.2	52.7	18.0	1124.7	1976
1977	7.9	15.1	20.1	85.9	45.1	73.5	130.0	106.3	86.2	26.1	56.6	15.9	670.7	1977
1978	0.3	19.0	34.0	109.1	73.0	160.2	95.0	108.1	98.4	94.0	14.5	47.5	853.1	1978
1979	30.2	40.7	44.2	22.9	88.1	120.7	60.1	62.7	-9.9	-9.9	-9.9	-9.9	-9.9	1979
NUMERO DE ANOS	22	22	22	22	22	22	22	23	22	22	22	22	21	
VALOR MAXIMO	67.8	41.0	101.0	201.0	198.6	254.0	198.1	143.2	102.2	172.7	132.9	101.0	1124.7	
CUARTIL SUPERIOR	22.2	28.6	54.2	125.6	114.7	155.0	130.0	106.3	67.5	94.0	77.8	34.6	909.9	
MEDIANA	11.3	18.6	43.6	90.1	90.9	104.3	111.8	90.0	59.7	68.1	57.1	21.8	853.1	
CUARTIL INFERIOR	5.8	11.5	20.1	57.9	72.6	77.6	89.5	71.0	51.3	53.0	42.0	12.8	750.4	
VALOR MINIMO	0.0	0.4	1.0	22.9	36.0	71.0	22.0	54.0	39.4	23.2	14.5	2.0	595.4	
PROMEDIOS	17.6	19.9	44.6	90.6	98.9	119.1	113.5	90.2	67.5	74.3	63.8	29.0	835.6	
												TOTAL DE LOS PROMEDIOS MENSUALES =	829.0	
PORCENTAJES	2.1	2.4	5.4	10.9	11.9	14.4	13.7	10.9	8.1	9.0	7.7	3.5		
DEV. ESTANDAR	18.6	12.2	28.9	43.0	43.6	45.6	39.6	22.4	21.4	34.0	30.8	23.6	115.5	
COEF. VARIACION	1.061	0.616	0.648	0.474	0.441	0.383	0.349	0.249	0.316	0.458	0.484	0.813	0.138	
COEF. ASIMETRIA	1.584	0.142	0.431	0.561	0.719	1.216	0.238	0.468	0.356	0.979	0.662	1.715	0.155	

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 66.

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212548	LA IBERIA	CHOCONTA	+05 02 04	+073 43 19	2760 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	17.1	25.4	54.2	63.8	69.6	73.2	116.5	71.0	76.8	69.0	31.4	74.8	742.8	1960
1961	8.4	0.4	46.4	96.2	36.0	167.8	75.6	93.2	50.2	104.7	96.2	12.0	787.1	1961
1962	12.7	28.0	48.7	40.6	138.9	140.4	139.6	102.8	55.2	93.5	82.9	33.4	917.3	1962
1963	5.9	32.0	4.2	125.6	158.6	92.2	112.9	103.5	60.4	51.0	110.8	12.8	909.9	1963
1964	0.0	5.6	7.7	107.0	143.8	99.6	86.4	54.0	55.6	62.4	42.2	34.6	698.9	1964
1965	11.5	6.4	28.0	214.4	126.1	110.3	111.3	113.4	39.4	62.9	77.8	12.8	914.3	1965
1966	5.8	6.4	94.6	41.0	36.2	77.6	89.5	84.3	40.2	62.9	132.9	54.1	725.5	1966
1967	18.5	2.8	78.0	130.9	93.7	141.9	89.0	143.2	60.7	71.6	60.3	31.0	921.6	1967
1968	17.6	15.7	26.1	201.0	59.0	158.6	170.9	82.2	51.3	69.6	44.9	13.1	910.0	1968
1969	67.8	18.1	9.1	131.0	101.5	72.0	109.5	61.2	47.1	172.7	75.0	21.0	886.0	1969
1970	44.5	32.2	35.6	67.0	110.0	136.4	110.8	64.2	102.2	89.2	55.7	14.5	862.3	1970
1971	22.2	23.9	51.9	90.2	114.7	104.7	132.3	90.8	53.8	23.2	44.4	41.1	793.2	1971
1972	59.8	12.7	35.9	142.1	163.7	161.5	114.0	71.0	59.0	40.0	40.0	6.0	905.7	1972
1973	2.0	41.0	1.0	82.0	85.0	85.0	114.0	112.0	97.0	53.0	126.0	31.0	829.0	1973
1974	28.0	36.0	91.0	90.0	80.0	71.0	110.0	90.0	52.0	67.0	41.0	2.0	758.0	1974
1975	17.0	13.2	43.0	57.9	95.0	155.0	22.0	86.0	84.0	112.0	42.0	101.0	828.1	1975
1976	10.0	25.0	101.0	132.0	105.0	254.0	198.1	74.2	87.5	67.2	52.7	18.0	1124.7	1976
1977	7.9	15.1	20.1	85.9	45.1	73.5	130.0	106.3	86.2	26.1	58.6	15.9	670.7	1977
1978	0.3	19.0	34.0	109.1	73.0	160.2	95.0	108.1	98.4	94.0	14.5	47.5	853.1	1978
1979	30.1	40.7	44.2	22.9	88.1	120.7	60.1	62.7	106.4	268.3	178.3	60.6	1083.1	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	67.8	41.0	101.0	214.4	158.6	254.0	198.1	143.2	106.4	268.3	178.3	101.0	1124.7	
CUARTIL SUPERIOR	25.1	30.3	53.0	130.9	120.4	156.8	123.3	104.9	86.8	93.8	89.5	44.3	912.1	
MEDIANA	14.8	18.5	39.4	93.2	94.3	115.5	111.0	88.0	59.7	68.1	57.1	26.0	857.7	
CUARTIL INFERIOR	6.9	9.6	23.1	65.4	71.3	81.3	89.3	71.0	51.6	57.7	42.1	12.9	772.5	
VALOR MINIMO	0.0	0.4	1.0	22.9	36.0	71.0	22.0	54.0	39.4	23.2	14.5	2.0	670.7	
PROMEDIOS	19.4	20.0	42.7	101.5	98.1	122.8	109.4	88.7	68.2	83.0	70.4	31.9	856.1	
PORCENTAJES	2.3	2.3	5.0	11.9	11.5	14.3	12.8	10.4	8.0	9.7	8.2	3.7		
DEV. ESTANDAR	18.7	12.5	29.6	49.5	42.0	46.4	37.3	22.2	21.8	54.7	40.6	25.3	115.4	
COEF. VARIACION	0.968	0.624	0.694	0.488	0.428	0.378	0.341	0.251	0.320	0.659	0.577	0.795	0.135	
COEF. ASIMETRIA	1.500	0.153	0.594	0.701	0.593	1.083	0.140	0.527	0.484	2.341	1.208	1.309	0.635	

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 18. INDICE DE ARNOLDUS = 88.

INDICE DE IRREGULARIDAD INTERANUAL =1.42

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1046.	1004.	953.	856.	759.	708.	666.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

IMPRESO EN COLOMBIA POR DYNARANZO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212539	REPRESA SISGA	CHOCONTA	+05 05 00	+073 44 00	2675 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1952	19.3	18.0	3.4	17.5	54.3	67.8	104.5	101.9	30.1	67.3	82.6	19.2	605.9
1953	12.6	16.2	41.3	76.8	126.6	124.7	111.0	99.8	83.6	88.6	45.9	11.6	838.7
1954	9.2	38.7	27.1	122.3	138.8	108.8	145.0	74.4	32.5	219.3	57.6	21.5	995.2
1955	64.3	25.3	165.6	87.6	72.2	55.0	134.3	51.7	103.9	93.9	100.1	-9.9	-9.9
1956	20.3	25.6	77.0	32.3	68.9	114.9	82.5	104.2	80.7	131.3	55.6	53.2	846.5
1957	0.0	7.6	53.7	75.3	179.4	104.8	103.7	106.5	46.5	95.3	21.9	9.5	804.2
1958	8.5	8.3	71.8	36.8	-9.9	81.9	108.8	78.1	27.5	36.5	47.5	14.2	-9.9
1959	3.0	13.3	36.1	-9.9	-9.9	86.5	-9.9	104.3	68.7	85.6	-9.9	22.6	-9.9
1960	17.5	22.5	60.0	93.3	91.8	69.9	101.8	97.7	81.5	79.2	27.2	69.3	811.7
1961	27.9	0.0	52.6	75.5	34.2	140.9	86.0	84.4	50.7	120.5	118.2	4.7	795.6
1962	5.7	17.8	56.4	38.2	136.5	122.2	131.6	74.7	56.8	102.9	79.6	18.5	840.9
1963	2.2	44.3	14.2	102.4	128.5	100.0	115.8	94.7	58.2	74.9	128.4	11.1	874.7
1964	0.0	4.3	1.2	85.0	153.5	112.3	102.7	55.6	56.3	60.7	32.4	40.9	704.9
1965	33.9	9.8	24.7	169.7	143.4	101.1	161.1	118.6	52.9	98.6	69.6	20.0	1003.4
1966	2.9	6.6	107.8	50.6	67.9	119.1	90.6	60.5	50.8	55.2	109.3	67.1	788.4
1967	17.3	1.7	59.5	92.2	74.6	132.2	86.8	143.3	57.5	64.7	81.2	40.3	851.3
1968	30.9	15.8	23.6	173.1	55.9	141.4	187.5	94.4	58.2	58.2	39.7	10.8	889.5
1969	108.5	99.2	135.2	87.5	64.5	82.5	42.9	60.9	-9.9	-9.9	-9.9	-9.9	-9.9
1970	64.1	47.6	21.5	56.5	102.7	102.2	110.5	68.4	79.5	107.6	39.9	12.5	813.0
1971	24.0	34.2	63.6	94.3	104.7	88.9	88.6	89.8	51.9	27.0	45.4	35.5	747.5
1972	76.9	9.7	40.2	189.6	120.0	121.6	127.2	62.5	79.0	38.9	46.6	8.2	920.4
1973	9.5	12.3	6.2	85.3	70.1	84.8	113.1	98.9	95.7	56.2	98.9	28.0	759.0
1974	27.3	38.9	56.2	103.4	78.9	72.2	130.0	79.5	51.1	62.5	47.0	0.0	747.0
1975	10.1	53.5	37.2	67.0	68.2	169.0	57.7	93.6	58.0	89.7	50.9	111.7	866.6
1976	11.9	26.3	77.1	100.6	113.7	171.0	181.1	84.4	98.6	88.6	67.0	19.5	1039.8
1977	0.0	5.6	20.1	106.9	50.2	96.3	123.0	73.6	121.4	35.6	61.4	13.2	707.3
1978	3.5	33.2	36.3	148.1	63.4	121.8	91.9	100.1	90.1	80.5	19.9	23.7	812.5
1979	7.0	39.4	58.7	155.9	95.6	130.9	101.3	96.7	29.4	176.7	118.1	77.6	1089.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAN

ESTACION X REPRESA SISGA MUNICIPIO DE CHOCONTA PERIODO 1952 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1089.3	1089.3	1089.3	2.236	0.297				I +		•	
2	1978	812.5	1901.8	950.9	-0.244	0.265				• I +			
3	1977	707.3	2609.1	869.7	-1.187	0.107			•	I+			
4	1976	1039.8	3648.9	912.2	1.793	0.345				I +	•		
5	1975	866.6	4515.5	903.1	0.241	0.377				I .+			
6	1974	747.0	5262.5	877.1	-0.831	0.267			•	I +			
7	1973	759.0	6021.5	860.2	-0.723	0.171			•	I+			
8	1972	920.4	6941.9	867.7	0.723	0.267				I +	•		
9	1971	747.9	7689.8	854.4	-0.823	0.157			•	I+			
10	1970	813.0	8502.8	850.3	-0.240	0.126				• I+			
11	1968	889.5	9392.3	853.8	0.446	0.185				I+ •			
12	1967	851.3	10243.6	853.6	0.104	0.199				I*			
13	1966	788.4	11032.0	848.6	-0.460	0.137				• I+			
14	1965	1003.4	12035.4	859.7	1.467	0.332				I +	•		
15	1964	704.9	12740.3	849.4	-1.208	0.172			•	I+			
16	1963	874.7	13615.0	850.9	0.313	0.213				I +•			
17	1962	840.9	14455.9	850.3	0.010	0.215				• +			
18	1961	795.6	15251.5	847.3	-0.396	0.162				• I+			
19	1960	811.7	16063.2	845.4	-0.251	0.129				• I+			
20	1957	804.2	16867.4	843.4	-0.318	0.087				• +			
21	1956	846.5	17713.9	843.5	0.061	0.095				*			
22	1954	995.2	18709.1	850.4	1.393	0.280				I +	•		
23	1953	838.7	19547.8	849.9	-0.009	0.278				• +			
24	1952	605.9	20153.7	839.7	-2.095	0.0				+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 24 ANOS = 839.7

DESVIACION ESTANDAR = 111.6

COEFICIENTE DE VARIACION = 0.133

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212539	REPRESA SISGA	CHOCONTA	+05 05 14	+073 44 02	2675 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1953	12.6	16.2	41.3	76.8	126.6	124.7	111.0	99.8	83.6	88.6	46.9	11.6	838.7	1953
1954	9.2	38.7	27.1	122.3	138.8	108.8	145.0	74.4	32.5	219.3	57.6	21.5	995.2	1954
1955	64.3	25.3	165.6	87.6	72.2	55.0	134.3	51.7	103.9	93.9	100.1	-9.9	-9.9	1955
1956	20.3	25.6	77.0	32.3	68.9	114.9	82.5	104.2	80.7	131.3	55.6	53.2	846.5	1956
1957	0.0	7.6	53.7	75.3	179.4	104.8	103.7	106.5	46.5	95.3	21.9	9.5	804.2	1957
1958	8.5	8.3	71.8	36.8	-9.9	81.9	108.8	76.1	27.5	36.5	47.5	14.2	-9.9	1958
1959	3.0	14.3	36.1	-9.9	-9.9	86.5	-9.9	104.3	68.7	85.6	-9.9	22.6	-9.9	1959
1960	17.5	22.5	60.0	93.3	91.8	69.9	101.8	97.7	81.5	79.2	27.2	69.3	811.7	1960
1961	27.5	0.0	52.6	75.5	34.2	140.9	86.0	84.4	50.7	120.5	118.2	4.7	795.6	1961
1962	5.7	17.8	56.4	38.2	136.5	122.2	131.6	74.7	56.8	102.9	79.6	18.5	840.9	1962
1963	2.2	44.3	14.2	102.4	128.5	100.0	115.8	94.7	58.2	74.9	128.4	11.1	874.7	1963
1964	0.0	4.3	1.2	85.0	153.5	112.3	102.7	55.6	56.3	60.7	32.4	40.9	704.9	1964
1965	33.9	9.8	24.7	169.7	143.4	101.1	161.1	118.6	52.9	98.6	69.6	20.0	1003.4	1965
1966	2.9	0.6	107.8	50.6	67.9	119.1	90.6	60.5	60.8	55.2	109.3	67.1	788.4	1966
1967	17.3	1.7	59.5	92.2	74.6	132.2	86.8	143.3	57.5	64.7	61.2	40.3	851.3	1967
1968	30.9	15.8	23.6	173.1	55.9	141.4	167.5	94.4	58.2	58.2	35.7	10.8	889.5	1968
1969	108.5	99.2	135.2	87.5	64.5	82.5	42.9	60.9	-9.9	-9.9	-9.9	-9.9	-9.9	1969
1970	64.1	47.6	21.5	56.5	102.7	102.2	110.5	68.4	79.5	107.6	35.9	12.5	813.0	1970
1971	24.0	34.2	63.6	94.3	104.7	88.9	88.6	86.8	51.9	27.0	45.4	35.5	747.5	1971
1972	76.9	9.7	40.2	189.6	120.0	121.6	127.2	62.5	79.0	38.9	46.6	8.2	920.4	1972
1973	9.5	12.3	6.2	85.3	70.1	84.8	113.1	98.9	95.7	56.2	98.9	28.0	759.0	1973
1974	27.3	38.9	56.2	103.4	78.9	72.2	130.0	79.5	51.1	62.5	47.0	0.0	747.0	1974
1975	10.1	5.5	37.2	67.0	68.2	169.0	57.7	93.6	58.0	89.7	80.9	111.7	866.6	1975
1976	11.9	20.3	77.1	100.6	113.7	171.0	181.1	84.4	98.6	88.6	67.0	19.5	1039.8	1976
1977	0.0	5.6	20.1	106.9	50.2	96.3	123.0	73.6	121.4	35.6	61.4	13.2	707.3	1977
1978	3.5	33.2	36.3	148.1	63.4	121.6	91.9	100.1	90.1	80.5	19.9	23.7	812.5	1978
1979	7.0	39.4	58.7	155.9	95.6	130.9	101.3	96.7	29.4	178.7	118.1	77.6	1089.3	1979
NUMERO DE ANOS	27	27	27	26	25	27	26	27	26	26	25	25	23	
VALOR MAXIMO	108.5	99.2	165.6	189.6	179.4	171.0	167.5	143.3	121.4	219.3	128.4	111.7	1089.3	
CUARTIL SUPERIOR	27.9	38.7	63.6	106.9	127.5	124.7	130.0	99.8	81.5	98.6	80.0	40.6	889.5	
MEDIANA	11.9	17.8	52.6	89.9	91.8	108.8	109.6	85.8	58.1	83.0	55.6	20.0	838.7	
CUARTIL INFERIOR	3.5	8.3	24.7	75.3	68.0	86.5	90.6	73.6	51.1	58.2	42.6	11.3	788.4	
VALOR MINIMO	0.0	0.0	1.2	32.3	34.2	55.0	42.9	51.7	27.5	27.0	19.9	0.0	704.9	
PROMEDIOS	22.2	24.4	52.8	96.4	96.2	109.5	112.2	87.1	66.2	85.8	64.4	29.8	849.9	
									TOTAL DE LOS PROMEDIOS MENSUALES =				846.8	
PORCENTAJES	2.6	2.9	6.2	11.4	11.4	12.9	13.2	10.3	7.8	10.1	7.6	3.5		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB
INDICE DE FOURNIER = 15. INDICE DE ARREGUDS = 64.

DEV. ESTANDAR	26.8	21.3	37.3	42.1	37.0	28.1	33.0	20.8	23.6	42.8	31.8	27.0	102.1
COEF. VARIACION	1.206	0.875	0.706	0.437	0.385	0.256	0.294	0.238	0.357	0.499	0.494	0.906	0.120
COEF. ASIMETRIA	1.901	1.757	1.412	0.659	0.462	0.335	0.417	0.439	0.452	1.473	0.634	1.584	0.845

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA ORSTOM

Biblioteca Ciencia y Tecnología

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212539	REPRESA SISGA	CHOCONTA	+05 05 14	+073 44 02	2675 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	17.5	22.5	60.0	93.3	91.8	69.9	101.8	97.7	81.5	79.2	27.2	69.3	811.7	1960
1961	27.9	0.0	52.6	75.5	34.2	140.9	86.0	84.4	50.7	120.5	118.2	4.7	795.6	1961
1962	5.7	17.8	56.4	38.2	136.5	122.2	131.6	74.7	56.8	102.9	79.6	18.5	840.9	1962
1963	2.2	44.3	14.2	102.4	128.5	100.0	115.8	94.7	58.2	74.9	128.4	11.1	874.7	1963
1964	0.0	4.3	1.2	85.0	153.5	112.3	102.7	55.6	56.3	60.7	32.4	40.9	704.9	1964
1965	33.9	9.8	24.7	169.7	143.4	101.1	161.1	118.6	52.9	98.6	69.6	20.0	1003.4	1965
1966	2.9	8.6	107.8	50.6	67.9	119.1	90.6	60.5	50.8	55.2	109.3	67.1	788.4	1966
1967	17.3	1.7	59.5	92.2	74.6	132.2	86.8	143.3	57.5	64.7	81.2	40.3	851.3	1967
1968	30.9	15.8	23.6	173.1	55.9	141.4	187.5	94.4	58.2	58.2	39.7	10.8	889.5	1968
1969	108.5	99.2	135.2	87.6	64.5	82.5	42.9	60.9	13.4	82.6	56.0	14.8	848.0	1969
1970	64.1	47.6	21.5	56.5	102.7	102.2	110.5	68.4	79.5	107.6	39.9	12.5	813.0	1970
1971	24.0	34.2	63.6	94.3	104.7	88.9	88.6	89.8	51.9	27.0	45.4	35.5	747.9	1971
1972	76.9	9.7	40.2	189.6	120.0	121.6	127.2	62.5	79.0	38.9	46.6	8.2	920.4	1972
1973	9.5	12.3	6.2	85.3	70.1	84.8	113.1	98.9	95.7	56.2	98.9	28.0	759.0	1973
1974	27.3	38.9	56.2	103.4	78.9	72.2	130.0	79.5	51.1	62.5	47.0	0.0	747.0	1974
1975	10.1	53.5	37.2	67.0	68.2	169.0	57.7	93.6	58.0	89.7	50.9	111.7	866.6	1975
1976	11.9	26.3	77.1	100.6	113.7	171.0	181.1	84.4	98.6	88.6	67.0	19.5	1039.8	1976
1977	0.0	5.6	20.1	106.9	50.2	96.3	123.0	73.6	121.4	35.6	61.4	13.2	707.3	1977
1978	3.5	33.2	36.3	148.1	63.4	121.8	91.9	100.1	90.1	80.5	19.9	23.7	812.5	1978
1979	7.0	39.4	58.7	155.9	95.6	130.9	101.3	96.7	29.4	178.7	118.1	77.6	1089.3	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	108.5	99.2	135.2	189.6	153.5	171.0	187.5	143.3	121.4	178.7	128.4	111.7	1089.3	
CUARTIL SUPERIOR	29.4	39.1	59.8	127.5	116.8	131.5	128.6	97.2	80.5	94.1	90.0	40.6	882.1	
MEDIANA	14.6	20.1	46.4	93.8	85.3	115.7	106.6	87.1	57.8	77.0	58.7	19.8	826.9	
CUARTIL INFERIOR	4.6	8.1	22.5	80.3	66.2	92.6	89.6	71.0	51.5	57.2	42.6	11.8	773.7	
VALOR MINIMO	0.0	0.0	1.2	38.2	34.2	69.9	42.9	55.6	13.4	27.0	19.9	0.0	704.9	
PROMEDIOS	24.1	26.1	47.6	103.8	90.9	114.0	111.6	86.6	64.5	78.1	66.8	31.4	845.6	
PORCENTAJES	2.8	3.1	5.6	12.3	10.8	13.5	13.2	10.2	7.6	9.2	7.9	3.7		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 84.

INDICE DE IRREGULARIDAD INTERANUAL =1.37

DEV. ESTANDAR	28.5	23.9	33.1	42.3	33.5	28.6	36.1	21.2	24.9	34.2	32.7	29.0	104.1
COEF. VARIACION	1.186	0.913	0.695	0.408	0.368	0.251	0.323	0.245	0.385	0.437	0.490	0.926	0.123

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1017.	979.	933.	846.	758.	712.	674.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.861	1.549	1.047	0.657	0.322	0.400	0.464	0.818	0.345	1.219	0.569	1.472	0.924

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212027	SAUCIO	CHUCUNTA	+05 07 00	+073 42 00	2670 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1948	17.0	21.0	42.5	122.5	133.5	104.6	122.7	89.3	74.3	46.5	73.5	20.5	867.9
1949	28.0	20.8	56.0	147.0	149.5	130.0	106.0	115.0	84.5	65.7	75.1	14.4	996.0
1950	63.8	48.0	63.2	86.5	138.0	93.6	106.3	64.6	87.7	125.5	51.3	45.0	973.5
1951	15.0	77.0	109.1	126.0	144.5	185.0	201.7	95.0	72.0	124.0	79.2	14.0	1242.5
1952	10.5	33.0	20.0	193.0	122.5	133.0	150.8	115.7	49.5	63.5	85.5	0.0	977.0
1953	4.5	5.0	44.0	68.5	111.0	145.0	151.0	127.0	77.0	104.0	49.0	10.0	896.0
1954	14.0	31.0	30.0	115.0	148.0	114.1	166.0	95.5	37.5	156.5	54.0	16.0	977.6
1955	49.0	3.0	25.0	38.0	22.0	38.5	110.0	44.0	113.0	67.0	79.0	34.0	622.5
1956	13.0	9.0	71.0	41.2	72.9	160.2	109.8	100.8	68.6	86.5	34.5	40.0	807.5
1957	7.5	6.0	42.0	52.6	186.9	130.6	135.8	112.6	49.9	72.0	5.2	16.0	817.1
1958	2.6	3.5	60.4	35.8	73.5	104.0	166.8	134.1	25.7	31.2	37.0	16.0	690.6
1959	1.0	9.0	30.0	34.5	89.0	84.2	180.0	69.1	63.3	72.5	39.7	23.7	656.0
1960	-9.9	-9.9	31.0	52.0	70.0	85.0	97.2	150.0	75.5	55.5	11.2	47.0	-9.9
1961	17.5	0.0	59.0	70.8	38.0	197.0	105.0	87.5	48.5	122.0	89.0	3.0	837.3
1962	2.0	21.0	44.5	31.0	127.0	137.0	176.0	64.0	52.0	93.0	56.5	21.0	825.0
1963	0.0	52.5	8.0	97.0	155.0	108.0	154.0	130.0	53.5	32.0	92.5	14.0	896.5
1964	0.0	0.0	2.0	62.0	144.5	99.0	127.0	56.0	57.0	47.0	37.5	11.0	643.0
1965	29.0	12.0	25.0	134.0	165.0	114.5	230.5	135.6	49.5	107.0	72.0	24.5	1098.6
1966	3.0	13.0	78.0	24.0	35.0	90.0	83.5	58.5	53.9	43.9	127.5	66.3	676.6
1967	26.5	1.0	47.5	104.0	64.0	160.5	118.0	185.5	49.5	34.5	75.5	38.5	905.0
1968	18.0	42.0	23.5	134.5	51.0	137.5	243.5	89.0	64.0	77.5	37.5	8.5	926.5
1969	36.0	11.5	5.0	118.7	86.0	67.5	135.0	79.0	17.1	145.0	65.0	26.0	805.8
1970	79.5	48.0	20.0	66.0	97.0	142.0	132.0	57.0	101.0	84.0	27.0	15.0	868.5
1971	32.0	23.0	50.0	109.0	122.0	112.0	131.0	59.0	46.0	14.3	38.9	40.2	777.4
1972	76.7	4.8	57.7	182.5	116.7	167.6	209.0	79.0	78.0	34.0	59.5	9.0	1074.5
1973	3.0	18.0	2.0	64.0	75.0	89.5	106.6	151.2	97.0	76.0	61.8	16.8	760.9
1974	-9.9	-9.9	87.5	85.0	62.5	62.0	122.0	64.0	46.5	30.0	70.0	12.0	-9.9
1975													
1976													
1977													
1978	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	95.7	54.2	48.7	12.2	10.0	-9.9
1979	7.4	21.7	65.1	91.8	14.5	30.6	4.4	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

ESTACION X SAUCIO MUNICIPIO DE CHOCONTA PERIODO 1948 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I
1	1973	760.9	760.9	760.9	-0.707	-0.122				+I			
2	1972	1074.5	1835.4	917.7	1.394	0.118				I+			
3	1971	777.4	2612.8	870.9	-0.596	0.016				+			
4	1970	868.5	3481.3	870.3	0.014	0.018				*			
5	1969	805.8	4287.1	857.4	-0.406	-0.052				+			
6	1968	926.5	5213.6	868.9	0.403	0.018				+			
7	1967	905.0	6118.6	874.1	0.259	0.062				+			
8	1966	676.6	6795.2	849.4	-1.271	-0.157				+I			
9	1965	1096.6	7892.8	877.1	1.555	0.111				I+			
10	1964	643.0	8535.8	853.7	-1.496	-0.147				+I			
11	1963	896.5	9433.3	857.6	0.202	-0.112				+I			
12	1962	825.0	10258.3	854.9	-0.277	-0.160				+I			
13	1961	837.3	11095.6	853.5	-0.195	-0.193				*I			
14	1959	696.0	11791.6	842.3	-1.141	-0.390				I			
15	1958	690.6	12482.2	832.1	-1.177	-0.593				I			
16	1957	817.1	13299.3	831.2	-0.330	-0.650				I			
17	1956	807.5	14106.8	829.8	-0.394	-0.718				I			
18	1955	622.5	14729.3	818.3	-1.634	-0.999				I			
19	1954	977.6	15706.9	826.7	0.745	-0.871				I			
20	1953	896.0	16602.9	830.1	0.198	-0.837				I			
21	1952	977.0	17579.9	837.1	0.741	-0.709				I			
22	1951	1242.5	18822.4	855.6	2.519	-0.275				I			
23	1950	973.5	19795.9	860.7	0.717	-0.151				I			
24	1949	996.0	20791.9	866.3	0.868	-0.002				+			
25	1948	867.9	21659.8	866.4	0.010	0.0				*			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I

PROMEDIO DE LOS 25 ANOS = 866.4

DESVIACION ESTANDAR = 149.3

COEFICIENTE DE VARIACION = 0.172

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212027	SAUCIO	CHOCONTA	+05 06 59	+073 42 06	2670 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	7.5	6.0	42.0	52.6	166.9	130.6	135.8	112.6	49.9	72.0	5.2	16.0	817.1	1957
1958	2.6	3.5	60.4	35.8	73.5	104.0	166.8	134.1	25.7	31.2	37.0	16.0	690.6	1958
1959	1.0	9.0	30.0	34.3	89.0	84.2	160.0	69.1	63.3	72.5	35.7	23.7	696.0	1959
1960	-9.9	-9.9	31.0	52.0	70.0	85.0	97.2	150.0	75.5	55.5	11.2	47.0	-9.9	1960
1961	17.5	0.0	59.0	70.8	38.0	197.0	105.0	87.5	48.5	122.0	89.0	3.0	837.3	1961
1962	2.0	21.0	44.5	31.0	127.0	137.0	176.0	64.0	52.0	93.0	56.5	21.0	825.0	1962
1963	0.0	52.5	8.0	97.0	155.0	108.0	154.0	130.0	53.5	32.0	92.5	14.0	896.5	1963
1964	0.0	0.0	2.0	62.0	144.5	99.0	127.0	56.0	57.0	47.0	37.5	11.0	643.0	1964
1965	29.0	12.0	25.0	134.0	165.0	114.5	230.5	135.6	49.5	107.0	72.0	24.5	1098.6	1965
1966	3.0	13.0	78.0	24.0	35.0	90.0	83.5	58.5	53.9	43.9	127.5	66.3	676.6	1966
1967	26.5	1.0	47.5	104.0	64.0	160.5	118.0	185.5	49.5	34.5	75.5	38.5	905.0	1967
1968	18.0	42.0	23.5	134.5	81.0	137.5	243.5	89.0	64.0	77.5	37.5	8.5	926.5	1968
1969	36.0	11.5	5.0	118.7	86.0	67.5	135.0	79.0	17.1	149.0	69.0	36.0	805.8	1969
1970	79.5	48.0	20.0	66.0	97.0	142.0	132.0	57.0	101.0	84.0	27.0	15.0	868.5	1970
1971	32.0	23.0	50.0	109.0	122.0	112.0	131.0	59.0	46.0	14.3	36.9	40.2	777.4	1971
1972	76.7	4.8	57.7	182.5	116.7	167.6	209.0	79.0	78.0	34.0	59.5	9.0	1074.5	1972
1973	3.0	18.0	2.0	64.0	75.0	89.5	106.6	151.2	57.0	76.0	61.8	16.8	760.9	1973
1974	-9.9	-9.9	67.5	85.0	62.5	62.0	122.0	64.0	46.5	30.0	70.0	12.0	-9.9	1974
1975														1975
1976														1976
1977														1977
1978	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	95.7	54.2	48.7	12.2	10.0	-9.9	1978
1979	7.4	21.7	65.1	91.8	14.5	30.6	4.4	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1979
NUMERO DE ANOS	17	17	19	19	19	19	19	19	19	19	19	19	16	
VALOR MAXIMO	79.5	52.5	87.5	182.5	166.9	197.0	243.5	185.5	101.0	149.0	127.5	66.3	1098.6	
CUARTIL SUPERIOR	30.5	22.3	59.0	109.0	127.0	137.5	176.0	134.1	64.0	84.0	72.0	36.0	900.8	
MEDIANA	7.5	12.0	42.0	70.8	86.0	108.0	132.0	87.5	53.5	55.5	56.5	16.0	821.0	
CUARTIL INFERIOR	2.3	4.1	20.0	52.0	62.5	85.0	106.6	64.0	48.5	34.0	37.0	11.0	728.4	
VALOR MINIMO	0.0	0.0	2.0	24.0	14.5	30.6	4.4	56.0	17.1	14.3	5.2	3.0	643.0	
PROMEDIOS	20.1	16.9	38.9	81.5	93.3	111.5	139.9	97.7	57.0	64.4	53.4	22.6	831.2	
									TOTAL DE LOS PROMEDIOS MENSUALES =				797.1	
PORCENTAJES	2.5	2.1	4.9	10.2	11.7	14.0	17.5	12.3	7.1	8.1	6.7	2.8		

TRIMESTRE MAS LLUVIOSO JUN JUL AGO **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 25. INDICE DE ARNOLDUS = 66.

DEV. ESTANDAR	25.0	16.5	25.6	41.9	47.4	40.2	55.0	39.3	20.4	35.5	31.0	16.1	130.9
COEF. VARIACION	1.242	0.976	0.659	0.514	0.508	0.360	0.393	0.402	0.358	0.550	0.580	0.715	0.157
COEF. ASIMETRIA	1.585	1.136	0.140	0.693	0.361	0.183	-0.194	0.757	0.494	0.832	0.499	1.349	0.643

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212083	LAS GRANJAS	EL COLEGIO	+04 26 00	+074 37 00	1400 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1961	-9.9	-9.9	-9.9	-9.9	42.8	144.9	74.8	16.8	99.9	253.8	255.6	32.7	-9.9
1962	59.2	121.8	219.9	128.1	173.9	103.0	61.7	122.6	42.6	239.5	245.4	230.1	1748.2
1963	78.6	140.1	89.4	210.7	384.1	166.2	95.1	58.2	22.9	204.8	98.5	53.6	1604.2
1964	19.3	106.8	91.6	300.0	145.8	270.1	134.9	238.8	217.3	237.0	142.0	145.1	2052.7
1965	83.2	61.0	63.6	235.5	-9.9	-9.9	-9.9	44.1	67.6	233.5	273.2	127.2	-9.9
1966	20.2	19.5	76.2	132.6	237.4	103.0	118.3	70.7	103.2	209.7	193.1	65.8	1349.7
1967													
1968	117.2	66.5	84.1	86.4	245.3	127.7	37.6	128.1	245.9	424.6	364.4	146.3	2074.1
1969	31.6	35.5	53.7	-9.9	343.2	122.7	-9.9	-9.9	-9.9	381.3	140.8	-9.9	-9.9
1970	218.2	150.1	115.8	-9.9	261.7	12.1	147.3	88.3	192.6	-9.9	-9.9	-9.9	-9.9
1971	459.2	256.2	365.5	153.3	536.5	166.3	111.3	161.5	191.3	332.7	383.1	162.5	3321.8
1972	90.0	99.3	113.4	242.9	164.1	106.2	0.5	8.2	41.5	123.0	261.0	104.0	1354.1
1973	42.0	23.0	107.0	139.0	135.0	108.0	130.0	127.0	173.0	251.0	173.0	166.0	1574.0
1974	171.0	306.0	182.0	192.0	75.0	20.0	31.0	127.0	225.0	263.0	152.0	29.0	1773.0
1975	57.0	162.5	121.0	143.0	136.0	67.0	202.0	77.0	148.0	279.0	262.0	308.0	1982.5
1976	29.0	93.0	360.0	320.0	87.0	50.0	30.0	36.0	-9.9	345.0	237.0	66.0	-9.9
1977	40.0	23.5	180.0	218.0	102.0	62.0	53.0	70.0	119.0	145.0	286.0	64.0	1362.5
1978	35.0	57.0	211.0	295.0	143.0	57.0	65.0	59.0	55.0	94.0	119.0	60.0	1270.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARAJO

ESTACION A LAS GRANJAS MUNICIPIO DE LL COLEGIO PERIODO 1961 - 1978 COEF DE CORRECCION 1.000

N	AN	I A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1978	1270.0	1270.0	1270.0	-0.931	-0.291				+ I			
2	1977	1382.5	2652.5	1326.3	-0.730	-0.515				+ I			
3	1976	1582.5	4235.0	1345.0	-0.243	-0.411				+ I	.		
4	1975	1773.0	6008.0	1502.0	-0.031	-0.421				+ .			
5	1974	1574.0	7582.0	1596.4	-0.387	-0.542				+ . I			
6	1973	1354.1	9336.1	1556.0	-0.781	-0.786				* I			
7	1972	3321.8	12657.9	1808.3	2.739	0.069				+		.	
8	1968	2074.1	14732.0	1841.5	0.507	0.228				I + .			
9	1966	1345.7	16081.7	1786.9	-0.785	-0.019			.	+			
10	1969	2052.7	18134.4	1813.9	0.469	0.128				I+ .			
11	1963	1609.2	19736.6	1794.4	-0.333	0.024			.	+			
12	1962	1746.2	21488.8	1790.6	-0.076	0.0				*			

N	AN	I A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 12 ANOS = 1790.6

DEVIACION ESTANDAR = 559.0

COEFICIENTE DE VARIACION = 0.312

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IDAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212083	LAS GRANJAS	EL COLEGIO	+04 33 20	+074 26 16	1450 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1961	-9.9	-9.9	-9.9	-9.9	42.8	144.9	74.8	16.8	99.9	253.8	288.6	32.7	-9.9	1961
1962	59.2	121.8	219.9	128.1	173.9	103.0	61.7	122.6	42.6	239.9	249.4	230.1	1748.2	1962
1963	78.6	140.1	89.4	210.7	364.1	168.2	95.1	58.2	22.9	204.8	98.5	53.6	1604.2	1963
1964	19.3	106.8	91.6	300.0	145.8	270.1	134.9	238.8	217.3	237.0	142.0	149.1	2052.7	1964
1965	83.2	61.0	63.6	235.5	-9.9	-9.9	-9.9	44.1	67.6	233.5	273.2	127.2	-9.9	1965
1966	20.2	19.5	76.2	132.6	237.4	103.0	118.3	70.7	103.2	209.7	193.1	65.8	1349.7	1966
1967														1967
1968	117.2	66.5	84.1	86.4	245.3	127.7	37.6	128.1	245.9	424.6	364.4	146.3	2074.1	1968
1969	31.6	35.5	63.7	-9.9	343.2	122.7	-9.9	-9.9	-9.9	381.3	140.8	-9.9	-9.9	1969
1970	218.2	150.1	115.8	-9.9	261.7	12.1	147.3	88.3	192.6	-9.9	-9.9	-9.9	-9.9	1970
1971														1971
1972	90.0	99.3	113.4	242.9	164.1	106.2	0.5	8.2	41.5	123.0	261.0	104.0	1354.1	1972
1973	42.0	23.0	107.0	139.0	126.0	108.0	130.0	127.0	173.0	251.0	173.0	166.0	1574.0	1973
1974	171.0	300.0	182.0	192.0	75.0	20.0	31.0	127.0	225.0	263.0	152.0	29.0	1773.0	1974
1975	57.0	162.5	121.0	143.0	136.0	67.0	202.0	77.0	148.0	279.0	262.0	308.0	1982.5	1975
1976	29.0	93.0	360.0	320.0	87.0	90.0	30.0	36.0	-9.9	345.0	237.0	66.0	-9.9	1976
1977	40.0	23.5	180.0	218.0	102.0	82.0	53.0	70.0	119.0	145.0	266.0	64.0	1382.5	1977
1978	35.0	57.0	211.0	295.0	143.0	57.0	65.0	59.0	55.0	94.0	119.0	80.0	1270.0	1978
NUMERO DE ANOS	15	15	15	13	15	15	14	15	14	15	15	14	11	
VALOR MAXIMO	218.2	300.0	360.0	320.0	364.1	270.1	202.0	238.8	245.9	424.6	364.4	308.0	2074.1	
CUARTIL SUPERIOR	90.0	140.1	182.0	268.9	245.3	127.7	130.0	127.0	192.6	279.0	262.0	149.1	******	
MEDIANA	57.0	93.0	113.4	210.7	145.8	103.0	69.9	70.7	111.1	239.9	237.0	92.0	1604.2	
CUARTIL INFERIOR	31.6	35.5	84.1	135.8	102.0	82.0	37.6	44.1	55.0	204.8	142.0	64.0	******	
VALOR MINIMO	19.3	19.5	53.7	86.4	42.8	12.1	0.5	8.2	22.9	94.0	98.5	29.0	1270.0	
PROMEDIOS	72.8	97.7	137.9	203.3	178.4	106.8	84.4	84.8	125.3	245.6	213.5	115.8	1651.4	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1666.3	
PORCENTAJES	4.4	5.9	8.3	12.2	10.7	6.4	5.1	5.1	7.5	14.7	12.8	7.0		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 36. INDICE DE ARNOLDUS = 161.

DEV. ESTANDAR	57.5	74.6	80.7	74.4	97.8	61.5	55.9	57.9	75.5	89.9	74.6	79.5	296.5
COEF. VARIACION	0.791	0.763	0.585	0.366	0.548	0.575	0.663	0.683	0.603	0.366	0.349	0.686	0.180
COEF. ASIMETRIA	1.634	1.560	1.626	0.119	0.812	1.065	0.556	1.251	0.243	0.316	0.187	1.229	0.235

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212083	LAS GRANJAS	EL COLEGIO	+04 33 20	+074 26 16	1450 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	120.4	93.4	120.4	222.7	144.5	105.0	117.6	91.1	143.9	218.5	178.3	116.3	1672.1	1960
1961	100.5	85.8	208.9	150.1	42.8	144.9	74.8	16.8	99.9	253.8	255.6	32.7	1466.6	1961
1962	59.2	121.8	219.9	128.1	173.9	103.0	61.7	122.6	42.6	239.9	245.4	230.1	1748.2	1962
1963	78.6	140.1	89.4	210.7	364.1	168.2	95.1	58.2	22.9	204.8	98.5	53.6	1604.2	1963
1964	19.3	100.8	91.6	300.0	145.8	270.1	134.9	238.8	217.3	237.0	142.0	149.1	2052.7	1964
1965	83.2	61.0	63.6	235.5	302.8	58.1	34.0	44.1	67.6	233.5	273.2	127.2	1563.8	1965
1966	20.2	19.5	76.2	132.6	237.4	103.0	118.3	70.7	103.2	209.7	193.1	65.8	1349.7	1966
1967	80.7	150.6	156.6	195.5	176.4	148.1	102.1	80.0	62.2	227.2	345.1	118.4	1842.9	1967
1968	117.2	66.5	84.1	86.4	245.3	127.7	37.6	128.1	245.9	424.6	364.4	146.3	2074.1	1968
1969	31.6	35.5	53.7	279.2	343.2	122.7	47.4	64.5	142.6	381.3	140.8	141.7	1784.2	1969
1970	218.2	150.1	115.8	218.3	261.7	12.1	147.3	88.3	192.6	221.3	238.6	46.6	1910.9	1970
1971	179.5	128.7	302.2	225.7	282.4	83.6	43.7	73.8	97.4	295.1	218.5	140.3	2070.9	1971
1972	90.0	99.3	113.4	242.9	164.1	106.2	0.5	8.2	41.5	123.0	261.0	104.0	1354.1	1972
1973	42.0	23.0	107.0	139.0	135.0	108.0	130.0	127.0	173.0	251.0	173.0	166.0	1574.0	1973
1974	171.0	306.0	182.0	192.0	75.0	20.0	31.0	127.0	225.0	263.0	152.0	29.0	1773.0	1974
1975	57.0	162.5	121.0	143.0	136.0	87.0	202.0	77.0	148.0	279.0	262.0	308.0	1982.5	1975
1976	29.0	93.0	360.0	320.0	87.0	90.0	30.0	36.0	157.0	345.0	237.0	66.0	1850.0	1976
1977	40.0	23.5	180.0	218.0	102.0	82.0	53.0	70.0	119.0	145.0	286.0	64.0	1382.5	1977
1978	35.0	57.0	211.0	295.0	143.0	57.0	65.0	59.0	55.0	94.0	119.0	80.0	1270.0	1978
1979	43.5	70.0	158.2	244.6	165.8	190.2	100.0	123.1	139.7	306.4	340.8	87.7	1970.6	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	218.2	306.0	360.0	320.0	364.1	270.1	202.0	238.8	245.9	424.6	364.4	308.0	2074.1	
CUARTIL SUPERIOR	108.8	134.4	195.4	243.7	253.5	136.3	117.9	122.8	165.0	287.0	267.6	144.0	1940.7	
MEDIANA	68.9	93.2	120.7	218.1	164.9	104.0	69.9	75.4	129.3	238.4	237.8	110.1	1760.6	
CUARTIL INFERIOR	37.5	59.0	90.5	140.5	135.5	82.8	40.6	58.6	64.9	214.1	162.5	64.9	1520.3	
VALOR MINIMO	19.3	19.5	53.7	86.4	42.8	12.1	0.5	8.2	22.9	94.0	98.5	29.0	1270.0	
PROMEDIOS	80.8	99.7	150.8	209.0	187.4	109.3	81.3	85.2	124.8	247.7	226.2	113.6	1715.8	
PORCENTAJES	4.7	5.8	8.8	12.2	10.9	6.4	4.7	5.0	7.3	14.4	13.2	6.6		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 36. INDICE DE ARNOLDUS = 166.

INDICE DE IRREGULARIDAD INTERANUAL = 1.48

DEV. ESTANDAR	56.4	65.9	79.8	63.8	91.7	58.2	50.1	50.8	65.2	79.8	76.1	68.4	258.9
COEF. VARIACION	0.698	0.660	0.529	0.305	0.489	0.532	0.616	0.596	0.522	0.322	0.337	0.602	0.151

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	2142.	2048.	1934.	1716.	1498.	1384.	1290.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.108	1.530	1.205	-0.099	0.598	0.900	0.616	1.308	0.221	0.272	0.135	1.305	-0.227

IMPRESO EN COLOMBIA POR DANAGANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212107	EL CORAZON	FACATATIVA	+04 52 00	+074 17 00	2530 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1974	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	64.0	125.0	127.0	103.0	40.0	-9.9
1975	10.0	112.0	124.0	59.0	162.0	39.0	86.0	49.0	69.0	90.0	128.0	97.0	1025.0
1976	45.0	92.0	114.0	130.0	150.0	66.0	38.0	9.0	49.0	154.0	62.0	32.0	941.0
1977	6.0	19.0	92.0	85.0	67.0	64.0	41.0	84.0	80.0	125.0	62.0	30.0	759.0
1978	13.0	36.0	171.0	120.0	48.0	67.0	38.0	43.0	32.0	165.0	73.0	41.0	847.0
1979	59.0	13.0	81.0	153.0	34.0	93.0	37.0	59.0	141.0	207.0	190.0	75.0	1146.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR CARANDAJO

ESTACION X EL CORAZON MUNICIPIO DE FACATATIVA PERIODO 1974 - 1979 COEF DE CORRECCION 1.000

ESTACION Y VENTALARGA MUNICIPIO DE ZIPACUIRA PERIODO 1974 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	COY	RAN	FCAN	R = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	1146.	1168.	1.073	0.083					+				
2	1978	1593.	2146.	0.947	0.033					+				
3	1977	2752.	3089.	0.881	-0.075				•	+				
4	1976	3653.	4039.	1.084	0.002					+	•			
5	1975	4718.	5162.	0.999	0.0					*				
N	AN	CLX	COY	RAN	FCAN	R = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 543.6 1032.3

RAZONES PROMEDIOS Y/X = 1.094

X/Y = 0.914

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* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA OFSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212107	EL CORAZON	FACATATIVA	+04 51 37	+074 17 21	2700 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1974	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	64.0	125.0	127.0	103.0	40.0	-9.9	1974
1975	13.0	112.0	124.0	59.0	162.0	39.0	66.0	49.0	69.0	90.0	126.0	97.0	1025.0	1975
1976	45.0	92.0	114.0	130.0	150.0	66.0	38.0	9.0	49.0	154.0	62.0	32.0	941.0	1976
1977	6.0	19.0	92.0	85.0	67.0	64.0	41.0	84.0	80.0	129.0	62.0	30.0	759.0	1977
1978	13.0	36.0	171.0	120.0	48.0	67.0	38.0	43.0	32.0	165.0	73.0	41.0	847.0	1978
1979	59.0	13.0	81.0	153.0	24.0	93.0	37.0	59.0	141.0	207.0	190.0	79.0	1146.0	1979
NUMERO DE ANOS	5	6	6	6	6	6	6	6	6	6	6	6	5	
VALOR MAXIMO	59.0	112.0	171.0	153.0	162.0	93.0	86.0	84.0	141.0	207.0	190.0	97.0	1146.0	
MEDIANA	13.0	36.0	114.0	120.0	67.0	66.0	38.0	54.0	74.5	141.5	88.0	40.5	941.0	
VALOR MENIMO	6.0	13.0	81.0	59.0	24.0	39.0	37.0	9.0	32.0	90.0	62.0	30.0	759.0	
PROMEDIOS	20.6	54.4	116.4	109.4	92.2	65.8	48.0	51.3	82.7	145.3	103.0	53.2	943.6	
									TOTAL DE LOS PROMEDIOS MENSUALES =				948.3	
PORCENTAJES	2.8	5.7	12.3	11.5	9.7	6.9	5.1	5.4	8.7	15.3	10.9	5.6		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 22. INDICE DE ARNOLDUS = 53.

DEV. ESTANDAR	23.8	44.8	35.0	37.3	59.6	19.1	21.3	25.1	42.6	39.8	49.9	27.9	150.8
COEF. VARIACION	0.896	0.824	0.300	0.341	0.646	0.291	0.444	0.489	0.516	0.274	0.485	0.525	0.160
COEF. ASIMETRIA	0.751	0.588	1.016	-0.399	0.461	0.052	2.209	-0.741	0.401	0.298	1.229	1.041	0.198

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CESTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212543	EL CERZO STA TECLA	FACATATIVA	+04 46 00	+074 20 00	2600 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1958	8.0	13.0	50.0	103.5	36.0	46.5	20.5	78.0	32.5	46.0	92.0	29.5	555.5
1959	3.5	10.0	76.0	78.5	106.5	127.0	97.5	37.0	34.5	66.5	53.0	27.0	737.0
1960	47.5	50.5	24.0	52.0	42.5	32.5	58.0	43.0	46.0	121.0	16.5	78.5	612.0
1961	63.0	7.0	87.5	108.0	16.5	74.0	66.5	29.5	11.5	134.0	152.0	39.5	769.0
1962	14.0	12.0	99.5	47.5	88.0	76.5	41.0	43.5	44.5	79.5	45.5	22.5	614.0
1963	10.5	55.0	25.0	101.0	69.0	41.0	37.0	34.5	38.5	90.5	112.0	4.0	618.0
1964	8.0	23.0	23.0	108.5	40.5	101.0	45.5	35.5	68.0	43.5	76.5	8.0	581.0
1965	5.0	5.5	3.0	158.0	82.0	11.0	22.0	20.0	29.0	67.5	146.0	24.0	573.0
1966	0.0	6.5	32.0	60.0	105.5	72.5	32.5	78.0	60.0	6.0	57.5	37.0	547.5
1967	36.0	10.0	18.0	51.0	141.5	98.5	18.5	43.0	8.5	94.5	79.0	43.5	642.0
1968	10.0	23.0	7.5	90.0	30.5	70.5	45.0	15.5	108.0	90.5	109.5	19.0	619.0
1969	42.5	23.0	14.0	66.0	67.0	66.0	3.0	30.5	48.0	216.0	63.0	28.0	671.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARAGO

ESTACION : EL CERRO STA TECLA MUNICIPIO DE PACATLAN PERIODO 1956 - 1969 COEF DE CORRECCION 1.000

N	AÑO	T	CC	MCY	ECR	ECAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1965	671.0	671.0	671.0	0.565	0.065				1			
2	1966	615.0	1286.0	643.0	-0.191	0.048				1			
3	1967	642.0	1928.0	644.0	0.167	0.067				1			
4	1968	547.0	2475.0	619.5	-0.141	-0.064				1			
5	1969	573.0	3052.0	610.5	-0.766	-0.154				1			
6	1964	561.0	3613.0	602.8	-0.677	-0.232				1	1		
7	1963	614.0	4251.0	607.4	-0.165	-0.261				1	1		
8	1962	614.0	4865.0	608.2	-0.222	-0.276				1	1		
9	1961	765.0	5654.0	628.3	2.262	-0.023				1			
10	1960	612.0	6266.0	626.6	-0.246	-0.052				1			
11	1955	838.0	7004.0	636.7	1.482	0.118				1			
12	1958	555.0	7559.0	629.9	-1.036	0.000				1			

N	AÑO	T	CC	MCY	ECR	ECAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 12 AÑOS = 629.9

DESVIACION ESTANDAR = 72.2

COEFICIENTE DE VARIACION = 0.115

****
* PRUEBAS DE SIMPLE MASA *
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PRUEBA DE LA CURVA DOBLE ACUMULATIVA *** PRUEBA DE HOMOGENEIDAD *** PROGRAMA CRSTCH

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212543	EL CONZO STA TECLA	FACATATIVA	+04 47 01	+074 15 57	2560 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	8.0	13.0	50.0	103.5	36.0	46.5	20.5	78.0	32.5	46.0	92.0	29.5	555.5	1958
1959	3.5	10.0	76.0	78.5	106.5	127.0	97.5	37.0	34.5	86.5	53.0	27.0	737.0	1959
1960	47.5	50.5	24.0	52.0	42.5	32.5	58.0	43.0	46.0	121.0	16.5	78.5	612.0	1960
1961	63.0	7.0	87.5	108.0	16.5	74.0	66.5	29.5	11.5	134.0	152.0	39.5	789.0	1961
1962	14.0	12.0	99.5	47.5	88.0	76.5	41.0	43.5	44.5	79.5	45.5	22.5	614.0	1962
1963	10.5	55.0	25.0	101.0	69.0	41.0	37.0	34.5	38.5	90.5	112.0	4.0	618.0	1963
1964	8.0	23.0	23.0	108.5	40.5	101.0	45.5	35.5	68.0	43.5	76.5	8.0	581.0	1964
1965	5.0	5.5	3.0	158.0	82.0	11.0	22.0	20.0	29.0	67.5	146.0	24.0	573.0	1965
1966	0.0	6.5	32.0	60.0	105.5	72.5	32.5	78.0	60.0	6.0	57.5	37.0	547.5	1966
1967	36.0	10.0	18.0	51.0	141.5	98.5	18.5	43.0	8.5	94.5	79.0	43.5	642.0	1967
1968	10.0	23.0	7.5	90.0	30.5	70.5	45.0	15.5	108.0	90.5	109.5	19.0	619.0	1968
1969	42.5	23.0	14.0	66.0	67.0	68.0	3.0	30.5	48.0	218.0	63.0	28.0	671.0	1969
NUMERO DE ANOS	12	12	12	12	12	12	12	12	12	12	12	12	12	
VALOR MAXIMO	63.0	55.0	99.5	158.0	141.5	127.0	97.5	78.0	108.0	218.0	152.0	78.5	789.0	
CUARTIL SUPERIOR	39.3	23.0	63.0	105.8	96.8	87.5	51.8	43.3	54.0	107.8	110.8	38.3	656.5	
MEDIANA	10.3	12.5	24.5	84.3	68.0	71.5	39.0	36.3	41.5	88.5	77.8	27.5	616.0	
CUARTIL INFERIOR	6.5	8.5	16.0	56.0	38.3	43.8	21.3	30.0	30.8	56.8	55.3	20.8	577.0	
VALOR MINIMO	0.0	5.5	3.0	47.5	16.5	11.0	3.0	15.5	8.5	6.0	16.5	4.0	547.5	
PROMEDIOS	20.7	19.9	38.3	85.3	68.8	68.3	40.6	40.7	44.1	89.8	83.5	30.0	629.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		629.9	
PORCENTAJES	3.3	3.2	6.1	13.5	10.9	10.8	6.4	6.5	7.0	14.3	13.3	4.8		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 13. INDICE DE ARNOLDUS = 64.

DEV. ESTANDAR	20.8	16.7	32.4	32.6	37.4	32.1	25.2	19.5	26.5	53.2	40.7	19.2	72.3
COEF. VARIACION	1.008	0.839	0.847	0.382	0.543	0.470	0.621	0.479	0.602	0.592	0.487	0.640	0.115
COEF. ASIMETRIA	1.024	1.488	0.955	0.824	0.463	0.008	0.875	1.129	1.129	1.046	0.315	1.338	1.166

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212512	EL TESORO 1	FACATATIVA	+04 48 00	+074 20 00	2600 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1932	30.6	50.2	22.9	92.8	80.5	48.9	55.3	83.3	45.3	100.6	88.5	54.0	752.9
1933	20.1	1.6	47.5	94.1	97.6	57.9	25.4	103.1	63.8	168.6	254.4	106.2	1080.3
1934	57.4	17.4	45.3	111.4	80.1	60.7	110.5	40.4	73.9	113.8	78.5	2.7	812.1
1935													
1936													
1937	-9.9	15.1	59.5	60.4	83.5	78.5	49.0	41.1	109.0	117.5	158.5	36.0	-9.9
1938	38.0	33.1	109.5	261.0	183.5	73.0	47.5	112.1	59.5	138.6	109.3	-9.9	-9.9
1939	13.5	15.5	35.2	95.5	133.0	33.0	15.0	44.0	65.5	126.5	157.0	56.0	789.7
1940	30.0	13.0	44.0	86.5	142.0	74.0	35.0	42.5	43.0	110.5	62.5	42.5	725.5
1941	50.0	21.0	27.0	82.0	48.0	120.0	49.0	49.0	83.0	100.0	108.0	27.0	764.0
1942	8.0	95.5	31.5	88.5	83.5	69.5	27.5	23.0	34.0	105.0	117.0	58.0	745.0
1943	63.0	46.0	69.5	113.0	59.0	32.5	31.0	53.0	70.0	118.0	85.0	87.0	827.0
1944	27.0	18.0	47.0	53.0	122.0	68.0	37.0	45.0	11.0	156.0	90.0	8.0	682.0
1945	20.0	47.0	-9.9	179.0	154.0	25.0	26.0	44.0	17.0	132.0	37.0	66.0	-9.9
1946	53.0	46.0	64.0	106.0	73.6	24.0	52.0	25.0	10.0	-9.9	98.0	60.0	-9.9
1947	23.0	36.0	24.0	98.0	55.0	54.0	113.0	88.0	90.0	164.0	35.0	11.0	831.0
1948	2.0	24.0	34.0	167.0	120.0	57.0	28.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1949	4.0	22.0	66.0	112.0	67.0	94.0	76.0	77.0	72.0	105.0	91.0	16.0	822.0
1950	78.0	92.0	81.0	81.0	210.0	133.0	79.0	83.0	74.0	186.0	98.0	40.0	1235.0
1951	44.0	75.7	41.0	77.0	95.0	93.0	74.0	47.0	34.0	191.0	-9.9	33.0	-9.9
1952	19.0	5.0	26.0	-9.9	-9.9	-9.9	81.0	49.0	49.0	76.0	162.0	54.0	-9.9
1953	36.0	27.0	90.0	74.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1954													
1955													
1956													
1957	35.0	43.0	42.0	91.0	158.0	50.0	45.0	33.0	-9.9	-9.9	-9.9	-9.9	-9.9
1958	9.0	20.0	99.0	109.0	57.0	40.0	20.0	96.0	36.0	95.0	127.0	60.0	768.0
1959	3.0	28.0	78.0	112.0	100.0	55.0	116.0	-9.9	51.0	-9.9	-9.9	-9.9	-9.9
1960	39.0	75.0	53.0	82.0	44.0	42.0	63.0	80.0	46.0	134.0	30.0	63.0	741.0
1961	54.0	7.0	53.0	89.0	29.0	53.0	57.0	26.0	22.0	131.0	142.0	29.0	732.0
1962	11.0	30.0	95.0	44.0	80.0	52.0	59.0	51.0	48.0	55.0	92.0	42.0	739.0
1963	18.0	66.0	35.0	87.0	119.0	33.0	29.0	47.0	26.0	74.0	133.0	16.0	683.0
1964	11.0	18.0	43.0	85.0	111.0	57.0	57.0	28.0	49.0	55.0	79.0	19.0	656.0
1965	25.0	16.0	5.0	128.0	139.0	15.0	14.0	39.0	38.0	114.0	142.0	12.0	687.0
1966	3.0	8.0	46.0	55.0	76.0	68.0	43.0	67.0	55.0	57.0	71.0	65.0	614.0
1967	25.0	50.0	19.0	60.0	78.0	119.0	35.0	27.0	38.0	99.0	90.0	99.0	739.0
1968													
1969													
1970	21.0	49.0	6.0	51.0	68.0	72.0	30.0	46.5	67.5	125.0	-9.9	-9.9	-9.9
1971	-9.9	54.5	145.0	55.5	149.0	47.0	35.5	56.5	68.5	155.0	74.5	18.5	-9.9
1972	69.0	41.5	138.0	82.0	130.0	57.0	15.5	62.7	15.0	34.0	101.5	24.5	770.7
1973	1.0	1.5	76.0	41.0	78.0	74.0	98.0	69.0	102.0	71.0	120.0	51.0	782.5
1974	60.0	30.0	99.0	72.0	67.0	43.0	26.0	40.0	66.0	71.0	118.0	33.0	725.0
1975	1.0	51.0	76.5	44.0	102.5	63.5	62.5	50.5	48.0	87.5	102.5	94.5	804.0
1976	24.5	47.5	128.5	51.0	95.0	51.0	33.0	7.5	58.5	65.0	116.5	55.5	733.5
1977	8.0	19.5	50.5	40.0	80.5	46.0	54.0	64.5	92.0	106.5	83.0	6.5	651.0
1978	0.0	38.5	74.0	154.5	74.5	57.5	28.0	0.5	33.0	66.5	38.5	63.0	668.5
1979	60.5	10.0	63.0	62.0	88.5	55.5	16.0	62.5	110.0	156.0	65.5	28.0	781.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

ESTACION : EL TESCFC I MUNICIPIO DE PACATATIVA PERIODO 1932 - 1975 COEF DE CORRECCION 1.000

N	AÑO	T /	CO	MCY	ECF	FCAN	F = -3. -2. -1. 0.C +1. +2. +3.
1	1975	781.5	781.5	781.5	0.000	0.014	
2	1974	666.5	1450.0	725.0	-0.032	-0.116	
3	1973	650.0	2101.0	700.3	-0.075	-0.273	
4	1972	733.5	2834.5	708.6	-0.001	-0.321	
5	1971	804.0	3638.5	727.7	0.274	-0.277	
6	1970	725.0	4363.5	727.3	-0.371	-0.336	
7	1969	784.5	5148.0	735.1	0.055	-0.321	
8	1968	770.7	5918.7	739.8	0.002	-0.320	
9	1967	735.0	6653.7	739.3	-0.256	-0.361	
10	1966	814.0	7269.7	727.0	-0.277	-0.364	
11	1965	687.0	7956.7	723.3	-0.081	-0.372	
12	1964	656.0	8612.7	717.7	-0.534	-0.821	
13	1963	683.0	9295.7	715.1	-0.314	-0.934	
14	1962	739.0	10034.7	716.6	-0.256	-0.579	
15	1961	732.0	10766.7	717.6	-0.314	-1.025	
16	1960	741.0	11507.7	719.2	-0.240	-1.063	
17	1959	768.0	12275.7	722.1	-0.120	-1.066	
18	1958	1235.0	13510.7	750.6	3.752	-0.463	
19	1945	822.0	14332.7	754.4	0.421	-0.356	
20	1947	831.0	15163.7	756.2	0.454	-0.316	
21	1944	682.0	15845.7	754.6	-0.722	-0.432	
22	1943	827.0	16672.7	757.6	0.482	-0.369	
23	1942	745.0	17417.7	757.3	-0.207	-0.392	
24	1941	764.0	18181.7	757.6	-0.052	-0.400	
25	1940	726.5	18907.2	756.3	-0.367	-0.489	
26	1939	765.7	19674.9	757.6	0.157	-0.434	
27	1938	814.1	20509.0	759.6	0.340	-0.375	
28	1933	1064.2	21569.2	771.0	2.525	0.023	
29	1932	752.5	22342.2	770.4	-0.143	0.000	

N	AÑO	T /	CO	MCY	ECF	FCAN	F = -3. -2. -1. 0.C +1. +2. +3.

PROMEDIO DE LOS 29 AÑOS = 770.4
DESVIACION ESTANDAR = 122.5
COEFICIENTE DE VARIACION = 0.159

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IDEAM-CRECER *** CALCULO DE PRECIPITACION-CLIMATOLOGIA *** PROGRAMA CRECER

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212512	EL TESORO I	PACATATIVA	+04 48 10	+074 15 31	2590 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	9.0	20.0	99.0	109.0	57.0	40.0	20.0	96.0	36.0	95.0	127.0	60.0	768.0	1958
1959	3.0	28.0	78.0	112.0	100.0	95.0	116.0	-9.9	51.0	-9.9	-9.9	-9.9	-9.9	1959
1960	39.0	75.0	53.0	52.0	44.0	42.0	63.0	80.0	46.0	134.0	30.0	63.0	741.0	1960
1961	54.0	7.0	53.0	89.0	29.0	93.0	57.0	26.0	22.0	131.0	142.0	29.0	732.0	1961
1962	11.0	30.0	95.0	44.0	80.0	92.0	59.0	51.0	48.0	95.0	92.0	42.0	739.0	1962
1963	18.0	60.0	35.0	87.0	119.0	33.0	29.0	47.0	26.0	74.0	133.0	16.0	683.0	1963
1964	11.0	18.0	43.0	85.0	111.0	97.0	57.0	28.0	49.0	59.0	79.0	19.0	656.0	1964
1965	25.0	10.0	5.0	128.0	139.0	15.0	14.0	39.0	38.0	114.0	142.0	12.0	687.0	1965
1966	3.0	8.0	46.0	55.0	76.0	68.0	43.0	67.0	55.0	57.0	71.0	65.0	614.0	1966
1967	25.0	50.0	19.0	60.0	78.0	119.0	35.0	27.0	38.0	99.0	90.0	99.0	739.0	1967
1968														1968
1969														1969
1970	21.0	49.0	6.0	51.0	66.0	72.0	30.0	46.5	67.5	129.0	-9.9	-9.9	-9.9	1970
1971	-9.9	54.5	145.0	55.5	149.0	47.0	35.5	56.5	68.5	155.0	74.5	18.5	-9.9	1971
1972	69.0	41.5	138.0	82.0	130.0	57.0	15.5	62.7	15.0	34.0	101.5	24.5	770.7	1972
1973	1.0	1.5	76.0	41.0	78.0	74.0	98.0	69.0	102.0	71.0	120.0	51.0	782.5	1973
1974	60.0	30.0	99.0	72.0	67.0	43.0	26.0	40.0	66.0	71.0	116.0	33.0	725.0	1974
1975	1.0	51.0	76.5	44.0	102.5	83.5	62.5	50.5	48.0	87.5	102.5	94.5	804.0	1975
1976	24.5	47.5	128.5	51.0	95.0	51.0	33.0	7.5	58.5	65.0	116.5	55.5	733.5	1976
1977	8.0	19.5	50.5	40.0	60.5	46.0	54.0	64.5	92.0	106.5	63.0	6.5	651.0	1977
1978	0.0	38.5	74.0	154.5	74.5	97.5	26.0	0.5	33.0	66.5	36.5	63.0	668.5	1978
1979	60.5	10.0	63.0	62.0	68.5	59.5	16.0	62.5	110.0	156.0	66.5	28.0	781.5	1979

	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
NUMERO DE ANOS	19	20	20	20	20	20	20	19	20	19	18	18	17
VALOR MAXIMO	69.0	75.0	145.0	154.5	149.0	119.0	116.0	96.0	110.0	156.0	142.0	99.0	804.0
CUARTIL SUPERIOR	39.0	49.5	97.0	88.0	106.8	92.5	58.0	64.5	66.8	129.0	120.0	63.0	769.3
MEDIANA	18.0	30.0	68.5	61.0	80.3	63.8	35.3	50.5	48.5	95.0	96.8	37.5	733.5
CUARTIL INFERIOR	3.0	17.0	44.5	51.0	71.3	44.5	27.0	28.0	37.0	66.5	74.5	19.0	675.8
VALOR MINIMO	0.0	1.5	5.0	40.0	29.0	15.0	14.0	0.5	15.0	34.0	30.0	6.5	614.0
PROMEDIOS	23.3	33.0	69.1	73.7	68.3	66.2	44.6	48.5	53.5	94.7	95.9	44.4	722.1
											TOTAL DE LOS PROMEDIOS MENSUALES =		735.3
PORCENTAJES	3.2	4.5	9.4	10.0	12.0	9.0	6.1	6.6	7.3	12.9	13.0	6.0	

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 13. INDICE DE ARREDONDO = 70.

	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
DEV. ESTANDAR	22.5	20.8	40.1	31.9	30.6	27.1	27.0	23.9	25.4	34.7	32.8	28.5	53.8
COEF. VARIACION	0.967	0.630	0.580	0.432	0.347	0.410	0.605	0.493	0.474	0.366	0.342	0.642	0.075
COEF. ASIMETRIA	0.903	0.309	0.289	1.122	0.244	0.108	1.266	-0.213	0.823	0.298	-0.420	0.581	-0.464

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212512	EL TESORO I	FACATATIVA	+04 48 10	+074 19 31	2590 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	39.0	75.0	53.0	52.0	44.0	42.0	63.0	80.0	46.0	134.0	30.0	83.0	741.0	1960
1961	54.0	7.0	53.0	89.0	29.0	93.0	57.0	26.0	22.0	131.0	142.0	29.0	732.0	1961
1962	11.0	30.0	95.0	44.0	80.0	92.0	59.0	51.0	48.0	95.0	92.0	42.0	739.0	1962
1963	18.0	60.0	35.0	87.0	119.0	33.0	29.0	47.0	26.0	74.0	133.0	16.0	683.0	1963
1964	11.0	18.0	43.0	85.0	111.0	97.0	57.0	28.0	49.0	59.0	79.0	19.0	656.0	1964
1965	25.0	16.0	5.0	128.0	139.0	15.0	14.0	39.0	38.0	114.0	142.0	12.0	687.0	1965
1966	3.0	8.0	46.0	55.0	76.0	68.0	43.0	67.0	55.0	57.0	71.0	65.0	614.0	1966
1967	25.0	50.0	19.0	60.0	78.0	119.0	35.0	27.0	38.0	99.0	90.0	99.0	739.0	1967
1968	10.9	33.8	29.3	91.9	62.5	77.7	39.5	43.6	75.0	124.4	142.2	36.2	767.0	1968
1969	47.7	18.7	15.2	69.2	92.7	76.8	5.1	38.5	87.4	130.4	81.5	62.7	725.9	1969
1970	21.0	49.0	6.0	51.0	68.0	72.0	30.0	46.5	67.5	129.0	106.0	49.0	695.0	1970
1971	7.0	54.5	145.0	55.5	149.0	47.0	35.5	56.5	68.5	155.0	74.5	18.5	866.5	1971
1972	69.0	41.5	138.0	82.0	130.0	57.0	15.5	62.7	15.0	34.0	101.5	24.5	770.7	1972
1973	1.0	1.5	76.0	41.0	78.0	74.0	98.0	69.0	102.0	71.0	120.0	51.0	782.5	1973
1974	60.0	30.0	99.0	72.0	67.0	43.0	26.0	40.0	66.0	71.0	118.0	33.0	725.0	1974
1975	1.0	51.0	76.5	44.0	102.5	83.5	62.5	50.5	48.0	87.5	102.5	94.5	804.0	1975
1976	24.5	47.5	128.5	51.0	95.0	51.0	33.0	7.5	58.5	65.0	116.5	55.5	733.5	1976
1977	8.0	19.5	50.5	40.0	80.5	46.0	54.0	64.5	92.0	106.5	83.0	6.5	651.0	1977
1978	0.0	38.5	74.0	154.5	74.5	97.5	28.0	0.5	33.0	66.5	38.5	63.0	668.5	1978
1979	80.5	10.0	63.0	62.0	88.5	59.5	16.0	62.5	110.0	156.0	65.5	28.0	781.5	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	69.0	75.0	145.0	154.5	149.0	119.0	98.0	80.0	110.0	156.0	142.2	99.0	866.5	
CUARTIL SUPERIOR	43.3	49.5	85.8	86.0	106.8	87.8	57.0	62.6	71.8	129.7	119.0	62.8	768.8	
MEDIANA	19.5	31.9	53.0	61.0	80.3	70.0	35.3	46.8	52.0	97.0	96.8	39.1	732.8	
CUARTIL INFERIOR	7.5	17.0	32.1	51.0	71.3	46.5	27.0	33.3	38.0	68.8	76.8	21.8	685.0	
VALOR MINIMO	0.0	1.5	5.0	40.0	29.0	15.0	5.1	0.5	15.0	34.0	30.0	6.5	614.0	
PROMEDIOS	24.8	34.3	62.5	70.7	88.2	67.2	40.0	45.4	57.2	98.0	96.4	44.4	728.1	
PORCENTAJES	3.4	4.6	8.6	9.7	12.1	9.2	5.5	6.2	7.9	13.5	13.2	6.1		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 13. INDICE DE ARNOLDUS = 70.

INDICE DE IRREGULARIDAD INTERANUAL =1.23

DEV. ESTANDAR	22.4	20.8	41.8	29.7	30.3	25.9	22.1	20.5	26.4	35.2	32.3	27.1	59.4
COEF. VARIACION	0.901	0.626	0.669	0.420	0.343	0.385	0.552	0.451	0.461	0.360	0.335	0.612	0.082

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	826.	804.	778.	728.	678.	652.	630.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.748	0.269	0.590	1.513	0.288	-0.012	0.771	-0.548	0.423	0.054	-0.329	0.607	0.207

IMPRESO EN COLOMBIA POR DANARAIN

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212549	TESCRO N2	FACATATIVA	+04 48 00	+074 20 00	2550 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1957	35.0	43.0	42.0	91.0	158.0	48.5	51.9	24.0	75.0	49.8	41.9	30.3	690.4
1958	11.2	11.5	112.2	116.6	27.6	36.1	21.3	79.4	33.3	85.5	102.2	53.1	690.0
1959	0.5	23.2	62.6	95.8	99.1	104.4	97.8	38.9	57.6	113.5	49.6	31.0	774.0
1960	25.5	58.3	45.9	51.2	41.1	35.5	47.3	67.8	33.2	115.0	18.8	75.6	619.2
1961	54.0	7.0	53.0	89.0	29.0	53.0	57.0	26.0	22.0	131.0	142.0	29.0	732.0
1962	15.5	24.4	84.4	44.7	81.1	88.5	55.0	44.0	52.4	87.1	93.5	37.1	708.1
1963	21.7	56.5	30.4	79.9	113.2	23.3	30.6	40.9	32.1	82.4	113.3	8.6	632.9
1964	8.0	13.6	40.7	90.8	90.9	53.6	62.3	25.1	48.7	63.3	74.9	22.7	634.6
1965	24.2	12.3	5.1	130.2	51.2	14.8	16.0	30.2	38.8	114.3	131.4	24.6	563.1
1966	1.7	12.2	44.6	50.0	86.5	59.0	30.8	66.4	40.0	54.4	60.6	55.4	561.6
1967	18.4	44.4	22.7	58.5	89.0	119.8	31.3	28.1	34.5	112.4	84.7	55.9	699.7
1968	29.7	25.9	25.8	139.5	37.9	79.9	33.4	17.7	151.2	113.5	119.3	28.8	802.6

DATOS CRIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAGRA, S

ESTACION > TESCHC N2 MUNICIPIO DE PACATATIVA PERIODO 1957 - 1966 COEF DE CORRECCION 1.000

N	AN	I /	CO	MCY	ECR	FCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1966	602.6	602.6	602.6	0.021	0.183				I4			
2	1967	655.7	1602.3	751.1	0.256	0.219				I *			
3	1966	661.6	2063.9	666.6	-1.613	0.043				4			
4	1965	653.1	2667.0	664.2	-1.137	-0.082				4			
5	1964	634.6	3251.6	656.3	-0.803	-0.146				+1			
6	1963	632.5	3824.5	654.1	-0.627	-0.213				4 I			
7	1962	704.1	4628.6	661.8	0.414	-0.169				+1	•		
8	1961	732.0	5364.6	670.6	0.746	-0.050				4	•		
9	1960	615.2	5564.6	664.5	-0.616	-0.177				+1			
10	1959	774.0	6757.6	675.6	1.226	-0.036				4	•		
11	1958	650.0	7447.6	677.1	0.163	-0.018				4.			
12	1957	650.4	8138.2	678.2	0.165	0.000				4.			

N	AN	I /	CO	MCY	ECR	FCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 12 AÑOS = 678.2

DESVIACION ESTANDAR = 72.3

COEFICIENTE DE VARIACION = 0.107

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CESTCA *** CALPO DE AGROCLIMATOLOGIA *** PROGRAMA CESTCA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212549	TESORO N2	FACATATIVA	+04 48 00	+074 2C 00	2550 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANUS
1957	35.0	43.0	42.0	91.0	158.0	48.5	51.9	24.0	75.0	49.8	41.9	30.3	690.4	1957
1958	11.2	11.5	112.2	116.6	27.6	36.1	21.3	79.4	33.3	85.5	102.2	53.1	690.0	1958
1959	0.5	23.2	62.6	95.8	59.1	104.4	57.8	38.9	57.6	113.5	49.6	31.0	774.0	1959
1960	25.5	58.3	45.9	51.2	41.1	35.5	47.3	67.8	33.2	115.0	18.8	79.6	619.2	1960
1961	54.0	7.0	53.0	89.0	29.0	93.0	57.0	26.0	22.0	131.0	142.0	29.0	732.0	1961
1962	15.5	24.4	84.4	44.7	61.1	88.9	55.0	44.0	52.4	87.1	93.5	37.1	708.1	1962
1963	21.7	50.5	30.4	79.9	113.2	23.3	30.6	40.9	32.1	82.4	113.3	8.6	632.9	1963
1964	8.0	13.6	40.7	90.8	90.9	93.6	62.3	25.1	48.7	63.3	74.9	22.7	634.6	1964
1965	24.2	12.3	5.1	130.2	61.2	14.8	16.0	30.2	38.6	114.3	131.4	24.6	593.1	1965
1966	1.7	12.2	44.6	50.0	66.5	59.0	30.8	66.4	40.0	54.4	60.6	55.4	561.6	1966
1967	18.4	44.4	22.7	58.5	89.0	119.8	31.3	28.1	34.5	112.4	84.7	55.9	699.7	1967
1968	29.7	25.5	26.8	139.5	37.9	79.9	33.4	17.7	151.2	113.5	119.3	28.8	802.6	1968
NUMERO DE ANOS	12	12	12	12	12	12	12	12	12	12	12	12	12	
VALOR MAXIMO	54.0	58.3	112.2	139.5	158.0	119.8	57.8	79.4	151.2	131.0	142.0	79.6	802.6	
CUARTIL SUPERIOR	27.6	43.7	57.8	106.2	95.0	93.3	56.0	55.2	55.0	113.9	116.3	54.2	720.0	
MEDIANA	20.0	23.8	43.3	89.9	83.8	69.4	40.3	34.5	39.4	99.7	89.1	30.6	690.2	
CUARTIL INFERIOR	9.6	12.2	28.1	54.8	39.5	35.8	30.7	25.5	33.2	72.8	55.1	26.7	626.0	
VALOR MINIMO	0.5	7.0	5.1	44.7	27.6	14.8	16.0	17.7	22.0	49.8	18.8	8.6	561.6	
PROMEDIOS	20.4	27.7	47.4	86.4	75.4	66.4	44.6	40.7	51.6	93.5	86.0	38.0	678.2	
											TOTAL DE LOS PROMEDIOS MENSUALES =		678.2	
PORCENTAJES	3.0	4.1	7.0	12.7	11.1	9.8	6.6	6.0	7.6	13.8	12.7	5.6		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 13. INDICE DE ARNOLDUS = 66.

DEV. ESTANDAR	15.0	18.3	28.7	31.5	39.3	34.6	22.4	20.1	34.4	27.0	36.0	19.4	72.3
COEF. VARIACION	0.735	0.661	0.605	0.364	0.522	0.522	0.503	0.494	0.668	0.289	0.442	0.510	0.107
COEF. ASIMETRIA	0.786	0.667	1.008	0.262	0.580	-0.055	1.118	0.911	2.536	-0.435	-0.247	0.788	0.120

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Biblioteca Mediateca y Cultura Pública

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212555	MANJUI	FACATATIVA	+04 48 00	+074 24 00	3260 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1963	-9.9	-9.9	-9.9	81.2	198.2	31.7	40.4	62.0	31.4	184.0	146.3	5.2	-9.9
1964	2.5	15.4	29.7	59.5	93.7	126.5	15.0	39.0	21.4	75.5	83.0	35.0	598.2
1965	27.0	27.5	11.0	160.0	61.0	10.0	18.5	34.5	57.0	119.0	155.5	16.0	717.0
1966	0.0	21.5	70.5	49.5	134.5	75.0	31.5	73.5	50.0	102.5	93.5	44.5	746.5
1967	30.5	28.5	42.5	164.5	74.5	112.0	33.0	30.0	35.5	105.0	62.0	55.5	777.5
1968	49.5	51.0	28.0	162.5	82.0	92.5	49.0	14.5	107.5	107.7	122.5	16.5	883.2
1969	64.5	52.0	15.5	96.5	75.5	49.5	10.5	41.5	68.5	144.5	89.0	25.2	732.7
1970	42.0	49.5	40.0	24.0	85.5	97.5	35.5	52.0	27.5	165.5	148.0	67.0	794.0
1971	-9.9	100.5	165.2	74.1	106.2	49.5	51.0	58.0	70.5	180.0	65.5	23.1	-9.9
1972	68.0	5.0	108.0	50.6	116.5	55.0	30.5	36.5	30.5	6.0	123.0	39.0	668.6
1973	0.0	5.5	80.4	81.3	94.3	51.1	73.0	67.0	124.5	80.0	135.5	87.0	879.6
1974	43.7	66.5	113.2	84.0	45.5	21.0	21.5	47.0	40.0	37.5	56.0	20.0	595.9
1975	2.5	73.0	50.0	37.5	101.0	48.0	60.5	59.5	81.5	99.2	58.5	52.5	763.7
1976	18.5	50.5	141.5	66.5	68.0	73.5	36.0	42.5	52.5	93.5	70.0	45.0	778.0
1977	47.0	22.0	51.0	88.0	86.5	65.5	55.5	53.5	128.0	115.5	118.5	28.5	883.5
1978	0.0	60.5	109.0	147.5	119.5	155.5	85.5	48.5	49.0	-9.9	123.0	116.0	-9.9
1979	53.0	72.0	86.0	114.0	86.5	100.0	16.0	51.5	56.5	199.5	130.0	46.5	1011.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA PER DAVARANJO

ESTACION X MANJUI MUNICIPIO DE PACATATIVA PERIODO 1963 - 1975 COEF DE CORRECCION 1.000

N	AÑO	X	CO	MOV	ECR	ECAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1975	1011.6	1011.6	1011.6	2.072	0.306	I + .
2	1977	883.6	1656.0	547.6	0.557	0.480	I + .
3	1976	776.0	2673.0	691.0	0.035	0.486	. +
4	1975	763.7	3436.7	655.2	-0.066	0.493	. +
5	1974	555.5	4032.0	606.6	-1.547	0.213	I +
6	1973	675.6	4512.2	618.7	0.523	0.350	I + .
7	1972	661.6	5260.0	757.3	-0.514	0.214	I +
8	1970	754.0	6374.6	756.6	0.178	0.241	I.+
9	1965	832.7	7107.5	769.7	-0.356	0.186	I+
10	1968	883.2	7990.7	756.1	0.555	0.330	I + .
11	1967	771.5	8760.2	757.1	0.034	0.336	. +
12	1966	744.5	9514.7	752.5	-0.236	0.300	. I +
13	1965	817.6	10231.7	767.1	-0.453	0.227	. I +
14	1964	551.2	10625.5	773.6	-1.527	0.000	. +

F = -3. -2. -1. 0.0 +1. +2. +3.

N	AÑO	X	CO	MOV	ECR	ECAN	

PROMEDIO DE LOS 14 AÑOS = 773.6
DESVIACION ESTANDAR = 114.6
COEFICIENTE DE VARIACION = 0.148

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRETA *** CALCULO DE AGROCLIMATOLOGIA *** PROGRAMA CRETA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212555	MANJUI	PACATATIVA	+04 48 12	+074 23 44	3260 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1963	-9.9	-9.9	-9.9	81.2	198.2	31.7	40.4	62.0	31.4	184.0	146.3	5.2	-9.9	1963
1964	2.5	15.4	29.7	59.5	93.7	128.5	15.0	39.0	21.4	75.5	83.0	35.0	598.2	1964
1965	27.0	27.5	11.0	180.0	61.0	10.0	18.5	34.5	57.0	119.0	155.5	16.0	717.0	1965
1966	0.0	21.5	70.5	49.5	134.5	75.0	31.5	73.5	50.0	102.5	93.5	44.5	746.5	1966
1967	30.5	20.5	42.5	164.5	74.5	112.0	33.0	30.0	35.5	109.0	62.0	55.5	777.5	1967
1968	49.5	51.0	28.0	162.5	82.0	92.5	49.0	14.5	107.5	107.7	122.5	16.5	883.2	1968
1969	64.5	52.0	15.5	90.5	75.5	49.5	10.5	41.5	68.5	144.5	89.0	25.2	732.7	1969
1970	42.0	49.5	40.0	24.0	85.5	57.5	35.5	52.0	27.5	165.5	148.0	67.0	794.0	1970
1971	-9.9	100.5	165.2	74.1	106.2	49.5	51.0	58.0	70.5	180.0	65.5	23.1	-9.9	1971
1972	68.0	5.0	108.0	50.6	116.5	55.0	30.5	36.5	30.5	6.0	123.0	39.0	668.6	1972
1973	0.0	5.5	80.4	81.3	94.3	51.1	73.0	67.0	124.5	80.0	135.5	87.0	879.6	1973
1974	43.7	66.5	113.2	84.0	45.5	21.0	21.5	47.0	40.0	37.5	56.0	20.0	595.9	1974
1975	2.5	73.0	50.0	37.5	101.0	48.0	60.5	59.5	81.5	99.2	58.5	92.5	763.7	1975
1976	18.5	50.5	141.5	80.5	68.0	73.5	36.0	42.5	52.5	93.5	70.0	45.0	778.0	1976
1977	47.0	22.0	51.0	88.0	66.5	85.5	55.5	53.5	128.0	119.5	116.5	28.5	883.5	1977
1978														1978
1979	53.0	72.0	86.0	114.0	86.5	100.0	16.0	51.5	56.5	199.5	130.0	46.5	1011.5	1979
NUMERO DE ANOS	14	15	15	16	16	16	16	16	16	16	16	16	14	
VALOR MAXIMO	68.0	100.5	165.2	180.0	198.2	128.5	73.0	73.5	128.0	199.5	155.5	92.5	1011.5	
CUARTIL SUPERIOR	49.5	66.5	108.0	105.3	103.6	89.0	50.0	58.8	76.0	155.0	132.5	51.0	879.6	
MEDIANA	30.3	49.5	51.0	82.6	86.5	56.3	34.3	49.3	54.5	108.3	106.0	37.0	770.6	
CUARTIL INFERIOR	2.5	21.5	29.7	55.0	75.0	48.8	20.0	37.8	33.4	86.8	67.8	21.5	717.0	
VALOR MINIMO	0.0	5.0	11.0	24.0	45.5	10.0	10.5	14.5	21.4	6.0	56.0	5.2	595.9	
PROMEDIOS	32.0	42.7	68.8	89.0	94.3	65.0	36.1	47.7	61.4	113.9	103.5	40.4	773.6	
									TOTALES DE LOS PROMEDIOS MENSUALES =				795.6	
PORCENTAJES	4.0	5.4	8.7	11.3	11.9	8.2	4.5	6.0	7.7	14.3	13.0	5.1		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 77.

DEV. ESTANDAR	24.1	27.8	46.4	45.6	35.0	32.7	17.9	15.1	33.7	52.4	35.1	25.1	114.9
COEF. VARIACION	0.752	0.651	0.673	0.509	0.371	0.502	0.497	0.316	0.549	0.460	0.339	0.620	0.148
COEF. ASIMETRIA	-0.122	0.429	0.749	0.787	1.793	0.280	0.456	-0.358	0.920	-0.206	-0.003	0.843	0.287

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212555	MANJUI	FACATATIVA	+04 48 12	+074 23 44	3260 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	30.6	28.4	52.3	74.2	89.4	31.5	35.2	74.1	53.9	147.9	45.2	87.6	750.3	1960
1961	72.4	17.1	78.7	102.9	16.5	80.2	17.9	31.7	30.3	161.6	153.6	6.9	769.8	1961
1962	22.1	24.4	89.9	57.7	108.4	88.1	28.4	57.1	54.5	124.6	167.1	23.0	845.3	1962
1963	20.0	34.6	43.6	81.2	198.2	31.7	40.4	62.0	31.4	184.0	146.3	5.2	884.6	1963
1964	2.5	15.4	29.7	59.5	93.7	128.5	15.0	39.0	21.4	75.5	83.0	35.0	598.2	1964
1965	27.0	27.5	11.0	180.0	61.0	10.0	18.5	34.5	57.0	119.0	155.5	16.0	717.0	1965
1966	0.0	21.5	70.5	49.5	134.5	75.0	31.5	73.5	50.0	102.5	93.5	44.5	746.5	1966
1967	30.5	28.5	42.5	164.5	74.5	112.0	33.0	30.0	35.5	109.0	62.0	55.5	777.5	1967
1968	49.5	51.0	28.0	162.5	82.0	92.5	49.0	14.5	107.5	107.7	122.5	16.5	883.2	1968
1969	64.5	52.0	15.5	90.5	75.5	49.5	10.5	41.5	68.5	144.5	89.0	25.2	732.7	1969
1970	42.0	49.5	40.0	24.0	85.5	57.5	35.5	52.0	27.5	165.5	148.0	67.0	794.0	1970
1971	7.3	100.5	165.2	74.1	106.2	49.5	51.0	58.0	70.5	180.0	65.5	23.1	950.9	1971
1972	68.0	5.0	108.0	50.6	116.5	55.0	30.5	36.5	30.5	6.0	123.0	39.0	668.6	1972
1973	0.0	5.5	80.4	81.3	94.3	51.1	73.0	67.0	124.5	80.0	135.5	87.0	879.6	1973
1974	43.7	66.5	113.2	84.0	45.5	21.0	21.5	47.0	40.0	37.5	56.0	20.0	595.9	1974
1975	2.5	73.0	50.0	37.5	101.0	48.0	60.5	59.5	81.5	99.2	58.5	92.5	763.7	1975
1976	18.5	50.5	141.5	86.5	68.0	73.5	36.0	42.5	52.5	93.5	70.0	45.0	778.0	1976
1977	47.0	22.0	51.0	88.0	86.5	85.5	55.5	53.5	128.0	119.5	118.5	28.5	883.5	1977
1978	0.0	40.4	72.8	98.5	79.8	130.6	57.1	32.4	32.7	76.1	82.2	77.5	780.1	1978
1979	53.0	72.0	86.0	114.0	86.5	100.0	16.0	51.5	56.5	199.5	130.0	46.5	1011.5	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	72.4	100.5	165.2	180.5	198.2	130.6	73.0	74.1	128.0	199.5	167.1	92.5	1011.5	
CUARTIL SUPERIOR	48.3	51.5	87.9	100.7	103.6	90.3	50.0	58.8	69.5	154.7	140.9	61.3	881.4	
MEDIANA	28.8	31.5	61.4	82.6	86.5	65.5	34.1	49.3	53.2	114.0	106.0	37.0	777.8	
CUARTIL INFERIOR	4.9	21.8	41.3	58.6	75.0	48.8	20.0	35.5	32.0	86.8	67.8	21.5	739.6	
VALOR MINIMO	0.0	5.0	11.0	24.3	16.5	10.0	10.5	14.5	21.4	6.0	45.2	5.2	595.9	
PROMEDIOS	30.4	39.3	68.5	88.3	90.2	68.5	35.8	47.9	57.7	116.7	105.2	42.1	790.5	
PORCENTAJES	3.8	5.0	8.7	11.2	11.4	8.7	4.5	6.1	7.3	14.8	13.3	5.3		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 77.

INDICE DE IRREGULARIDAD INTERANUAL =1.42

DEV. ESTANDAR	24.0	25.0	40.8	41.5	35.9	34.0	17.3	15.7	31.4	49.2	39.0	27.5	106.4
COEF. VARIACION	0.789	0.636	0.595	0.470	0.398	0.496	0.482	0.328	0.543	0.422	0.370	0.654	0.135

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	966.	927.	880.	791.	701.	654.	615.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.225	0.782	0.801	0.877	1.065	0.232	0.481	-0.116	1.172	-0.329	0.025	0.604	0.052

IMPRESO EN COLOMBIA POR DANARAN C.

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212069	TESORO VERTIENTE	FACATATIVA	+04 48 00	+074 18 00	2610 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1959	0.5	25.7	77.5	116.5	84.0	132.0	115.0	32.0	65.5	121.0	73.0	23.5	866.2
1960	18.0	55.0	61.5	72.0	56.0	24.5	64.5	68.0	27.0	144.3	19.3	117.5	727.6
1961	63.0	10.0	52.5	98.5	26.0	65.0	49.0	25.0	32.0	120.0	154.0	36.0	735.0
1962	10.0	27.0	75.0	75.0	114.0	108.0	74.0	71.0	61.0	125.0	101.0	52.0	897.0
1963	35.0	81.0	47.0	75.0	104.0	42.0	33.0	58.0	31.0	74.0	146.0	15.0	741.0
1964	19.0	19.0	46.0	119.0	88.0	143.0	99.0	49.0	80.0	69.0	115.0	23.0	869.0
1965	43.0	32.0	8.0	162.0	143.0	20.0	31.0	48.0	50.0	110.0	185.5	27.0	859.5
1966	3.0	10.0	63.0	76.0	100.0	69.0	59.0	93.0	69.0	68.0	76.0	63.0	749.0
1967	18.0	62.0	28.0	79.0	111.0	121.0	31.0	43.0	50.0	126.0	105.0	65.0	839.0
1968	34.0	29.0	36.0	159.0	34.0	130.0	46.0	28.0	137.0	123.0	112.0	21.0	889.0
1969	37.0	24.0	41.0	94.0	114.0	64.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1970	33.0	21.0	4.0	53.0	88.0	55.0	39.0	59.0	118.0	172.0	98.0	51.0	795.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-DFSTCH *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DIANA

ESTACION A DESDE VERTIENTE MUNICIPIO DE FACATATIVA PERIODO 1959 - 1970 COEF DE CORRECCION 1.000

N	AN	I J	CO	MCY	ECF	FCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1970	755.0	755.0	755.0	-0.303	-0.029	
2	1968	885.0	1684.0	842.0	1.115	0.066	
3	1967	839.0	2523.0	841.0	0.356	0.055	
4	1966	745.0	3268.0	816.0	-0.552	0.014	
5	1965	855.0	4123.0	824.6	0.442	0.066	
6	1964	885.0	5008.0	834.6	0.806	0.134	
7	1963	741.0	5749.0	820.2	-0.112	0.043	
8	1962	853.0	6602.0	825.2	0.225	0.143	
9	1961	725.0	7327.0	813.3	-0.261	0.045	
10	1960	727.0	8054.0	810.1	-0.312	-0.063	
11	1959	866.0	8967.0	815.2	0.364	0.0	

N	AN	I J	CO	MCY	ECF	FCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 11 AÑOS = 815.2

DESVIACION ESTANDAR = 66.6

COEFICIENTE DE VARIACION = 0.082

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IDEAM-CASTOR *** CALCULO DE AGROCLIMATOLOGIA *** PROGRAMA CASTOR

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212009	TESORO VERTIENTE	FACATATIVA	+04 48 46	+074 1E 19	2550 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1959	0.5	25.7	77.5	116.5	64.0	132.0	115.0	32.0	65.5	121.0	73.0	23.5	866.2	1959
1960	18.0	55.0	61.5	72.0	56.0	24.5	64.5	68.0	27.0	144.3	19.3	117.5	727.6	1960
1961	63.0	10.0	52.5	98.5	26.0	69.0	49.0	25.0	32.0	120.0	154.0	36.0	735.0	1961
1962	10.0	27.0	75.0	75.0	114.0	108.0	74.0	71.0	61.0	129.0	101.0	52.0	897.0	1962
1963	35.0	81.0	47.0	75.0	104.0	42.0	33.0	58.0	31.0	74.0	146.0	15.0	741.0	1963
1964	19.0	19.0	46.0	119.0	68.0	143.0	99.0	49.0	60.0	69.0	115.0	23.0	869.0	1964
1965	43.0	32.0	8.0	162.0	143.0	20.0	31.0	46.0	50.0	110.0	185.5	27.0	859.5	1965
1966	1.0	10.0	63.0	76.0	100.0	69.0	59.0	93.0	69.0	68.0	76.0	63.0	749.0	1966
1967	18.0	62.0	26.0	79.0	111.0	121.0	31.0	43.0	60.0	126.0	105.0	65.0	839.0	1967
1968	34.0	29.0	36.0	159.0	34.0	130.0	46.0	28.0	137.0	123.0	112.0	21.0	889.0	1968
1969	37.0	24.0	41.0	94.0	114.0	84.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1969
1970	33.0	21.0	4.0	53.0	68.0	59.0	39.0	59.0	118.0	172.0	98.0	51.0	795.0	1970
NUMERO DE ANOS	12	12	12	12	12	12	11	11	11	11	11	11	11	
VALOR MAXIMO	63.0	81.0	77.5	162.0	143.0	143.0	115.0	93.0	137.0	172.0	185.5	117.5	897.0	
CUARTIL SUPERIOR	36.0	43.5	62.3	117.8	112.5	125.5	*****	*****	*****	*****	*****	*****	******	
MEDIANA	26.0	26.3	46.5	86.5	94.0	76.5	49.0	49.0	61.0	121.0	105.0	36.0	839.0	
CUARTIL INFERIOR	14.0	20.0	32.0	75.0	70.0	50.5	*****	*****	*****	*****	*****	*****	******	
VALOR MINIMO	0.5	10.0	4.0	53.0	26.0	20.0	31.0	25.0	27.0	68.0	19.3	15.0	727.6	
PROMEDIOS	26.1	33.0	45.0	98.3	88.5	83.5	58.2	52.2	65.5	114.2	107.7	44.9	815.2	
											TOTAL DE LOS PROMEDIOS MENSUALES =		817.0	
PORCENTAJES	3.2	4.0	5.5	12.0	10.8	10.2	7.1	6.4	8.0	14.0	13.2	5.5		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO ENE FEB MAR

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 80.

DEV. ESTANDAR	18.1	21.8	23.5	34.7	34.5	43.0	28.1	20.5	35.2	32.5	44.6	29.8	66.8
COEF. VARIACION	0.691	0.660	0.522	0.353	0.390	0.515	0.483	0.392	0.537	0.285	0.414	0.664	0.082
COEF. ASIMETRIA	0.425	1.224	-0.444	0.901	-0.607	-0.080	1.040	0.510	1.037	-0.106	-0.192	1.521	-0.245

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Biblioteca Nacional de Colombia

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212094	TISQUESUSA	FACATATIVA	+04 48 00	+074 17 00	2570 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1966	-9.9	-9.9	-9.9	-9.9	103.0	55.0	41.0	62.0	43.0	61.0	98.0	52.0	-9.9
1967	-9.9	-9.9	-9.9	-9.9	22.7	106.5	40.1	38.0	38.6	94.2	77.1	50.5	-9.9
1968	30.5	35.3	45.9	147.1	30.5	133.5	33.3	19.4	103.0	98.9	103.4	34.6	815.8
1969	37.9	27.9	37.7	85.3	98.6	45.4	14.8	30.5	81.5	156.1	83.1	34.4	733.2
1970	27.3	12.1	23.1	29.9	84.5	73.1	30.0	42.6	67.2	162.3	92.5	26.8	671.4
1971	72.6	55.4	173.8	76.3	118.6	50.1	41.2	67.4	44.4	128.8	97.0	50.1	975.7
1972	70.6	90.2	105.9	133.6	145.9	56.2	38.1	36.7	32.8	42.7	114.2	18.0	884.9
1973	3.0	1.5	60.8	31.5	69.4	72.4	74.6	68.3	108.6	74.2	110.6	65.1	740.0
1974	30.1	46.7	135.3	92.4	60.4	24.2	31.6	41.3	65.9	104.8	106.5	37.8	777.0
1975	2.6	58.6	78.5	61.8	102.1	93.9	95.7	62.5	41.1	84.0	68.0	50.1	838.9
1976	26.6	52.0	120.0	61.9	75.8	59.2	37.8	8.5	38.4	97.7	55.6	40.8	674.3
1977	6.3	17.9	27.9	75.1	54.4	26.0	38.6	66.4	101.3	114.0	102.0	12.1	642.0
1978	0.2	15.9	63.5	150.0	98.0	147.0	18.0	19.0	24.3	56.4	34.9	69.9	697.1
1979	31.6	22.4	63.2	113.0	88.3	66.5	34.5	68.2	81.6	164.9	68.5	29.0	831.7

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

FENOMENO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR CARVAJAL

ESTACION X TLSCLESUSA MUNICIPIO DE FACULTATIVA PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AÑO	T/A	CO	MCY	ECR	ECAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	631.7	621.7	631.7	0.165	0.075				+ .			
2	1978	658.1	1560.6	764.4	-0.166	-0.024			.	+			
3	1977	642.0	2170.6	723.6	-1.322	-0.154			.	+1			
4	1976	674.3	2845.1	711.3	-0.557	-0.322			.	+ 1			
5	1975	631.5	3504.6	736.6	0.657	-0.237				+ 1	.		
6	1974	778.0	4401.0	743.5	0.035	-0.233				+ .			
7	1973	840.0	5201.0	743.0	-0.337	-0.476				.+ 1			
8	1972	884.5	6085.5	760.7	1.120	-0.132				+1		.	
9	1971	575.7	7061.0	784.6	2.032	0.125				1+		.	
10	1970	671.4	7733.0	773.3	-1.026	-0.003			.	+			
11	1969	733.2	8466.2	769.7	-0.405	-0.095			.	+			
12	1968	815.0	9282.0	773.5	0.425	0.0				+ .			

N	AÑO	T/A	CO	MCY	ECR	ECAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 12 AÑOS = 773.5

DESVIACION ESTANDAR = 55.5

COEFICIENTE DE VARIACION = 0.125

****
* PRUEBAS DE SIMPLE RASA *
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PROYECTO IGAC-CEGTA *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CEGTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212094	TISQUESUSA	FACATATIVA	+04 48 10	4074 17 18	2570 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	-9.9	-9.9	-9.9	-9.9	103.0	55.0	41.0	62.0	43.0	61.0	98.0	52.0	-9.9	1966
1967	-9.9	-9.9	-9.9	-9.9	22.7	106.9	40.1	38.0	38.6	94.2	77.1	50.5	-9.9	1967
1968	30.5	35.3	45.9	147.1	30.5	133.9	33.3	19.4	103.0	98.9	103.4	34.6	615.8	1968
1969	37.9	27.9	37.7	85.3	98.6	45.4	14.8	30.5	81.5	156.1	83.1	34.4	733.2	1969
1970	27.3	12.1	23.1	29.9	84.5	73.1	30.0	42.6	67.2	162.3	92.5	26.8	671.4	1970
1971	72.6	55.4	173.8	70.3	118.6	50.1	41.2	67.4	44.4	128.8	97.0	50.1	975.7	1971
1972	70.6	90.2	105.9	133.6	145.9	56.2	38.1	36.7	32.8	42.7	114.2	18.0	884.9	1972
1973	3.0	1.5	60.8	31.5	69.4	72.4	74.6	68.3	108.6	74.2	110.6	65.1	740.0	1973
1974	30.1	46.7	135.3	92.4	60.4	24.2	31.6	41.3	65.9	104.8	106.5	37.8	777.0	1974
1975	2.6	56.6	78.5	61.8	102.1	93.9	55.7	62.5	41.1	84.0	66.0	90.1	838.9	1975
1976	26.6	52.0	120.0	61.9	75.8	59.2	37.8	8.5	38.4	97.7	55.6	40.8	674.3	1976
1977	0.3	17.9	27.9	75.1	84.4	26.0	38.6	66.4	101.3	114.0	102.0	12.1	642.0	1977
1978	0.2	15.9	63.5	150.0	98.0	147.0	18.0	19.0	24.3	56.4	34.9	69.9	697.1	1978
1979	31.6	22.4	63.2	113.0	88.3	66.5	34.5	68.2	81.6	164.9	66.5	29.0	831.7	1979
NUMERO DE ANOS	12	12	12	12	14	14	14	14	14	14	14	14	12	
VALOR MAXIMO	72.6	90.2	173.8	150.0	145.9	147.0	95.7	68.3	108.6	164.9	114.2	90.1	975.7	
CUARTIL SUPERIOR	34.7	53.7	112.9	123.3	102.1	93.9	41.0	66.4	81.6	128.8	103.4	52.0	835.3	
MEDIANA	28.7	31.6	63.3	80.8	86.4	62.8	37.9	41.9	55.1	98.3	94.8	39.3	758.5	
CUARTIL INFERIOR	4.6	10.9	41.8	61.8	60.4	50.1	31.6	30.5	38.6	74.2	66.5	29.0	685.7	
VALOR MINIMO	0.2	1.5	23.1	29.9	22.7	24.2	14.8	8.5	24.3	42.7	34.9	12.1	642.0	
PROMEDIOS	28.3	36.3	78.0	88.2	82.3	72.1	40.7	45.1	62.3	102.9	86.5	43.7	773.5	
											TOTAL DE LOS PROMEDIOS MENSUALES =		766.2	
PORCENTAJES	3.7	4.7	10.2	11.5	10.7	9.4	5.3	5.9	8.1	13.4	11.3	5.7		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 14. INDICE DE APARICIOS = 72.

DEV. ESTANDAR	24.2	25.1	46.6	40.8	33.3	36.7	20.9	20.8	28.7	39.1	23.1	21.2	99.5
COEF. VARIACION	0.856	0.691	0.598	0.463	0.405	0.508	0.514	0.463	0.461	0.380	0.267	0.485	0.129
COEF. ASIMETRIA	0.755	0.722	0.823	0.210	-0.134	0.835	1.716	-0.313	0.425	0.295	-0.916	0.674	0.589

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212057	VENECIA	FACATATIVA	+04 51 00	+074 24 00	2673 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1957	11.5	56.2	136.7	73.8	137.7	38.2	44.8	24.5	62.2	155.5	124.6	59.0	924.7
1958	42.3	145.5	83.2	124.7	42.8	48.8	21.1	90.0	45.0	122.0	148.5	123.9	1037.8
1959	63.5	37.5	95.6	66.2	130.0	56.3	69.8	60.1	44.7	230.5	180.0	80.7	1154.9
1960	88.5	95.4	25.7	17.9	-9.9	16.0	87.2	85.4	83.0	159.9	58.2	154.2	-9.9
1961	59.5	41.8	79.4	156.7	27.9	111.5	65.5	34.5	32.6	252.1	164.6	71.2	1097.3
1962	51.0	77.4	117.5	159.0	213.0	89.0	60.5	95.9	73.1	144.7	140.9	124.7	1346.7
1963	151.0	137.4	41.8	189.6	224.5	80.8	85.3	66.8	53.5	207.3	97.1	66.5	1401.6
1964	10.8	41.8	29.3	136.0	91.5	222.0	88.6	89.1	85.2	105.8	97.2	85.9	1083.2
1965	55.0	16.3	33.0	175.1	104.9	36.8	40.9	58.8	72.8	213.6	352.3	73.5	1235.2
1966	5.1	39.0	117.7	169.6	107.2	83.6	121.9	108.2	113.3	144.8	227.0	105.5	1342.9
1967	29.6	70.5	137.8	192.5	132.5	121.3	63.6	37.9	28.5	139.0	168.5	93.3	1215.0
1968	75.1	69.1	49.0	77.6	71.4	159.1	62.7	44.4	165.8	141.0	120.6	70.9	1106.7
1969	62.8	64.9	48.2	59.8	32.3	46.8	46.9	70.9	79.8	199.7	78.5	54.4	847.0
1970	6.6	13.9	5.4	47.0	85.8	250.9	113.9	70.8	56.9	198.1	440.5	147.0	1436.8
1971	185.5	116.5	108.5	69.5	108.0	24.5	35.5	62.5	61.5	92.5	80.5	36.0	981.0
1972	123.5	65.5	203.5	281.0	142.0	49.5	83.5	42.0	47.5	35.5	129.8	69.0	1272.3
1973	23.0	17.0	73.0	45.0	124.0	42.0	159.5	96.0	140.5	147.0	138.5	171.5	1177.0
1974	94.5	134.5	233.0	106.0	44.5	28.0	36.5	37.5	91.0	122.0	169.0	33.5	1130.0
1975	11.0	57.9	72.7	60.0	143.5	64.5	116.5	53.0	80.5	147.5	179.0	202.0	1188.1
1976	86.0	70.0	196.0	142.5	101.0	52.5	44.0	35.0	60.0	164.5	94.5	75.0	1162.0
1977	39.0	39.0	81.5	52.5	69.0	66.0	46.0	55.0	173.0	169.0	123.5	56.5	1010.0
1978	16.5	39.5	137.5	109.0	101.0	56.0	33.0	10.0	25.0	145.5	46.0	70.0	833.0
1979	68.0	15.0	85.0	91.0	77.0	104.0	11.0	69.5	106.5	240.0	156.0	84.0	1107.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X VENECIA MUNICIPIO DE FACATATIVA PERIODO 1957 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1979	1107.0	1107.0	1107.0	-0.204	-0.025	
2	1978	833.0	1940.0	970.0	-1.677	-0.299	
3	1977	1010.0	2950.0	983.3	-0.756	-0.413	
4	1976	1162.0	4112.0	1028.0	0.131	-0.394	
5	1975	1188.1	5300.1	1060.0	0.291	-0.353	
6	1974	1130.0	6430.1	1071.7	-0.064	-0.362	
7	1973	1177.0	7607.1	1086.7	0.223	-0.330	
8	1972	1272.3	8879.4	1109.9	0.605	-0.214	
9	1971	981.0	9860.4	1095.6	-0.974	-0.354	
10	1970	1436.8	11297.2	1129.7	1.605	-0.094	
11	1969	847.0	12144.2	1104.0	-1.792	-0.352	
12	1968	1106.7	13250.9	1104.2	-0.206	-0.381	
13	1967	1215.0	14465.9	1112.8	0.455	-0.316	
14	1966	1342.9	15808.8	1129.2	1.236	-0.138	
15	1965	1235.2	17044.0	1136.3	0.576	-0.055	
16	1964	1083.2	18127.2	1132.9	-0.350	-0.105	
17	1963	1401.6	19528.8	1148.8	1.554	0.124	
18	1962	1346.7	20875.5	1159.7	1.255	0.304	
19	1961	1097.3	21972.8	1156.5	-0.264	0.267	
20	1959	1154.9	23127.7	1156.4	0.068	0.279	
21	1958	1037.8	24165.5	1150.7	-0.627	0.189	
22	1957	924.7	25090.2	1140.5	-1.317	0.0	

N	AN	T A	CU	MOY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 22 ANOS = 1140.5
DEVIACION ESTANDAR = 163.8
COEFICIENTE DE VARIACION = 0.144

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212057	VENECIA	FACATATIVA	+04 51 03	+074 24 14	2670 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	11.5	56.2	136.7	73.8	127.7	38.2	44.8	24.5	62.2	155.5	124.6	59.0	924.7	1957
1958	42.3	145.5	83.2	124.7	42.8	48.8	21.1	90.0	45.0	122.0	146.5	123.9	1037.8	1958
1959	63.5	37.5	95.6	66.2	130.0	96.3	69.8	60.1	44.7	230.5	160.0	80.7	1154.9	1959
1960	88.5	95.4	25.7	17.9	-9.9	16.0	87.2	85.4	83.0	159.9	56.2	154.2	-9.9	1960
1961	59.5	41.6	79.4	156.7	27.9	111.5	65.5	34.5	32.6	252.1	164.6	71.2	1097.3	1961
1962	51.0	77.4	117.5	159.0	213.0	89.0	60.5	95.9	73.1	144.7	140.9	124.7	1346.7	1962
1963	151.0	137.4	41.8	189.6	224.5	80.8	85.3	66.8	53.5	207.3	97.1	66.5	1401.6	1963
1964	10.8	41.2	29.3	136.0	91.5	222.0	88.6	89.1	85.2	105.8	97.2	85.9	1083.2	1964
1965	55.0	16.3	33.0	175.1	104.9	38.8	40.9	58.8	72.8	213.8	352.3	73.5	1235.2	1965
1966	5.1	39.0	117.7	169.6	107.2	83.6	121.9	108.2	113.3	144.8	227.0	105.5	1342.9	1966
1967	29.6	70.5	137.8	192.5	132.5	121.3	63.6	37.9	28.5	139.0	166.5	93.3	1215.0	1967
1968	75.1	69.1	49.0	77.6	71.4	159.1	62.7	44.4	165.8	141.0	120.6	70.9	1106.7	1968
1969	62.8	64.9	48.2	59.8	32.3	48.8	46.9	70.9	79.8	199.7	76.5	54.4	847.0	1969
1970	6.6	13.9	5.4	47.0	65.8	250.9	113.9	70.8	56.9	198.1	440.5	147.0	1436.8	1970
1971	185.5	116.5	108.5	69.5	108.0	24.6	35.5	62.5	61.5	92.5	80.5	36.0	981.0	1971
1972	123.5	65.5	203.5	281.0	142.0	49.5	83.5	42.0	47.5	35.5	129.8	69.0	1272.3	1972
1973	23.0	17.0	73.0	45.0	124.0	42.0	159.5	96.0	140.5	147.0	136.5	171.5	1177.0	1973
1974	94.5	134.5	233.0	106.0	44.5	28.0	36.5	37.5	91.0	122.0	169.0	33.5	1130.0	1974
1975	11.0	57.9	72.7	60.0	143.5	64.5	116.5	53.0	60.5	147.5	179.0	202.0	1188.1	1975
1976	86.0	70.0	196.0	142.5	101.0	93.5	44.0	35.0	60.0	164.5	94.5	75.0	1162.0	1976
1977	39.0	39.0	81.5	92.5	69.0	66.0	46.0	55.0	173.0	169.0	123.5	56.5	1010.0	1977
1978	16.5	39.5	137.5	109.0	101.0	96.0	33.0	10.0	25.0	149.5	46.0	70.0	833.0	1978
1979	68.0	15.0	85.0	91.0	77.0	104.0	11.0	69.5	106.5	240.0	156.0	84.0	1107.0	1979
NUMERO DE ANOS	23	23	23	23	22	23	23	23	23	23	23	23	22	
VALOR MAXIMO	185.5	145.5	233.0	281.0	224.5	250.9	159.5	108.2	173.0	252.1	440.5	202.0	1436.8	
CUARTIL SUPERIOR	86.0	77.4	136.7	159.0	132.5	104.0	87.2	85.4	91.0	199.7	169.0	123.9	1235.2	
MEDIANA	55.0	57.9	83.2	106.0	102.9	80.8	62.7	60.1	72.8	149.5	136.5	75.0	1142.4	
CUARTIL INFERIOR	16.5	39.0	48.2	66.2	71.4	42.0	40.9	37.9	47.5	139.0	97.1	66.5	1037.8	
VALOR MINIMO	5.1	13.9	5.4	17.9	27.9	16.0	11.0	10.0	25.0	35.5	46.0	33.5	833.0	
PROMEDIOS	59.1	63.5	95.3	114.9	105.1	85.8	66.9	60.8	77.5	160.1	152.8	91.7	1140.5	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1133.3	
PORCENTAJES	5.2	5.6	8.4	10.1	9.3	7.6	5.9	5.4	6.8	14.1	13.5	8.1		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 23. INDICE DE ARAOZOUS = 106.

DEV. ESTANDAR	47.3	39.3	59.3	62.0	50.8	59.2	36.1	25.5	40.1	50.3	69.0	43.3	163.8
COEF. VARIACION	0.800	0.619	0.623	0.539	0.483	0.690	0.540	0.420	0.517	0.314	0.453	0.473	0.144
COEF. ASIMETRIA	1.113	0.792	0.757	0.793	0.688	1.507	0.638	0.028	1.083	-0.204	2.023	1.084	-0.088

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212057	VENECIA	FACATATIVA	+04 51 03	+074 24 14	2670 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	88.5	95.4	25.7	17.9	132.5	16.0	87.2	85.4	83.0	159.9	58.2	154.2	1003.9	1960
1961	59.5	41.8	79.4	150.7	27.9	111.5	65.5	34.5	32.6	252.1	164.6	71.2	1097.3	1961
1962	51.0	77.4	117.5	159.0	213.0	89.0	60.5	95.9	73.1	144.7	140.9	124.7	1346.7	1962
1963	151.0	137.4	41.8	189.0	224.5	80.8	85.3	66.8	53.5	207.3	97.1	66.5	1401.6	1963
1964	10.8	41.8	29.3	130.0	91.5	222.0	88.6	89.1	85.2	105.8	97.2	85.9	1083.2	1964
1965	55.0	10.3	33.0	175.1	104.9	38.8	40.9	58.8	72.8	213.8	352.3	73.5	1235.2	1965
1966	5.1	39.0	117.7	169.6	107.2	83.6	121.9	108.2	113.3	144.8	227.0	105.5	1342.9	1966
1967	29.6	70.5	137.8	192.5	132.5	121.3	63.6	37.9	28.5	139.0	168.5	93.3	1215.0	1967
1968	75.1	69.1	49.0	77.6	71.4	159.1	62.7	44.4	165.8	141.0	120.6	70.9	1106.7	1968
1969	62.8	64.9	48.2	59.8	32.3	48.8	46.9	70.9	79.8	199.7	78.5	54.4	847.0	1969
1970	9.6	13.9	5.4	47.0	85.8	250.9	113.9	70.8	56.9	198.1	440.5	147.0	1436.8	1970
1971	185.5	116.5	108.5	69.5	108.0	24.5	35.5	62.5	61.5	92.5	80.5	36.0	981.0	1971
1972	123.5	65.5	203.5	281.0	142.0	49.5	83.5	42.0	47.5	35.5	129.8	69.0	1272.3	1972
1973	23.0	17.0	73.0	45.0	124.0	42.0	159.5	96.0	140.5	147.0	138.5	171.5	1177.0	1973
1974	94.5	134.5	233.0	106.0	44.5	28.0	36.5	37.5	91.0	122.0	169.0	33.5	1130.0	1974
1975	11.0	57.9	72.7	60.0	143.5	64.5	116.5	53.0	80.5	147.5	179.0	202.0	1188.1	1975
1976	80.0	70.0	196.0	142.5	101.0	93.5	44.0	35.0	60.0	164.5	94.5	75.0	1162.0	1976
1977	39.0	39.0	81.5	92.5	69.0	66.0	46.0	55.0	173.0	169.0	123.5	56.5	1010.0	1977
1978	16.5	39.5	137.5	109.0	101.0	96.0	33.0	10.0	25.0	149.5	46.0	70.0	833.0	1978
1979	68.0	15.0	85.0	91.0	77.0	104.0	11.0	69.5	106.5	240.0	156.0	84.0	1107.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	185.5	137.4	233.0	281.0	224.5	250.9	159.5	108.2	173.0	252.1	440.5	202.0	1436.8	
CUARTIL SUPERIOR	87.3	73.9	127.6	164.3	132.5	107.8	87.9	78.1	98.8	198.9	168.8	115.1	1253.7	
MEDIANA	57.3	61.4	80.4	107.5	102.9	82.2	63.1	60.6	76.4	148.5	134.1	74.3	1146.0	
CUARTIL INFERIOR	19.8	39.0	45.0	64.8	74.2	45.4	42.4	39.9	55.2	140.0	95.8	67.8	1046.6	
VALOR MINIMO	5.1	13.9	5.4	17.9	27.9	16.0	11.0	10.0	25.0	35.5	46.0	33.5	833.0	
PROMEDIOS	62.1	61.1	93.8	118.9	106.7	89.5	70.1	61.2	81.5	158.7	153.1	92.2	1148.8	
PORCENTAJES	5.4	5.3	8.2	10.3	9.3	7.8	6.1	5.3	7.1	13.8	13.3	8.0		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 22. INDICE DE ARNOLDUS = 106.

INDICE DE IRREGULARIDAD INTERANUAL =1.45

DEV. ESTANDAR	49.4	37.3	63.0	64.9	50.9	62.0	36.9	25.3	41.5	50.9	95.4	45.3	166.0
COEF. VARIACION	0.796	0.611	0.672	0.546	0.478	0.693	0.526	0.414	0.509	0.321	0.623	0.492	0.144

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1422.	1362.	1289.	1149.	1009.	936.	876.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.990	0.708	0.804	0.645	0.749	1.379	0.752	-0.064	0.885	-0.271	1.924	1.071	-0.154

IMPRESO EN COLOMBIA POR DANARIN S.

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212516	LA RAMADA	FUNZA	+04 42 11	+074 10 41	2545 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1938	-9.9	27.3	60.4	122.5	142.0	31.5	40.0	89.6	23.1	150.4	53.3	144.6	-9.9
1939	6.0	6.2	42.8	57.5	102.2	61.8	23.1	26.6	41.3	72.5	96.3	29.2	565.5
1940	23.6	19.2	23.6	57.3	56.4	39.0	9.6	19.5	34.1	196.6	157.4	44.4	682.7
1941	32.9	47.7	6.5	62.1	70.9	25.4	5.3	29.9	58.3	66.4	90.3	36.6	542.3
1942	20.3	54.6	48.0	102.0	93.4	45.3	69.0	22.9	36.5	167.4	145.1	102.6	907.1
1943	86.4	81.6	82.2	91.7	52.9	30.1	27.9	49.9	28.6	118.9	84.8	111.0	846.0
1944	20.8	33.7	75.4	61.2	-9.9	-9.9	-9.9	-9.9	21.5	130.6	65.3	56.1	-9.9
1945	4.6	49.4	17.6	195.4	178.5	25.1	20.4	14.0	12.2	250.2	108.0	47.2	922.6
1946	30.9	34.0	57.8	88.8	55.1	23.3	32.9	48.5	11.1	78.2	80.7	89.9	631.2
1947	10.8	5.8	48.5	22.6	46.8	52.1	110.0	49.0	78.9	175.5	29.0	19.6	648.6
1948	3.5	21.3	15.5	112.5	96.2	42.6	35.9	44.5	42.4	47.4	29.6	63.4	554.8
1949	23.5	20.3	39.2	60.9	108.8	114.3	73.1	30.6	60.9	78.2	88.6	9.9	702.3
1950	92.8	114.5	69.5	92.9	128.5	89.9	53.7	37.8	32.1	115.5	-9.9	28.9	-9.9
1951	19.2	63.6	79.4	47.6	85.2	35.9	35.2	28.9	-9.9	-9.9	-9.9	-9.9	-9.9
1952	12.3	18.2	30.8	129.8	106.2	48.3	64.7	16.8	44.3	29.1	134.7	54.0	679.2
1953	14.8	23.6	39.9	68.0	117.6	67.0	22.3	21.3	79.3	117.1	151.6	21.3	743.8
1954	26.1	18.5	52.4	126.9	83.8	59.8	49.8	52.2	35.9	155.3	69.7	99.7	830.1
1955	17.7	30.8	62.2	128.4	73.3	104.2	71.7	28.0	86.8	184.2	120.9	80.3	988.5
1956	40.4	79.1	67.5	92.2	60.5	112.3	32.9	31.6	67.3	192.9	55.2	78.8	910.7
1957	27.2	21.2	48.2	127.9	86.7	27.9	29.9	34.9	42.2	116.7	52.9	22.2	637.9
1958	27.4	50.3	80.8	123.8	56.6	23.4	13.0	73.9	44.7	73.3	92.5	92.4	752.1
1959	17.2	15.2	35.7	62.9	51.4	86.5	70.7	37.9	29.2	55.8	62.3	32.4	556.9
1960	28.0	37.3	30.3	91.0	61.9	-9.9	51.5	39.9	58.6	65.7	53.8	81.4	-9.9
1961	29.5	11.6	90.7	102.4	34.5	70.9	50.9	27.1	20.7	126.9	122.9	43.4	731.5
1962	32.2	10.0	73.0	74.3	98.4	93.6	31.1	52.8	48.5	53.1	53.3	51.9	672.2
1963	26.6	67.8	54.4	64.6	89.6	67.7	28.7	36.7	17.4	115.8	76.0	15.5	660.8
1964	3.9	20.9	35.4	121.5	77.6	105.7	78.3	50.4	37.0	79.9	61.0	43.4	715.0
1965	6.8	20.7	37.5	191.1	92.4	16.1	23.7	30.7	17.7	111.4	88.7	32.3	669.1
1966	2.5	11.2	47.0	38.1	63.0	78.9	40.2	61.9	22.1	85.3	119.1	80.6	653.9
1967	5.6	25.1	20.0	46.9	93.5	86.6	48.3	27.7	27.3	76.2	106.8	57.9	621.9
1968	12.0	42.2	44.8	119.2	54.8	98.6	28.4	14.2	70.1	73.4	150.3	16.4	724.4
1969	58.2	37.3	26.4	146.4	60.1	52.6	9.2	34.2	90.5	171.7	41.5	46.7	814.8
1970	35.5	39.1	11.8	49.0	100.0	56.0	55.0	36.7	56.7	257.3	39.4	30.7	767.2
1971	115.1	65.2	94.0	70.1	74.2	59.3	34.2	58.9	81.8	70.2	103.3	42.4	868.7
1972	45.5	40.1	51.3	115.3	110.2	89.0	55.8	33.4	27.2	78.7	107.5	34.3	758.3
1973	2.0	2.0	51.2	59.4	75.1	63.0	39.8	56.3	115.9	102.9	71.1	83.0	721.7
1974	53.9	59.7	30.3	97.7	59.5	38.8	14.8	51.7	94.6	74.0	150.2	15.5	740.7
1975	1.1	36.4	130.2	40.9	118.2	66.5	45.6	61.8	79.3	137.1	59.8	71.6	848.5
1976	22.1	52.8	-9.9	-9.9	61.9	45.2	8.5	19.3	47.1	101.8	70.8	50.8	-9.9
1977	3.4	27.5	72.0	52.9	28.4	20.3	37.3	40.3	110.1	150.5	65.2	25.1	633.0
1978	6.6	11.1	52.5	153.0	109.6	66.6	29.1	16.3	50.6	85.2	29.6	29.8	644.0
1979	20.2	42.1	51.8	94.8	85.7	64.6	17.6	87.3	62.6	125.3	128.2	23.8	804.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR PANAMA

ESTACION X LA BANADA MUNICIPIO DE FLORIDA PERIODO 1938 - 1979 COEF DE CORRECCION 1.000

N	AN	T #	CU	MCY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1979	804.0	804.0	804.0	C.652	C.107	I+
2	1978	644.0	1448.0	724.0	-C.736	-C.007	+
3	1977	633.0	2081.0	693.7	-C.834	-C.135	+I
4	1976	848.5	2929.5	732.4	1.065	C.033	+
5	1974	740.7	3670.2	734.0	C.127	C.052	+.
6	1973	721.7	4391.9	732.0	-C.042	C.046	+
7	1972	758.3	5150.2	735.7	C.284	C.090	+.
8	1971	866.7	6016.9	752.4	1.265	C.285	I + .
9	1970	767.2	6786.1	754.0	C.364	C.342	I *
10	1969	814.8	7600.9	760.1	C.788	C.463	I + .
11	1968	724.4	8325.3	756.8	-C.016	C.460	. +
12	1967	621.9	8947.2	745.6	-C.533	C.316	I +
13	1966	653.9	9601.1	736.5	-C.647	C.217	I +
14	1965	669.1	10270.2	733.6	-C.512	C.136	I+
15	1964	715.0	10985.2	732.3	-C.102	C.122	.I+
16	1963	660.8	11646.0	727.9	-C.566	C.032	+
17	1962	672.2	12318.2	724.6	-C.464	-C.043	+
18	1961	731.5	13049.7	725.0	C.045	-C.036	*
19	1959	556.9	13606.6	716.1	-1.513	-C.270	+ I
20	1958	752.1	14358.7	717.5	C.225	-C.234	+ I .
21	1957	637.9	14996.6	714.1	-C.750	-C.356	+ I
22	1956	910.7	15907.3	723.1	1.644	-C.103	+I .
23	1955	988.5	16895.8	734.6	2.338	C.258	I + .
24	1954	830.1	17725.9	738.6	C.525	C.401	I + .
25	1953	743.8	18469.7	738.8	C.155	C.425	I. +
26	1952	675.2	19144.9	736.5	-C.421	C.360	. I +
27	1949	702.3	19891.2	735.2	-C.218	C.327	. I +
28	1948	554.8	20406.0	728.8	-1.531	C.090	+
29	1947	648.6	21054.6	726.0	-C.654	-C.017	+
30	1946	631.2	21685.8	722.5	-C.650	-C.148	+I
31	1945	922.6	22608.4	729.3	1.750	C.122	I+ .
32	1943	846.0	23454.4	732.5	1.067	C.287	I + .
33	1942	907.1	24361.5	738.2	1.612	C.535	I + .
34	1941	542.3	24903.8	732.5	-1.643	C.282	I +
35	1940	682.7	25586.4	731.0	-C.350	C.222	. I +
36	1939	565.5	26151.9	726.4	-1.436	C.C	+

N	AN	T #	CU	MCY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 36 ANOS = 726.4

DEVIACION ESTANDAR = 112.1

COEFICIENTE DE VARIACION = 0.154

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTCM *** CALPC DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
21251o	LA RAMADA	FUNZA	+04 42 12	+074 10 41	2545 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1938	-9.9	27.3	60.4	122.5	142.0	31.5	40.0	89.6	23.1	150.4	53.3	144.6	-9.9	1938
1939	o.o	o.2	42.8	57.5	102.2	61.8	23.1	26.6	41.3	72.5	96.3	29.2	565.5	1939
1940	23.6	15.2	23.6	57.3	86.4	39.0	9.6	19.5	34.1	198.6	157.4	44.4	682.7	1940
1941	32.9	47.7	6.5	62.1	70.9	35.4	5.3	29.9	58.3	66.4	90.3	36.6	542.3	1941
1942	20.3	54.6	48.0	102.0	93.4	45.3	69.0	22.9	36.5	167.4	145.1	102.6	907.1	1942
1943	80.4	61.6	82.2	91.7	82.9	30.1	27.9	49.9	28.6	118.9	84.8	111.0	846.0	1943
1944	20.8	33.7	75.4	61.2	-9.9	-9.9	-9.9	-9.9	21.5	130.6	65.3	56.1	-9.9	1944
1945	4.6	49.4	17.6	195.4	178.5	25.1	20.4	14.0	12.2	250.2	108.0	47.2	922.6	1945
1946	30.9	34.0	57.8	88.8	85.1	23.3	32.9	48.5	11.1	78.2	80.7	89.9	631.2	1946
1947	10.8	5.8	48.5	22.6	46.8	52.1	110.0	49.0	78.9	175.5	29.0	19.6	648.6	1947
1948	3.5	21.3	15.5	112.5	96.2	42.6	35.9	44.5	42.4	47.4	29.6	63.4	554.8	1948
1949	23.5	20.3	39.2	60.9	108.8	114.3	73.1	30.6	60.9	72.2	88.6	9.9	702.3	1949
1950	92.8	114.5	69.5	92.9	128.5	89.9	53.7	37.8	32.1	119.5	-9.9	28.9	-9.9	1950
1951	19.2	63.6	79.4	47.6	85.2	35.9	35.2	28.9	-9.9	-9.9	-9.9	-9.9	-9.9	1951
1952	12.3	18.2	30.8	129.8	106.2	48.3	54.7	16.8	44.3	29.1	134.7	54.0	679.2	1952
1953	14.8	23.6	39.9	68.0	117.6	67.0	22.3	21.3	79.3	117.1	151.6	21.3	743.8	1953
1954	20.1	18.5	52.4	120.9	83.8	59.8	49.8	52.2	35.9	155.3	69.7	99.7	830.1	1954
1955	17.7	30.8	62.2	128.4	73.3	104.2	71.7	28.0	66.8	184.2	120.9	80.3	988.5	1955
1956	40.4	79.1	67.5	92.2	60.5	112.3	32.9	31.6	67.3	192.9	55.2	78.8	910.7	1956
1957	27.2	21.2	48.2	127.9	86.7	27.9	29.9	34.9	42.2	116.7	52.9	22.2	637.9	1957
1958	27.4	80.3	80.8	123.8	86.6	23.4	13.0	73.9	44.7	73.3	92.5	92.4	752.1	1958
1959	17.2	15.2	39.7	62.9	81.4	86.5	70.7	37.9	29.2	55.5	62.3	32.4	556.9	1959
1960	28.0	37.3	30.3	91.0	61.9	-9.9	51.5	39.9	58.6	65.7	53.8	81.4	-9.9	1960
1961	29.5	11.6	90.7	102.4	34.5	70.9	50.9	27.1	20.7	126.9	122.9	43.4	731.5	1961
1962	32.2	10.0	73.0	74.3	98.4	93.6	31.1	52.8	48.5	53.1	53.3	51.9	672.2	1962
1963	26.6	67.8	54.4	64.6	89.6	67.7	28.7	36.7	17.4	115.6	76.0	15.5	660.8	1963
1964	3.9	20.9	35.4	121.5	77.6	105.7	78.3	50.4	37.0	79.9	61.0	43.4	715.0	1964
1965	o.8	20.7	37.5	191.1	92.4	16.1	23.7	30.7	17.7	111.4	88.7	32.3	669.1	1965
1966	2.5	11.2	47.0	38.1	63.0	78.9	40.2	61.9	22.1	89.3	119.1	80.6	653.9	1966
1967	5.o	25.1	20.0	46.9	93.5	86.6	48.3	27.7	27.3	76.2	106.8	57.9	621.9	1967
1968	12.0	42.2	44.8	119.2	84.8	98.6	28.4	14.2	70.1	73.4	150.3	16.4	724.4	1968
1969	53.2	37.3	26.4	146.4	60.1	92.6	9.2	34.2	90.5	171.7	41.5	46.7	814.8	1969
1970	35.5	39.1	11.8	49.0	100.0	56.0	55.0	36.7	56.7	257.3	39.4	30.7	767.2	1970
1971	115.1	65.2	94.0	70.1	74.2	59.3	34.2	58.5	81.8	70.2	103.3	42.4	868.7	1971
1972	45.5	40.1	51.3	115.3	110.2	59.0	55.8	33.4	27.2	78.7	107.5	34.3	758.3	1972
1973	2.0	2.0	51.2	59.4	75.1	63.0	39.8	56.3	115.9	102.9	71.1	83.0	721.7	1973
1974	53.9	59.7	30.3	97.7	89.5	38.8	14.8	51.7	94.6	74.0	150.2	15.5	740.7	1974
1975	1.1	36.4	130.2	40.9	118.2	66.5	45.6	61.8	79.3	137.1	59.8	71.6	848.5	1975
1976	22.1	52.8	-9.9	-9.9	61.9	45.2	8.5	19.3	47.1	101.8	70.8	50.8	-9.9	1976
1977	3.4	27.5	72.0	52.9	28.4	20.3	37.3	40.3	110.1	150.5	65.2	25.1	633.0	1977
1978	o.6	11.1	52.5	153.0	109.6	66.6	29.1	16.3	50.6	89.2	29.6	29.8	644.0	1978
1979	20.2	42.1	51.8	94.8	85.7	64.6	17.6	87.3	62.6	125.3	128.2	23.8	804.0	1979

*** CARACTERISTICAS PLUVICMETRICAS MENSUALES Y ANUALES DE LA PAGINA ANTERICR ***

ANCS	ENE	FEE	MAR	ABR	MAY	JUN	JUL	AGC	SEP	OCT	NOV	DIC	TOTAL ANOS
NUMERO DE ANCS	41	42	41	41	41	40	41	41	41	41	40	41	36
VALOR MAXIMO	115.1	114.5	130.2	195.4	178.5	114.3	110.0	89.6	115.9	257.3	157.4	144.6	988.5
CUARTIL SUPERICR	31.5	49.4	68.5	122.0	101.1	82.7	52.6	51.0	68.7	150.4	112.5	79.5	809.4
MEDIANA	20.8	32.2	48.5	91.7	83.8	59.5	35.2	36.7	44.3	111.4	88.7	44.4	718.3
CUARTIL INFERICR	6.7	19.2	33.1	60.1	59.8	37.3	23.4	27.4	27.9	73.3	57.5	29.0	646.3
VALOR MINIMO	1.1	2.0	6.5	22.6	28.4	16.1	5.3	14.0	11.1	29.1	29.0	9.9	542.3
PROMEDIOS	26.1	35.6	50.9	91.8	83.0	60.1	39.2	39.7	49.9	115.2	86.7	52.2	726.4
											TOTAL DE LOS PROMEDICS MENSUALES =		730.4
PORCENTAJES	3.6	4.9	7.0	12.6	11.4	8.2	5.4	5.4	6.8	15.8	11.9	7.1	

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENCS LLUVICSO ENE FEE MAR

INDICE DE FOURNIER = 18. INDICE DE ARNCLDUS = 72.

DEV. ESTANDAR	25.0	23.7	25.2	40.1	30.0	27.5	22.2	18.3	27.0	53.2	37.0	31.0	112.1
COEF. VARIACION	0.959	0.664	0.494	0.436	0.362	0.458	0.564	0.462	0.541	0.462	0.427	0.594	0.154
COEF. ASIMETRIA	1.948	1.145	0.719	0.657	0.796	0.315	0.905	0.934	0.677	0.887	0.348	0.918	0.436

PROYECTO IGAC-CRSTOM *** GRUPC DE HIDRCCLIMATCLOGIA

PROGRAMA CRSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
21251b	LA RAMADA	FUNZA	+04 42 12	+074 10 41	2545 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	28.0	37.3	30.3	91.0	61.9	68.6	51.5	39.9	58.6	65.7	53.8	81.4	668.0	1960
1961	29.5	11.6	90.7	102.4	34.5	70.9	50.9	27.1	20.7	126.9	122.9	43.4	731.5	1961
1962	32.2	10.0	73.0	74.3	98.4	93.6	31.1	52.8	48.5	53.1	53.3	51.9	672.2	1962
1963	26.6	67.8	54.4	64.6	89.6	67.7	28.7	36.7	17.4	115.8	76.0	15.5	660.8	1963
1964	3.9	20.9	35.4	121.5	77.6	105.7	78.3	50.4	37.0	79.9	61.0	43.4	715.0	1964
1965	6.8	20.7	37.5	191.1	92.4	16.1	23.7	30.7	17.7	111.4	88.7	32.3	669.1	1965
1966	2.5	11.2	47.0	38.1	63.0	78.9	40.2	61.9	22.1	89.3	119.1	80.6	653.9	1966
1967	5.6	25.1	20.0	46.9	93.5	86.6	48.3	27.7	27.3	76.2	106.8	57.9	621.9	1967
1968	12.0	42.2	44.8	119.2	54.8	98.6	28.4	14.2	70.1	73.4	150.3	16.4	724.4	1968
1969	58.2	37.3	26.4	146.4	60.1	92.6	9.2	34.2	90.5	171.7	41.5	46.7	814.8	1969
1970	35.5	39.1	11.8	49.0	100.0	56.0	55.0	36.7	56.7	257.3	39.4	30.7	767.2	1970
1971	115.1	65.2	94.0	70.1	74.2	59.3	34.2	58.9	81.8	70.2	103.3	42.4	868.7	1971
1972	45.5	40.1	51.3	115.3	110.2	59.0	55.8	33.4	27.2	78.7	107.5	34.3	758.3	1972
1973	2.0	2.0	51.2	59.4	75.1	63.0	39.8	56.3	115.9	102.9	71.1	83.0	721.7	1973
1974	53.9	59.7	30.3	97.7	59.5	38.8	14.8	51.7	94.6	74.0	150.2	15.5	740.7	1974
1975	1.1	36.4	130.2	40.9	118.2	66.5	45.6	61.8	79.3	137.1	59.8	71.6	848.5	1975
1976	22.1	52.8	111.3	106.2	61.9	45.2	8.5	19.3	47.1	101.8	70.8	50.8	697.8	1976
1977	3.4	27.5	72.0	52.9	28.4	20.3	37.3	40.3	110.1	150.5	65.2	25.1	633.0	1977
1978	6.6	11.1	52.5	153.0	109.6	66.6	29.1	16.3	50.6	89.2	29.6	29.8	644.0	1978
1979	20.2	42.1	51.8	94.8	85.7	64.6	17.6	87.3	62.6	125.3	128.2	23.8	804.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	115.1	67.8	130.2	191.1	118.2	105.7	78.3	87.3	115.9	257.3	150.3	83.0	868.7	
CUARTIL SUPERIOR	33.8	42.1	72.5	117.2	95.9	82.7	49.6	54.5	80.5	126.1	113.3	54.9	762.7	
MEDIANA	21.1	36.8	51.2	92.9	76.3	66.5	35.7	38.3	53.6	95.5	73.5	42.9	718.3	
CUARTIL INFERIOR	4.7	16.1	32.8	56.1	61.0	57.5	26.0	29.2	27.2	75.1	56.8	27.4	664.4	
VALOR MINIMO	1.1	2.0	11.8	38.1	28.4	16.1	8.5	14.2	17.4	53.1	29.6	15.5	621.9	
PROMEDIOS	25.5	33.0	55.8	91.7	77.4	65.9	36.4	41.9	56.8	107.5	84.9	43.8	720.8	
PORCENTAJES	3.5	4.6	7.7	12.7	10.7	9.1	5.1	5.8	7.9	14.9	11.8	6.1		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 70.

INDICE DE IRREGULARIDAD INTERANUAL =1.29

DEV. ESTANDAR	27.6	19.1	31.0	41.4	24.6	23.7	17.6	18.2	30.9	46.9	36.6	21.9	71.8
COEF. VARIACION	1.079	0.579	0.556	0.451	0.318	0.360	0.483	0.435	0.545	0.436	0.431	0.499	0.100

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	839.	813.	781.	721.	660.	629.	603.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.958	0.231	0.951	0.707	-0.248	-0.439	0.368	0.600	0.414	1.870	0.372	0.558	0.605

IMPRESO EN COLOMBIA POR DANKERANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
241509	EL SANTUARIO	FUQUENE	+05 28 00	+073 44 00	2580 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1960	-9.9	-9.9	-9.9	110.3	80.1	24.6	46.3	56.2	30.2	185.6	40.9	106.9	-9.9
1961	74.0	7.9	76.6	94.2	21.3	51.7	25.2	8.3	17.5	173.5	177.3	54.4	781.9
1962	40.1	60.3	95.4	115.1	85.4	145.2	10.1	54.0	27.7	140.1	166.3	47.3	987.0
1963	21.6	66.5	170.0	214.1	106.6	69.6	22.7	25.3	14.0	126.6	226.2	14.3	1097.5
1964	14.1	51.4	56.1	226.5	125.3	79.1	59.0	46.6	50.0	154.7	138.5	52.6	1053.9
1965	22.0	70.5	51.7	187.1	95.1	11.4	8.6	32.9	7.8	127.8	199.4	42.3	856.6
1966	10.1	26.2	73.4	86.5	127.8	100.8	26.2	41.2	80.9	114.7	232.8	85.9	1006.5
1967	68.6	92.4	48.6	112.0	85.6	71.3	29.8	22.9	36.5	100.5	-9.9	39.2	-9.9
1968	14.0	31.4	75.8	175.0	76.8	50.7	7.7	8.9	88.9	135.4	128.9	19.7	857.2
1969	63.3	80.6	46.4	234.9	85.7	85.3	9.8	7.4	66.5	127.6	81.1	109.2	997.8
1970	56.6	38.0	34.1	112.3	138.5	37.5	31.1	29.9	75.0	182.4	123.6	36.7	895.7
1971	117.2	58.1	221.4	252.6	198.1	40.9	22.0	48.9	58.2	156.5	143.1	54.4	1411.4
1972	98.9	52.1	58.0	242.0	105.5	50.7	76.6	86.5	46.9	65.6	93.1	34.3	1014.2
1973	6.7	9.0	124.6	111.6	122.6	88.4	111.1	79.2	137.4	158.6	176.3	162.0	1287.5
1974	24.4	83.2	152.0	200.7	97.3	62.4	11.1	61.2	155.4	146.3	213.8	33.4	1241.2
1975	9.4	73.9	82.8	135.1	148.8	59.6	123.1	76.1	105.3	146.6	80.7	91.0	1174.4
1976	38.6	73.3	146.4	78.3	83.8	34.6	0.9	42.6	58.8	243.3	134.3	74.5	1009.4
1977	17.2	12.1	57.8	26.5	32.5	60.5	38.1	45.0	97.3	154.0	183.7	93.6	838.3
1978	25.2	68.1	172.3	232.9	117.8	32.3	61.8	37.3	54.4	55.8	53.7	80.4	1036.0
1979	56.2	31.6	182.0	169.9	112.0	72.4	59.3	89.0	99.0	174.5	182.1	59.8	1287.8

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRA

ESTACION X CARMEN DE CARUPA MUNICIPIO DE CARMEN DE CARUPA PERIODO 1962 - 1979 COEF DE CORRECCION 1.000

ESTACION Y EL SANTUARIO MUNICIPIO DE FUQUENE PERIODO 1962 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	1032.	1288.	1.050	0.060					+				
2	1978	1795.	2324.	0.964	0.025					+				
3	1977	2429.	3162.	0.991	0.018					*				
4	1976	3249.	4171.	1.065	0.079					+				
5	1975	4154.	5346.	1.010	0.090					*				
6	1974	5037.	6587.	0.932	0.011					+				
7	1973	5804.	7875.	0.780	-0.251					+ I				
8	1972	6688.	8889.	1.142	-0.118					+I				
9	1971	7742.	10300.	0.978	-0.147					+I				
10	1970	8384.	11196.	0.939	-0.197					+I				
11	1969	9137.	12194.	0.990	-0.207					+I				
12	1968	9981.	13051.	1.289	0.023					+				
13	1964	10629.	14105.	0.893	-0.081					+				
14	1962	11520.	15092.	1.089	0.000					+				

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 822.8 1078.0

RAZONES PROMEDIOS Y/X = 1.310

X/Y = 0.763

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
241509	EL SANTUARIO	FLORENE	+05 28 08	+073 44 32	2615 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	-9.9	-9.9	110.4	60.1	24.6	46.3	56.2	30.2	189.6	40.9	106.9	-9.9	1960
1961	74.0	7.9	76.6	94.2	21.3	51.7	25.2	8.3	17.5	173.5	177.3	54.4	781.9	1961
1962	40.1	60.3	95.4	115.1	85.4	145.2	10.1	54.0	27.7	140.1	166.3	47.3	987.0	1962
1963	21.6	60.5	170.0	214.1	106.6	89.6	22.7	25.3	14.0	126.6	226.2	14.3	1097.5	1963
1964	14.1	51.4	56.1	226.5	125.3	79.1	59.0	46.6	50.0	154.7	136.5	52.6	1053.9	1964
1965	22.0	70.5	51.7	167.1	95.1	11.4	8.6	32.9	7.6	127.6	199.4	42.3	856.6	1965
1966	10.1	20.2	73.4	80.5	127.8	100.8	26.2	41.2	60.9	114.7	232.8	85.9	1006.5	1966
1967	68.6	92.4	48.6	112.0	85.6	71.3	29.8	22.9	36.5	100.5	-9.9	39.2	-9.9	1967
1968														1968
1969	63.3	80.6	46.4	234.9	85.7	85.3	9.8	7.4	66.5	127.6	81.1	109.2	997.8	1969
1970	56.6	38.0	34.1	112.3	138.5	37.5	21.1	29.9	75.0	182.4	123.6	36.7	895.7	1970
1971	117.2	58.1	221.4	252.6	158.1	40.9	22.0	48.9	58.2	156.5	143.1	94.4	1411.4	1971
1972	98.9	52.1	58.0	242.0	105.5	50.7	76.6	86.5	46.9	69.6	93.1	34.3	1014.2	1972
1973	6.7	9.0	124.6	111.6	122.6	88.4	111.1	79.2	137.4	158.6	176.3	162.0	1287.5	1973
1974	24.4	83.2	152.0	200.7	97.3	62.4	11.1	61.2	155.4	146.3	213.8	33.4	1241.2	1974
1975	9.4	73.9	82.8	135.1	148.8	99.6	123.1	76.1	105.3	148.6	80.7	91.0	1174.4	1975
1976	38.6	73.3	146.4	78.3	83.8	34.6	0.9	42.6	58.8	243.3	134.3	74.5	1009.4	1976
1977	17.2	12.1	57.8	26.5	32.5	80.5	38.1	45.0	97.3	154.0	183.7	93.6	838.3	1977
1978	25.2	68.1	172.3	232.9	117.8	32.3	61.8	37.3	54.4	99.8	83.7	80.4	1036.0	1978
1979	56.2	31.6	182.0	169.9	112.0	72.4	59.3	89.0	99.0	174.5	182.1	59.8	1287.8	1979
NUMERO DE ANOS	18	18	18	19	19	19	19	19	19	19	18	19	17	
VALOR MAXIMO	117.2	92.4	221.4	252.6	158.1	145.2	123.1	89.0	155.4	243.3	232.8	162.0	1411.4	
CUARTIL SUPERIOR	63.3	73.3	152.0	226.5	125.3	88.4	59.3	61.2	97.3	173.5	183.7	93.6	1207.6	
MEDIANA	31.9	59.2	79.7	135.1	105.5	71.3	29.8	45.0	58.2	148.6	154.7	59.8	1014.2	
CUARTIL INFERIOR	17.2	31.6	56.1	110.3	85.4	37.5	11.1	29.9	30.2	126.6	93.1	39.2	941.3	
VALOR MINIMO	6.7	7.9	34.1	26.5	21.3	11.4	0.9	7.4	7.8	69.6	40.9	14.3	781.9	
PROMEDIOS	42.6	53.1	102.8	154.9	103.7	66.2	40.7	46.9	64.1	146.8	147.0	69.1	1057.5	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1037.6	
PORCENTAJES	4.1	5.1	9.9	14.9	10.0	6.4	3.9	4.5	6.2	14.1	14.2	6.7		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 23. INDICE DE ARNOLDUS = 106.

DEV. ESTANDAR	32.2	26.5	57.5	67.4	39.3	32.7	34.1	23.9	40.7	38.6	56.4	35.8	174.4
COEF. VARIACION	0.759	0.499	0.559	0.435	0.379	0.493	0.838	0.511	0.635	0.263	0.397	0.518	0.165
COEF. ASIMETRIA	0.947	-0.503	0.660	-0.043	0.053	0.450	1.218	0.220	0.719	0.378	-0.246	0.841	0.426

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
241509	EL SANTUARIO	FUQUENE	+05 28 08	+073 44 32	2615 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	72.0	74.2	171.9	110.3	80.1	24.6	46.3	56.2	30.2	189.6	40.9	106.9	1003.2	1960
1961	74.0	7.9	76.6	94.2	21.3	51.7	25.2	8.3	17.5	173.5	177.3	54.4	781.9	1961
1962	40.1	60.3	95.4	115.1	85.4	145.2	10.1	54.0	27.7	140.1	166.3	47.3	987.0	1962
1963	21.6	66.5	170.0	214.1	106.6	89.6	22.7	25.3	14.0	126.6	226.2	14.3	1097.5	1963
1964	14.1	51.4	56.1	226.5	125.3	79.1	59.0	46.6	50.0	154.7	136.5	52.6	1053.9	1964
1965	22.0	70.5	51.7	187.1	55.1	11.4	8.6	32.9	7.8	127.8	199.4	42.3	856.6	1965
1966	10.1	26.2	73.4	86.5	127.8	100.8	26.2	41.2	80.9	114.7	232.8	85.9	1006.5	1966
1967	68.6	92.4	48.6	112.0	85.6	71.3	29.8	22.9	36.5	100.5	178.0	39.2	885.4	1967
1968	17.1	38.2	92.3	213.1	93.5	110.5	9.4	10.8	108.3	169.8	157.0	24.0	1044.0	1968
1969	63.3	80.0	46.4	234.9	85.7	85.3	9.8	7.4	66.5	127.6	81.1	109.2	997.8	1969
1970	56.6	38.0	34.1	112.3	138.5	37.5	31.1	29.9	75.0	182.4	123.6	36.7	895.7	1970
1971	117.2	58.1	221.4	252.6	198.1	40.9	22.0	48.9	58.2	156.5	143.1	94.4	1411.4	1971
1972	98.9	52.1	58.0	242.0	105.5	50.7	76.6	86.5	46.9	69.6	93.1	34.3	1014.2	1972
1973	6.7	9.0	124.6	111.6	122.6	88.4	111.1	79.2	137.4	158.6	176.3	162.0	1287.5	1973
1974	24.4	83.2	152.0	200.7	97.3	62.4	11.1	61.2	155.4	146.3	213.8	33.4	1241.2	1974
1975	9.4	73.9	82.8	135.1	148.8	99.6	123.1	70.1	105.3	148.6	80.7	91.0	1174.4	1975
1976	38.6	73.3	146.4	78.3	83.8	34.6	0.9	42.6	58.8	243.3	134.3	74.5	1009.4	1976
1977	17.2	12.1	57.8	26.5	32.5	80.5	38.1	45.0	97.3	154.0	183.7	93.6	838.3	1977
1978	25.2	68.1	172.3	232.9	117.8	32.3	61.8	37.3	54.4	99.8	53.7	80.4	1036.0	1978
1979	56.2	31.6	182.0	169.9	112.0	72.4	59.3	89.0	99.0	174.5	182.1	59.8	1287.8	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	117.2	92.4	221.4	252.6	198.1	145.2	123.1	89.0	155.4	243.3	232.8	162.0	1411.4	
CUARTIL SUPERIOR	65.9	73.6	161.0	220.3	123.9	89.0	59.1	58.7	98.1	171.6	182.9	92.3	1135.9	
MEDIANA	31.9	59.2	87.5	152.5	101.4	71.8	28.0	43.8	58.5	151.3	161.6	57.1	1011.8	
CUARTIL INFERIOR	17.1	34.8	56.9	110.9	85.5	39.2	10.6	27.6	33.3	127.1	108.3	37.9	941.3	
VALOR MINIMO	6.7	7.9	34.1	26.5	21.3	11.4	0.9	7.4	7.8	69.6	40.9	14.3	781.9	
PROMEDIOS	42.7	53.4	105.7	157.8	103.2	68.4	39.1	45.1	66.4	147.9	149.1	66.8	1045.5	
PORCENTAJES	4.1	5.1	10.1	15.1	9.9	6.5	3.7	4.3	6.3	14.1	14.3	6.4		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 24. INDICE DE ARNOLDUS = 108.

INDICE DE IRREGULARIDAD INTERANUAL =1.51

DEV. ESTANDAR	31.7	25.7	56.6	66.9	38.3	33.3	33.9	24.6	40.9	37.9	55.7	36.2	164.9
COEF. VARIACION	0.744	0.482	0.536	0.424	0.371	0.487	0.867	0.547	0.616	0.256	0.374	0.542	0.158

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1317.	1257.	1184.	1045.	907.	834.	774.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.869	-0.504	0.544	-0.148	0.097	0.316	1.273	0.251	0.565	0.288	-0.465	0.856	0.591

IMPRESO EN COLOMBIA POR DANARAJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240513	ISLA EL SANTUARIO	FUQUENE	+05 28 00	+073 44 00	2650 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1942	-9.9	-9.9	-9.9	-9.9	66.5	25.5	-9.9	15.2	9.6	179.3	137.9	61.2	-9.9
1943	57.3	39.6	100.3	152.6	54.6	22.1	11.4	45.5	12.3	252.5	110.7	39.5	898.4
1944	22.4	18.5	45.3	62.5	207.2	80.3	1.0	66.5	24.3	227.9	88.9	107.3	952.1
1945	-9.9	-9.9	-9.9	-9.9	63.9	46.4	8.9	0.3	51.1	161.0	184.0	75.6	-9.9
1946	61.6	35.5	-9.9	114.5	4.3	3.1	5.1	-9.9	-9.9	15.2	4.9	46.4	-9.9
1947	16.6	28.6	166.2	57.3	132.1	46.2	43.1	25.9	96.1	313.7	104.2	14.5	1044.5
1948	0.6	116.1	49.6	253.5	123.4	24.2	31.8	0.0	-9.9	116.7	115.8	32.9	-9.9
1949	8.4	143.9	270.0	161.1	102.0	18.6	3.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1950													
1951													
1952													
1953													
1954													
1955													
1956													
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1.1	39.3	131.6	83.0	40.7	-9.9
1958	62.3	34.7	49.7	188.9	37.3	76.6	10.5	82.9	39.8	85.2	244.6	45.7	958.4
1959	0.6	75.7	109.7	121.5	128.0	67.0	20.2	63.4	55.7	198.6	82.7	52.6	975.9
1960	58.3	59.0	136.1	145.6	80.8	27.9	45.5	55.9	30.2	185.8	40.5	108.0	973.6
1961	73.0	8.0	77.0	90.0	20.8	49.8	23.8	8.0	16.2	170.4	172.6	39.6	749.2
1962	37.2	55.8	105.4	110.1	78.8	137.6	9.2	51.2	26.0	138.0	181.8	46.9	978.0
1963	19.9	62.5	190.6	176.9	103.7	65.6	21.2	20.7	11.6	122.2	229.5	12.1	1056.5
1964	9.5	48.7	52.3	255.4	126.2	70.4	52.6	42.0	44.8	143.8	130.4	48.8	1024.9
1965	19.0	69.3	51.2	175.8	78.9	12.5	9.9	28.5	4.7	35.7	186.2	33.3	709.0
1966	9.6	25.0	37.0	96.8	61.4	69.4	26.3	43.2	81.5	113.2	229.3	87.5	900.2
1967	67.5	91.5	48.2	110.1	90.6	70.3	29.2	23.4	35.9	102.3	136.2	41.8	647.0
1968	14.9	33.9	75.9	179.1	78.4	91.1	9.0	10.3	97.8	155.6	127.9	18.3	892.2
1969	65.3	80.7	44.9	233.3	-9.9	64.1	9.1	8.0	66.5	131.4	81.7	-9.9	-9.9
1970	61.2	38.2	34.3	117.1	139.0	37.2	30.8	31.4	57.7	170.7	123.5	35.7	876.8
1971	115.9	55.5	205.0	223.1	196.8	40.7	24.0	47.0	51.6	144.1	137.7	109.7	1351.1
1972	110.9	55.0	56.9	244.5	102.1	32.2	66.1	88.9	48.7	70.7	91.2	37.0	1004.2
1973	7.1	9.2	122.8	114.3	124.4	86.9	108.5	79.8	136.3	162.7	184.3	146.6	1282.9
1974	26.7	85.0	163.3	205.3	90.9	63.8	11.7	61.5	159.5	146.0	222.1	33.5	1269.3
1975	10.9	77.9	85.4	146.8	167.3	100.7	125.0	82.8	108.7	133.2	86.5	97.1	1222.3
1976	-9.9	78.1	153.0	89.4	83.6	32.5	2.7	43.0	61.0	252.7	149.3	75.1	-9.9
1977	16.5	12.5	58.4	35.5	31.6	78.8	36.4	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1978													
1979	54.5	27.2	180.6	203.1	98.2	68.8	58.7	89.1	104.0	175.4	181.9	57.2	1298.7

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR PAPELES

ESTACION X ISLA EL SANTUARIO MUNICIPIO DE FUQUENE PERIODO COEF DE CORRECCION

1963 - 1979 1.000

ESTACION Y MONSERRATE MUNICIPIO DE FUQUENE PERIODO COEF DE CORRECCION

1963 - 1979 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	1299.	1287.	1.003	0.003					*				
2	1975	2521.	2410.	1.081	0.090					+	.			
3	1974	3790.	3411.	1.260	0.337					I +			.	
4	1973	5073.	4684.	1.001	0.339					. +				
5	1972	6077.	5879.	0.835	0.151			.		I+				
6	1971	7428.	7193.	1.021	0.178					I+.				
7	1970	8305.	7967.	1.126	0.271					I +	.			
8	1968	9197.	8981.	0.874	0.149				.	I+				
9	1967	10044.	10026.	0.806	-0.045			.		+				
10	1966	10945.	10965.	0.952	-0.087				.	+				
11	1965	11654.	11938.	0.724	-0.344			.	+	I				
12	1964	12679.	12813.	1.164	-0.207				+	I	.			
13	1963	13735.	13645.	1.262	0.0					+		.		
N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 1056.5 1049.6

RAZONES PROMEDIOS Y/X = 0.993

X/Y = 1.007

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
24051.3	ISLA EL SANTUARIO	FLORENE	+05 28 08	+073 44 32	2615 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1942	-9.9	-9.9	-9.9	-9.9	66.5	25.5	-9.9	15.2	9.6	179.3	137.9	61.2	-9.9	1942
1943	57.3	39.6	100.3	152.6	54.6	22.1	11.4	45.5	12.3	252.5	110.7	39.5	898.4	1943
1944	22.4	18.5	45.3	92.5	207.2	80.3	1.0	66.5	24.3	227.9	66.9	107.3	952.1	1944
1945	-9.9	-9.9	-9.9	-9.9	63.9	46.4	8.9	0.3	51.1	161.0	184.0	75.6	-9.9	1945
1946	61.6	35.5	-9.9	114.5	4.3	3.1	5.1	-9.9	-9.9	15.2	4.9	46.4	-9.9	1946
1947	10.6	26.6	166.2	57.3	132.1	46.2	43.1	25.9	96.1	313.7	104.2	14.5	1044.5	1947
1948	0.6	116.1	49.6	253.5	123.4	24.2	31.8	0.0	-9.9	116.7	115.8	32.9	-9.9	1948
1949	8.4	143.9	270.0	101.1	102.0	18.6	3.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1949
1950														1950
1951														1951
1952														1952
1953														1953
1954														1954
1955														1955
1956														1956
1957	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1.1	39.3	131.6	83.0	40.7	-9.9	1957
1958	62.3	34.7	49.7	188.9	37.3	76.8	10.5	82.9	39.8	85.2	244.6	45.7	958.4	1958
1959	0.6	75.7	109.7	121.5	128.0	67.0	20.2	63.4	55.7	198.6	82.7	52.8	975.9	1959
1960	58.3	59.0	136.1	145.6	60.8	27.9	45.5	55.9	30.2	185.8	40.5	108.0	973.6	1960
1961	73.0	8.0	77.0	90.0	20.8	49.8	23.8	8.0	16.2	170.4	172.6	39.6	749.2	1961
1962	37.2	55.8	105.4	110.1	78.8	137.6	9.2	51.2	26.0	138.0	181.8	46.9	978.0	1962
1963	19.9	62.5	190.6	170.9	103.7	85.6	21.2	20.7	11.6	122.2	229.5	12.1	1056.5	1963
1964	9.5	48.7	52.3	255.4	126.2	70.4	52.6	42.0	44.8	143.8	130.4	48.8	1024.9	1964
1965														1965
1966	9.6	25.0	37.0	96.8	61.4	89.4	26.3	43.2	81.5	113.2	229.3	87.5	900.2	1966
1967	67.5	91.5	48.2	110.1	90.6	70.3	29.2	23.4	35.9	102.3	136.2	41.8	847.0	1967
1968	14.9	33.9	75.9	179.1	78.4	91.1	9.0	10.3	97.8	155.6	127.9	18.3	892.2	1968
1969	65.3	80.7	44.9	233.3	-9.9	64.1	9.1	8.0	66.5	131.4	81.7	-9.9	-9.9	1969
1970	61.2	36.2	34.3	117.1	139.0	37.2	30.8	31.4	57.7	170.7	123.5	35.7	876.8	1970
1971	115.9	55.5	205.0	223.1	196.8	40.7	24.0	47.0	51.6	144.1	137.7	109.7	1351.1	1971
1972	110.9	55.0	56.9	244.5	102.1	32.2	66.1	88.9	48.7	70.7	91.2	37.0	1004.2	1972
1973	7.1	9.2	122.8	114.3	124.4	66.9	108.5	79.8	136.3	162.7	184.3	146.6	1282.9	1973
1974														1974
1975	10.9	77.9	85.4	146.8	167.3	100.7	125.0	82.8	108.7	133.2	66.5	97.1	1222.3	1975
1976	-9.9	78.1	153.0	89.4	83.6	32.9	2.7	43.0	61.0	252.7	149.3	75.1	-9.9	1976
1977	16.5	12.5	58.4	35.5	31.6	78.8	36.4	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1977
1978														1978
1979	54.5	27.2	180.6	203.1	58.2	68.8	58.7	89.1	104.0	175.4	181.9	57.2	1298.7	1979

Ministerio de Hacienda y Crédito Público

*** CARACTERISTICAS PLUVIOMETRICAS MENSUALES Y ANUALES DE LA PAGINA ANTERIOR ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
NUMERO DE ANOS	24	25	24	25	26	27	26	25	24	26	26	25	19	
VALOR MAXIMO	115.9	143.9	270.0	255.4	207.2	137.6	125.0	89.1	136.3	313.7	244.6	146.6	1351.1	
CUARTIL SUPERIOR	61.9	76.8	144.5	196.0	126.2	84.1	43.1	64.5	74.0	179.3	161.8	81.5	1056.5	
MEDIANA	29.8	46.7	81.2	145.6	94.4	67.0	23.9	43.0	49.9	149.8	129.1	46.9	975.9	
CUARTIL INFERIOR	10.2	27.9	49.6	103.4	63.9	32.2	9.1	12.8	28.1	122.2	66.9	38.3	898.4	
VALOR MINIMO	0.6	8.0	34.3	35.5	4.3	3.1	1.0	0.0	9.6	15.2	4.9	12.1	749.2	
PROMEDIOS	40.1	52.5	102.3	147.3	96.3	59.1	31.3	41.0	54.4	155.5	132.3	59.1	1015.1	
												TOTAL DE LOS PROMEDIOS MENSUALES =	971.6	
PORCENTAJES	4.1	5.4	10.5	15.2	9.9	6.1	3.2	4.2	5.6	16.0	13.6	6.1		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 25. INDICE DE ARREGUIS = 103.

DEV. ESTANDAR	33.5	33.2	63.6	63.2	49.8	31.4	30.9	29.5	34.2	61.5	57.7	33.8	163.7	
COEF. VARIACION	0.837	0.635	0.621	0.429	0.517	0.531	0.989	0.720	0.629	0.395	0.436	0.571	0.161	
COEF. ASIMETRIA	0.728	0.990	1.045	0.230	0.384	0.322	1.765	0.214	0.741	0.390	0.075	0.915	0.806	

* PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Biblioteca Hacienda

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240136	MONSERRATE	FUQUENE	+05 24 00	+073 48 00	2865 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1963	21.5	74.5	106.5	88.0	162.5	52.0	41.5	29.0	36.5	68.0	145.5	6.5	832.0
1964	24.0	39.0	19.5	182.5	88.5	137.5	47.5	37.0	58.5	84.5	101.5	55.0	875.0
1965	12.5	38.0	9.5	242.0	126.0	22.5	34.5	53.5	22.0	159.5	210.0	43.0	973.4
1966	4.0	17.5	31.5	96.5	139.5	146.0	45.0	51.5	69.5	150.5	138.5	47.0	939.0
1967	30.5	62.0	126.5	111.5	128.0	90.5	44.1	62.0	61.5	62.5	164.5	101.0	1044.6
1968	52.0	74.0	63.5	177.0	126.5	139.0	47.0	44.0	83.5	114.5	69.0	28.5	1014.5
1969	40.0	66.5	72.5	191.0	85.5	61.0	15.0	6.0	150.0	117.5	39.5	23.5	868.0
1970	11.0	65.0	17.5	88.0	98.0	41.0	60.5	36.5	91.0	129.5	116.5	19.0	773.5
1971	80.0	95.0	177.0	164.5	211.0	66.0	51.0	97.0	53.5	100.1	162.5	55.0	1314.6
1972	117.0	69.5	74.0	245.0	157.5	96.5	88.5	102.0	42.5	67.5	113.5	61.0	1194.5
1973	0.0	14.5	51.5	76.0	101.5	153.0	85.5	80.0	152.5	141.0	303.0	114.5	1273.0
1974	10.0	87.0	103.0	160.5	96.5	81.0	42.5	34.0	96.5	130.5	130.5	29.0	1001.0
1975	1.0	61.0	81.0	45.0	130.0	62.5	108.0	102.5	90.5	149.5	137.5	135.0	1123.5
1976	48.0	66.0	148.5	229.0	120.5	62.0	42.0	31.0	122.0	161.0	84.5	51.5	1166.0
1977	29.0	9.0	35.0	159.0	43.5	43.0	28.5	50.5	100.0	138.0	185.5	53.0	874.0
1978	0.0	48.0	131.0	312.5	152.0	80.0	78.5	54.5	92.0	201.0	119.0	163.5	1432.0
1979	7.5	41.0	104.5	200.0	135.0	162.5	64.5	134.5	38.8	219.5	134.0	25.0	1266.8

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAF

ESTACION X MONSERRATE MUNICIPIO DE FUQUENE PERIODO 1963 - 1979 COEF DE CORRECCION 1.000

ESTACION Y EL SANTUARIO MUNICIPIO DE FUQUENE PERIODO 1963 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	1287.	1288.	1.007	0.008					*				
2	1978	2719.	2424.	1.392	0.389					I +				.
3	1977	3593.	3162.	1.050	0.429					I + .				
4	1976	4759.	4171.	1.164	0.583					I +		.		
5	1975	5882.	5346.	0.964	0.543				.	I +				
6	1974	6883.	6587.	0.812	0.325			.		I +				
7	1973	8156.	7875.	0.996	0.320					. +				
8	1972	9351.	8889.	1.186	0.498					I +		.		
9	1971	10665.	10400.	0.938	0.416				.	I +				
10	1970	11439.	11196.	0.870	0.307				.	I +				
11	1969	12307.	12194.	0.876	0.191				.	I+				
12	1968	13321.	13051.	1.192	0.345					I +		.		
13	1966	14260.	14057.	0.940	0.289				.	I +				
14	1965	15234.	14914.	1.145	0.405					I +	.			
15	1964	16109.	15968.	0.836	0.243				.	I +				
16	1963	16941.	17065.	0.764	0.0			.		+				
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

N	AN	CUX	CUY	RAN	PCAN	P = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I

PROMEDIOS = 1058.8 1066.6

RAZONES PROMEDIOS Y/X = 1.007

X/Y = 0.993

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* PRUEBAS DE DOBLE MASA *

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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240136	MONSERRATE	POPAYAN	+02 24 09	+076 34 26	2870 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1963	21.5	74.5	106.5	88.0	162.5	52.0	41.5	29.0	36.5	68.0	145.5	6.5	832.0	1963
1964	24.0	39.0	19.5	182.5	88.5	137.5	47.5	37.0	58.5	84.5	101.5	55.0	875.0	1964
1965	12.5	38.0	9.5	242.0	126.0	22.5	34.5	53.5	22.0	159.5	210.0	43.0	973.4	1965
1966	4.0	17.5	31.5	96.5	139.5	148.0	45.0	51.5	69.5	150.5	138.5	47.0	939.0	1966
1967	30.5	62.0	126.5	111.5	128.0	90.5	44.1	62.0	61.5	62.5	164.5	101.0	1044.6	1967
1968	52.0	74.0	63.5	177.0	126.5	135.0	47.0	44.0	63.5	114.5	69.0	28.5	1014.5	1968
1969	40.0	66.5	72.5	191.0	65.5	61.0	15.0	6.0	150.0	117.5	39.5	23.5	868.0	1969
1970	11.0	65.0	17.5	88.0	98.0	41.0	60.5	36.5	91.0	129.5	116.5	19.0	773.5	1970
1971	80.0	95.0	177.0	164.5	211.0	68.0	51.0	57.0	53.5	100.1	162.5	55.0	1314.6	1971
1972	117.0	69.5	74.0	245.0	157.5	66.5	68.5	102.0	42.5	67.5	113.5	61.0	1194.5	1972
1973	0.0	14.5	51.5	70.0	101.5	153.0	65.5	80.0	152.5	141.0	303.0	114.5	1273.0	1973
1974	10.0	87.0	103.0	160.5	96.5	81.0	42.5	34.0	96.5	130.5	130.5	29.0	1001.0	1974
1975	1.0	61.0	81.0	45.0	130.0	82.5	108.0	102.5	90.5	149.5	137.5	135.0	1123.5	1975
1976	48.0	66.0	148.5	229.0	120.5	62.0	42.0	31.0	122.0	161.0	84.5	51.5	1166.0	1976
1977	29.0	9.0	35.0	159.0	43.5	43.0	28.5	50.5	100.0	138.0	165.5	53.0	874.0	1977
1978														1978
1979	7.5	41.0	104.5	200.0	135.0	182.5	64.5	134.5	38.8	219.5	134.0	25.0	1286.8	1979
NUMERO DE ANOS	16	16	16	16	16	16	16	16	16	16	16	16	16	
VALOR MAXIMO	117.0	95.0	177.0	245.0	211.0	182.5	108.0	134.5	152.5	219.5	303.0	135.0	1314.6	
CUARTIL SUPERIOR	44.0	71.8	105.5	195.5	137.3	136.3	62.5	88.5	98.3	150.0	163.5	58.0	1180.3	
MEDIANA	22.8	63.5	73.3	162.5	126.3	74.5	46.0	51.0	76.5	130.0	135.8	49.3	1007.8	
CUARTIL INFERIOR	8.8	38.5	33.3	92.3	97.3	54.3	41.8	35.3	48.0	92.3	107.5	26.8	874.5	
VALOR MINIMO	0.0	9.0	9.5	45.0	43.5	22.9	15.0	6.0	22.0	62.5	39.5	6.5	773.5	
PROMEDIOS	30.5	55.0	76.3	153.5	121.9	88.5	52.8	59.4	79.3	124.6	139.8	53.0	1034.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1034.6	
PORCENTAJES	2.9	5.3	7.4	14.8	11.8	8.6	5.1	5.7	7.7	12.0	13.5	5.1		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 23. INDICE DE ARNOLDUS = 103.

DEV. ESTANDAR	31.7	25.7	49.0	62.4	38.0	47.7	23.8	34.5	39.0	41.7	61.0	35.7	173.7
COEF. VARIACION	1.039	0.468	0.641	0.407	0.312	0.538	0.450	0.580	0.492	0.334	0.436	0.675	0.168
COEF. ASIMETRIA	1.615	-0.488	0.471	-0.149	0.310	0.642	0.959	0.731	0.546	0.314	1.076	1.133	0.268

PROYECTO IGAC-CRSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTOM

Biblioteca Nacional
Colombia

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240136	MONSERRATE	FUQUENE	+05 24 09	+073 48 26	2870 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	9.0	94.6	74.8	113.8	117.0	102.1	55.2	70.0	102.7	166.6	90.9	100.4	1097.1	1960
1961	55.6	4.5	136.9	168.9	40.7	88.4	57.3	26.8	73.5	221.8	141.0	61.9	1077.3	1961
1962	27.6	87.9	101.1	115.9	133.3	124.4	45.8	105.7	60.3	119.2	152.3	39.2	1092.7	1962
1963	21.5	74.5	106.5	88.0	162.5	52.0	41.5	29.0	36.5	68.0	145.5	6.5	832.0	1963
1964	24.0	39.0	19.5	182.5	88.5	137.5	47.5	37.0	58.5	84.5	101.5	55.0	875.0	1964
1965	12.5	38.0	9.5	242.0	126.0	22.9	34.5	53.5	22.0	159.5	210.0	43.0	973.4	1965
1966	4.0	17.5	31.5	96.5	139.5	148.0	45.0	51.5	69.5	150.5	138.5	47.0	939.0	1966
1967	30.5	62.0	126.5	111.5	128.0	90.5	44.1	62.0	61.5	62.5	164.5	101.0	1044.6	1967
1968	52.0	74.0	63.5	177.0	126.5	135.0	47.0	44.0	83.5	114.5	69.0	28.5	1014.5	1968
1969	40.0	66.5	72.5	191.0	85.5	61.0	15.0	6.0	150.0	117.5	39.5	23.5	868.0	1969
1970	11.0	65.0	17.5	88.0	98.0	41.0	60.5	36.5	91.0	129.5	116.5	19.0	773.5	1970
1971	80.0	95.0	177.0	164.5	211.0	68.0	51.0	97.0	53.5	100.1	162.5	55.0	1314.6	1971
1972	117.0	69.5	74.0	245.0	157.5	56.5	88.5	102.0	42.5	67.5	113.5	61.0	1194.5	1972
1973	0.0	14.5	51.5	76.0	101.5	153.0	85.5	80.0	152.5	141.0	303.0	114.5	1273.0	1973
1974	10.0	87.0	103.0	160.5	96.5	81.0	42.5	34.0	96.5	130.5	130.5	29.0	1001.0	1974
1975	1.0	61.0	81.0	45.0	130.0	82.5	108.0	102.5	90.5	149.5	137.5	135.0	1123.5	1975
1976	48.0	66.0	148.5	229.0	120.5	62.0	42.0	31.0	122.0	161.0	84.5	51.5	1166.0	1976
1977	29.0	9.0	35.0	159.0	43.5	43.0	28.5	50.5	100.0	138.0	185.5	53.0	874.0	1977
1978	0.0	31.1	85.8	204.6	99.5	52.7	51.4	35.7	60.2	131.6	77.9	107.1	937.6	1978
1979	7.5	41.0	104.5	200.0	135.0	182.5	64.5	134.5	38.8	219.5	134.0	25.0	1286.8	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	117.0	95.0	177.0	245.0	211.0	182.5	108.0	134.5	152.5	221.8	303.0	135.0	1314.6	
CUARTIL SUPERIOR	44.0	71.8	105.5	195.5	134.1	129.7	58.9	88.5	98.3	155.0	157.4	81.1	1144.8	
MEDIANA	22.8	63.5	77.9	162.5	123.3	81.8	47.3	51.0	71.5	131.0	135.8	52.3	1029.5	
CUARTIL INFERIOR	8.3	34.5	43.3	104.0	97.3	54.6	42.3	34.8	56.0	107.3	96.2	28.8	906.3	
VALOR MINIMO	0.0	4.5	9.5	45.0	40.7	22.9	15.0	6.0	22.0	62.5	39.5	6.5	773.5	
PROMEDIOS	29.0	53.9	81.0	152.9	117.0	89.2	52.8	59.5	78.3	131.6	134.9	57.8	1037.9	
PORCENTAJES	2.8	5.2	7.8	14.7	11.3	8.6	5.1	5.7	7.5	12.7	13.0	5.6		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 23. INDICE DE ARNOLDUS = 103.

INDICE DE IRREGULARIDAD INTERANUAL =1.48

DEV. ESTANDAR	30.0	27.9	45.8	58.2	38.7	44.0	21.2	33.8	35.6	43.7	57.0	35.7	157.4
COEF. VARIACION	1.033	0.517	0.566	0.380	0.331	0.493	0.403	0.568	0.455	0.332	0.422	0.617	0.152

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1297.	1240.	1170.	1038.	905.	836.	779.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.588	-0.374	0.245	-0.105	0.096	0.576	1.047	0.672	0.645	0.361	1.186	0.762	0.201

IMPRESO EN COLOMBIA POR DANARAJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211502	BETHANIA	FUSAGASUGA	+04 21 00	+074 21 00	1380 METROS

AÑO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1945	-9.9	-9.9	-9.9	-9.9	-9.9	29.0	91.0	41.0	46.0	156.0	361.0	-9.9	-9.9
1946	72.0	64.0	91.0	-9.9	87.0	-9.9	60.0	41.0	6.0	105.0	228.0	97.0	-9.9
1947	147.0	91.0	110.0	163.0	76.0	111.0	103.0	72.0	67.0	191.0	91.0	51.0	1273.0
1948	31.0	96.0	-9.9	257.0	37.0	35.0	26.0	15.0	29.0	83.0	91.0	94.0	-9.9
1949	90.0	67.0	127.0	42.0	119.0	131.0	37.0	-9.9	102.0	120.0	200.0	61.0	-9.9
1950	82.0	224.0	168.0	149.0	176.0	104.0	39.0	41.0	62.0	114.0	196.0	125.0	1480.0
1951	40.0	65.0	282.0	123.0	138.0	53.0	57.0	62.0	39.0	240.0	208.0	43.0	1350.0
1952	161.0	23.0	14.0	177.0	79.0	-9.9	77.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1953	50.0	47.0	130.0	150.0	159.0	-9.9	13.0	-9.9	99.0	156.0	-9.9	-9.9	-9.9
1954													
1955	-9.9	-9.9	189.0	200.0	68.0	195.0	59.0	40.0	103.0	187.0	147.0	135.0	-9.9
1956	156.0	171.0	126.0	125.0	104.0	83.0	40.0	59.0	77.0	188.0	93.0	156.0	1418.0
1957	-9.9	51.0	226.0	181.0	235.0	81.0	48.0	54.0	89.0	182.0	107.0	39.0	-9.9
1958	41.0	35.0	40.0	224.0	115.0	9.0	10.0	38.0	25.0	145.0	127.0	50.0	859.0
1959	65.0	29.0	24.0	63.0	173.0	160.0	49.0	17.0	25.0	154.0	221.0	26.0	1006.0
1960													
1961	98.0	152.0	128.0	-9.9	79.0	33.0	129.0	30.0	13.0	190.0	272.0	34.0	-9.9
1962	87.0	89.0	151.0	139.0	155.0	93.0	45.0	80.0	35.0	215.0	141.0	149.0	1379.0
1963	43.0	123.0	82.0	159.0	296.0	101.0	62.0	59.0	59.0	156.0	364.0	60.0	1606.0
1964	33.0	5.0	34.0	189.0	141.0	107.0	86.0	98.0	149.0	-9.9	-9.9	-9.9	-9.9
1965	70.0	32.0	45.0	161.0	129.0	44.0	30.0	105.0	-9.9	127.0	225.0	150.0	-9.9
1966	2.0	28.0	133.0	180.0	149.0	139.0	107.0	172.0	146.0	129.0	456.0	251.0	1892.0
1967	40.0	71.0	312.0	290.0	390.0	130.0	85.0	120.0	45.0	128.0	357.0	265.0	2233.0
1968	97.0	145.0	35.0	280.0	225.0	425.0	65.0	50.0	145.0	267.0	350.0	170.0	2274.0
1969	65.0	125.0	10.0	223.0	212.0	60.0	35.0	0.0	92.0	226.0	254.0	183.0	1487.0
1970	85.0	303.0	60.0	198.0	170.0	140.0	45.0	58.0	116.0	320.0	385.0	46.0	1926.0
1971	190.0	165.0	200.0	155.0	90.0	140.0	16.0	130.0	185.0	257.0	252.0	167.0	1987.0
1972	161.0	315.0	465.0	337.0	346.0	167.0	79.0	102.0	92.0	115.0	218.0	90.0	2491.0
1973													
1974													
1975													
1976													
1977													
1978	15.0	49.5	107.5	128.5	52.0	53.0	39.5	16.0	82.0	124.5	113.0	66.0	866.5
1979	54.0	56.0	165.0	255.0	97.0	129.0	63.0	145.0	141.0	227.0	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DISARP C

ESTACION : BETHANIA MUNICIPIO DE FUSAGASUGA PERIODO 1945 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1978	866.5	866.5	866.5	-1.466	-0.457			•	+ I			
2	1972	2491.0	3357.5	1678.8	1.801	0.104				I+		•	
3	1971	1987.0	5344.5	1781.5	0.787	0.350				I +	•		
4	1970	1926.0	7270.5	1817.6	0.665	0.557				I	+•		
5	1969	1487.0	8757.5	1751.5	-0.218	0.489			•	I +			
6	1968	2274.0	11031.5	1838.6	1.365	0.914				I	+ •		
7	1967	2233.0	13264.5	1894.9	1.282	1.314				I	•+		
8	1966	1892.0	15156.5	1894.6	0.596	1.500				I	• +		
9	1963	1606.0	16762.5	1862.5	0.021	1.506				•	+		
10	1962	1379.0	18141.5	1814.1	-0.435	1.371			•	I	+		
11	1959	1006.0	19147.5	1740.7	-1.186	1.001			•	I	+		
12	1958	859.0	20006.5	1667.2	-1.481	0.540			•	I +			
13	1955	1418.0	21424.5	1648.0	-0.357	0.428			•	I +			
14	1951	1350.0	22774.5	1626.8	-0.494	0.274			•	I +			
15	1950	1480.0	24254.5	1617.0	-0.232	0.202			•	I +			
16	1947	1273.0	25527.5	1595.5	-0.649	0.0			•	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 16 ANOS = 1595.5

DEVIACION ESTANDAR = 497.2

COEFICIENTE DE VARIACION = 0.312

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211502	BETHANIA	PUSAGASUGA	+04 21 50	+074 22 35	1620 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1945	-9.9	-9.9	-9.9	-9.9	-9.9	29.0	91.0	41.0	46.0	198.0	361.0	-9.9	-9.9	1945
1946	72.0	64.0	91.0	-9.9	87.0	-9.9	60.0	41.0	6.0	105.0	226.0	97.0	-9.9	1946
1947	147.0	91.0	110.0	163.0	76.0	111.0	103.0	72.0	67.0	191.0	91.0	51.0	1273.0	1947
1948	31.0	56.0	-9.9	257.0	37.0	35.0	26.0	15.0	29.0	83.0	91.0	94.0	-9.9	1948
1949	90.0	67.0	127.0	42.0	119.0	131.0	37.0	-9.9	102.0	120.0	200.0	61.0	-9.9	1949
1950	82.0	224.0	166.0	149.0	176.0	104.0	39.0	41.0	62.0	114.0	196.0	125.0	1480.0	1950
1951	40.0	69.0	282.0	123.0	138.0	53.0	57.0	62.0	39.0	240.0	206.0	43.0	1350.0	1951
1952	161.0	23.0	14.0	177.0	79.0	-9.9	77.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1952
1953	50.0	47.0	130.0	150.0	169.0	-9.9	13.0	-9.9	99.0	198.0	-9.9	-9.9	-9.9	1953
1954														1954
1955	-9.9	-9.9	189.0	200.0	68.0	195.0	59.0	40.0	103.0	187.0	147.0	135.0	-9.9	1955
1956	156.0	171.0	126.0	125.0	104.0	83.0	40.0	59.0	77.0	188.0	93.0	196.0	1418.0	1956
1957	-9.9	51.0	226.0	181.0	235.0	81.0	48.0	54.0	89.0	182.0	107.0	39.0	-9.9	1957
1958														1958
1959	65.0	29.0	24.0	63.0	173.0	160.0	49.0	17.0	25.0	154.0	221.0	26.0	1006.0	1959
1960														1960
1961	98.0	152.0	128.0	-9.9	79.0	33.0	129.0	30.0	13.0	190.0	272.0	34.0	-9.9	1961
1962	87.0	89.0	151.0	139.0	155.0	93.0	45.0	80.0	35.0	215.0	141.0	149.0	1379.0	1962
1963	43.0	123.0	82.0	159.0	296.0	101.0	62.0	59.0	59.0	198.0	364.0	60.0	1606.0	1963
1964	33.0	5.0	34.0	189.0	141.0	107.0	66.0	98.0	149.0	-9.9	-9.9	-9.9	-9.9	1964
1965	70.0	32.0	45.0	161.0	129.0	44.0	30.0	105.0	-9.9	127.0	225.0	150.0	-9.9	1965
1966	1.2	17.3	82.1	111.1	51.9	85.8	66.0	106.1	90.0	79.6	281.4	154.9	1167.4	1966
1967	29.9	43.8	192.5	178.8	240.6	80.2	52.4	74.0	27.8	74.0	220.3	163.5	1377.8	1967
1968	59.8	89.5	21.6	172.8	138.8	262.1	40.1	30.8	89.5	177.1	215.9	105.0	1403.0	1968
1969	40.1	77.2	6.2	137.6	130.7	37.0	21.6	0.0	56.8	140.7	156.7	112.9	917.5	1969
1970	52.4	166.9	37.0	122.2	104.9	66.4	27.8	35.8	71.6	197.4	237.5	28.4	1188.3	1970
1971	117.2	101.8	123.4	95.6	55.5	86.4	9.9	80.2	114.1	183.3	185.5	103.0	1225.9	1971
1972	99.3	194.4	286.9	207.9	213.6	103.0	48.7	62.9	56.8	73.4	134.6	55.5	1536.9	1972
1973														1973
1974														1974
1975														1975
1976														1976
1977														1977
1978	15.0	49.5	107.5	128.5	52.0	53.0	39.5	16.0	62.0	124.5	113.0	86.0	866.5	1978
1979	54.0	56.0	165.0	255.0	97.0	129.0	63.0	145.0	141.0	227.0	-9.9	-9.9	-9.9	1979

Biblioteca Nacional
Colombiana

*** CARACTERISTICAS PLUVIOMETRICAS MENSUALES Y ANUALES DE LA PAGINA ANTERIOR ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
NUMERO DE ANOS	24	25	25	24	26	24	27	24	25	25	23	22	15	
VALOR MAXIMO	161.0	224.0	286.9	257.0	256.0	262.1	129.0	145.0	149.0	240.0	364.0	196.0	1606.0	
CUARTIL SUPERIOR	94.0	112.4	166.5	179.9	159.0	109.0	63.0	77.0	94.5	197.7	228.0	135.0	1418.0	
MEDIANA	62.4	67.0	123.4	154.5	124.0	86.4	48.7	56.5	67.0	182.0	200.0	95.5	1350.0	
CUARTIL INFERIOR	40.0	45.4	41.0	124.0	79.0	53.0	37.0	33.3	37.0	117.0	134.6	51.0	1167.4	
VALOR MINIMO	1.2	5.0	6.2	42.0	37.0	29.0	9.9	0.0	6.0	73.4	91.0	26.0	866.5	
PROMEDIOS	70.6	85.8	118.0	153.6	129.8	95.1	52.6	56.9	69.2	158.7	193.9	94.1	1279.7	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1278.3	
PORCENTAJES	5.5	6.7	9.2	12.0	10.2	7.4	4.1	4.4	5.4	12.4	15.2	7.4		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 29. INDICE DE ARNOLDUS = 124.

DEV. ESTANDAR	42.8	59.1	78.5	50.9	63.7	54.1	27.2	34.3	37.4	50.4	77.9	49.8	219.1	
COEF. VARIACION	0.607	0.689	0.665	0.331	0.491	0.569	0.518	0.603	0.541	0.318	0.402	0.530	0.171	
COEF. ASIMETRIA	0.713	0.922	0.531	-0.003	0.900	1.434	0.946	0.668	0.312	-0.393	0.628	0.313	-0.561	

* PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
6031 36	PUESTO DE MONTA	FUSAGASUGA	+04 21 00	+074 26 00	1420 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1951	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	47.0	28.0	115.0	242.0	47.0	-9.9
1952	156.0	48.0	79.0	171.0	218.0	33.0	48.0	4.0	40.0	34.0	397.0	54.0	1282.0
1953	48.0	55.0	132.0	83.0	228.0	53.0	34.0	16.0	87.0	208.0	45.0	-9.9	-9.9
1954	-9.9	31.0	36.0	126.0	122.0	66.0	0.0	45.0	-9.9	-9.9	-9.9	187.0	-9.9
1955	116.0	83.0	192.0	148.0	145.0	96.0	69.0	13.0	109.0	221.0	135.0	138.0	1465.0
1956	190.0	125.0	92.0	100.0	88.0	68.0	31.0	33.0	54.0	226.0	123.0	270.0	1400.0
1957	47.0	87.0	190.0	175.0	259.0	-9.9	26.0	17.0	24.0	126.0	108.0	74.0	-9.9
1958	40.0	16.0	50.0	112.0	73.0	2.0	0.0	3.0	2.0	148.0	97.0	12.0	555.0
1959	12.0	0.0	-9.9	43.0	164.0	81.0	85.0	25.0	31.0	7.7	163.0	29.0	-9.9
1960	160.0	108.0	77.0	74.0	75.0	61.0	-9.9	43.0	34.0	164.0	84.0	-9.9	-9.9
1961	112.0	62.0	104.0	162.0	29.0	31.0	68.0	14.0	20.0	224.0	201.0	22.0	1049.0
1962	37.0	22.0	124.0	100.0	125.0	89.0	41.0	31.0	34.0	166.0	181.0	117.0	1067.0
1963	84.0	62.0	55.0	137.0	166.0	132.0	25.0	120.0	37.0	203.0	363.0	41.0	1425.0
1964	12.0	18.0	0.0	123.0	73.0	124.0	50.0	37.0	74.0	204.0	154.0	96.0	965.0
1965													
1966	0.0	52.0	120.0	54.0	57.0	74.0	33.0	63.0	128.0	104.0	195.0	156.0	1036.0
1967	26.0	33.0	182.0	138.0	99.0	64.0	38.0	13.0	7.0	82.0	171.0	170.0	1023.0
1968	49.0	166.0	33.0	243.0	105.0	134.0	20.0	24.0	84.0	136.0	154.0	73.0	1221.0
1969	44.0	26.0	19.0	186.0	186.0	94.0	8.0	18.0	124.0	226.0	103.0	26.0	1062.0
1970	77.0	183.0	40.0	62.0	114.0	76.0	-9.9	-9.9	-9.9	-9.9	139.0	8.0	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARAJO

ESTACION X PUESTO DE MONTA MUNICIPIO DE FUSAGASUGA PERIODO 1951 - 1970 COEF DE CORRECCION 1.000

N	AN	T A	CU	MUY	ECR	PCAN	P =-3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1969	1062.0	1062.0	1062.0	-0.267	-0.059				+			
2	1968	1221.0	2283.0	1141.5	0.365	0.022				+			
3	1967	1023.0	3306.0	1102.0	-0.422	-0.072				+			
4	1966	1036.0	4342.0	1085.5	-0.370	-0.155				+I			
5	1964	965.0	5307.0	1061.4	-0.652	-0.300				+ I			
6	1963	1425.0	6732.0	1122.0	1.175	-0.038				+			
7	1962	1067.0	7799.0	1114.1	-0.247	-0.093				+I			
8	1961	1045.0	8844.0	1106.0	-0.315	-0.164				+I			
9	1958	559.0	9403.0	1044.8	-2.281	-0.673			+	I			
10	1956	1402.0	10805.0	1080.3	1.076	-0.433			+	I			
11	1955	1465.0	12266.0	1115.3	1.334	-0.135				+I			
12	1952	1282.0	13550.0	1129.2	0.607	0.000				+			

N	AN	T A	CU	MUY	ECR	PCAN	P =-3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 12 ANOS = 1129.2
DESVIACION ESTANDAR = 251.7
COEFICIENTE DE VARIACION = 0.223

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CONSTEN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
6001J6	PUESTO DE MONTA	PASCAGOULA	+04 19 43	+074 21 53	1775 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	160.0	108.0	77.0	74.0	75.0	61.0	-9.9	43.0	34.0	164.0	64.0	-9.9	-9.9	1960
1961	112.0	62.0	104.0	162.0	29.0	31.0	68.0	14.0	20.0	224.0	201.0	22.0	1049.0	1961
1962	37.0	22.0	124.0	100.0	125.0	89.0	41.0	31.0	34.0	166.0	181.0	117.0	1067.0	1962
1963	84.0	82.0	55.0	137.0	166.0	132.0	25.0	120.0	37.0	203.0	363.0	41.0	1425.0	1963
1964	12.0	18.0	0.0	123.0	73.0	124.0	50.0	37.0	74.0	204.0	154.0	96.0	965.0	1964
1965														1965
1966	0.0	52.0	120.0	54.0	57.0	74.0	33.0	63.0	128.0	104.0	195.0	156.0	1036.0	1966
1967	20.0	33.0	182.0	138.0	99.0	64.0	38.0	13.0	7.0	82.0	171.0	170.0	1023.0	1967
1968	49.0	186.0	33.0	243.0	105.0	134.0	20.0	24.0	84.0	136.0	154.0	73.0	1221.0	1968
1969	44.0	26.0	19.0	186.0	186.0	94.0	8.0	18.0	124.0	228.0	103.0	26.0	1062.0	1969
1970	77.0	163.0	40.0	62.0	114.0	76.0	-9.9	-9.9	-9.9	-9.9	139.0	8.0	-9.9	1970
NUMERO DE ANOS	10	10	10	10	10	10	8	9	9	9	10	9	8	
VALOR MAXIMO	160.0	186.0	182.0	243.0	186.0	134.0	68.0	120.0	128.0	228.0	363.0	170.0	1425.0	
MEDIANA	46.5	57.0	66.0	130.0	102.0	82.5	35.5	31.0	37.0	166.0	162.5	73.0	1055.5	
VALOR MINIMO	0.0	18.0	0.0	54.0	29.0	31.0	8.0	13.0	7.0	82.0	64.0	8.0	965.0	
PROMEDIOS	60.1	73.2	75.4	127.9	102.9	87.9	35.4	40.3	60.2	167.9	174.5	78.8	1106.0	
										TOTAL DE LOS PROMEDIOS MENSUALES =			1084.5	
PORCENTAJES	5.5	6.7	7.0	11.8	9.5	8.1	3.3	3.7	5.6	15.5	16.1	7.3		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 26. INDICE DE ARNOLDUS = 111.

DEV. ESTANDAR	48.9	59.7	56.6	59.1	48.0	33.8	18.6	33.9	44.4	52.2	76.1	59.7	148.0
COEF. VARIACION	0.814	0.816	0.751	0.462	0.467	0.384	0.525	0.840	0.738	0.311	0.436	0.758	0.134
COEF. ASIMETRIA	0.913	1.096	0.536	0.600	0.362	0.034	0.379	1.914	0.591	-0.500	1.752	0.409	1.755

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211911	VALSALICE	FUSAGASUGA	+04 21 00	+074 26 00	1450 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	-9.9	-9.9	81.0	195.7	87.5	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1961													
1962	-9.9	-9.9	-9.9	104.2	184.1	83.5	118.0	67.5	108.7	147.3	157.1	178.2	-9.9
1963	123.5	121.0	88.6	206.5	243.7	65.3	53.7	63.4	62.0	186.8	277.5	77.1	1569.1
1964	9.0	53.2	67.1	167.4	134.7	141.8	91.6	78.7	53.8	273.0	130.2	142.7	1343.2
1965	39.5	26.5	30.3	173.7	117.7	20.5	17.9	64.3	63.4	186.8	297.5	116.2	1154.3
1966	67.3	94.3	93.7	167.9	121.5	89.0	57.3	102.9	80.8	75.6	224.5	144.6	1319.4
1967	39.7	56.9	208.6	189.7	184.4	100.2	69.9	18.6	27.6	129.3	160.1	122.7	1307.7
1968	76.4	56.8	71.4	226.8	78.3	167.7	23.5	36.6	78.3	165.7	192.7	74.0	1248.2
1969	68.1	26.7	7.3	202.4	151.1	74.4	14.3	30.4	94.0	211.4	103.0	38.7	1021.8
1970	111.1	96.9	82.3	88.0	101.8	38.8	49.3	53.4	73.9	225.0	219.0	28.0	1167.5
1971	188.9	140.7	154.6	108.5	151.8	94.0	66.3	78.2	74.4	197.5	-9.9	-9.9	-9.9
1972	168.5	149.3	118.9	181.4	134.6	65.5	23.5	32.5	36.6	135.6	193.0	110.2	1349.6
1973	29.0	28.5	92.1	56.2	116.0	61.0	75.0	-9.9	140.0	207.0	100.0	123.0	-9.9
1974	119.0	192.0	260.0	153.0	115.0	53.0	42.0	41.0	110.0	204.0	88.0	31.0	1408.0
1975	40.0	201.0	154.0	142.0	175.0	120.0	109.2	120.0	139.0	51.0	151.0	249.0	1651.2
1976	75.0	68.0	285.0	110.0	104.0	83.0	23.0	29.0	123.0	264.0	107.0	135.0	1406.0
1977	31.0	27.0	94.0	141.0	79.0	91.0	43.0	69.0	106.0	138.0	132.0	65.0	1016.0
1978	20.0	39.0	141.0	177.0	91.0	44.0	41.0	51.0	108.0	107.0	66.0	116.0	1003.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARAN.O

ESTACION K VALSALICE MUNICIPIO DE FUSAGASUGA PERIODO 1960 - 1978 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1978	1003.0	1003.0	1003.0	-1.419	-0.218				+ I			
2	1977	1016.0	2019.0	1009.5	-1.353	-0.427				+ I			
3	1976	1406.0	3425.0	1141.7	0.622	-0.331				+ I			
4	1975	1651.2	5076.2	1269.0	1.803	-0.044				+			
5	1974	1408.0	6484.2	1296.8	0.632	0.053				+			
6	1972	1349.6	7833.8	1305.6	0.336	0.105				I+			
7	1970	1167.5	9001.3	1285.9	-0.586	0.015				+			
8	1969	1021.8	10023.1	1252.9	-1.323	-0.189				+I			
9	1968	1248.2	11271.3	1252.4	-0.177	-0.216				+I			
10	1967	1307.7	12579.0	1257.9	0.124	-0.197				+I			
11	1966	1319.4	13898.4	1263.5	0.183	-0.169				+I			
12	1965	1154.3	15052.7	1254.4	-0.653	-0.270				+ I			
13	1964	1343.2	16395.9	1261.2	0.304	-0.223				+ I			
14	1963	1569.1	17965.0	1283.2	1.447	0.0				+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 14 ANOS = 1283.2
DEVIACION ESTANDAR = 197.5
COEFICIENTE DE VARIACION = 0.154

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
21151I	VALSALICE	PLSAGASUGA	+04 23 54	+074 23 43	1420 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	-9.9	-9.9	81.0	155.7	87.5	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1960
1961														1961
1962	-9.9	-9.9	-9.9	104.2	164.1	83.5	118.0	67.5	108.7	147.3	157.1	178.2	-9.9	1962
1963	123.5	121.0	88.5	206.5	243.7	65.3	53.7	63.4	62.0	186.6	277.5	77.1	1569.1	1963
1964	9.0	53.2	67.1	167.4	134.7	141.6	91.6	78.7	53.8	273.0	130.2	142.7	1343.2	1964
1965	39.5	20.5	30.3	173.7	117.7	20.5	17.9	64.3	63.4	186.6	257.5	116.2	1154.3	1965
1966	67.3	94.3	93.7	167.9	121.5	89.0	57.3	102.9	60.8	75.6	224.5	144.6	1319.4	1966
1967	39.7	56.9	208.6	189.7	164.4	100.2	69.9	18.6	27.6	129.3	160.1	122.7	1307.7	1967
1968	70.4	50.8	71.4	226.8	78.3	167.7	23.5	36.6	78.3	165.7	152.7	74.0	1248.2	1968
1969	68.1	26.7	7.3	202.4	151.1	74.4	14.3	30.4	94.0	211.4	102.0	38.7	1021.8	1969
1970	111.1	90.9	82.3	88.0	101.8	38.8	49.3	53.4	73.9	225.0	215.0	28.0	1167.5	1970
1971	188.9	140.7	154.6	108.5	151.8	94.0	66.3	78.2	74.4	197.5	-9.9	-9.9	-9.9	1971
1972	168.5	149.3	118.9	181.4	134.6	65.5	23.5	32.5	36.6	135.6	193.0	110.2	1349.6	1972
1973	29.0	28.5	92.1	56.2	116.0	61.0	75.0	-9.9	140.0	207.0	100.0	123.0	-9.9	1973
1974	119.0	192.0	260.0	153.0	115.0	53.0	42.0	41.0	110.0	204.0	88.0	31.0	1408.0	1974
1975	40.0	201.0	154.0	142.0	175.0	120.0	109.2	120.0	139.0	51.0	151.0	249.0	1651.2	1975
1976	75.0	68.0	285.0	110.0	104.0	83.0	23.0	29.0	123.0	264.0	107.0	135.0	1406.0	1976
1977	31.0	27.0	94.0	141.0	79.0	91.0	43.0	69.0	106.0	138.0	132.0	65.0	1016.0	1977
1978	20.0	39.0	141.0	177.0	91.0	44.0	41.0	51.0	108.0	107.0	66.0	118.0	1003.0	1978
NUMERO DE ANOS	16	16	16	18	18	18	17	16	17	17	16	16	14	
VALOR MAXIMO	188.9	201.0	285.0	226.8	243.7	167.7	118.0	120.0	140.0	273.0	257.5	249.0	1651.2	
CUARTIL SUPERIOR	115.0	130.8	154.3	181.4	175.0	94.0	72.4	73.6	109.3	209.2	206.0	138.8	1406.0	
MEDIANA	67.7	62.4	93.8	160.2	128.0	83.3	49.3	58.4	80.8	186.8	154.0	117.1	1313.5	
CUARTIL INFERIOR	35.3	33.8	76.8	108.5	104.0	61.0	23.5	34.5	62.7	132.4	105.0	69.5	1154.3	
VALOR MINIMO	9.0	26.5	7.3	56.2	78.3	20.5	14.3	18.6	27.6	51.0	66.0	28.0	1003.0	
PROMEDIOS	75.4	80.1	121.8	148.7	127.7	82.2	54.0	58.5	87.0	170.9	162.4	109.6	1283.2	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1294.4	
PORCENTAJES	5.8	6.7	9.4	11.5	10.6	6.4	4.2	4.5	6.7	13.2	12.5	8.5		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 23. INDICE DE ARNOLDUS = 122.

DEV. ESTANDAR	53.3	58.9	76.5	48.1	44.7	36.0	31.2	27.8	33.0	61.0	67.3	57.6	197.5
COEF. VARIACION	0.707	0.684	0.628	0.323	0.324	0.437	0.577	0.475	0.380	0.357	0.414	0.525	0.154
COEF. ASIMETRIA	0.869	0.801	0.847	-0.332	0.747	0.684	0.690	0.680	-0.068	-0.252	0.619	0.631	0.173

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211911	VALSALICE	FUSAGASUGA	+04 23 54	+074 23 43	1420 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	66.9	154.8	83.0	81.0	195.6	87.5	77.9	119.6	88.5	171.7	59.9	115.7	1307.1	1960
1961	131.5	65.6	127.5	181.0	39.1	75.1	33.0	29.8	49.9	212.0	159.6	109.9	1214.0	1961
1962	66.7	35.6	72.2	104.2	184.1	83.5	118.0	67.5	108.7	147.3	157.1	178.2	1323.1	1962
1963	123.5	121.0	88.6	206.5	243.7	65.3	53.7	63.4	62.0	186.8	277.5	77.1	1569.1	1963
1964	9.0	53.2	67.1	107.4	134.7	141.8	91.6	78.7	53.8	273.0	130.2	142.7	1343.2	1964
1965	39.5	20.5	30.3	173.7	117.7	20.5	17.9	64.3	63.4	186.8	297.5	116.2	1154.3	1965
1966	67.3	94.5	93.7	167.9	121.5	89.0	57.3	102.9	80.8	75.6	224.5	144.6	1319.4	1966
1967	39.7	56.9	208.6	189.7	184.4	100.2	69.9	18.6	27.6	129.3	160.1	122.7	1307.7	1967
1968	70.4	50.8	71.4	226.8	78.3	167.7	23.5	36.6	78.3	165.7	192.7	74.0	1248.2	1968
1969	68.1	20.7	7.3	202.4	151.1	74.4	14.3	30.4	94.0	211.4	103.0	38.7	1021.8	1969
1970	111.1	90.9	82.3	88.0	101.8	38.8	49.3	53.4	73.9	225.0	219.0	28.0	1167.5	1970
1971	188.9	140.7	154.6	108.5	151.8	94.0	66.3	78.2	74.4	197.5	184.2	110.6	1549.7	1971
1972	168.5	149.3	118.9	181.4	134.6	65.5	23.5	32.5	36.6	135.6	193.0	110.2	1349.6	1972
1973	29.0	28.5	92.1	56.2	116.0	61.0	75.0	73.6	140.0	207.0	100.0	123.0	1101.4	1973
1974	119.0	192.0	260.0	153.0	115.0	53.0	42.0	41.0	110.0	204.0	88.0	31.0	1408.0	1974
1975	40.0	201.0	154.0	142.0	175.0	120.0	109.2	120.0	139.0	51.0	151.0	249.0	1651.2	1975
1976	75.0	68.0	285.0	110.0	104.0	83.0	23.0	29.0	123.0	264.0	107.0	135.0	1406.0	1976
1977	31.0	27.0	94.0	141.0	79.0	91.0	43.0	69.0	106.0	138.0	132.0	65.0	1016.0	1977
1978	20.0	39.0	141.0	177.0	91.0	44.0	41.0	51.0	108.0	107.0	66.0	118.0	1003.0	1978
1979	40.2	47.2	125.6	128.2	110.1	104.5	68.7	142.8	85.8	241.9	281.3	139.7	1506.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	188.9	201.0	285.0	226.8	243.7	167.7	118.0	142.8	140.0	273.0	297.5	249.0	1651.2	
CUARTIL SUPERIOR	115.0	130.8	147.5	181.2	163.4	97.1	72.4	78.4	108.3	211.7	206.0	137.3	1407.0	
MEDIANA	67.1	61.2	93.8	160.2	119.6	83.3	51.5	63.8	83.3	186.8	158.3	115.9	1313.5	
CUARTIL INFERIOR	39.6	30.4	77.2	109.3	102.9	63.1	28.3	34.5	62.7	136.8	105.0	75.5	1160.9	
VALOR MINIMO	9.0	20.5	7.3	56.2	39.1	20.5	14.3	18.6	27.6	51.0	59.9	28.0	1003.0	
PROMEDIOS	75.6	83.5	118.1	149.3	131.4	83.0	54.9	65.1	85.2	176.5	164.2	111.5	1298.3	
PORCENTAJES	5.8	6.4	9.1	11.5	10.1	6.4	4.2	5.0	6.6	13.6	12.6	8.6		
DEV. ESTANDAR	49.8	57.1	69.3	46.3	47.9	34.4	29.7	34.5	31.4	58.7	69.9	51.6	186.8	
COEF. VARIACION	0.659	0.684	0.587	0.310	0.365	0.415	0.541	0.530	0.369	0.333	0.426	0.463	0.144	

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 24. INDICE DE ARNOLDUS = 122.

INDICE DE IRREGULARIDAD INTERANUAL =1.45

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1606.	1538.	1456.	1298.	1141.	1059.	991.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.867	0.846	1.026	-0.356	0.456	0.631	0.577	0.777	0.034	-0.431	0.443	0.563	0.077	

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350610	ESCUELA TENA	GACHALA	+04 40 00	+073 31 00	1700 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1972	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	216.0	113.5	90.2	55.8	-9.9
1973	25.3	14.3	93.0	233.6	300.0	273.3	207.2	310.2	234.9	157.0	136.8	39.9	2065.5
1974	38.1	138.8	128.1	264.7	366.7	277.3	297.2	235.5	125.5	120.8	51.1	8.7	2052.5
1975	36.4	47.9	224.5	172.5	288.5	426.1	221.5	235.5	105.5	155.9	98.5	67.2	2120.0
1976	23.0	67.5	113.8	182.0	277.0	308.0	308.4	160.3	169.2	49.9	109.4	65.7	1834.2
1977	33.0	85.9	120.7	115.6	157.7	302.2	355.7	165.9	203.5	125.1	64.8	24.0	1754.1
1978	94.1	38.7	109.3	216.8	319.8	507.8	239.8	216.1	152.2	171.3	35.0	70.0	2170.9
1979	17.1	4.2	135.5	129.6	214.2	245.1	212.5	202.4	93.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANEBA

ESTACION X ESCUELA TENA MUNICIPIO DE GACHALA PERIODO 1972 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1978	2170.9	2170.9	2170.9	1.029	0.086				+	.		
2	1977	1754.1	3925.0	1962.5	-1.474	-0.037			.	+			
3	1976	1834.2	5759.2	1919.7	-0.993	-0.120			.	+I			
4	1975	2120.0	7879.2	1969.8	0.724	-0.059				+	.		
5	1974	2052.5	9931.7	1986.3	0.318	-0.033				+	.		
6	1973	2065.5	11997.2	1999.5	0.396	0.0				+	.		

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 6 ANOS = 1999.5

DEVIACION ESTANDAR = 166.5

COEFICIENTE DE VARIACION = 0.083

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350610	ESCUELA TENA	GACHALA	+04 43 00	+073 31 20	1700 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1972	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	216.0	113.5	90.2	55.8	-9.9	1972
1973	25.3	14.3	93.0	233.0	300.0	273.3	207.2	310.2	234.9	197.0	136.8	39.9	2065.5	1973
1974	38.1	138.8	128.1	264.7	366.7	277.3	297.2	235.5	125.5	120.8	51.1	8.7	2052.5	1974
1975	36.4	47.9	224.5	172.5	268.5	426.1	221.5	235.5	105.5	195.9	96.5	67.2	2120.0	1975
1976	23.0	67.5	113.8	182.0	277.0	308.0	308.4	160.3	169.2	49.9	109.4	65.7	1834.2	1976
1977	33.0	65.9	120.7	115.0	157.7	302.2	285.7	165.9	203.5	125.1	64.8	24.0	1754.1	1977
1978	94.1	38.7	109.3	216.8	319.8	507.8	239.8	216.1	152.2	171.3	35.0	70.0	2170.9	1978
1979	17.1	4.2	135.5	129.0	214.2	245.1	212.5	202.4	93.9	-9.9	-9.9	-9.9	-9.9	1979
NUMERO DE ANOS	7	7	7	7	7	7	7	7	8	7	7	7	6	
VALOR MAXIMO	94.1	138.8	224.5	264.7	366.7	507.8	385.7	310.2	234.9	197.0	136.8	70.0	2170.9	
MEDIANA	33.0	47.9	120.7	182.0	268.5	302.2	239.8	216.1	160.7	125.1	90.2	55.8	2059.0	
VALOR MINIMO	17.1	4.2	93.0	115.0	157.7	245.1	207.2	160.3	93.9	49.9	35.0	8.7	1754.1	
PROMEDIOS	38.1	56.8	132.1	187.8	274.8	334.3	263.2	216.0	162.6	139.1	83.7	47.3	1999.5	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1937.8	
PORCENTAJES	2.0	2.9	6.8	9.7	14.2	17.2	13.6	11.2	8.4	7.2	4.3	2.4		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 56. INDICE DE APARICIOS = 215.

DEV. ESTANDAR	25.8	45.9	43.0	54.3	69.1	95.9	57.4	50.7	52.5	52.8	35.4	23.8	166.5
COEF. VARIACION	0.677	0.809	0.325	0.289	0.252	0.287	0.218	0.232	0.323	0.380	0.423	0.504	0.083
COEF. ASIMETRIA	2.173	0.842	2.084	-0.005	-0.668	1.278	0.658	0.821	0.049	-0.511	0.071	-0.765	-0.791

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350609	GACHALA	GACHALA	+04 42 00	+073 31 00	1760 METROS

AÑO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1962	-9.9	-9.9	-9.9	-9.9	335.0	426.0	340.0	233.0	248.0	132.0	79.0	50.0	-9.9
1963	18.0	153.0	76.0	307.0	297.0	287.0	202.0	263.0	198.0	65.0	50.0	52.0	1968.0
1964	0.0	55.0	111.0	329.0	369.0	326.0	272.0	202.0	205.0	175.0	130.0	52.0	2226.0
1965	81.0	30.0	109.0	310.0	531.0	293.0	366.0	220.0	134.0	145.0	162.0	71.0	2452.0
1966	65.0	50.0	156.0	25.0	152.0	240.0	202.0	227.0	185.0	95.0	110.0	68.0	1575.0
1967	129.0	71.0	156.0	260.0	259.0	318.0	346.0	395.0	275.0	30.0	94.0	50.0	2383.0
1968	12.0	9.0	83.0	282.0	175.0	356.0	447.0	260.0	227.0	272.0	147.0	42.0	2354.0
1969	105.0	115.0	125.0	247.0	300.0	199.0	177.0	237.0	145.0	235.0	84.0	74.0	2043.0
1970	64.0	56.5	212.0	377.0	277.0	364.0	256.0	116.0	153.0	181.0	64.0	72.0	2192.5
1971	35.0	64.5	122.0	277.0	303.0	365.0	378.0	317.0	215.0	115.0	126.0	70.0	2407.5
1972	87.0	79.5	213.0	202.0	493.0	344.5	286.5	299.5	239.5	126.0	94.0	-9.9	-9.9
1973	30.0	3.0	126.0	159.0	224.0	234.0	126.0	191.0	134.0	137.0	62.0	17.0	1483.0
1974	6.0	178.0	167.0	308.0	444.0	165.0	391.0	345.0	264.0	166.0	82.0	24.0	2564.0
1975	30.0	69.0	271.0	228.0	327.0	339.0	188.0	230.0	140.0	171.0	88.0	83.0	2164.0
1976	32.0	61.0	127.0	146.0	-9.9	-9.9	358.0	263.0	159.0	73.0	110.0	69.0	-9.9
1977	0.0	101.0	139.0	165.0	205.0	326.0	369.0	193.0	233.0	131.0	43.0	30.0	1935.0
1978	85.0	33.0	126.0	234.0	340.0	400.0	261.0	228.0	241.0	187.0	46.0	78.0	2259.0
1979	89.0	5.0	174.0	265.0	263.0	256.0	214.0	225.0	117.0	224.0	253.0	67.0	2154.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAF

ESTACION x GACHALA MUNICIPIO DE GACHALA PERIODO 1962 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	2154.0	2154.0	2154.0	0.028	0.004				*			
2	1978	2259.0	4413.0	2206.5	0.373	0.057				+ .			
3	1977	1935.0	6348.0	2116.0	-0.689	-0.041			.	+			
4	1975	2164.0	8512.0	2128.0	0.061	-0.032				*			
5	1974	2564.0	11076.0	2215.2	1.372	0.163				I+	.		
6	1973	1483.0	12559.0	2093.2	-2.171	-0.146		.		+I			
7	1971	2407.5	14966.5	2138.1	0.859	-0.024				+	.		
8	1970	2192.5	17159.0	2144.9	0.155	-0.002				+.			
9	1969	2043.0	19202.0	2133.6	-0.335	-0.049			.	+			
10	1968	2354.0	21556.0	2155.6	0.084	0.048				+	.		
11	1967	2383.0	23939.0	2176.3	0.779	0.159				I+	.		
12	1966	1575.0	25514.0	2126.2	-1.869	-0.107		.		+I			
13	1965	2452.0	27966.0	2151.2	1.005	0.036				+	.		
14	1964	2226.0	30192.0	2156.6	0.264	0.073				+ .			
15	1963	1988.0	32180.0	2145.3	-0.516	0.0			.	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 15 ANOS = 2145.3
DEVIACION ESTANDAR = 305.1
COEFICIENTE DE VARIACION = 0.142

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
3506009	GACHALA	GACHALA	+04 42 00	+073 31 20	1760 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1962	-9.9	-9.9	-9.9	-9.9	335.0	426.0	340.0	233.0	248.0	132.0	79.0	50.0	-9.9	1962
1963	18.0	153.0	76.0	307.0	297.0	287.0	202.0	263.0	198.0	85.0	50.0	52.0	1588.0	1963
1964	0.0	55.0	111.0	329.0	369.0	326.0	272.0	202.0	205.0	175.0	130.0	52.0	2226.0	1964
1965	81.0	30.0	109.0	310.0	331.0	293.0	366.0	220.0	134.0	145.0	162.0	71.0	2452.0	1965
1966	65.0	50.0	156.0	25.0	152.0	240.0	202.0	227.0	185.0	95.0	110.0	68.0	1575.0	1966
1967	129.0	71.0	156.0	260.0	259.0	318.0	346.0	395.0	275.0	30.0	94.0	50.0	2383.0	1967
1968	12.0	9.0	83.0	282.0	175.0	398.0	447.0	260.0	227.0	272.0	147.0	42.0	2354.0	1968
1969	103.0	115.0	125.0	247.0	300.0	199.0	177.0	237.0	145.0	235.0	84.0	74.0	2043.0	1969
1970	64.0	58.0	212.0	377.0	277.0	364.0	256.0	116.0	153.0	181.0	64.0	72.0	2192.5	1970
1971	35.0	64.5	122.0	277.0	303.0	385.0	378.0	317.0	215.0	115.0	126.0	70.0	2407.5	1971
1972	87.0	79.5	213.0	202.0	493.0	344.5	286.5	295.5	239.5	126.0	94.0	-9.9	-9.9	1972
1973	30.0	3.0	126.0	199.0	224.0	234.0	126.0	191.0	134.0	137.0	62.0	17.0	1483.0	1973
1974	6.0	178.0	167.0	308.0	444.0	189.0	351.0	345.0	264.0	166.0	82.0	24.0	2564.0	1974
1975	30.0	69.0	271.0	228.0	327.0	339.0	188.0	230.0	140.0	171.0	86.0	83.0	2164.0	1975
1976	32.0	61.0	127.0	146.0	-9.9	-9.9	358.0	263.0	159.0	73.0	110.0	69.0	-9.9	1976
1977	0.0	101.0	139.0	165.0	205.0	326.0	369.0	193.0	233.0	131.0	43.0	30.0	1535.0	1977
1978	85.0	33.0	126.0	234.0	340.0	400.0	261.0	228.0	241.0	187.0	46.0	78.0	2259.0	1978
1979	89.0	5.0	174.0	265.0	263.0	258.0	214.0	225.0	117.0	224.0	253.0	67.0	2154.0	1979

NUMERO DE ANOS	17	17	17	17	17	17	18	18	18	18	18	17	15	
VALOR MAXIMO	129.0	178.0	271.0	377.0	531.0	426.0	447.0	395.0	275.0	272.0	253.0	83.0	2564.0	
CUARTIL SUPERIOR	86.0	90.3	170.5	307.5	384.5	374.5	366.0	263.0	239.5	181.0	126.0	71.5	2383.0	
MEDIANA	35.0	61.0	127.0	260.0	300.0	326.0	279.3	231.5	201.5	141.0	91.0	67.0	2192.5	
CUARTIL INFERIOR	15.0	31.5	116.5	200.5	241.5	249.0	202.0	220.0	145.0	115.0	64.0	46.0	1988.0	
VALOR MINIMO	0.0	3.0	76.0	25.0	152.0	189.0	126.0	116.0	117.0	30.0	43.0	17.0	1483.0	
PROMEDIOS	51.1	66.7	148.6	244.8	311.4	313.3	287.8	246.9	195.1	148.9	101.3	57.0	2145.3	
									TOTAL DE LOS PROMEDIOS MENSUALES =				2170.9	
PORCENTAJES	2.4	3.1	6.8	11.3	14.3	14.4	13.3	11.4	9.0	6.9	4.7	2.6		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 45. INDICE DE APARCLOUS = 231.

DEV. ESTANDAR	39.9	48.6	49.7	82.4	104.1	71.3	90.2	63.1	50.4	60.1	50.8	19.6	305.2	
COEF. VARIACION	0.782	0.729	0.339	0.336	0.334	0.228	0.314	0.255	0.258	0.404	0.501	0.344	0.142	
COEF. ASIMETRIA	0.355	0.864	1.016	-1.076	0.651	-0.247	-0.065	0.520	-0.045	0.138	1.619	-0.750	-1.002	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350603	SECR DE AGRICULTURA	GACHETA	+04 50 00	+073 38 00	1800 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1953	-9.9	-9.9	108.3	111.2	292.4	156.4	193.9	82.8	96.5	111.9	74.3	50.6	-9.9
1954													
1955	89.5	52.0	175.9	128.3	157.6	131.0	314.0	84.6	129.4	143.0	104.0	31.0	1540.3
1956	99.0	27.0	119.4	75.7	89.1	164.6	166.1	126.8	106.4	213.2	38.0	36.9	1262.2
1957	-9.9	2.5	10.6	44.8	39.0	14.6	155.8	169.9	125.1	115.4	79.9	45.9	-9.9
1958	0.3	17.0	95.5	95.4	122.5	143.5	171.0	204.2	71.5	68.0	58.5	7.5	1064.9
1959	14.0	15.0	37.5	106.3	94.9	172.6	253.7	178.9	109.2	131.4	88.2	60.1	1281.8
1960	16.7	74.4	49.5	161.0	159.7	156.5	191.1	103.3	111.2	81.8	87.7	60.6	1253.5
1961	2.1	5.6	76.4	155.8	58.8	156.7	157.0	83.2	93.8	183.0	167.0	60.0	1203.4
1962	8.0	35.0	110.2	74.7	161.4	241.1	169.6	111.9	134.6	54.2	87.3	20.4	1248.4
1963	19.0	72.0	30.0	209.0	253.0	147.0	155.0	139.0	69.0	67.0	171.0	38.0	1369.0
1964	0.0	24.4	10.7	132.4	234.6	212.2	118.9	105.0	156.8	242.8	129.6	237.7	1605.1
1965	31.0	10.0	75.0	189.0	295.0	170.0	261.0	152.0	57.0	165.0	140.0	73.0	1618.0
1966	21.0	5.0	125.0	37.0	60.0	136.0	234.0	138.0	124.0	133.0	325.0	111.0	1451.0
1967	17.0	7.0	61.0	306.0	306.0	428.0	212.0	256.0	145.0	164.0	175.0	40.0	2137.0
1968	14.0	24.0	73.0	181.0	115.0	253.0	197.0	79.0	128.0	165.0	87.0	47.0	1403.0
1969	96.0	70.0	41.0	130.0	161.0	115.0	146.0	169.0	91.0	253.0	153.0	54.0	1479.0
1970	60.2	45.0	146.6	8.2	33.7	273.6	296.1	81.4	103.3	435.9	199.2	19.4	1706.6
1971	46.2	38.2	75.2	176.0	229.1	237.8	370.8	306.0	179.2	317.0	240.7	-9.9	-9.9
1972	186.3	46.0	214.3	272.5	350.8	292.8	286.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1973	-9.9	-9.9	-9.9	-9.9	154.0	219.0	158.0	155.0	163.0	186.0	100.0	55.0	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DAVARANJO

ESTACION K SECR DE AGRICULTURA MUNICIPIO DE GACHETA PERIODO 1953 - 1973 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1970	1706.6	1706.6	1706.6	1.013	0.184				I+	.		
2	1969	1479.0	3185.6	1592.8	0.143	0.210				I.+			
3	1968	1403.0	4588.6	1529.5	-0.147	0.183				.I+			
4	1967	2137.0	6725.6	1681.4	2.698	0.666				I +		.	
5	1966	1451.0	8176.6	1635.3	0.036	0.672				. +			
6	1965	1618.0	9794.6	1632.4	0.674	0.795				I .+			
7	1964	1605.1	11399.7	1628.5	0.625	0.908				I . +			
8	1963	1369.0	12768.7	1596.1	-0.277	0.858				. I +			
9	1962	1248.4	14017.1	1557.5	-0.738	0.724			.	I +			
10	1961	1203.4	15220.5	1522.0	-0.910	0.558			.	I +			
11	1960	1253.5	16474.0	1497.6	-0.719	0.428			.	I +			
12	1959	1281.8	17755.8	1479.6	-0.610	0.317			.	I +			
13	1958	1064.9	18820.7	1447.7	-1.439	0.056			.	+			
14	1956	1262.2	20082.9	1434.5	-0.685	-0.069			.	+			
15	1955	1540.3	21623.2	1441.5	0.377	0.000				+ .			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 15 ANOS = 1441.5
DEVIACION ESTANDAR = 261.7
COEFICIENTE DE VARIACION = 0.182

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350606	GAMA	GAMA	+04 46 00	+073 37 00	2140 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1962	-9.9	-9.9	-9.9	-9.9	296.0	371.0	278.0	182.0	232.0	215.0	165.0	59.0	-9.9
1963	33.0	163.0	69.0	301.0	296.0	263.0	215.0	193.0	155.0	78.0	76.0	88.0	1930.0
1964	0.0	25.0	34.0	145.0	189.0	198.0	95.0	119.0	154.0	128.0	75.0	73.0	1235.0
1965	51.0	16.0	60.0	197.0	329.0	236.0	360.0	220.0	63.0	161.0	151.0	78.0	1922.0
1966	57.0	29.0	143.0	124.0	109.0	162.0	246.0	252.0	167.0	109.0	142.0	107.0	1647.0
1967	95.0	19.0	96.0	168.0	191.0	184.0	185.0	169.0	80.0	65.0	112.0	28.0	1392.0
1968	8.0	0.0	61.0	187.0	104.0	244.0	275.0	89.0	87.0	127.0	74.0	38.0	1294.0
1969	48.0	73.0	26.0	129.0	158.0	115.0	209.0	164.0	105.0	232.0	93.0	62.0	1414.0
1970	39.0	43.0	156.0	164.0	222.0	286.0	208.0	130.0	143.0	106.0	130.0	60.0	1687.0
1971	31.0	122.0	137.0	203.0	159.0	235.0	325.0	269.0	148.0	95.0	89.0	41.0	1854.0
1972	92.0	41.0	106.0	172.0	328.0	319.0	318.0	290.0	144.0	93.0	137.0	51.0	2091.0
1973	39.0	10.0	36.0	110.0	243.0	253.0	150.0	221.0	180.0	57.0	120.0	50.0	1469.0
1974	18.0	64.0	112.0	186.0	216.0	84.0	177.0	133.0	93.0	80.0	34.0	10.0	1187.0
1975	12.0	40.0	100.0	75.0	150.0	239.0	110.0	165.0	90.0	168.0	87.0	16.0	1252.0
1976	27.0	37.0	129.0	155.0	241.0	334.0	210.0	180.0	95.0	55.0	70.0	27.0	1560.0
1977	0.0	74.0	57.0	83.0	78.0	65.0	277.0	121.0	133.0	69.0	60.5	50.0	1067.5
1978	35.0	24.0	57.0	138.0	198.0	216.0	127.0	160.0	200.0	128.0	9.0	10.0	1302.0
1979	11.0	14.0	72.0	118.0	98.0	210.0	113.0	180.0	58.0	249.0	193.0	100.5	1416.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

ESTACION X GAMA MUNICIPIO DE GAMA PERIODO 1962 - 1979 COEF DE CORRECCION 1.000

ESTACION Y GACHALA MUNICIPIO DE GACHALA PERIODO 1962 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	1417.	2154.	0.959	-0.041					+	+			
2	1978	2719.	4413.	0.840	-0.209					+	I			
3	1977	3786.	6348.	0.804	-0.386					+	I			
4	1975	5038.	8512.	0.844	-0.543					+	I			
5	1974	6225.	11076.	0.675	-0.932				+		I			
6	1973	7694.	12559.	1.444	-0.625					+	I			
7	1971	9548.	14967.	1.123	-0.487					+	I			
8	1970	11235.	17159.	1.122	-0.362					+	I			
9	1969	12649.	19202.	1.009	-0.353					+				
10	1968	13943.	21556.	0.802	-0.571					+	I			
11	1967	15335.	23939.	0.852	-0.736				+		I			
12	1966	16982.	25514.	1.525	-0.350					+	I			
13	1965	18904.	27966.	1.143	-0.187						+I			
14	1964	20139.	30192.	0.809	-0.385					+	I			
15	1963	22069.	32180.	1.416	0.0						+			
						P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CUX	CUY	RAN	PCAN	R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 1471.3 2145.3

RAZONES PROMEDIOS Y/X = 1.458

X/Y = 0.686

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240138	EL PUENTE	GUACHETA	+05 22 00	+073 40 00	2810 METROS

AÑO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1963	19.0	78.5	107.5	115.5	124.0	39.5	58.0	32.0	5.0	80.0	176.0	5.0	840.0
1964	9.0	47.0	11.5	161.5	77.5	62.5	29.5	25.0	23.0	76.0	55.5	72.0	652.0
1965	3.0	14.5	13.0	204.0	112.5	24.5	42.0	45.0	7.5	141.0	137.5	36.0	780.5
1966	0.0	44.5	72.0	34.5	48.5	72.0	13.5	25.5	25.5	83.0	202.0	140.0	761.0
1967	44.0	34.5	75.6	94.2	100.1	66.6	38.3	51.7	31.8	69.2	123.1	44.2	773.3
1968	9.1	77.7	38.2	154.8	46.5	79.3	35.0	28.2	48.9	65.6	151.2	7.9	742.4
1969	61.5	30.7	2.7	107.5	58.1	29.3	27.5	22.3	34.4	177.8	83.2	30.9	665.9
1970	65.9	74.7	12.9	42.8	104.8	37.0	45.1	15.6	47.1	201.8	81.4	16.2	745.3
1971	61.9	36.6	110.5	86.9	102.1	53.5	42.4	34.6	65.9	46.4	91.3	83.9	816.0
1972	56.0	73.0	59.4	142.0	44.7	46.1	43.2	53.5	26.8	51.7	105.4	16.7	758.5
1973	7.4	20.0	70.2	82.3	44.5	45.6	54.8	79.4	114.7	104.1	85.9	48.7	757.6
1974	24.8	52.3	93.7	105.0	51.1	31.9	13.3	7.0	38.0	79.8	123.3	19.1	639.3
1975	8.1	92.4	80.6	62.5	41.7	47.9	40.8	42.2	44.1	135.6	59.4	94.8	750.1
1976	23.6	41.0	163.8	116.6	54.8	67.0	37.8	31.3	57.1	171.3	97.7	35.8	897.8
1977	0.3	4.1	82.0	118.4	50.9	30.0	26.9	32.2	111.4	75.4	101.3	58.0	690.9
1978	1.4	53.1	51.2	106.6	65.3	27.2	26.3	53.9	42.4	93.5	65.1	42.9	628.9
1979	14.9	39.5	81.5	39.2	42.5	37.2	16.7	38.2	15.0	217.1	147.2	90.3	779.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANIGRAF

ESTACION X EL PUENTE MUNICIPIO DE GUACHETA PERIODO 1963 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	779.3	779.3	779.3	0.463	0.045				+			
2	1978	628.9	1408.2	704.1	-1.616	-0.112				+I			
3	1977	690.9	2099.1	699.7	-0.759	-0.185				+I			
4	1976	897.8	2996.9	749.2	2.101	0.018				+			
5	1975	750.1	3747.0	749.4	0.059	0.024				*			
6	1974	639.3	4386.3	731.0	-1.472	-0.119				+I			
7	1973	757.6	5143.9	734.8	0.163	-0.103				+I			
8	1972	758.5	5902.4	737.8	0.175	-0.086				+.			
9	1971	816.0	6718.4	746.5	0.970	0.008				+			
10	1970	745.3	7463.7	746.4	-0.007	0.007				*			
11	1969	665.9	8129.6	739.1	-1.104	-0.100				+			
12	1968	742.4	8872.0	739.3	-0.047	-0.104				+.			
13	1967	773.3	9645.3	741.9	0.380	-0.067				+			
14	1965	761.0	10406.3	743.3	0.210	-0.047				+			
15	1965	780.5	11186.8	745.8	0.479	-0.001				+			
16	1964	652.0	11838.8	739.9	-1.297	-0.126				+I			
17	1963	840.0	12678.8	745.8	1.302	0.0				+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 17 ANOS = 745.8
DEVIACION ESTANDAR = 72.4
COEFICIENTE DE VARIACION = 0.097

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240138	EL PUENTE	GUACHETA	+05 21 54	+073 40 22	2810 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1963	19.0	78.5	107.5	115.5	124.0	39.5	58.0	32.0	5.0	80.0	176.0	5.0	840.0	1963
1964	9.0	47.0	11.5	101.5	77.5	62.5	29.5	25.0	23.0	78.0	55.5	72.0	652.0	1964
1965	3.0	14.5	13.0	204.0	112.5	24.5	42.0	45.0	7.5	141.0	137.5	36.0	780.5	1965
1966	3.0	44.5	72.0	34.5	48.5	72.0	13.5	25.5	25.5	83.0	202.0	140.0	761.0	1966
1967	44.0	34.5	75.6	94.2	100.1	66.6	38.3	51.7	31.8	69.2	123.1	44.2	773.3	1967
1968	9.1	77.7	38.2	154.8	46.5	79.3	35.0	28.2	48.9	65.6	181.2	7.9	742.4	1968
1969	61.5	30.7	2.7	107.5	58.1	29.3	27.5	22.3	34.4	177.8	63.2	30.9	665.9	1969
1970	65.9	74.7	12.9	42.8	104.8	37.0	45.1	15.6	47.1	201.8	81.4	16.2	745.3	1970
1971	61.9	30.0	110.5	60.9	102.1	53.5	42.4	34.6	65.9	46.4	91.3	83.9	816.0	1971
1972	90.0	73.0	59.4	142.0	44.7	46.1	43.2	53.5	26.8	51.7	105.4	16.7	758.5	1972
1973	7.4	20.0	70.2	82.3	44.5	45.6	54.8	79.4	114.7	104.1	85.9	48.7	757.6	1973
1974	24.8	52.3	93.7	105.0	81.1	31.9	13.3	7.0	38.0	79.8	123.3	19.1	639.3	1974
1975	8.1	92.4	80.6	82.5	41.7	47.9	40.8	42.2	44.1	135.6	89.4	94.8	750.1	1975
1976	23.6	41.0	163.8	116.6	54.8	67.0	37.8	31.3	57.1	171.3	97.7	35.8	697.8	1976
1977	0.3	4.1	82.0	118.4	80.9	30.0	26.9	32.2	111.4	75.4	101.3	88.0	690.9	1977
1978	1.4	53.1	51.2	100.6	65.3	27.2	26.3	53.9	42.4	93.5	85.1	42.9	628.9	1978
1979	14.9	39.5	81.5	39.2	42.5	37.2	16.7	38.2	15.0	217.1	147.2	90.3	779.3	1979
NUMERO DE ANOS	17	17	17	17	17	17	17	17	17	17	17	17	17	
VALOR MAXIMO	90.0	92.4	163.8	204.0	124.0	79.3	58.0	79.4	114.7	217.1	202.0	140.0	697.8	
CUARTIL SUPERIOR	52.6	73.6	87.8	130.2	101.1	64.5	42.8	48.3	63.0	156.1	142.3	77.9	779.9	
MEDIANA	14.9	44.5	72.0	106.6	64.8	45.6	37.8	32.2	38.0	83.0	101.3	42.9	757.6	
CUARTIL INFERIOR	5.2	32.6	25.6	72.4	45.6	30.9	26.6	25.3	24.3	72.3	82.3	17.9	678.4	
VALOR MINIMO	0.0	4.1	2.7	34.5	41.7	24.5	13.3	7.0	15.0	46.4	55.5	5.0	628.9	
PROMEDIOS	26.5	47.9	66.3	104.4	68.8	46.9	34.8	36.3	43.4	110.1	111.0	49.6	745.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		745.8	
PORCENTAJES	3.5	6.4	8.9	14.0	9.2	6.3	4.7	4.9	5.8	14.8	14.9	6.6		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 17. INDICE DE ARACLOUS = 76.

DEV. ESTANDAR	28.8	24.7	42.2	45.6	28.4	17.2	13.1	17.1	30.9	53.6	41.3	36.5	72.4
COEF. VARIACION	1.087	0.515	0.637	0.436	0.412	0.366	0.376	0.470	0.711	0.487	0.372	0.736	0.097
COEF. ASIMETRIA	1.188	0.122	0.346	0.316	0.823	0.489	-0.116	0.773	1.301	0.834	0.691	0.992	0.082

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda
Colombia

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240138	EL PUENTE	GUACHETA	+05 21 54	+073 40 22	2810 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	10.4	42.8	84.1	89.4	81.6	17.3	88.7	31.9	44.5	111.3	121.7	23.7	747.4	1960
1961	14.5	49.2	87.7	103.0	11.7	48.2	36.8	24.9	19.2	163.3	154.8	0.1	713.4	1961
1962	15.2	70.8	57.9	80.8	93.8	79.0	35.4	30.6	46.4	91.3	102.5	65.5	787.2	1962
1963	19.0	78.5	107.5	115.5	124.0	39.5	58.0	32.0	5.0	80.0	176.0	5.0	840.0	1963
1964	9.0	47.0	11.5	161.5	77.5	62.5	29.5	25.0	23.0	78.0	55.5	72.0	652.0	1964
1965	3.0	14.5	13.0	204.0	112.5	24.5	42.0	45.0	7.5	141.0	137.5	36.0	780.5	1965
1966	0.0	44.5	72.0	34.5	48.5	72.0	13.5	25.5	25.5	83.0	202.0	140.0	761.0	1966
1967	44.0	34.5	75.6	94.2	100.1	66.6	38.3	51.7	31.8	69.2	123.1	44.2	773.3	1967
1968	9.1	77.7	36.2	154.8	46.5	79.3	35.0	28.2	48.9	65.6	151.2	7.9	742.4	1968
1969	61.5	30.7	2.7	107.5	58.1	29.3	27.5	22.3	34.4	177.8	83.2	30.9	665.9	1969
1970	65.9	74.7	12.9	42.8	104.8	37.0	45.1	15.6	47.1	201.8	81.4	16.2	745.3	1970
1971	61.9	36.6	110.5	86.9	102.1	53.5	42.4	34.6	65.9	46.4	91.3	83.9	816.0	1971
1972	96.0	73.0	59.4	142.0	44.7	46.1	43.2	53.5	26.8	51.7	105.4	16.7	758.5	1972
1973	7.4	20.0	70.2	82.3	44.5	45.6	54.8	79.4	114.7	104.1	85.9	48.7	757.6	1973
1974	24.6	52.3	93.7	105.0	51.1	31.9	13.3	7.0	38.0	79.8	123.3	19.1	639.3	1974
1975	8.1	92.4	80.6	62.5	41.7	47.9	40.8	42.2	44.1	135.6	59.4	94.8	750.1	1975
1976	23.6	41.0	163.8	116.6	54.8	67.0	37.8	31.3	57.1	171.3	97.7	35.8	697.8	1976
1977	0.3	4.1	82.0	118.4	50.9	30.0	26.9	32.2	111.4	75.4	101.3	58.0	690.9	1977
1978	1.4	53.1	51.2	106.6	65.3	27.2	26.3	53.9	42.4	93.5	65.1	42.9	628.9	1978
1979	14.9	39.5	81.5	39.2	42.5	37.2	16.7	38.2	15.0	217.1	147.2	90.3	779.3	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	96.0	92.4	163.8	204.0	124.0	79.3	88.7	79.4	114.7	217.1	202.0	140.0	897.8	
CUARTIL SUPERIOR	34.4	73.8	85.9	117.5	96.9	64.5	42.8	43.6	48.0	152.1	142.3	68.8	779.9	
MEDIANA	14.7	45.8	73.8	104.0	56.4	45.8	37.3	32.1	40.2	92.4	103.9	39.4	753.8	
CUARTIL INFERIOR	7.7	35.5	44.7	84.5	45.6	30.9	27.2	25.3	24.3	76.7	84.5	17.9	702.1	
VALOR MINIMO	0.0	4.1	2.7	34.5	11.7	17.3	13.3	7.0	5.0	46.4	55.5	0.1	628.9	
PROMEDIOS	24.5	49.1	67.8	102.7	67.8	47.1	37.6	35.5	42.4	111.9	113.3	46.6	746.3	
PORCENTAJES	3.3	6.6	9.1	13.8	9.1	6.3	5.0	4.8	5.7	15.0	15.2	6.2		
DEV. ESTANDAR	26.9	23.6	39.3	42.1	29.8	18.7	17.0	15.9	28.9	50.9	39.2	35.9	67.5	
COEF. VARIACION	1.096	0.480	0.579	0.410	0.440	0.397	0.452	0.448	0.681	0.455	0.346	0.770	0.090	

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 76.

INDICE DE IRREGULARIDAD INTERANUAL =1.26

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	857.	833.	803.	746.	690.	660.	635.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.429	0.045	0.238	0.457	0.321	0.345	1.262	0.931	1.397	0.755	0.550	0.966	0.063	

IMPRESO EN COLOMBIA POR DANAPAN.O

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240117	GUACHETA	GUACHETA	+05 23 00	+073 43 00	2690 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1958	-9.9	17.0	38.0	104.0	40.0	89.0	36.0	31.0	34.0	161.0	-9.9	73.0	-9.9
1959	0.0	37.0	43.0	112.0	87.0	56.0	34.0	41.0	16.0	166.0	130.0	57.0	781.0
1960	80.0	40.0	128.0	82.0	56.0	25.0	18.0	49.0	14.0	95.0	43.0	144.0	774.0
1961	52.0	4.0	137.0	88.0	0.0	58.0	13.0	15.0	27.0	104.0	114.0	50.0	662.0
1962	96.0	25.0	142.0	126.0	90.0	57.0	31.0	38.0	13.0	57.0	152.0	78.0	945.0
1963	21.0	34.0	152.0	140.0	152.0	43.0	61.0	23.0	41.0	65.0	251.0	24.0	1007.0
1964	20.0	93.0	42.0	195.0	150.0	79.0	17.0	33.0	21.0	82.0	74.0	46.0	852.0
1965	16.0	45.0	33.0	291.0	115.0	21.0	41.0	-9.9	16.0	160.0	197.0	-9.9	-9.9
1966	0.0	39.0	24.0	105.0	65.0	106.0	31.0	49.0	91.0	87.0	307.0	196.0	1102.0
1967	56.0	127.0	187.0	131.0	132.0	76.0	24.0	19.0	25.0	66.0	298.0	66.0	1227.0
1968	9.0	4.0	0.0	173.0	78.0	106.0	32.0	12.0	68.0	122.0	-9.9	-9.9	-9.9
1969	84.0	57.0	20.0	487.0	135.0	28.0	9.0	0.0	52.0	219.0	124.0	99.0	1314.0
1970	58.0	109.0	11.0	48.0	142.0	31.0	55.0	11.0	92.0	275.0	98.0	40.0	970.0
1971	150.0	29.0	168.0	138.0	129.0	52.0	26.0	32.0	79.0	125.0	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAL.C

ESTACION X SIMIJACA MUNICIPIO DE SIMIJACA PERIODO COEF DE CORRECCION

1958 - 1971 1.000

ESTACION Y GUACHETA MUNICIPIO DE GUACHETA PERIODO COEF DE CORRECCION

1958 - 1971 1.000

					P =	-4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CUX	CUY	RAN	PCAN	I	I	I	I	I	I	I	I	I
					R :	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1970	669.	970.	0.768	-0.228					+ I				
2	1969	1508.	2284.	0.712	-0.614					+ I				
3	1967	2452.	3511.	0.857	-0.791				+	I				
4	1966	3237.	4613.	0.794	-1.022				+	I				
5	1964	4237.	5465.	1.308	-0.755				+	I				
6	1963	5312.	6472.	1.190	-0.561					+ I				
7	1962	6316.	7417.	1.184	-0.384					+ I				
8	1961	7007.	8079.	1.164	-0.274					+ I				
9	1960	7943.	8853.	1.348	-0.000					+				
					P =	-4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CUX	CUY	RAN	PCAN	I	I	I	I	I	I	I	I	I
					R :	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 882.6 983.7

RAZONES PROMEDIOS Y/X = 1.115

X/Y = 0.897

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* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212084	LA FLORESTA	GUASCA	+04 51 00	+073 47 00	2940 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1962	-9.9	-9.9	-9.9	-9.9	279.0	384.0	331.0	209.0	182.0	156.0	88.0	116.0	-9.9
1963	39.0	95.0	108.0	241.0	358.0	314.0	240.0	207.0	145.0	101.0	135.0	65.0	2048.0
1964	0.0	16.0	59.0	235.0	274.0	295.0	225.0	170.0	158.0	114.0	99.0	138.0	1783.0
1965	131.0	41.0	259.0	-9.9	321.0	245.0	403.0	271.0	104.0	184.0	223.0	73.0	-9.9
1966	-9.9	8.0	207.0	91.0	188.0	130.0	178.0	248.0	177.0	113.0	247.0	222.0	-9.9
1967	120.0	60.0	173.0	228.0	306.0	457.0	399.0	482.0	175.0	171.0	179.0	120.0	2870.0
1968	68.0	80.0	75.0	291.0	225.0	390.0	446.0	243.0	170.0	202.0	134.0	107.0	2431.0
1969	68.0	159.0	81.0	277.0	270.0	210.0	339.0	305.0	220.0	345.0	119.0	138.0	2531.0
1970	202.0	171.0	149.0	219.0	251.0	504.0	425.0	416.0	361.0	405.0	394.0	111.0	3612.0
1971	132.0	173.0	240.7	214.0	331.0	362.0	364.0	254.0	171.0	137.0	97.0	73.0	2548.7
1972	245.0	72.0	154.0	318.0	404.0	449.0	442.0	421.0	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARIA

ESTACION X LA FLORESTA MUNICIPIO DE GUASCA PERIODO 1962 - 1972 COEF DE CORRECCION 1.000

ESTACION Y SECR DE AGRICULTURA MUNICIPIO DE GACHETA PERIODO 1962 - 1972 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. R : 0.6	-3. 0.7	-2. 0.8	-1. 0.9	0.0 1.0	+1. 1.1	+2. 1.2	+3. 1.3	+4. 1.4
1	1970	3612.	1707.	1.344	0.363					I +				
2	1969	6143.	3186.	1.087	0.442					I + .				
3	1968	8574.	4589.	1.100	0.529					I + .				
4	1967	11444.	6726.	0.853	0.335				.	I +				
5	1964	13227.	8331.	0.705	0.042			.		+				
6	1963	15275.	9700.	0.950	0.0				.	+				

N	AN	CUX	CUY	RAN	PCAN	P = -4. R : 0.6	-3. 0.7	-2. 0.8	-1. 0.9	0.0 1.0	+1. 1.1	+2. 1.2	+3. 1.3	+4. 1.4

PROMEDIOS = 2545.8 1616.6

RAZONES PROMEDIOS Y/X = 0.635
X/Y = 1.575

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600101	PALACIOS GUASCA	GUASCA	+04 42 59	+073 49 28	3000 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1965	63.9	15.2	88.8	198.9	275.7	223.5	361.3	203.8	82.9	212.2	215.9	156.0	2078.1
1966	31.6	30.6	218.1	109.1	122.1	149.2	173.8	105.0	118.7	153.5	207.8	236.5	1656.0
1967	83.7	55.3	141.7	168.9	269.2	370.4	308.7	271.4	165.4	148.2	132.7	65.7	2181.3
1968													
1969	108.9	72.7	91.1	204.0	189.9	183.4	180.9	192.4	91.0	285.4	121.1	58.9	1799.7
1970	98.3	98.0	140.0	155.2	279.0	372.3	245.3	204.3	165.0	161.7	166.8	-9.9	-9.9
1971	44.9	81.5	147.5	208.8	156.8	315.3	350.5	240.4	209.6	167.0	95.5	68.8	2090.4
1972	189.3	45.5	133.1	273.9	326.8	320.9	324.1	179.4	171.0	146.4	124.9	33.3	2263.6
1973	37.9	5.2	40.1	92.4	246.5	311.0	261.9	236.3	271.7	175.4	112.0	138.3	1934.7
1974	98.8	81.9	188.2	148.4	248.4	190.0	324.0	224.1	272.2	171.9	113.7	54.9	2116.5
1975	30.8	53.0	157.9	100.1	238.3	412.1	236.7	234.4	199.0	215.2	132.2	157.3	2147.0
1976	88.9	44.7	169.5	219.2	278.6	375.8	411.9	200.2	152.2	-9.9	150.6	76.5	-9.9
1977	2.9	72.4	115.9	138.3	144.4	240.6	314.4	188.8	157.8	136.2	129.8	80.3	1721.8
1978	41.3	39.3	113.7	198.3	161.0	361.0	195.6	172.7	167.5	202.0	64.3	43.8	1760.5
1979	22.4	11.6	105.8	219.1	154.6	281.8	161.0	184.1	135.8	276.7	240.2	124.1	1977.2

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

ESTACION X PALACIOS GUASCA MUNICIPIO DE GUASCA PERIODO 1965 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	1977.2	1977.2	1977.2	-0.000	-0.000				*			
2	1978	1760.5	3737.7	1868.8	-1.079	-0.110			•	+I			
3	1977	1721.8	5459.5	1819.8	-1.272	-0.239			•	+ I			
4	1975	2147.0	7606.5	1901.6	0.845	-0.153				+I	•		
5	1974	2116.5	9723.0	1944.6	0.694	-0.083				+	•		
6	1973	1934.7	11657.7	1942.9	-0.212	-0.104				•+I			
7	1972	2263.6	13921.3	1988.8	1.426	0.041				+		•	
8	1971	2090.4	16011.7	2001.5	0.564	0.098				+	•		
9	1969	1799.7	17811.4	1979.0	-0.884	0.008			•	+			
10	1967	2181.3	19992.7	1999.3	1.016	0.111				I+	•		
11	1966	1656.0	21648.7	1968.1	-1.600	-0.051			•	+			
12	1965	2078.1	23726.8	1977.2	0.502	0.000				+	•		

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 12 ANOS = 1977.2

DEVIACION ESTANDAR = 200.8

COEFICIENTE DE VARIACION = 0.102

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
6001D1	PALACIOS GUASCA	GUASCA	+04 42 34	+073 5C 4E	3050 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1965	63.9	15.2	68.8	198.9	275.7	223.5	361.3	203.8	82.9	212.2	215.9	156.0	2078.1	1965
1966	31.6	30.6	218.1	109.1	122.1	149.2	173.8	105.0	118.7	153.5	207.8	236.5	1656.0	1966
1967	83.7	55.3	141.7	168.9	269.2	370.4	308.7	271.4	165.4	148.2	132.7	65.7	2181.3	1967
1968														1968
1969	108.9	72.7	51.1	264.0	169.9	183.4	180.9	192.4	91.0	285.4	121.1	58.9	1799.7	1969
1970	98.3	58.0	148.0	155.2	279.0	372.3	245.3	204.3	165.0	161.7	166.8	-9.9	-9.9	1970
1971	44.9	81.5	147.5	208.6	156.8	315.3	350.5	240.4	209.6	167.0	99.5	68.8	2090.4	1971
1972	184.3	45.5	133.1	273.9	326.8	320.9	324.1	179.4	171.0	146.4	124.9	33.3	2263.6	1972
1973	37.9	5.2	46.1	92.4	246.5	311.0	261.9	236.3	271.7	175.4	112.0	138.3	1934.7	1973
1974	98.8	81.9	188.2	148.4	248.4	190.0	324.0	224.1	272.2	171.9	113.7	54.9	2116.5	1974
1975	30.8	53.0	137.9	100.1	238.3	412.1	236.7	234.4	199.0	215.2	132.2	157.3	2147.0	1975
1976	88.9	44.7	169.5	219.2	278.6	375.8	411.9	200.2	152.2	-9.9	150.6	76.5	-9.9	1976
1977	2.9	72.4	115.9	138.3	144.4	240.6	314.4	188.8	157.8	136.2	125.8	80.3	1721.8	1977
1978	41.3	39.3	113.7	198.3	161.0	361.0	195.6	172.7	167.5	202.0	64.3	43.8	1760.5	1978
1979	22.4	11.6	165.8	219.1	154.6	281.8	161.0	184.1	135.8	276.7	240.2	124.1	1977.2	1979
NUMERO DE ANOS	14	14	14	14	14	14	14	14	14	13	14	13	12	
VALOR MAXIMO	184.3	98.0	218.1	273.9	326.8	412.1	411.9	271.4	272.2	285.4	240.2	236.5	2263.6	
CUARTIL SUPERIOR	98.3	72.7	165.8	219.1	275.7	370.4	324.1	234.4	199.0	213.7	166.8	147.1	2131.8	
MEDIANA	54.4	49.3	139.8	183.6	242.4	313.1	285.3	202.0	165.2	171.9	131.0	76.5	2027.6	
CUARTIL INFERIOR	31.6	30.6	113.7	138.3	156.8	223.5	195.6	184.1	135.8	150.6	113.7	56.9	1780.1	
VALOR MINIMO	2.9	5.2	46.1	92.4	122.1	149.2	161.0	105.0	82.9	136.2	64.3	33.3	1656.0	
PROMEDIOS	67.0	50.5	131.8	178.2	220.8	293.4	275.0	202.7	168.6	188.6	143.7	99.6	1977.2	
											TOTAL DE LOS PROMEDIOS MENSUALES =		2019.8	
PORCENTAJES	3.3	2.5	6.5	8.8	10.9	14.5	13.6	10.0	8.3	9.3	7.1	4.9		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB
INDICE DE FOURNIER = 43. INDICE DE ARREDONDO = 155.

DEV. ESTANDAR	47.2	28.6	49.8	57.5	64.2	83.5	78.6	39.6	56.4	48.0	46.6	58.8	200.8
COEF. VARIACION	0.704	0.565	0.378	0.323	0.291	0.284	0.286	0.195	0.334	0.254	0.338	0.591	0.102
COEF. ASIMETRIA	1.082	-0.061	-0.357	0.072	-0.102	-0.370	0.007	-0.756	0.525	1.125	0.691	1.115	-0.319

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA ORSTOM

Mi Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
6001 01	PALACIOS GUASCA	GUASCA	+04 42 34	+073 50 48	3050 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	94.8	61.8	156.7	188.0	269.5	185.6	250.0	234.4	193.6	156.1	86.2	152.0	2028.7	1960
1961	83.6	91.0	119.1	189.7	122.9	411.7	316.7	214.9	136.5	153.4	154.4	13.1	2007.0	1961
1962	45.0	63.5	133.7	134.9	171.1	346.3	395.4	170.2	126.6	171.0	181.5	119.7	2023.9	1962
1963	60.0	94.5	29.6	147.2	294.6	294.6	200.2	212.8	149.7	192.6	186.0	27.1	1888.9	1963
1964	5.2	57.6	22.2	236.0	219.1	305.2	327.9	137.1	162.1	148.6	74.6	108.1	1823.9	1964
1965	63.9	15.2	68.8	198.9	275.7	223.5	361.3	203.8	62.9	212.2	215.9	156.0	2078.1	1965
1966	31.6	30.6	218.1	109.1	122.1	149.2	173.8	105.0	118.7	153.5	207.8	236.5	1656.0	1966
1967	83.7	55.3	141.7	168.9	269.2	370.4	308.7	271.4	165.4	148.2	132.7	65.7	2181.3	1967
1968	19.7	77.4	66.3	219.2	180.6	292.6	357.0	198.9	219.8	163.0	161.1	56.6	2012.2	1968
1969	108.9	72.7	51.1	264.0	189.9	183.4	180.9	192.4	91.0	285.4	121.1	58.9	1799.7	1969
1970	98.3	98.0	148.0	155.2	279.0	372.3	245.3	204.3	165.0	161.7	166.8	35.0	2128.9	1970
1971	44.9	81.5	147.5	208.6	156.8	315.3	350.5	240.4	209.6	167.0	99.5	68.8	2090.4	1971
1972	184.3	45.5	133.1	273.9	326.8	320.9	324.1	179.4	171.0	146.4	124.9	33.3	2263.6	1972
1973	37.9	5.2	46.1	92.4	246.5	311.0	261.9	236.3	271.7	175.4	112.0	138.3	1934.7	1973
1974	98.8	81.9	188.2	148.4	248.4	190.0	324.0	224.1	272.2	171.9	113.7	54.9	2116.5	1974
1975	30.8	53.0	137.9	100.1	238.3	412.1	236.7	234.4	199.0	215.2	132.2	157.3	2147.0	1975
1976	88.9	44.7	169.5	219.2	278.6	375.8	411.9	200.2	152.2	192.7	150.6	76.5	2360.8	1976
1977	2.9	72.4	115.9	138.3	144.4	240.6	314.4	188.8	157.8	136.2	129.8	80.3	1721.8	1977
1978	41.3	39.3	113.7	198.3	161.0	301.0	195.6	172.7	167.5	202.0	64.3	43.8	1760.5	1978
1979	22.4	11.0	165.8	219.1	154.6	281.8	161.0	184.1	135.8	276.7	240.2	124.1	1977.2	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	184.3	98.0	218.1	273.9	326.8	412.1	411.9	271.4	272.2	285.4	240.2	236.5	2360.8	
CUARTIL SUPERIOR	91.8	79.4	152.3	219.1	272.6	365.7	339.2	229.2	196.3	197.3	174.1	131.2	2122.7	
MEDIANA	52.5	59.8	133.4	168.3	228.7	308.1	311.5	202.0	165.2	169.0	132.4	72.6	2018.0	
CUARTIL INFERIOR	31.2	42.0	67.5	142.7	158.9	232.0	218.4	181.7	136.1	153.4	112.8	49.3	1856.4	
VALOR MINIMO	2.9	5.2	22.2	92.4	122.1	149.2	161.0	105.0	82.9	136.2	64.3	13.1	1656.0	
PROMEDIOS	62.3	57.9	118.6	180.3	217.5	297.2	282.9	200.3	168.4	181.5	142.8	90.3	2000.1	
PORCENTAJES	3.1	2.9	5.9	9.0	10.9	14.9	14.1	10.0	8.4	9.1	7.1	4.5		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 44. INDICE DE ARNOLDUS = 200.

INDICE DE IRREGULARIDAD INTERANUAL =1.27

DEV. ESTANDAR	43.6	27.4	54.5	51.8	62.8	79.1	73.6	37.6	50.2	40.7	47.2	57.0	183.8
COEF. VARIACION	0.700	0.474	0.459	0.287	0.289	0.266	0.260	0.188	0.298	0.224	0.331	0.631	0.092

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	2303.	2236.	2155.	2000.	1845.	1764.	1698.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.022	-0.460	-0.317	-0.018	-0.037	-0.377	-0.226	-0.672	0.513	1.542	0.342	0.888	-0.111

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212080	SAN JOSE	GUASCA	+04 50 32	+073 53 33	2700 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	9.1	18.4	-9.9
1961	56.4	23.7	111.2	109.5	26.2	117.1	71.2	48.7	4.2	107.0	52.9	1.6	729.7
1962	24.3	16.1	55.1	70.1	97.4	113.9	67.9	64.9	60.0	115.9	97.9	67.9	855.4
1963	22.7	59.6	5.5	130.5	132.1	45.6	54.9	51.5	53.2	58.5	116.8	19.7	790.8
1964	1.1	17.1	5.4	114.7	99.1	117.7	94.5	39.4	38.4	75.6	28.0	85.0	716.0
1965	20.2	6.1	18.5	163.1	110.0	40.6	108.9	60.8	20.6	124.5	101.5	9.6	784.4
1966	4.0	30.5	104.6	56.9	46.8	-9.9	-9.9	49.9	34.1	49.1	105.6	50.5	-9.9
1967	18.7	29.2	127.1	104.6	63.8	105.6	82.9	83.4	40.8	79.7	74.5	43.0	853.3
1968	13.4	106.9	13.1	121.2	91.7	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	0.0	-9.9
1969	-9.9	-9.9	-9.9	133.3	89.6	59.4	63.5	77.0	40.2	216.5	77.2	16.1	-9.9
1970	3.6	36.3	26.0	36.5	92.1	114.5	75.1	53.0	70.4	154.9	88.7	5.8	756.9
1971	47.2	55.2	42.9	121.6	154.2	66.4	52.9	121.4	56.4	12.4	29.0	39.4	801.0
1972	51.8	39.8	78.2	163.8	167.0	116.1	71.0	35.4	34.9	35.3	62.4	4.4	866.1
1973	11.0	0.8	13.3	57.5	41.2	56.3	47.6	60.6	122.1	98.4	76.2	61.6	663.6
1974	39.7	31.5	101.9	83.6	80.1	31.7	58.7	40.5	62.6	64.6	81.7	14.9	711.5
1975	10.3	29.9	66.3	66.7	88.9	57.8	35.4	77.5	82.5	114.2	117.9	102.6	890.0
1976	26.1	39.9	78.7	101.1	72.8	66.2	89.8	44.5	53.0	121.6	104.2	27.4	847.3
1977	0.0	13.1	44.6	147.1	59.0	55.0	79.0	60.0	86.7	34.4	71.5	26.9	677.3
1978	10.0	85.6	94.3	77.3	82.8	58.1	62.3	43.9	49.5	58.8	42.8	36.2	741.6
1979	14.2	40.4	67.6	82.7	96.5	105.5	72.6	73.8	55.3	156.7	84.2	36.2	885.7

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARAJO

ESTACION K SAN JOSE MUNICIPIO DE GUASCA PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	885.7	885.7	885.7	1.539	0.127				I+	•		
2	1978	741.6	1627.3	813.6	-0.590	0.071			•	+			
3	1977	677.3	2304.6	768.2	-1.450	-0.067		•		+			
4	1976	847.3	3151.9	788.0	0.825	0.012				+	•		
5	1975	890.0	4041.9	808.4	1.396	0.145				I+	•		
6	1974	711.5	4753.4	792.2	-0.992	0.050			•	+			
7	1973	663.6	5417.0	773.9	-1.633	-0.105		•		+I			
8	1972	866.1	6283.1	785.4	1.076	-0.003				+	•		
9	1971	801.0	7084.1	787.1	0.205	0.017				+	•		
10	1970	756.9	7841.0	784.1	-0.385	-0.020			•	+			
11	1967	853.3	8694.3	790.4	0.905	0.066				+	•		
12	1965	784.4	9478.7	789.9	-0.017	0.065				*			
13	1964	716.0	10194.7	784.2	-0.932	-0.024			•	+			
14	1963	790.8	10985.5	784.7	0.069	-0.018				*			
15	1962	855.4	11840.9	789.4	0.933	0.071				+	•		
16	1961	729.7	12570.6	785.7	-0.749	0.0			•	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 16 ANOS = 785.7

DEVIACION ESTANDAR = 74.7

COEFICIENTE DE VARIACION = 0.095

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTUM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212060	SAN JOSE	GUASCA	+04 50 32	+073 53 32	2700 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	9.1	18.4	-9.9	1960
1961	50.4	23.7	111.2	109.5	26.2	117.1	71.2	48.7	4.2	107.0	52.9	1.6	729.7	1961
1962	24.3	16.1	55.1	70.1	97.4	113.9	67.9	64.9	60.0	119.9	97.9	67.9	855.4	1962
1963	22.7	55.0	5.5	130.5	132.1	45.8	54.9	51.5	53.2	98.5	116.8	19.7	790.6	1963
1964	1.1	17.1	5.4	114.7	99.1	117.7	94.5	39.4	38.4	75.6	28.0	85.0	716.0	1964
1965	20.2	0.1	18.5	163.1	110.0	40.6	108.9	60.8	20.6	124.5	101.5	9.6	784.4	1965
1966	4.0	30.5	104.6	56.9	46.8	-9.9	-9.9	49.9	34.1	49.1	105.6	90.5	-9.9	1966
1967	18.7	29.2	127.1	104.6	63.8	105.6	62.9	83.4	40.6	79.7	74.5	43.0	853.3	1967
1968	13.4	106.9	13.1	121.2	91.7	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	0.0	-9.9	1968
1969	-9.9	-9.9	-9.9	133.3	69.6	59.4	63.5	77.0	40.2	216.9	77.2	16.1	-9.9	1969
1970	3.6	30.3	26.0	30.5	92.1	114.5	75.1	53.0	70.4	154.9	66.7	5.8	756.9	1970
1971	47.2	85.2	42.9	121.6	154.2	68.4	52.9	121.4	56.4	12.4	29.0	39.4	801.0	1971
1972	51.8	39.8	78.2	163.8	167.0	118.1	71.0	35.4	34.9	39.3	62.4	4.4	866.1	1972
1973	11.0	0.8	13.3	57.5	41.2	56.3	47.6	60.6	122.1	95.4	76.2	81.6	663.6	1973
1974	39.7	31.5	101.9	83.6	80.1	31.7	58.7	40.5	62.6	84.6	61.7	14.9	711.5	1974
1975	10.5	29.9	66.3	66.7	68.9	97.8	35.4	77.5	82.5	114.2	117.9	102.6	890.0	1975
1976	26.1	39.9	78.7	101.1	72.8	88.2	69.8	44.5	53.0	121.6	104.2	27.4	847.3	1976
1977	0.0	13.1	44.6	147.1	89.0	55.0	79.0	60.0	86.7	34.4	71.5	26.9	677.3	1977
1978	10.0	85.6	94.3	77.3	62.8	98.1	62.3	43.9	49.5	58.8	42.8	36.2	741.6	1978
1979	14.2	40.4	67.6	82.7	96.5	105.5	72.6	73.8	55.3	156.7	64.2	36.2	885.7	1979
NUMERO DE ANOS	18	18	18	19	19	17	17	18	18	18	19	20	16	
VALOR MAXIMO	50.4	106.9	127.1	163.8	167.0	118.1	108.9	121.4	122.1	216.9	117.9	102.6	890.0	
CUARTIL SUPERIOR	20.1	40.4	94.3	130.5	99.1	114.2	80.9	73.8	62.6	121.6	101.5	55.4	854.3	
MEDIANA	16.4	31.0	60.7	104.6	85.6	97.8	71.0	56.5	53.1	96.9	77.2	27.1	787.6	
CUARTIL INFERIOR	10.0	17.1	18.5	70.1	63.8	55.6	56.8	44.5	38.4	58.8	52.9	12.3	722.8	
VALOR MINIMO	0.0	0.0	5.4	36.5	26.2	31.7	35.4	35.4	4.2	12.4	9.1	0.0	663.6	
PROMEDIOS	20.8	36.6	58.6	102.2	85.0	84.3	69.9	60.3	53.6	96.9	74.8	36.4	785.7	
											TOTAL DE LOS PROMEDIOS MENSUALES =		783.6	
PORCENTAJES	2.7	4.7	7.5	13.0	11.4	10.8	8.9	7.7	6.8	12.4	9.6	4.6		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 13. INDICE DE ARREGUIS = 75.

DEV. ESTANDAR	17.4	26.7	39.5	36.7	35.6	30.7	18.1	20.8	26.4	50.1	31.0	32.1	74.7
COEF. VARIACION	0.836	0.727	0.675	0.359	0.420	0.364	0.259	0.345	0.493	0.517	0.414	0.884	0.095
COEF. ASIMETRIA	0.872	1.287	0.125	0.698	0.498	-0.404	0.272	1.515	0.747	0.514	-0.696	0.860	-0.113

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212080	SAN JOSE	GUASCA	+04 50 32	+073 53 32	2700 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	33.2	43.2	51.0	127.8	60.8	46.1	108.8	49.5	47.1	108.0	80.3	18.4	776.2	1960
1961	56.4	23.7	111.2	109.5	26.2	117.1	71.2	48.7	4.2	107.0	52.9	1.6	729.7	1961
1962	24.3	16.1	55.1	70.1	97.4	113.9	67.9	64.9	60.0	119.9	97.9	67.9	855.4	1962
1963	22.7	59.6	5.5	130.5	132.1	45.8	54.9	51.5	53.2	98.5	116.8	19.7	790.8	1963
1964	1.1	17.1	5.4	114.7	59.1	117.7	94.5	39.4	38.4	75.6	28.0	85.0	716.0	1964
1965	20.2	6.1	18.5	163.1	110.0	40.6	108.9	60.8	20.6	124.5	101.5	9.6	784.4	1965
1966	4.0	30.5	104.6	56.9	46.8	91.6	96.5	49.9	34.1	49.1	105.6	90.5	760.1	1966
1967	18.7	29.2	127.1	104.6	63.8	105.6	82.9	83.4	40.8	79.7	74.5	43.0	853.3	1967
1968	13.4	106.9	13.1	121.2	51.7	97.1	63.2	45.8	71.7	101.8	74.0	26.4	826.3	1968
1969	43.5	30.2	12.6	133.3	89.6	59.4	63.5	77.0	40.2	116.9	77.2	16.1	759.5	1969
1970	3.6	36.3	26.0	36.3	92.1	114.5	75.1	53.0	70.4	154.9	88.7	5.8	756.9	1970
1971	47.2	55.2	42.9	121.6	154.2	68.4	52.9	121.4	56.4	12.4	29.0	39.4	801.0	1971
1972	51.8	39.8	78.2	163.8	167.0	118.1	71.0	35.4	34.9	39.3	62.4	4.4	866.1	1972
1973	11.0	0.8	13.3	57.5	41.2	56.3	47.6	60.6	122.1	95.4	76.2	81.6	663.6	1973
1974	39.7	31.5	101.9	83.6	80.1	31.7	58.7	40.5	62.6	84.6	81.7	14.9	711.5	1974
1975	10.3	29.9	66.3	66.7	88.9	97.8	35.4	77.5	82.5	114.2	117.9	102.6	890.0	1975
1976	26.1	39.9	78.7	101.1	72.8	88.2	89.8	44.5	53.0	121.6	104.2	27.4	847.3	1976
1977	0.0	13.1	44.6	147.1	59.0	55.0	79.0	60.0	86.7	34.4	71.5	26.9	677.3	1977
1978	10.0	85.6	94.3	77.3	82.8	98.1	62.3	43.9	49.5	58.8	42.8	36.2	741.6	1978
1979	14.2	40.4	67.6	82.7	96.5	105.5	72.6	73.8	55.3	156.7	84.2	36.2	885.7	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	56.4	106.9	127.1	163.8	167.0	118.1	108.9	121.4	122.1	156.7	117.9	102.6	890.0	
CUARTIL SUPERIOR	37.4	41.8	86.5	129.1	98.2	109.7	86.3	69.3	66.5	118.4	99.7	55.4	850.3	
MEDIANA	19.4	31.0	53.0	107.0	89.2	94.3	71.1	52.3	53.1	100.1	78.7	27.1	780.3	
CUARTIL INFERIOR	10.1	20.4	15.9	73.7	62.3	55.6	60.5	45.1	39.3	67.2	66.9	15.5	735.6	
VALOR MINIMO	0.0	0.8	5.4	36.5	26.2	31.7	35.4	35.4	4.2	12.4	28.0	1.6	663.6	
PROMEDIOS	22.7	36.8	55.9	103.5	87.6	83.4	72.8	59.1	54.2	92.7	78.4	37.7	784.6	
PORCENTAJES	2.9	4.7	7.1	13.2	11.2	10.6	9.3	7.5	6.9	11.8	10.0	4.8		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 14. INDICE DE ARNOLDUS = 74.

INDICE DE IRREGULARIDAD INTERANUAL =1.25

DEV. ESTANDAR	17.5	25.4	38.8	36.2	35.2	29.7	19.6	20.1	25.4	38.7	25.9	31.1	67.6
COEF. VARIACION	0.771	0.690	0.694	0.350	0.402	0.356	0.270	0.340	0.469	0.417	0.331	0.825	0.086

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FREQUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	896.	871.	842.	785.	728.	698.	673.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.566	1.331	0.250	-0.040	0.588	-0.386	0.270	1.670	0.690	-0.388	-0.460	0.900	-0.064

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212562	GUATAVITA	GUATAVITA	+04 54 4C	+073 52 00	2625 METROS

AÑO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1955	44.0	75.0	55.0	140.0	35.0	18.0	84.0	15.0	86.0	101.0	125.0	84.0	862.0
1956	42.5	68.5	63.0	16.1	65.4	77.9	-9.9	38.3	62.1	154.5	-9.9	67.0	-9.9
1957	1.1	28.0	118.0	80.8	154.3	46.0	53.0	45.8	45.7	125.6	34.2	26.0	758.5
1958	36.7	33.0	32.3	28.6	56.2	33.4	46.4	46.6	12.0	31.0	78.0	39.0	473.2
1959	58.0	8.5	34.6	33.0	104.2	64.3	96.0	53.1	59.0	125.5	64.0	35.0	735.2
1960	41.3	77.3	85.9	116.0	55.0	55.0	47.0	51.0	31.5	55.5	14.0	106.0	739.5
1961	58.0	42.0	114.0	107.0	31.0	66.0	34.0	30.0	26.0	116.0	62.0	1.0	709.0
1962	44.0	47.0	61.0	62.0	85.6	61.0	50.5	51.0	30.5	143.5	93.5	23.0	772.6
1963	33.0	45.5	15.5	84.5	130.0	29.0	32.0	32.5	28.8	76.0	109.0	71.0	686.8
1964	2.0	36.5	4.5	107.0	89.0	53.0	59.5	21.5	23.5	73.0	34.5	113.0	657.0
1965	23.0	9.5	38.0	123.0	100.0	15.0	60.2	40.5	5.5	95.0	77.0	11.0	597.7
1966	1.5	29.0	114.6	58.0	20.5	53.1	27.0	28.0	26.8	63.1	143.9	111.0	676.5
1967	15.0	43.0	88.5	58.6	48.0	80.0	35.5	44.0	33.0	84.0	148.3	73.5	751.4
1968	7.5	74.5	14.0	140.5	42.5	99.5	51.0	25.0	38.5	-9.9	65.5	15.5	-9.9
1969	54.7	16.5	3.5	125.2	49.7	44.6	29.9	47.1	27.3	185.7	92.0	16.6	692.8
1970	21.2	72.4	56.5	35.7	75.9	66.5	57.9	38.1	82.1	131.4	85.4	2.6	726.7
1971	68.2	20.9	74.3	115.3	92.9	50.6	48.2	39.0	66.7	17.0	51.2	52.7	697.0
1972	74.1	29.8	55.2	170.7	95.6	70.9	42.2	29.7	15.2	45.3	86.2	18.1	733.0
1973	25.9	1.2	25.4	60.9	40.1	81.3	30.9	86.0	137.9	75.3	63.7	129.1	761.7
1974	25.5	53.7	78.5	69.0	84.4	35.4	46.0	23.8	69.0	57.3	47.9	11.2	601.7
1975	10.2	17.5	64.1	69.8	49.0	72.6	38.6	65.7	73.5	64.7	53.0	129.3	708.0
1976	19.9	21.2	106.1	104.4	90.1	65.0	50.7	35.1	38.3	126.3	118.9	32.4	808.4
1977	8.0	5.8	78.0	118.7	30.1	21.2	47.9	28.9	57.3	19.0	66.2	15.5	496.6
1978	9.8	46.0	53.6	97.4	66.6	48.7	36.6	30.9	37.0	26.0	25.6	65.3	543.5
1979	9.1	48.8	102.2	94.2	104.5	121.1	51.5	55.1	20.3	212.6	143.1	42.9	1005.4

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X GUATAVITA MUNICIPIO DE GUATAVITA PERIODO 1955 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I
1	1979	1005.4	1005.4	1005.4	2.621	0.428				I +			
2	1978	543.5	1548.9	774.4	-1.397	0.200				I+			
3	1977	496.6	2045.5	681.8	-1.805	-0.095				+			
4	1976	808.4	2853.9	713.5	0.907	0.053				+			
5	1975	708.0	3561.9	712.4	0.034	0.059				*			
6	1974	601.7	4163.6	693.9	-0.891	-0.087				+			
7	1973	761.7	4925.3	703.6	0.501	-0.005				+			
8	1972	733.0	5658.3	707.3	0.251	0.036				+			
9	1971	697.0	6355.3	706.1	-0.062	0.026				*			
10	1970	726.7	7082.0	708.2	0.197	0.058				+			
11	1969	692.8	7774.8	706.8	-0.098	0.042				*			
12	1967	751.4	8526.2	710.5	0.411	0.109				I+			
13	1966	676.5	9202.7	707.9	-0.240	0.070				+			
14	1965	597.7	9800.4	700.0	-0.925	-0.081				+			
15	1964	657.0	10457.4	697.2	-0.410	-0.148				+I			
16	1963	686.8	11144.2	696.5	-0.150	-0.172				*I			
17	1962	772.6	11916.8	701.0	0.596	-0.075				+			
18	1961	709.0	12625.8	701.4	0.043	-0.068				*			
19	1960	739.5	13365.3	703.4	0.308	-0.018				+			
20	1959	735.2	14100.5	705.0	0.271	0.026				+			
21	1958	473.2	14573.7	694.0	-2.008	-0.302				+ I			
22	1957	758.5	15332.2	696.9	0.473	-0.224				+ I			
23	1955	862.0	16194.2	704.1	1.373	0.0				+			
							P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
N	AN	T A	CU	MOY	ECR	PCAN	I	I	I	I	I	I	I

PROMEDIO DE LOS 23 ANOS = 704.1
DEVIACION ESTANDAR = 115.0
COEFICIENTE DE VARIACION = 0.163

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2125e2	GUATAVITA	GUATAVITA	+04 54 39	+073 52 10	2625 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1955	44.0	75.0	55.0	140.0	35.0	18.0	84.0	15.0	66.0	101.0	125.0	64.0	862.0	1955
1956	42.5	68.5	63.0	16.1	65.4	77.9	-9.9	38.3	62.1	154.5	-9.9	67.0	-9.9	1956
1957	1.1	28.0	118.0	80.8	154.3	46.0	53.0	45.8	45.7	125.6	34.2	26.0	758.5	1957
1958	36.7	33.0	32.3	28.6	56.2	33.4	46.4	46.6	12.0	31.0	78.0	39.0	473.2	1958
1959	58.0	8.5	34.6	33.0	104.2	64.3	96.0	53.1	59.0	125.5	64.0	35.0	735.2	1959
1960	41.3	77.3	65.9	116.0	55.0	55.0	47.0	51.0	31.5	59.5	14.0	106.0	739.5	1960
1961	58.0	42.0	114.0	107.0	31.0	88.0	34.0	30.0	26.0	116.0	62.0	1.0	709.0	1961
1962	44.0	47.0	61.0	62.0	65.6	81.0	50.5	51.0	30.5	143.5	93.5	23.0	772.6	1962
1963	33.0	45.5	15.5	84.5	130.0	29.0	32.0	32.5	28.8	76.0	105.0	71.0	686.8	1963
1964	2.0	36.5	4.5	107.0	89.0	93.0	59.5	21.5	23.5	73.0	34.5	113.0	657.0	1964
1965														1965
1966	1.5	29.0	114.6	58.0	20.5	53.1	27.0	28.0	26.8	63.1	143.9	111.0	676.5	1966
1967	15.0	43.0	88.5	58.6	48.0	80.0	35.5	44.0	33.0	84.0	148.3	73.5	751.4	1967
1968	7.5	74.5	14.0	140.5	42.5	99.5	51.0	25.0	38.5	-9.9	65.5	15.5	-9.9	1968
1969	54.7	10.5	3.5	125.2	49.7	44.6	29.9	47.1	27.3	185.7	92.0	16.6	692.8	1969
1970	21.2	72.4	56.5	35.7	75.9	66.5	57.9	38.1	82.1	131.4	65.4	3.6	726.7	1970
1971	68.2	20.9	74.3	115.3	92.9	50.6	48.2	39.0	66.7	17.0	51.2	52.7	697.0	1971
1972	74.1	29.8	55.2	170.7	95.6	70.9	42.2	29.7	15.2	45.3	66.2	18.1	733.0	1972
1973	25.9	1.2	25.4	80.9	40.1	81.3	30.9	86.0	137.9	79.3	63.7	129.1	761.7	1973
1974	25.5	53.7	78.5	89.0	84.4	35.4	46.0	23.6	69.0	57.3	47.9	11.2	601.7	1974
1975	10.2	17.5	64.1	89.8	49.0	72.6	38.6	65.7	73.5	64.7	53.0	129.3	708.0	1975
1976	19.9	21.2	108.1	104.4	90.1	65.0	50.7	35.1	38.3	126.3	118.9	32.4	808.4	1976
1977	8.0	5.6	78.0	118.7	30.1	21.2	47.9	28.9	57.3	19.0	66.2	15.5	496.6	1977
1978	9.6	46.0	53.6	97.4	66.6	48.7	36.6	30.9	37.0	26.0	25.6	65.3	543.5	1978
1979	9.1	48.8	102.2	94.2	104.5	121.1	51.5	55.1	20.3	212.6	143.1	42.9	1005.4	1979
NUMERO DE ANOS	24	24	24	24	24	24	23	24	24	23	23	24	22	
VALOR MAXIMO	74.1	77.3	118.0	170.7	154.3	121.1	96.0	86.0	137.9	212.6	148.3	129.3	1005.4	
CUARTIL SUPERIOR	44.0	51.2	87.2	115.6	91.5	80.5	51.5	49.0	64.4	126.3	109.0	78.8	758.5	
MEDIANA	25.7	39.3	62.0	89.3	66.0	64.6	47.0	38.2	37.6	79.3	66.2	40.9	717.6	
CUARTIL INFERIOR	9.4	21.0	33.4	59.7	45.3	45.3	35.5	29.3	27.0	57.3	51.2	17.3	676.5	
VALOR MINIMO	1.1	1.2	3.5	16.1	20.5	18.0	27.0	15.0	12.0	17.0	14.0	1.0	473.2	
PROMEDIOS	29.6	39.2	62.4	87.2	70.6	62.3	47.7	40.0	47.0	92.1	78.5	53.4	708.9	
												TOTAL DE LOS PROMEDIOS MENSUALES =	710.2	
PORCENTAJES	4.2	5.5	8.8	12.3	9.9	8.8	6.7	5.6	6.6	13.0	11.1	7.5		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB
INDICE DE FOURNIER = 12. INDICE DE ARNOLDUS = 65.

DEV. ESTANDAR	22.3	22.8	35.2	39.4	33.4	25.8	16.3	15.7	28.8	52.8	36.6	40.8	115.3
COEF. VARIACION	0.752	0.580	0.564	0.451	0.473	0.413	0.341	0.392	0.613	0.574	0.492	0.765	0.163
COEF. ASIMETRIA	0.432	0.210	-0.087	0.064	0.670	0.198	1.555	1.064	1.478	0.532	0.367	0.593	0.090

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212562	GUATAVITA	GUATAVITA	+04 54 39	+073 52 10	2625 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	41.3	77.3	85.9	116.0	55.0	55.0	47.0	51.0	31.5	59.5	14.0	106.0	739.5	1960
1961	58.0	42.0	114.0	107.0	31.0	8d.0	34.0	30.0	26.0	116.8	62.0	1.0	709.0	1961
1962	44.0	47.0	61.0	82.0	85.6	81.0	50.5	51.0	30.5	143.5	93.5	23.0	772.6	1962
1963	33.0	45.5	15.5	84.5	130.0	29.0	32.0	32.5	28.8	76.0	109.0	71.0	686.8	1963
1964	2.0	36.5	4.5	107.0	89.0	93.0	59.5	21.5	23.5	73.0	34.5	113.0	657.0	1964
1965	30.6	12.6	50.5	163.4	132.8	19.9	80.0	53.8	7.3	126.2	102.3	14.6	794.0	1965
1966	1.5	29.0	114.6	58.0	20.5	53.1	27.0	28.0	26.8	63.1	143.9	111.0	676.5	1966
1967	15.0	43.0	88.5	58.6	48.0	80.0	35.5	44.0	33.0	84.0	148.3	73.5	751.4	1967
1968	7.5	74.5	14.0	140.5	42.5	99.5	51.0	25.0	38.5	159.0	65.5	15.5	733.0	1968
1969	54.7	16.5	3.5	125.2	49.7	44.6	29.9	47.1	27.3	185.7	92.0	16.6	692.8	1969
1970	21.2	72.4	56.5	35.7	75.9	66.5	57.9	38.1	82.1	131.4	85.4	3.6	726.7	1970
1971	68.2	20.9	74.3	115.3	92.9	50.6	48.2	39.0	66.7	17.0	51.2	52.7	697.0	1971
1972	74.1	29.8	55.2	170.7	95.6	70.9	42.2	29.7	15.2	45.3	86.2	18.1	733.0	1972
1973	25.9	1.2	25.4	60.9	40.1	81.3	30.9	86.0	137.9	79.3	63.7	129.1	761.7	1973
1974	29.5	53.7	78.5	69.0	84.4	35.4	46.0	23.8	69.0	57.3	47.9	11.2	601.7	1974
1975	10.2	17.5	64.1	69.8	49.0	72.6	38.6	65.7	73.5	64.7	53.0	129.3	708.0	1975
1976	19.9	21.2	106.1	104.4	90.1	65.0	50.7	35.1	38.3	126.3	118.9	32.4	808.4	1976
1977	8.0	5.8	78.0	118.7	30.1	21.2	47.9	28.9	57.3	19.0	66.2	15.5	496.6	1977
1978	9.8	46.0	53.6	97.4	66.6	48.7	36.6	30.9	37.0	26.0	25.6	65.3	543.5	1978
1979	9.1	48.8	102.2	94.2	104.5	121.1	51.5	55.1	20.3	212.6	143.1	42.9	1005.4	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	74.1	77.3	114.6	170.7	132.8	121.1	80.0	86.0	137.9	212.6	148.3	129.3	1005.4	
CUARTIL SUPERIOR	42.6	47.9	87.2	117.3	91.5	81.1	50.8	51.0	62.0	128.8	105.6	89.8	756.5	
MEDIANA	23.3	39.3	62.5	100.9	71.2	65.8	46.5	36.6	32.3	77.6	75.8	37.6	717.8	
CUARTIL INFERIOR	9.4	19.2	37.9	85.5	45.3	46.6	34.8	29.3	26.4	58.4	52.1	15.5	681.6	
VALOR MINIMO	1.5	1.2	3.5	35.7	20.5	19.9	27.0	21.5	7.3	17.0	14.0	1.0	496.6	
PROMEDIOS	28.0	37.1	62.3	97.9	70.7	63.8	44.8	40.8	43.5	93.2	80.3	52.3	714.7	
PORCENTAJES	3.9	5.2	8.7	13.7	9.9	8.9	6.3	5.7	6.1	13.0	11.2	7.3		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 13. INDICE DE ARNOLDUS = 67.

INDICE DE IRREGULARIDAD INTERANUAL =1.46

	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
DEV. ESTANDAR	22.1	22.1	35.4	36.2	32.4	26.9	12.6	16.2	30.2	54.8	39.0	44.4	103.6
COEF. VARIACION	0.791	0.597	0.568	0.370	0.458	0.421	0.281	0.396	0.694	0.588	0.486	0.849	0.145

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	885.	848.	802.	715.	627.	582.	544.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
COEF. ASIMETRIA	0.765	0.292	-0.257	0.339	0.331	0.139	0.966	1.261	1.791	0.576	0.263	0.616	0.477

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350605	JUNIN	JUNIN	+04 47 00	+073 40 00	2350 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1962	-9.9	-9.9	-9.9	-9.9	196.0	235.0	170.0	149.0	95.0	91.0	-9.9	-9.9	-9.9
1963	-9.9	-9.9	-9.9	287.0	136.0	152.0	160.0	159.0	123.0	59.0	137.0	3.0	-9.9
1964	0.0	22.0	26.0	-9.9	228.0	143.0	128.0	109.0	143.0	96.0	89.0	61.0	-9.9
1965	50.0	95.0	85.0	92.0	90.0	155.0	210.0	135.0	17.0	-9.9	-9.9	-9.9	-9.9
1966	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	74.0	199.0	60.0	-9.9
1967	1.0	0.4	-9.9	-9.9	-9.9	-9.9	196.0	176.0	102.0	96.0	87.0	35.0	-9.9
1968	33.0	46.0	69.0	208.0	158.0	240.0	231.0	114.0	96.0	153.0	92.0	76.0	1516.0
1969	69.0	105.0	67.0	146.0	139.0	93.0	230.0	174.0	100.0	153.0	52.0	41.0	1369.0
1970	61.0	72.0	172.0	166.0	168.0	264.0	214.0	127.0	137.0	161.0	78.0	47.0	1667.0
1971	28.0	93.0	150.0	177.0	246.0	267.0	344.0	237.0	138.0	-9.9	-9.9	-9.9	-9.9
1972	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	102.0	85.0	96.0	24.0	-9.9
1973	25.0	17.0	38.0	113.0	196.0	261.0	215.0	191.0	188.0	176.0	104.0	38.0	1562.0
1974	37.0	57.0	112.0	151.0	218.0	165.0	209.0	172.0	109.0	90.0	43.0	2.0	1365.0
1975	18.0	31.0	124.0	116.0	148.0	264.0	113.0	172.0	89.0	135.0	48.0	116.0	1398.0
1976	36.0	35.0	95.0	164.0	219.0	279.0	249.0	173.0	136.0	139.0	129.0	35.0	1689.0
1977	1.0	58.0	61.0	172.0	122.0	176.0	300.0	121.0	126.0	90.0	96.0	19.0	1342.0
1978	36.0	46.0	88.0	209.0	193.0	272.0	164.0	162.0	135.0	110.0	28.0	26.0	1469.0
1979	14.0	29.0	92.0	162.0	159.0	234.0	163.0	132.0	82.0	269.0	194.0	65.0	1595.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Credito Publico

ESTACION X JUNIN MUNICIPIO DE JUNIN PERIODO 1962 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I
1	1979	1595.0	1595.0	1595.0	0.762	0.065				+	•		
2	1978	1469.0	3064.0	1532.0	-0.220	0.046				•	+		
3	1977	1342.0	4406.0	1468.7	-1.209	-0.057			•		+		
4	1976	1689.0	6095.0	1523.8	1.494	0.071					+	•	
5	1975	1398.0	7493.0	1498.6	-0.773	0.005				•	+		
6	1974	1365.0	8858.0	1476.3	-1.030	-0.084			•		+		
7	1973	1562.0	10420.0	1488.6	0.505	-0.040					+	•	
8	1972	1667.0	12087.0	1510.9	1.322	0.073					+		•
9	1969	1369.0	13456.0	1495.1	-0.998	-0.013				•	+		
10	1968	1516.0	14972.0	1497.2	0.146	0.0					+•		

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I

PROMEDIO DE LOS 10 ANOS = 1497.2
DEVIACION ESTANDAR = 128.4
COEFICIENTE DE VARIACION = 0.086

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350603	JUNIN	JUNIN	+04 47 30	+073 40 00	2350 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1962	-9.9	-9.9	-9.9	-9.9	196.0	235.0	170.0	149.0	95.0	91.0	-9.9	-9.9	-9.9	1962
1963	-9.9	-9.9	-9.9	287.0	136.0	152.0	160.0	159.0	123.0	99.0	137.0	3.0	-9.9	1963
1964	0.0	22.0	26.0	-9.9	228.0	143.0	128.0	109.0	143.0	96.0	85.0	81.0	-9.9	1964
1965	50.0	95.0	85.0	92.0	90.0	155.0	210.0	135.0	17.0	-9.9	-9.9	-9.9	-9.9	1965
1966	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	74.0	199.0	60.0	-9.9	1966
1967	1.0	0.4	-9.9	-9.9	-9.9	-9.9	196.0	176.0	102.0	96.0	87.0	35.0	-9.9	1967
1968	33.0	46.0	69.0	208.0	158.0	240.0	231.0	114.0	96.0	153.0	92.0	76.0	1516.0	1968
1969	69.0	105.0	67.0	146.0	139.0	93.0	230.0	174.0	100.0	153.0	92.0	41.0	1369.0	1969
1970	61.0	72.0	172.0	166.0	168.0	264.0	214.0	127.0	137.0	161.0	78.0	47.0	1667.0	1970
1971	28.0	93.0	150.0	177.0	246.0	267.0	344.0	237.0	138.0	-9.9	-9.9	-9.9	-9.9	1971
1972	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	102.0	85.0	96.0	24.0	-9.9	1972
1973	25.0	17.0	38.0	113.0	196.0	261.0	215.0	191.0	188.0	176.0	104.0	38.0	1562.0	1973
1974	37.0	57.0	112.0	151.0	218.0	165.0	209.0	172.0	109.0	90.0	43.0	2.0	1365.0	1974
1975	18.0	31.0	124.0	116.0	148.0	284.0	113.0	172.0	89.0	139.0	48.0	116.0	1398.0	1975
1976	36.0	35.0	95.0	164.0	219.0	279.0	249.0	173.0	136.0	139.0	129.0	35.0	1689.0	1976
1977	1.0	58.0	61.0	172.0	122.0	176.0	300.0	121.0	126.0	90.0	96.0	19.0	1342.0	1977
1978	36.0	46.0	88.0	209.0	193.0	272.0	164.0	162.0	135.0	110.0	28.0	26.0	1469.0	1978
1979	14.0	29.0	92.0	162.0	159.0	234.0	163.0	132.0	62.0	269.0	194.0	65.0	1595.0	1979
NUMERO DE ANOS	14	14	13	13	15	15	16	16	17	16	15	15	10	
VALOR MAXIMO	69.0	105.0	172.0	287.0	246.0	284.0	344.0	237.0	188.0	269.0	199.0	116.0	1689.0	
CUARTIL SUPERIOR	37.0	72.0	118.0	192.5	218.0	267.0	230.5	173.5	136.5	153.0	129.0	65.0	******	
MEDIANA	30.5	46.0	88.0	164.0	168.0	235.0	209.5	160.5	109.0	104.5	92.0	38.0	1492.5	
CUARTIL INFERIOR	14.0	29.0	64.0	131.0	139.0	155.0	163.5	129.5	95.5	90.5	52.0	24.0	******	
VALOR MINIMO	0.0	0.4	26.0	92.0	90.0	93.0	113.0	109.0	17.0	74.0	28.0	2.0	1342.0	
PROMEDIOS	29.2	50.5	90.7	166.4	174.4	214.7	206.0	156.4	112.8	126.3	98.1	44.5	1497.2	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1470.1	
PORCENTAJES	2.0	3.4	6.2	11.3	11.9	14.6	14.0	10.6	7.7	8.6	6.7	3.0		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 31. INDICE DE ARNOLDUS = 152.

DEV. ESTANDAR	21.5	31.5	41.5	49.9	43.9	61.2	59.4	33.1	36.1	49.6	50.1	30.8	128.4
COEF. VARIACION	0.736	0.624	0.457	0.300	0.252	0.285	0.288	0.212	0.320	0.393	0.510	0.692	0.086
COEF. ASIMETRIA	0.274	0.378	0.450	0.954	-0.149	-0.585	0.723	0.653	-0.648	1.668	0.819	0.775	0.260

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212050	LA CABANA	LA CALERA	+04 46 00	+073 57 00	2600 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1955	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	127.6	40.4	216.7	163.4	126.8	118.0	-9.9
1956	81.8	75.6	110.6	53.0	79.2	145.4	57.4	64.8	74.4	141.6	53.8	160.6	1098.4
1957	26.4	19.2	37.2	90.6	170.2	61.6	85.2	73.9	55.5	64.8	113.0	35.5	853.1
1958	62.6	22.8	60.4	63.8	62.2	39.0	59.4	66.4	27.8	63.8	120.8	30.6	679.6
1959	12.8	26.8	26.1	31.0	121.2	139.2	143.4	59.8	64.4	31.1	55.3	15.2	726.3
1960	17.2	59.4	39.1	49.5	56.7	63.0	93.5	55.5	35.5	63.3	37.3	92.7	662.7
1961	34.2	2.8	98.9	109.4	18.9	57.3	59.8	47.1	50.0	156.8	99.9	12.0	787.1
1962	38.0	46.7	66.5	77.9	101.0	105.6	61.5	86.4	59.0	69.4	131.7	67.4	911.3
1963	41.3	66.5	39.3	128.2	147.8	60.4	70.1	48.3	38.4	71.6	126.0	17.9	875.8
1964	2.0	83.6	2.4	127.8	106.8	110.7	65.7	52.6	50.9	66.3	42.5	56.7	770.0
1965	17.0	8.5	15.0	135.2	108.9	62.5	94.7	64.5	18.5	115.0	116.1	22.2	765.1
1966	1.5	27.3	103.5	64.0	51.2	74.3	80.2	92.1	40.6	136.8	178.0	96.6	968.1
1967	23.5	5.0	174.4	56.5	164.0	159.0	112.0	63.1	29.0	106.5	155.5	77.7	1168.2
1968	23.0	83.3	29.0	170.4	83.5	153.0	135.0	45.5	82.6	101.7	136.5	40.8	1084.3
1969	57.0	38.0	13.8	220.0	95.0	51.0	51.0	104.0	33.2	156.0	118.0	34.5	1051.5
1970	50.0	28.0	19.5	36.4	27.5	54.5	37.2	17.2	47.0	144.3	92.0	7.1	561.1
1971	26.2	74.0	84.0	145.4	166.6	82.2	58.0	94.6	73.8	146.8	60.2	34.6	1046.4
1972	76.0	-9.9	-9.9	157.9	119.3	122.9	79.5	45.0	41.1	76.5	72.7	4.1	-9.9
1973	9.6	1.2	15.2	40.2	80.8	65.8	61.4	77.8	114.6	96.6	88.2	78.0	749.4
1974	52.0	25.0	67.0	69.5	129.0	27.0	39.5	20.0	15.0	61.1	82.0	2.0	589.1
1975	4.0	116.5	26.5	31.0	82.0	54.5	44.5	44.5	34.5	39.0	57.0	52.0	586.0
1976	4.0	27.5	23.5	83.0	132.0	129.0	91.0	68.0	44.0	87.0	70.0	42.0	801.0
1977	0.0	0.0	5.0	22.0	45.0	25.0	-9.9	-9.9	-9.9	74.5	80.5	50.0	-9.9
1978	2.0	75.0	59.0	91.0	121.0	161.5	47.0	43.0	66.0	42.0	53.5	36.0	800.0
1979	14.0	67.0	77.0	152.0	90.0	139.0	51.0	170.2	83.0	212.0	239.0	122.0	1416.2

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION K LA CABANA MUNICIPIO DE LA CALERA PERIODO 1955 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1416.2	1416.2	1416.2	2.586	0.644				I +		.	
2	1978	800.0	2216.2	1108.1	-0.286	0.573				. I +			
3	1976	801.0	3017.2	1005.7	-0.282	0.503				. I +			
4	1975	586.0	3603.2	900.8	-1.284	0.183			.	I +			
5	1974	589.1	4192.3	838.5	-1.249	-0.133			.	+I			
6	1973	749.4	4941.7	823.6	-0.522	-0.263			.	+ I			
7	1971	1046.4	5988.1	855.4	0.862	-0.048				+	.		
8	1970	561.1	6549.2	818.6	-1.400	-0.397			.	+ I			
9	1969	1051.5	7600.7	844.5	0.886	-0.176				+I	.		
10	1968	1084.3	8685.0	868.5	1.039	0.082				+	.		
11	1967	1168.2	9853.2	895.7	1.430	0.439				I +	.		
12	1966	968.1	10821.3	901.8	0.497	0.563				I .+			
13	1965	765.1	11586.4	891.3	-0.449	0.451			.	I +			
14	1964	770.0	12356.4	882.6	-0.426	0.345			.	I +			
15	1963	875.8	13232.2	882.1	0.067	0.361				. I +			
16	1962	911.3	14143.5	884.0	0.233	0.419				I . +			
17	1961	787.1	14930.6	878.3	-0.346	0.333			.	I +			
18	1960	662.7	15593.3	866.3	-0.926	0.102			.	I+			
19	1959	726.3	16319.6	858.9	-0.630	-0.054			.	+			
20	1958	679.6	16999.2	850.0	-0.847	-0.266			.	+ I			
21	1957	853.1	17852.3	850.1	-0.049	-0.275				+ .			
22	1956	1098.4	18950.7	861.4	1.105	0.0				+	.		

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 22 ANOS = 861.4
DEVIACION ESTANDAR = 214.5
COEFICIENTE DE VARIACION = 0.249

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212050	LA CABANA	LA CALERA	+04 46 38	+073 57 30	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	20.4	19.2	37.2	90.6	170.2	61.6	85.2	73.9	55.5	84.8	113.0	35.5	853.1	1957
1958	62.6	22.6	60.4	63.8	62.2	39.0	59.4	66.4	27.8	63.8	120.8	30.6	679.6	1958
1959	12.8	26.8	26.1	31.0	121.2	139.2	143.4	59.8	64.4	31.1	55.3	15.2	726.3	1959
1960	17.2	59.4	39.1	49.5	56.7	63.0	93.5	55.5	35.5	63.3	37.3	92.7	662.7	1960
1961	34.2	2.8	98.9	109.4	18.9	97.3	59.8	47.1	50.0	156.8	99.9	12.0	787.1	1961
1962	38.0	46.7	66.5	77.9	101.0	105.8	61.5	86.4	59.0	69.4	131.7	67.4	911.3	1962
1963	41.3	66.5	39.3	128.2	147.8	60.4	70.1	48.3	38.4	71.6	126.0	17.9	875.8	1963
1964	2.0	83.6	2.4	127.8	106.8	110.7	65.7	52.6	50.9	68.3	42.5	56.7	770.0	1964
1965	17.0	9.5	15.0	136.2	108.9	52.5	94.7	64.5	18.5	115.0	116.1	22.2	765.1	1965
1966														1966
1967														1967
1968														1968
1969														1969
1970	50.0	28.0	19.5	30.4	27.5	54.9	37.2	17.2	47.0	144.3	92.0	7.1	561.1	1970
1971	26.2	74.0	84.0	145.4	166.6	82.2	58.0	94.6	73.8	146.8	60.2	34.6	1046.4	1971
1972	76.0	-9.9	-9.9	157.9	119.3	122.9	79.5	45.0	41.1	76.5	72.7	4.1	-9.9	1972
1973	9.6	1.2	15.2	40.2	60.8	85.8	61.4	77.8	114.6	96.6	68.2	78.0	749.4	1973
1974	52.0	25.0	67.0	69.5	129.0	27.0	39.5	20.0	15.0	61.1	62.0	2.0	589.1	1974
1975	4.0	116.5	26.5	31.0	82.0	54.5	44.5	44.5	34.5	39.0	57.0	52.0	586.0	1975
1976	4.0	27.5	23.5	83.0	132.0	129.0	91.0	68.0	44.0	87.0	70.0	42.0	801.0	1976
1977	0.0	0.0	5.0	22.0	45.0	29.0	-9.9	-9.9	-9.9	74.5	60.5	50.0	-9.9	1977
1978	2.0	75.0	59.0	91.0	121.0	161.5	47.0	43.0	66.0	43.0	53.5	38.0	800.0	1978
1979	14.0	67.0	77.0	152.0	90.0	139.0	51.0	170.2	83.0	212.0	239.0	122.0	1416.2	1979
NUMERO DE ANOS	19	18	18	19	19	19	18	18	18	19	19	19	17	
VALOR MAXIMO	76.0	116.5	98.9	157.9	170.2	161.5	143.4	170.2	114.6	212.0	239.0	122.0	1416.2	
CUARTIL SUPERIOR	41.3	67.0	66.5	128.2	129.0	122.9	85.2	73.9	64.4	115.0	116.1	56.7	864.4	
MEDIANA	17.2	27.8	38.1	83.0	106.8	82.2	61.4	57.6	48.5	74.5	62.0	35.5	770.0	
CUARTIL INFERIOR	4.0	19.2	19.5	40.2	62.2	54.5	51.0	45.0	35.5	63.3	57.0	15.2	671.1	
VALOR MINIMO	0.0	0.0	2.4	22.0	18.9	27.0	37.2	17.2	15.0	31.1	37.3	2.0	561.1	
PROMEDIOS	25.8	41.5	42.3	86.4	99.3	86.1	69.0	63.0	51.1	89.7	91.5	41.1	798.8	
									TOTAL DE LOS PROMEDIOS MENSUALES =				786.7	
PORCENTAJES	3.3	5.3	5.4	11.0	12.6	10.9	8.8	8.0	6.5	11.4	11.6	5.2		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 13. INDICE DE ARNOLDUS = 74.

DEV. ESTANDAR	22.5	33.5	28.5	45.0	43.4	40.0	25.9	33.5	24.0	46.2	45.9	31.9	201.9
COEF. VARIACION	0.872	0.806	0.674	0.521	0.437	0.465	0.375	0.531	0.470	0.516	0.501	0.778	0.253
COEF. ASIMETRIA	0.777	0.587	0.434	0.154	-0.248	0.249	1.401	1.891	0.963	1.242	1.667	1.012	1.853

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212050	LA CABANA	LA CALERA	+04 46 38	+073 57 30	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	17.2	59.4	39.1	49.5	56.7	63.0	93.5	55.5	35.5	63.3	37.3	92.7	662.7	1960
1961	34.2	2.8	98.9	109.4	18.9	97.3	59.8	47.1	50.0	156.8	99.9	12.0	787.1	1961
1962	38.0	46.7	66.5	77.9	101.0	105.8	61.5	86.4	59.0	69.4	131.7	67.4	911.3	1962
1963	41.3	66.5	39.3	128.2	147.8	80.4	70.1	48.3	38.4	71.6	126.0	17.9	875.8	1963
1964	2.0	83.6	2.4	127.8	106.8	110.7	65.7	52.6	50.9	68.3	42.5	56.7	770.0	1964
1965	17.0	5.5	15.0	135.2	108.9	52.5	94.7	64.5	18.5	115.0	116.1	22.2	765.1	1965
1966	1.3	22.3	84.5	68.5	41.8	60.6	65.4	75.1	33.1	113.3	145.3	78.8	790.0	1966
1967	16.9	3.6	125.2	69.3	117.8	114.2	80.4	45.3	20.8	77.9	111.7	55.8	838.9	1967
1968	16.2	58.7	20.4	120.1	58.8	107.8	95.1	32.1	58.2	71.7	96.2	28.7	764.0	1968
1969	41.6	27.8	10.1	160.7	69.4	66.5	37.3	76.0	24.3	143.2	86.2	25.2	768.3	1969
1970	50.0	28.0	19.5	36.4	27.5	54.9	37.2	17.2	47.0	144.3	92.0	7.1	561.1	1970
1971	26.2	74.0	84.0	145.4	166.6	82.2	58.0	94.6	73.8	146.8	60.2	34.6	1046.4	1971
1972	76.0	37.6	38.4	157.9	119.3	122.9	79.5	45.0	41.1	76.5	72.7	4.1	871.0	1972
1973	9.6	1.2	15.2	40.2	80.8	85.8	61.4	77.8	114.6	96.6	88.2	78.0	749.4	1973
1974	52.0	25.0	67.0	69.5	129.0	27.0	39.5	20.0	15.0	61.1	82.0	2.0	589.1	1974
1975	4.0	110.5	26.5	31.0	82.0	54.5	44.5	44.5	34.5	39.0	57.0	52.0	586.0	1975
1976	4.0	27.5	23.5	83.0	132.0	129.0	91.0	68.0	44.0	87.0	70.0	42.0	801.0	1976
1977	0.0	0.0	5.0	22.0	45.0	29.0	67.9	78.9	69.7	74.5	80.5	50.0	522.5	1977
1978	2.0	75.0	59.0	91.0	121.0	161.5	47.0	43.0	66.0	43.0	53.5	38.0	800.0	1978
1979	14.0	67.0	77.0	152.0	90.0	139.0	51.0	170.2	83.0	212.0	239.0	122.0	1416.2	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	76.0	116.5	125.2	160.7	166.6	161.5	95.1	170.2	114.6	212.0	239.0	122.0	1416.2	
CUARTIL SUPERIOR	39.6	66.8	72.0	131.7	120.1	112.4	79.9	76.9	62.5	129.1	113.9	62.0	854.9	
MEDIANA	16.9	32.8	38.7	87.0	95.5	84.0	63.4	54.0	45.5	77.2	87.2	40.0	778.5	
CUARTIL INFERIOR	4.0	13.9	17.3	59.0	57.7	57.7	49.0	44.8	33.8	68.8	65.1	20.0	706.0	
VALOR MINIMO	0.0	0.0	2.4	22.0	18.9	27.0	37.2	17.2	15.0	39.0	37.3	2.0	522.5	
PROMEDIOS	23.2	41.4	45.8	93.8	91.1	87.2	65.0	62.1	48.9	96.6	94.4	44.4	793.8	
PORCENTAJES	2.9	5.2	5.8	11.8	11.5	11.0	8.2	7.8	6.2	12.2	11.9	5.6		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 12. INDICE DE ARNOLDUS = 75.

INDICE DE IRREGULARIDAD INTERANUAL =1.91

DEV. ESTANDAR	21.1	32.7	34.9	45.3	40.9	36.6	19.2	33.0	24.4	44.3	45.0	31.9	194.0
COEF. VARIACION	0.909	0.789	0.762	0.484	0.449	0.420	0.295	0.532	0.500	0.458	0.476	0.720	0.244

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1113.	1042.	957.	794.	630.	545.	475.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.920	0.503	0.696	-0.014	-0.102	0.174	0.195	1.789	0.966	1.066	1.761	0.732	1.662

IMPRESO EN COLOMBIA POR ENARANCO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212112	LA CASITA	LA CALERA	+04 39 00	+074 01 00	3045 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1973	-9.9	-9.9	-9.9	75.0	51.0	54.0	55.0	94.0	130.0	122.0	101.0	173.0	-9.9
1974	48.0	96.0	153.0	97.0	124.0	42.0	58.0	35.0	54.0	103.0	126.1	47.0	983.1
1975	10.0	167.0	66.0	88.0	134.8	52.0	81.0	106.0	67.0	141.0	113.0	174.0	1239.8
1976	33.0	46.0	99.0	145.0	94.0	56.0	80.0	28.0	94.0	185.3	108.0	45.0	1053.3
1977	0.0	12.0	58.0	113.0	26.0	44.0	94.0	60.0	72.0	89.0	101.0	45.0	714.0
1978	0.0	50.0	76.0	145.0	93.0	66.0	52.0	66.0	66.0	26.0	61.0	63.0	784.0
1979	10.0	15.0	107.0	77.0	77.0	47.0	19.0	70.0	52.0	116.0	153.0	85.0	828.0

DATOS CRIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X LA CASITA MUNICIPIO DE LA CALERA PERIODO 1973 - 1979 COEF DE CORRECCION 1.000

N	AN	T /	CU	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	828.0	828.0	828.0	-0.835	-0.113				I	+I		
2	1978	784.0	1612.0	806.0	-0.783	-0.274				I	+I		
3	1977	714.0	2326.0	775.3	-1.120	-0.505			+	I			
4	1976	1053.3	3379.3	844.8	0.610	-0.381				+I			
5	1975	1235.8	4615.1	923.8	1.561	-0.053				+I			
6	1974	987.1	5602.2	933.7	0.252	0.0				+I			

N	AN	T /	CU	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 6 ANOS = 933.7
DEVIACION ESTANDAR = 196.1
COEFICIENTE DE VARIACION = 0.210

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CRSIG *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CRSIGM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212011	SAN RAFAEL N 1	LA CALERA	+04 42 00	+073 59 00	2750 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1933	-9.9	-9.9	-9.9	-9.9	80.7	115.5	26.8	61.7	49.7	194.9	251.7	106.8	-9.9
1934	52.2	90.0	63.1	61.0	106.8	45.1	85.1	61.3	47.1	75.3	262.8	124.6	1074.4
1935	99.4	48.0	39.4	137.9	101.8	76.0	79.0	76.0	86.0	74.4	152.4	15.4	985.7
1936	1.2	22.5	57.6	62.8	105.1	66.6	27.5	54.1	46.0	163.7	68.0	122.5	798.2
1937	157.6	64.2	88.7	67.2	102.0	38.0	43.5	45.3	58.7	67.4	94.7	46.0	893.3
1938	43.8	64.8	65.3	192.1	111.3	46.4	51.3	68.4	32.0	203.1	150.4	126.0	1154.9
1939	21.3	5.5	119.5	58.2	93.8	47.3	45.8	39.0	29.6	141.7	172.3	19.6	793.6
1940	82.4	76.5	5.8	56.1	68.9	46.9	34.3	39.3	29.1	106.7	139.9	107.8	793.7
1941	38.2	54.4	44.5	86.0	45.0	25.1	35.0	35.8	60.6	66.9	92.9	16.2	600.6
1942	8.0	91.9	46.0	75.4	78.5	41.0	20.1	53.9	21.0	175.7	122.0	75.1	812.6
1943	63.6	21.5	128.6	135.4	50.5	57.5	47.0	107.0	33.5	43.5	47.0	88.0	823.1
1944	112.0	35.5	29.2	103.7	262.7	68.5	21.2	36.0	36.3	131.0	87.5	79.5	1003.1
1945	18.0	54.7	40.5	148.0	158.0	17.0	36.0	31.0	24.0	140.0	134.3	44.3	845.8
1946	98.0	22.5	31.5	63.3	70.5	27.8	44.5	52.6	9.7	12.8	93.4	108.0	634.6
1947	39.5	32.1	20.7	29.5	32.7	68.7	85.3	37.6	71.4	184.2	36.1	21.5	659.3
1948	14.0	38.2	54.0	154.1	86.5	41.4	45.6	28.8	25.6	57.4	107.7	26.0	679.3
1949	43.7	36.8	69.4	61.2	113.2	47.4	64.9	35.6	30.5	102.6	68.6	36.3	716.2
1950	113.2	92.9	119.9	92.8	112.4	87.3	53.0	35.1	74.9	91.4	113.0	97.8	1083.7
1951	54.9	60.3	181.5	61.7	163.5	35.4	43.0	34.0	26.1	89.6	111.0	17.8	878.8
1952	101.7	19.9	53.7	103.0	94.1	35.5	69.5	48.7	21.8	51.7	178.9	120.8	903.3
1953	58.8	26.0	63.3	39.5	65.0	75.5	34.0	10.5	58.0	166.0	129.0	54.0	779.6
1954	20.5	14.5	17.0	172.5	64.0	63.0	77.7	55.0	32.0	179.0	68.0	58.0	841.2
1955	13.5	62.0	98.5	150.0	41.5	66.0	92.5	24.0	101.7	144.0	109.0	147.0	1049.7
1956	106.5	163.0	129.0	50.0	54.5	93.5	35.0	36.0	70.5	104.2	33.0	259.0	1134.2
1957	52.0	31.0	96.1	86.5	101.5	38.4	61.0	48.0	-9.9	189.5	49.5	90.0	-9.9
1958	27.0	18.5	46.5	32.0	51.0	20.5	19.5	59.5	26.0	131.7	141.5	52.8	626.5
1959	17.4	50.4	33.3	-9.9	-9.9	53.2	104.3	60.3	-9.9	73.5	100.9	16.0	-9.9
1960	15.5	86.5	66.5	44.0	35.0	28.0	46.0	70.8	30.0	58.0	39.0	83.5	602.8
1961	62.0	3.5	90.5	68.4	22.0	66.3	41.0	-9.9	-9.9	-9.9	124.8	8.0	-9.9
1962	35.0	78.9	69.4	66.0	101.5	94.5	40.2	50.0	32.5	111.0	128.0	63.0	870.0
1963	24.0	85.0	12.8	100.6	124.1	85.2	33.6	18.5	19.5	60.0	126.5	2.0	661.9
1964	6.0	34.5	2.5	107.5	73.5	74.5	58.5	13.0	20.0	134.5	30.5	73.0	628.0
1965	3.0	0.8	36.0	163.0	79.0	23.6	42.8	22.4	9.0	117.5	131.8	29.2	658.1
1966	0.0	50.5	181.0	52.0	30.5	62.8	34.5	58.0	39.7	75.2	161.2	172.8	918.2
1967	7.8	27.9	138.5	112.0	89.0	57.0	-9.9	30.0	51.3	74.0	145.5	93.5	-9.9
1968	0.0	41.5	14.5	179.5	42.5	60.0	25.0	3.4	22.5	30.5	-9.9	0.0	-9.9
1969	17.0	0.0	0.0	161.0	75.5	50.0	22.0	53.8	36.8	213.0	166.0	36.0	831.1
1970	82.5	40.5	36.5	40.8	91.5	57.0	70.0	44.2	78.3	227.0	110.3	25.5	904.1
1971	54.5	37.0	91.5	168.8	135.3	47.5	45.0	45.5	83.5	77.1	92.8	71.7	950.2
1972	117.0	37.5	89.0	149.1	98.9	75.0	39.7	36.1	11.8	111.5	-9.9	1.5	-9.9
1973	1.0	0.0	22.0	31.3	45.6	55.2	38.5	52.5	99.0	48.0	146.5	170.5	710.1
1974	90.5	167.0	60.5	-9.9	20.5	-9.9	25.0	-9.9	101.5	112.5	6.0	-9.9	-9.9
1975	2.0	103.5	50.0	60.5	81.5	54.0	72.9	88.3	37.0	73.0	77.0	64.0	763.7
1976	24.0	-9.9	-9.9	98.7	72.3	61.0	48.4	25.1	75.8	224.8	99.2	58.9	-9.9
1977	1.7	56.8	87.3	99.9	62.1	31.6	59.2	40.7	65.4	49.5	94.2	29.5	647.9
1978	1.3	23.4	46.3	135.2	52.4	60.1	-9.9	-9.9	63.1	47.6	21.9	40.3	-9.9
1979	19.2	50.7	72.2	100.7	59.2	72.4	22.9	60.2	36.3	148.0	144.4	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X SAN RAFAEL N 1 MUNICIPIO DE LA CALERA PERIODO 1933 - 1979 COEF DE CORRECCION 1.000

N	AN	T /	CU	MCY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1977	647.5	647.5	647.5	-1.125	-0.215	
2	1975	763.7	1411.6	705.8	-0.351	-0.290	
3	1973	716.1	2127.7	709.2	-0.130	-0.425	
4	1971	550.2	3071.9	768.0	0.752	-0.278	
5	1970	504.1	3576.0	715.2	0.495	-0.182	
6	1969	631.1	4207.1	701.2	0.037	-0.176	
7	1966	518.2	5725.3	817.9	0.565	-0.063	
8	1965	658.1	6383.4	797.9	-1.000	-0.266	
9	1964	628.0	7011.4	779.0	-0.251	-0.508	
10	1963	661.5	7673.3	767.3	-1.034	-0.703	
11	1962	870.0	8543.3	776.7	0.283	-0.648	
12	1960	602.8	9146.1	762.2	-1.411	-0.918	
13	1958	626.9	9772.8	751.7	-1.260	-1.159	
14	1956	1134.2	10906.8	779.1	1.588	-0.788	
15	1955	1049.7	11956.5	797.1	1.422	-0.813	
16	1954	841.2	12797.7	799.9	0.101	-0.494	
17	1953	779.6	13577.3	798.7	-0.250	-0.545	
18	1952	903.3	14480.6	804.5	0.494	-0.455	
19	1951	878.8	15359.4	808.4	0.335	-0.390	
20	1950	1083.7	16443.1	822.2	1.638	-0.077	
21	1949	716.2	17159.3	817.1	-0.692	-0.209	
22	1948	679.3	17838.6	810.8	-0.526	-0.386	
23	1947	659.3	18497.9	804.3	-1.052	-0.587	
24	1946	634.6	19132.5	797.2	-1.205	-0.818	
25	1945	845.8	19978.3	799.1	0.130	-0.793	
26	1944	1103.1	20981.4	807.0	1.127	-0.578	
27	1943	823.1	21804.5	807.6	-0.014	-0.581	
28	1942	812.6	22617.1	807.8	-0.061	-0.596	
29	1941	600.6	23217.7	800.6	-1.424	-0.866	
30	1940	793.7	24011.4	800.4	-0.200	-0.907	
31	1939	793.6	24805.0	800.2	-0.201	-0.945	
32	1938	1154.9	25959.9	811.2	2.065	-0.546	
33	1937	893.3	26853.1	813.7	0.431	-0.463	
34	1936	791.2	27651.3	813.3	-0.172	-0.496	
35	1935	785.7	28437.0	812.8	-0.217	-0.502	
36	1934	1074.4	29711.4	825.3	1.575	0.0	

N	AN	T /	CU	MCY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 36 ANOS = 825.3
DESVIACION ESTANDAR = 157.8
COEFICIENTE DE VARIACION = 0.191

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CESTON *** CALCO DE AGROCLIMATOLOGIA *** PROGRAMA CESTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212011	SAN RAFAEL N 1	LA CALERA	+04 42 17	+073 59 46	2750 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1942	8.0	91.9	46.0	75.4	78.5	41.0	20.1	53.9	21.0	179.7	122.0	75.1	812.6	1942
1943	63.6	21.5	128.6	135.4	50.5	57.5	47.0	107.0	33.5	43.5	47.0	88.0	823.1	1943
1944	112.0	35.5	29.2	103.7	262.7	68.5	21.2	36.0	36.3	131.0	87.5	79.5	1003.1	1944
1945	18.0	54.7	40.5	148.0	158.0	17.0	36.0	31.0	24.0	140.0	134.3	44.3	645.8	1945
1946	98.0	22.5	31.5	63.3	70.5	27.8	44.5	52.6	9.7	12.8	93.4	108.0	634.6	1946
1947	39.5	32.1	20.7	29.5	32.7	68.7	85.3	37.6	71.4	184.2	36.1	21.5	659.3	1947
1948	14.0	38.2	54.0	154.1	66.5	41.4	45.6	28.8	25.6	57.4	107.7	26.0	679.3	1948
1949	43.7	36.8	69.4	61.2	113.2	47.4	64.9	35.6	36.5	102.6	66.6	36.3	716.2	1949
1950	113.2	52.5	119.9	92.8	112.4	67.3	53.0	35.1	74.9	91.4	113.0	97.8	1083.7	1950
1951	54.9	60.3	181.5	61.7	163.5	35.4	43.0	34.0	26.1	89.6	111.0	17.8	878.8	1951
1952	101.7	19.9	53.7	103.0	94.1	39.5	69.5	48.7	21.8	51.7	178.9	120.8	903.3	1952
1953	58.8	26.0	63.3	89.5	65.0	75.5	34.0	10.5	58.0	166.0	129.0	54.0	779.6	1953
1954	20.5	14.5	17.0	172.5	64.0	83.0	77.7	55.0	32.0	179.0	66.0	58.0	841.2	1954
1955	13.5	62.0	98.5	150.0	41.5	66.0	92.5	24.0	101.7	144.0	109.0	147.0	1049.7	1955
1956														1956
1957	52.0	31.0	96.1	80.5	101.5	38.4	61.0	48.0	-9.9	189.5	49.5	90.0	-9.9	1957
1958	27.0	18.5	46.5	32.0	51.0	20.5	19.5	59.5	26.0	131.7	141.5	52.8	626.5	1958
1959	17.4	50.4	33.3	-9.9	-9.9	53.2	104.3	60.3	-9.9	73.5	100.9	16.0	-9.9	1959
1960	15.5	80.5	66.5	44.0	35.0	28.0	46.0	70.8	30.0	58.0	35.0	83.5	602.8	1960
1961	62.0	3.5	90.5	68.4	22.0	66.3	41.0	-9.9	-9.9	-9.9	124.8	8.0	-9.9	1961
1962	35.0	78.9	69.4	66.0	101.5	94.5	40.2	50.0	32.5	111.0	126.0	63.0	870.0	1962
1963	24.0	85.0	12.8	100.6	124.1	55.3	33.6	18.5	19.5	60.0	126.5	2.0	661.9	1963
1964	6.0	34.5	2.5	107.5	73.5	74.5	58.5	13.0	20.0	134.5	30.5	73.0	628.0	1964
1965	3.0	0.8	36.0	163.0	79.0	23.6	42.8	22.4	9.0	117.5	131.8	29.2	658.1	1965
1966	0.0	80.5	181.0	52.0	30.5	62.8	34.5	58.0	39.7	75.2	161.2	172.8	918.2	1966
1967	7.8	27.9	138.5	112.0	69.0	97.0	-9.9	30.0	51.3	74.0	145.5	93.5	-9.9	1967
1968	0.0	41.5	14.5	179.5	42.5	80.0	25.0	3.4	22.5	30.5	-9.9	0.0	-9.9	1968
1969	17.0	0.0	0.0	161.0	75.5	50.0	22.0	53.8	36.8	213.0	166.0	36.0	831.1	1969
1970	82.5	40.5	36.5	40.8	91.5	57.0	70.0	44.2	78.3	227.0	110.3	25.5	904.1	1970
1971	54.5	37.0	91.5	168.8	135.3	47.5	45.0	45.5	83.5	77.1	92.8	71.7	950.2	1971
1972	117.0	37.5	89.0	149.1	98.9	75.0	39.7	36.1	11.8	111.5	-9.9	1.5	-9.9	1972
1973	1.0	0.0	22.0	31.3	45.6	55.2	38.5	52.5	99.0	48.0	146.5	170.5	710.1	1973
1974	90.5	167.0	60.5	-9.9	20.5	-9.9	25.0	-9.9	101.5	112.5	6.0	-9.9	-9.9	1974
1975	2.0	103.5	50.0	60.5	81.5	54.0	72.9	86.3	37.0	73.0	77.0	64.0	763.7	1975
1976	24.0	-9.9	-9.9	98.7	72.3	61.0	48.4	25.1	75.8	224.6	99.2	58.9	-9.9	1976
1977	1.7	56.8	57.3	99.9	62.1	31.6	59.2	40.7	65.4	49.5	94.2	29.5	647.9	1977
1978	1.3	23.4	46.3	135.2	82.4	80.1	-9.9	-9.9	63.1	47.6	21.9	40.3	-9.9	1978
1979	19.2	50.7	72.2	100.7	59.2	72.4	22.9	60.2	36.3	148.0	144.4	-9.9	-9.9	1979

Ministerio de Hacienda
y
Crédito Público

*** CARACTERISTICAS PLUVICMETRICAS MENSUALES Y ANUALES DE LA PAGINA ANTERICR ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGC	SEP	OCT	NOV	DIC	TOTAL ANOS
NUMERO DE ANOS	37	36	36	35	36	36	35	34	34	36	35	35	27
VALOR MAXIMO	117.0	107.0	181.5	179.5	262.7	97.0	104.3	107.0	101.7	227.0	176.9	172.8	1083.7
CUARTIL SUPERICR	60.4	58.5	89.8	148.0	100.2	73.4	61.0	53.9	65.4	146.0	131.8	88.0	903.3
MEDIANA	24.0	37.3	53.8	99.9	74.5	50.1	44.5	42.4	36.3	106.8	109.0	58.0	812.6
CUARTIL INFERICR	7.9	22.9	32.4	61.2	50.8	40.3	34.0	30.0	24.0	59.0	68.6	26.0	659.3
VALOR MINIMO	0.0	0.0	0.0	29.5	20.5	17.0	19.5	3.4	9.0	12.8	6.0	0.0	602.8
PROMEDICS	38.4	45.4	63.0	98.5	81.6	56.5	48.1	43.2	44.5	110.0	101.2	61.6	795.7
									TOTAL DE LCS PRCMEDICS MENSUALES =				792.0
PORCENTAJES	4.8	5.7	8.0	12.4	10.3	7.1	6.1	5.5	5.6	13.9	12.8	7.8	

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVICSC JUL AGC SEF

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 75.

DEV. ESTANDAR	36.8	34.3	44.8	46.2	46.9	21.1	21.3	21.2	27.3	57.9	43.4	44.9	138.4
COEF. VARIACION	0.958	0.755	0.712	0.469	0.574	0.374	0.443	0.489	0.613	0.526	0.429	0.729	0.174
COEF. ASIMETRIA	0.893	1.434	1.089	0.189	1.816	-0.036	0.806	0.756	0.803	0.445	-0.454	0.852	0.378

* PROYECTO IGAC-ORSTCM *** GRUPC DE HIDRCCLIMATCLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212072	HDA LA PALMA	LA MESA	+04 36 00	+074 35 00	1100 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1962	60.2	149.3	171.0	125.3	101.6	56.4	36.7	42.9	36.8	266.2	194.8	200.2	1441.4
1963	55.1	241.6	98.7	363.7	365.5	134.2	24.2	22.3	81.0	245.8	228.7	158.1	2018.9
1964	5.4	92.0	41.5	215.6	92.2	133.3	91.4	98.5	13.0	140.9	153.4	89.8	1167.0
1965	25.0	8.2	15.3	321.3	120.6	2.5	1.0	155.2	68.4	379.8	414.1	145.8	1657.2
1966	7.8	58.0	122.3	214.4	158.6	177.3	39.0	52.3	112.5	322.1	376.4	301.5	1942.2
1967	51.6	222.5	288.0	256.7	208.7	53.4	42.2	12.1	82.8	123.4	349.5	84.6	1775.5
1968	52.8	130.5	53.6	429.1	94.7	178.2	15.1	21.7	164.7	304.9	215.7	55.6	1760.6
1969	146.5	39.6	39.0	267.8	137.0	41.6	16.0	40.8	146.7	354.5	163.3	94.4	1527.2
1970	110.0	132.5	108.1	82.5	119.6	50.4	77.1	49.9	102.9	-9.9	-9.9	-9.9	-9.9
1971	342.0	140.1	241.0	158.3	251.5	45.0	31.9	-9.9	75.0	205.1	288.3	150.0	-9.9
1972	229.4	88.3	120.6	333.4	144.7	118.5	0.0	25.6	68.5	144.6	193.6	27.0	1544.6
1973	104.7	26.6	99.3	73.1	114.0	64.0	146.3	97.5	204.3	233.3	341.6	253.2	1777.9
1974	96.3	202.7	303.5	120.3	93.0	14.7	2.0	67.0	191.2	271.1	222.5	162.5	1746.8
1975													
1976													
1977	21.5	58.5	137.5	221.5	88.5	52.5	19.0	67.0	174.0	138.5	303.0	78.0	1359.5
1978	33.0	97.0	298.0	168.0	18.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X HDA LA PALMA MUNICIPIO DE LA MESA PERIODO 1962 - 1978 COEF DE CORRECCION 1.000

N	AN	T.A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1977	1395.5	1399.5	1599.5	-1.024	-0.150				+	I		
2	1974	1746.8	3146.3	1573.1	0.415	-0.089				+	•		
3	1973	1777.8	4924.2	1641.4	0.544	-0.009				+	•		
4	1972	1544.6	6468.8	1617.2	-0.422	-0.071				+			
5	1969	1527.2	7996.0	1599.2	-0.485	-0.144				+	I		
6	1968	1760.6	9756.6	1626.1	0.472	-0.075				+	•		
7	1967	1775.5	11532.1	1647.4	0.534	0.004				+	•		
8	1966	1542.2	13474.3	1684.3	1.225	0.183				I+	•		
9	1965	1657.2	15131.5	1681.3	0.044	0.190				• +			
10	1964	1167.0	16298.5	1629.8	-1.587	-0.102			•	+	I		
11	1963	2018.9	18317.4	1665.2	1.543	0.125				I+	•		
12	1962	1441.4	19758.8	1646.6	-0.050	0.0			•	+			

N	AN	T.A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 12 ANOS = 1646.6

DEVIACION ESTANDAR = 241.4

COEFICIENTE DE VARIACION = 0.147

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTGM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTGM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212072	HDA LA PALMA	LA MESA	+04 36 00	4074 30 40	1100 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1962	60.2	149.3	171.0	125.3	101.6	56.4	36.7	42.9	36.8	266.2	194.8	200.2	1441.4	1962
1963	55.1	241.6	98.7	303.7	365.5	134.2	24.2	22.3	81.0	245.6	228.7	158.1	2018.9	1963
1964	5.4	92.0	41.5	215.0	92.2	133.3	91.4	98.5	13.0	140.5	153.4	89.8	1167.0	1964
1965	25.0	8.2	15.3	321.3	120.6	2.5	1.0	155.2	68.4	379.8	414.1	145.8	1657.2	1965
1966	7.8	58.0	122.3	214.4	158.6	177.3	39.0	52.3	112.5	322.1	376.4	301.5	1942.2	1966
1967	51.6	222.5	268.0	256.7	208.7	53.4	42.2	12.1	82.8	123.4	349.5	84.6	1775.5	1967
1968	52.8	130.5	53.6	429.1	94.7	178.2	15.1	21.7	164.7	304.9	215.7	99.6	1760.6	1968
1969	146.5	39.6	39.0	267.8	137.0	41.6	16.0	40.8	146.7	394.5	163.3	94.4	1527.2	1969
1970														1970
1971	342.0	140.1	241.0	158.3	281.5	45.0	31.9	-9.9	75.0	205.1	266.3	190.0	-9.9	1971
1972	229.4	88.3	120.6	333.4	144.7	118.9	0.0	25.6	68.5	144.6	193.6	77.0	1544.6	1972
1973	104.7	26.6	99.3	73.1	114.0	84.0	146.3	97.5	204.3	233.3	341.6	253.2	1777.9	1973
1974	96.5	202.7	303.5	120.3	93.0	14.7	2.0	67.0	191.2	271.1	222.5	162.5	1746.8	1974
1975														1975
1976														1976
1977	21.5	56.5	137.5	221.5	88.5	92.5	19.0	67.0	174.0	138.5	303.0	78.0	1399.5	1977
1978	33.0	97.0	298.0	168.0	18.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1978
NUMERO DE ANOS	14	14	14	14	14	13	13	12	13	13	13	13	12	
VALOR MAXIMO	342.0	241.6	303.5	429.1	365.5	178.2	146.3	155.2	204.3	394.5	414.1	301.5	2018.9	
CUARTIL SUPERIOR	104.7	149.3	241.0	321.3	158.6	133.7	40.6	82.3	169.3	313.5	345.5	195.1	1776.7	
MEDIANA	53.9	94.5	121.4	218.5	117.3	84.0	24.2	47.6	82.8	245.8	228.7	145.8	1702.0	
CUARTIL INFERIOR	25.0	58.0	53.6	158.3	93.0	43.3	8.6	23.9	68.4	142.7	194.2	87.2	1484.3	
VALOR MINIMO	5.4	8.2	15.3	73.1	18.0	2.5	0.0	12.1	13.0	123.4	153.4	77.0	1167.0	
PROMEDIOS	87.9	111.1	144.9	233.5	142.0	87.1	35.8	58.6	109.1	243.5	265.0	148.8	1646.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1667.7	
PORCENTAJES	5.3	6.7	8.7	14.0	8.5	5.2	2.1	3.5	6.5	14.6	15.9	8.9		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 42. INDICE DE ARNOLDUS = 175.

DEV. ESTANDAR	95.0	73.4	100.5	102.1	85.5	57.8	41.1	41.7	61.2	91.2	85.6	71.9	241.4
COEF. VARIACION	1.080	0.661	0.694	0.438	0.602	0.664	1.149	0.712	0.561	0.374	0.323	0.483	0.147
COEF. ASIMETRIA	1.831	0.475	0.525	0.326	1.476	0.258	1.954	1.178	0.184	0.210	0.280	0.909	-0.405

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212072	HDA LA PALMA	LA MESA	+04 36 00	+074 30 40	1100 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	95.7	110.9	130.7	122.2	122.1	75.9	76.8	56.4	124.6	277.1	201.2	201.1	1594.7	1960
1961	135.7	69.6	179.0	292.7	62.6	109.5	67.9	32.9	76.2	271.9	449.5	71.5	1819.0	1961
1962	60.2	149.3	171.0	125.3	101.6	56.4	36.7	42.9	36.8	266.2	194.8	200.2	1441.4	1962
1963	55.1	241.6	98.7	364.7	365.5	134.2	24.2	22.3	81.0	245.8	226.7	158.1	2018.9	1963
1964	5.4	92.0	41.5	215.6	92.2	133.3	91.4	98.5	13.0	140.9	153.4	89.8	1167.0	1964
1965	25.0	8.2	15.3	321.3	120.6	2.5	1.0	155.2	68.4	379.8	414.1	145.8	1657.2	1965
1966	7.8	58.0	122.3	214.4	158.6	177.3	39.0	52.3	112.5	322.1	376.4	301.5	1942.2	1966
1967	51.6	222.5	288.0	256.7	208.7	53.4	42.2	12.1	82.8	123.4	349.5	84.6	1775.5	1967
1968	52.8	130.5	53.6	429.1	54.7	178.2	15.1	21.7	164.7	304.9	215.7	99.6	1760.6	1968
1969	146.5	39.6	39.0	267.8	137.0	41.6	16.0	40.8	146.7	394.5	163.3	94.4	1527.2	1969
1970	110.0	132.5	108.1	82.5	119.6	90.4	77.1	49.9	102.9	381.3	345.2	113.7	1713.2	1970
1971	342.0	139.9	241.0	158.3	251.5	45.0	31.9	71.7	75.0	205.1	288.3	190.0	2039.7	1971
1972	229.4	88.3	120.6	333.4	144.7	118.9	0.0	25.6	68.5	144.6	193.6	77.0	1544.6	1972
1973	104.7	20.6	99.3	73.1	114.0	84.0	146.3	97.5	204.3	233.3	341.6	253.2	1777.9	1973
1974	96.3	202.7	303.5	120.3	93.0	14.7	2.0	67.0	191.2	271.1	222.5	162.5	1746.8	1974
1975	27.6	173.3	148.2	219.0	221.8	72.2	84.6	77.4	138.5	256.9	331.0	268.3	2018.8	1975
1976	63.8	158.0	259.8	213.5	131.6	77.0	2.3	31.9	93.9	354.0	234.3	168.7	1788.8	1976
1977	21.5	58.5	137.5	221.5	88.5	92.5	19.0	67.0	174.0	138.5	303.0	78.0	1399.5	1977
1978	33.0	97.0	298.0	168.0	93.0	118.9	21.1	33.7	96.5	196.7	199.0	104.1	1459.0	1978
1979	72.8	50.2	114.0	185.3	175.5	146.8	28.4	116.1	96.5	386.2	263.3	187.0	1822.6	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	342.0	241.6	303.5	429.1	365.5	178.2	146.3	155.2	204.3	394.5	449.5	301.5	2039.7	
CUARTIL SUPERIOR	107.3	153.6	210.0	280.2	167.0	126.1	72.3	74.5	142.6	338.0	343.4	195.1	1820.8	
MEDIANA	62.0	103.9	126.5	215.0	121.3	87.2	30.1	51.1	96.5	268.6	248.8	151.9	1753.7	
CUARTIL INFERIOR	30.3	58.3	99.0	141.8	93.8	54.9	15.6	32.4	75.6	200.9	200.1	92.1	1535.9	
VALOR MINIMO	5.4	8.2	15.3	73.1	62.6	2.5	0.0	12.1	13.0	123.4	153.4	71.5	1167.0	
PROMEDIOS	86.8	112.5	148.5	219.2	144.8	91.1	41.1	58.6	107.4	264.7	273.4	152.5	1700.7	
PORCENTAJES	5.1	6.6	8.7	12.9	8.5	5.4	2.4	3.4	6.3	15.6	16.1	9.0		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 44. INDICE DE ARNOLDUS = 179.

INDICE DE IRREGULARIDAD INTERANUAL =1.42

DEV. ESTANDAR	81.0	65.7	88.3	95.5	71.3	48.9	38.3	36.3	50.1	87.9	86.1	68.7	229.2
COEF. VARIACION	0.933	0.584	0.595	0.435	0.492	0.536	0.931	0.619	0.466	0.332	0.315	0.451	0.135

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	2078.	1995.	1894.	1701.	1508.	1407.	1323.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.959	0.373	0.498	0.444	1.817	0.102	1.218	1.131	0.309	-0.084	0.491	0.678	-0.477

IMPRESO EN COLOMBIA POR DANARAN.O

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212117	LA MESA	LA MESA	+04 38 00	+074 28 00	1300 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1951	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	31.3	252.2	205.0	219.8	-9.9
1952	99.7	44.0	86.0	259.0	103.2	74.3	70.7	16.2	135.3	65.4	243.0	146.4	1343.2
1953	181.2	2.0	226.0	70.4	166.8	64.8	52.1	12.6	305.7	274.9	150.1	213.5	1720.1
1954	25.9	61.5	84.0	109.7	102.1	67.8	40.4	55.6	77.0	370.3	215.6	242.0	1451.9
1955	42.3	96.6	256.9	317.6	211.5	56.9	52.3	40.4	101.3	469.9	300.2	166.8	2172.7
1956	114.5	71.9	97.5	57.6	68.4	67.0	17.2	25.2	120.8	210.4	128.3	241.1	1219.9
1957	47.0	87.2	51.4	269.2	227.4	-9.9	22.0	59.0	84.2	135.5	174.0	54.0	-9.9
1958	112.0	211.0	58.0	122.0	127.0	-9.9	2.0	38.4	20.0	128.0	142.4	108.0	-9.9
1959	24.0	60.0	88.0	158.0	370.0	312.0	176.0	34.7	144.3	524.0	536.2	-9.9	-9.9
1960	-9.9	-9.9	-9.9	-9.9	-9.9	204.9	58.2	46.6	46.8	251.6	132.2	67.2	-9.9
1961	143.4	157.0	265.2	-9.9	181.5	51.3	-9.9	25.2	-9.9	189.2	700.0	-9.9	-9.9
1962	280.2	157.8	-9.9	-9.9	497.2	291.7	62.1	55.3	91.7	207.0	257.6	158.1	-9.9
1963	94.7	205.6	48.2	310.5	237.7	85.3	54.2	57.6	10.9	155.0	382.6	38.1	1720.4
1964	24.2	27.6	1.4	137.8	101.0	74.4	54.0	65.4	39.0	134.8	76.8	50.6	787.0
1965	19.8	26.2	35.4	171.2	57.0	6.6	8.2	9.4	30.6	150.2	276.0	51.8	842.6
1966	1.0	18.6	107.4	105.0	78.2	60.8	10.4	27.4	94.0	166.4	317.8	268.5	1275.5
1967	55.4	81.2	159.8	163.2	132.0	108.2	33.0	16.6	35.8	96.0	199.6	58.6	1133.4
1968	92.2	42.6	77.6	189.6	69.2	136.6	10.8	-9.9	57.4	183.4	174.6	37.2	-9.9
1969	99.2	29.0	2.4	179.2	50.6	32.8	7.8	8.4	143.2	152.2	124.6	-9.9	-9.9
1970	-9.9	68.9	38.6	-9.9	-9.9	-9.9	51.4	50.6	53.8	-9.9	-9.9	-9.9	-9.9
1971	131.4	144.2	240.2	114.2	125.4	33.0	10.8	3.0	25.0	139.2	116.0	43.8	1126.2
1972	115.6	106.2	129.2	150.8	52.6	19.4	0.4	20.6	21.4	82.4	81.2	31.8	811.6
1973	18.2	11.6	44.2	12.0	22.0	54.0	40.0	66.5	161.5	285.5	322.0	154.5	1232.0
1974	154.8	175.6	239.5	187.5	56.0	0.0	0.0	0.0	133.0	158.7	202.2	125.6	1472.9
1975	18.5	168.4	139.3	157.0	112.7	87.9	181.5	49.1	159.6	163.6	218.6	277.3	1733.5
1976	157.1	0.0	277.0	158.4	47.0	29.7	0.0	9.7	30.1	226.6	125.6	98.4	1159.6
1977	2.0	19.1	255.9	325.8	103.5	145.5	20.0	113.2	193.0	234.5	309.5	67.0	1789.0
1978	20.0	42.5	246.0	245.5	93.4	44.0	12.0	41.0	42.6	123.8	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PROYECTC IGAC-ORSTCN *** GRUPO DE HIDROCLIMATOLCGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARA

ESTACION X LA MESA MUNICIPIO DE LA MESA PERIODO 1951 - 1978 COEF DE CORRECCION 1.000

N	AN	T A	CU	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1977	1785.0	1785.0	1785.0	-1.135	0.323				I +	.		
2	1976	1155.6	2940.6	1474.3	-0.503	0.180			.	I+			
3	1975	1733.5	4682.1	1560.7	0.554	0.462				I +	.		
4	1974	1472.5	6155.0	1538.7	0.314	0.551				I . +			
5	1973	1232.0	7387.0	1477.4	-0.314	0.462			.	I +			
6	1972	811.6	8198.6	1366.4	-1.411	0.062		.		+			
7	1971	1126.2	9324.8	1332.1	-0.550	-0.105			.	+ I			
8	1967	1133.4	10458.2	1307.3	-0.572	-0.267			.	+ I			
9	1966	1295.5	11753.7	1303.7	-0.201	-0.324				+. I			
10	1965	842.6	12596.3	1257.6	-1.330	-0.701		.	+	I			
11	1964	787.0	13383.3	1214.8	-1.475	-1.119		. +		I			
12	1963	1720.4	15083.7	1257.0	0.560	-0.847			+	I	.		
13	1958	1219.5	16303.6	1254.1	-0.246	-0.545			+	. I			
14	1955	2172.7	18476.3	1319.7	2.140	-0.339				+ I		.	
15	1954	1451.9	19928.2	1328.5	0.260	-0.265				+ I .			
16	1953	1720.1	21648.3	1353.0	0.555	0.007				+	.		
17	1952	1343.2	22991.5	1352.4	-0.024	0.0				*			

N	AN	T A	CU	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 17 ANOS = 1352.4

DESVIACION ESTANDAR = 383.3

COEFICIENTE DE VARIACION = 0.283

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240133	EL ESPINO	LENGUAZAQUE	+05 20 00	+073 44 00	2550 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1961	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	104.5	17.1	-9.9
1962	22.2	15.2	60.8	39.9	89.7	105.9	42.2	47.2	16.7	83.7	193.6	30.4	747.5
1963	12.8	60.7	81.8	49.0	158.7	40.3	63.2	26.9	19.3	35.6	-9.9	-9.9	-9.9
1964	-9.9	29.3	8.1	211.8	100.6	50.3	32.7	25.0	19.3	87.2	93.1	32.9	-9.9
1965	13.4	27.8	13.2	140.3	132.8	13.9	28.8	36.1	11.6	118.8	114.2	29.3	680.2
1966	1.1	-9.9	52.5	83.8	30.4	63.3	34.7	34.4	45.7	58.6	108.0	108.6	-9.9
1967	23.8	40.5	36.3	51.7	82.8	50.8	27.2	21.3	32.7	38.8	85.1	52.7	543.7
1968	12.8	46.6	52.9	159.9	67.4	67.0	39.5	39.7	44.9	76.7	124.0	11.8	783.2
1969	38.7	18.0	43.6	160.7	84.5	42.1	22.2	12.5	56.9	100.3	71.8	69.6	720.9
1970	32.3	22.3	38.9	65.0	150.5	29.5	42.9	29.3	74.7	170.3	170.9	10.2	846.8
1971	65.0	55.6	144.7	110.3	153.1	48.3	40.6	37.6	73.0	84.0	47.8	64.4	924.4
1972	115.0	43.1	35.4	186.8	69.2	35.6	64.5	-9.9	36.9	51.0	98.6	34.4	-9.9
1973	0.0	10.8	63.3	64.6	39.1	65.4	94.1	103.5	134.5	134.0	113.6	87.2	910.1
1974	26.2	48.1	63.7	124.5	53.6	31.2	30.3	15.3	110.1	121.1	123.6	19.3	767.0
1975	3.7	81.3	73.9	42.1	57.5	36.5	73.8	40.3	66.2	132.5	42.6	76.6	727.8
1976	24.5	27.3	98.0	125.5	80.0	59.8	31.6	13.1	46.9	138.2	82.7	33.6	761.2
1977	5.1	3.2	38.6	97.1	-9.9	-9.9	26.2	17.2	115.1	-9.9	-9.9	7.3	-9.9
1978	4.8	0.0	-9.9	-9.9	-9.9	45.4	23.1	43.7	63.4	-9.9	27.4	1.7	-9.9
1979	42.9	74.3	122.6	91.2	148.8	65.5	60.2	86.4	47.4	257.0	113.2	0.0	1129.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANANE

ESTACION X EL ESPINO MUNICIPIO DE LENGUAZAQUE PERIODO 1961 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1129.5	1129.5	1129.5	2.286	0.420				I +		•	
2	1978	761.2	1890.7	945.3	-0.232	0.378			•	I +			
3	1975	727.8	2618.5	872.8	-0.461	0.293			•	I +			
4	1974	767.0	3385.5	846.4	-0.193	0.257			•	I +			
5	1973	910.1	4295.6	859.1	0.786	0.402				I + •			
6	1971	924.4	5220.0	870.0	0.884	0.564				I + •			
7	1970	846.8	6066.8	866.7	0.353	0.629				I • +			
8	1969	720.9	6787.7	848.5	-0.508	0.536			•	I +			
9	1968	783.2	7570.9	841.2	-0.082	0.521				• I +			
10	1967	543.7	8114.6	811.5	-1.720	0.205		•		I +			
11	1965	680.2	8794.8	799.5	-0.786	0.060			•	+			
12	1962	747.5	9542.3	795.2	-0.326	0.000			•	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 12 ANOS = 795.2
DEVIACION ESTANDAR = 146.2
COEFICIENTE DE VARIACION = 0.184

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240139	EL TRIANGULO	LENGUAZAQUE	+05 18 00	+073 37 00	2800 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1963	8.5	53.5	24.0	135.0	202.0	89.0	79.5	65.5	18.0	85.0	93.5	6.0	859.5
1964	0.0	24.0	4.5	117.0	104.0	128.0	78.0	56.5	50.5	80.0	64.0	29.5	736.0
1965	6.0	14.0	14.5	185.0	175.5	51.5	92.5	78.0	40.5	129.0	126.0	15.0	927.5
1966	4.5	0.0	109.5	64.5	58.0	94.5	61.0	64.0	52.0	54.5	153.5	124.5	840.5
1967	13.0	7.9	80.5	113.4	112.4	136.7	62.0	80.9	60.5	68.8	80.3	47.1	863.5
1968	8.4	49.5	16.0	180.8	74.6	120.7	68.5	63.7	88.4	70.2	108.2	11.9	860.9
1969	115.5	10.4	3.3	190.3	97.7	90.5	53.1	43.8	32.9	217.1	100.3	15.5	930.4
1970	44.4	53.6	21.3	34.5	121.7	76.7	74.7	55.9	108.8	125.6	97.8	12.5	827.5
1971	25.6	16.9	110.1	87.1	155.0	88.2	74.5	56.9	75.8	35.7	59.7	64.7	824.2
1972	70.2	22.9	67.9	203.4	66.1	66.2	76.2	59.8	39.5	35.6	70.9	13.6	794.3
1973	7.1	8.0	16.0	78.4	79.5	72.5	108.4	78.2	159.8	82.0	109.1	62.5	861.5
1974	15.9	73.0	69.5	70.1	74.0	52.6	64.1	31.9	70.5	84.9	139.2	4.8	750.5
1975	5.1	57.3	32.0	77.7	93.5	84.5	58.3	82.2	73.9	157.2	50.5	66.6	838.8
1976	8.7	32.4	85.5	92.8	101.6	90.7	52.6	50.6	67.2	124.3	74.7	28.2	809.3
1977	3.2	0.0	25.3	173.2	41.9	49.6	54.6	41.5	79.2	70.6	125.2	22.3	686.6
1978	0.3	62.3	-9.9	-9.9	89.4	59.3	31.2	62.3	52.3	99.1	50.4	29.1	-9.9
1979	14.0	28.0	79.0	138.7	151.5	115.0	32.5	72.8	32.5	245.8	173.1	57.0	1139.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARENJO

ESTACION X EL TRIANGULO MUNICIPIO DE LENGUAZAQUE PERIODO 1963 - 1979 COEF DE CORRECCION 1.000

N	AN	T /	CU	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1135.5	1139.9	1139.9	2.904	C.346				I	+		
2	1977	686.6	1826.5	913.2	-1.565	C.157				I+			
3	1976	809.3	2635.8	878.6	-C.373	C.112				I+			
4	1975	836.8	3474.6	868.6	-C.061	C.103				+I			
5	1974	756.8	4225.1	845.0	-C.556	-C.011				+			
6	1973	861.5	5086.6	847.6	C.144	C.006				+			
7	1972	754.3	5840.9	840.1	-C.522	-C.056				+			
8	1971	824.2	6705.1	838.1	-C.225	-C.083				+			
9	1970	827.5	7532.6	837.0	-C.153	-C.106				+I			
10	1969	930.4	8463.0	846.3	C.827	-C.007				+			
11	1968	860.5	9323.5	847.6	C.136	C.005				+			
12	1967	863.5	10187.4	848.9	C.164	C.025				+			
13	1966	840.5	11027.9	848.3	-C.064	C.021				+			
14	1965	927.5	11955.4	854.0	C.755	C.116				I+			
15	1964	736.0	12691.4	846.1	-1.100	-C.015				+			
16	1963	859.5	13550.9	846.9	C.125	C.C				+			

N	AN	T /	CU	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 16 AÑOS = 846.9
DESVIACION ESTANDAR = 100.9
COEFICIENTE DE VARIACION = 0.119

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CRESTA *** CURSO DE AGROCLIMATOLOGIA *** PROGRAMA CRESTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
249139	EL TRIANGULO	LENGUAZAQUE	+05 18 21	+073 37 18	2800 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1963	8.5	53.5	24.0	135.0	202.0	89.0	79.5	65.5	18.0	85.0	93.5	6.0	859.5	1963
1964	0.0	24.0	4.5	117.0	104.0	128.0	78.0	56.5	50.5	80.0	64.0	29.5	736.0	1964
1965	6.0	14.0	14.5	189.0	175.5	51.5	92.5	78.0	40.5	129.0	126.0	15.0	927.5	1965
1966	4.5	0.0	109.5	64.5	58.0	94.5	61.0	64.0	52.0	54.5	153.5	124.5	840.5	1966
1967	13.0	7.9	80.5	113.4	112.4	136.7	62.0	80.9	60.5	68.8	80.3	47.1	863.5	1967
1968	8.4	49.5	16.0	180.8	74.6	120.7	68.5	63.7	88.4	70.2	108.2	11.9	860.9	1968
1969	115.5	16.4	3.3	190.3	97.7	50.5	53.1	43.8	32.9	217.1	100.3	15.5	930.4	1969
1970	44.4	53.6	21.3	34.5	121.7	76.7	74.7	55.9	108.8	125.6	97.8	12.5	827.5	1970
1971	25.6	16.9	110.1	67.1	155.0	58.2	74.5	56.9	75.8	39.7	99.7	64.7	824.2	1971
1972	70.2	22.5	67.9	203.4	66.1	68.2	76.2	59.8	39.5	35.6	70.9	13.6	794.3	1972
1973	7.1	8.0	16.0	78.4	79.5	72.5	108.4	78.2	159.8	82.0	109.1	62.5	861.5	1973
1974	15.9	73.0	69.5	70.1	74.0	52.6	64.1	31.9	70.5	84.9	139.2	4.8	750.5	1974
1975	5.1	57.3	32.0	77.7	93.5	84.5	58.3	82.2	73.9	157.2	80.5	66.6	838.8	1975
1976	8.7	32.4	85.5	92.8	101.6	90.7	52.6	50.6	67.2	124.3	74.7	28.2	809.3	1976
1977	3.2	0.0	25.3	173.2	41.9	49.6	54.6	41.5	79.2	70.6	125.2	22.3	686.6	1977
1978	0.3	62.3	-9.9	-9.9	89.4	59.3	31.2	62.3	52.3	99.1	80.4	29.1	-9.9	1978
1979	14.0	28.0	79.0	138.7	151.5	115.0	32.5	72.8	32.5	245.8	173.1	57.0	1139.9	1979
NUMERO DE ANOS	17	17	16	16	17	17	17	17	17	17	17	17	16	
VALOR MAXIMO	115.5	73.0	110.1	203.4	202.0	136.7	108.4	82.2	159.8	245.8	173.1	124.5	1139.9	
CUARTIL SUPERIOR	20.7	53.5	79.8	177.0	136.6	104.8	77.1	75.4	77.5	127.3	125.6	59.8	862.5	
MEDIANA	8.5	24.0	28.6	115.2	97.7	76.7	64.1	62.3	60.5	84.9	97.8	28.2	839.6	
CUARTIL INFERIOR	4.8	9.2	16.0	78.0	74.3	55.4	53.8	53.2	40.0	69.5	67.4	13.0	801.8	
VALOR MINIMO	0.0	0.0	3.3	34.5	41.9	49.6	31.2	31.9	18.0	35.6	50.4	4.8	686.6	
PROMEDIOS	20.6	30.2	47.4	121.4	105.8	82.2	66.0	61.4	64.8	104.1	98.6	35.9	846.5	
											TOTAL DE LOS PROMEDIOS MENSUALES =		838.6	
PORCENTAJES	2.5	3.6	5.7	14.5	12.6	9.8	7.9	7.3	7.7	12.4	11.8	4.3		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 64.

DEV. ESTANDAR	30.3	23.5	37.4	52.6	43.3	28.7	19.4	14.4	33.5	58.0	36.2	31.2	100.9	
COEF. VARIACION	1.468	0.776	0.790	0.433	0.410	0.349	0.293	0.234	0.517	0.557	0.367	0.868	0.119	
COEF. ASIMETRIA	2.423	0.392	0.463	0.154	0.808	0.596	0.149	-0.329	1.414	1.309	0.482	1.543	1.455	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240139	EL TRIANGULO	LENGUAZAQUE	+05 18 21	+073 37 18	2800 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	10.9	22.2	86.7	129.2	83.9	54.9	103.8	65.5	85.0	93.5	82.4	42.4	860.4	1960
1961	19.6	30.3	31.6	103.3	99.7	132.4	68.9	60.4	32.7	142.5	111.1	3.2	835.7	1961
1962	32.5	34.8	55.6	115.5	127.9	124.4	35.3	65.5	56.8	98.9	127.5	12.4	887.1	1962
1963	8.5	53.5	24.0	135.0	202.0	89.0	79.5	65.5	18.0	85.0	93.5	6.0	859.5	1963
1964	0.0	24.0	4.5	117.0	104.0	128.0	78.0	56.5	50.5	80.0	64.0	29.5	736.0	1964
1965	6.0	14.0	14.5	185.0	175.5	51.5	92.5	78.0	40.5	129.0	126.0	15.0	927.5	1965
1966	4.5	0.0	109.5	64.5	58.0	94.5	61.0	64.0	52.0	54.5	153.5	124.5	840.5	1966
1967	13.0	7.9	80.5	113.4	112.4	136.7	62.0	80.9	60.5	68.8	80.3	47.1	863.5	1967
1968	8.4	49.5	16.0	180.8	74.6	120.7	68.5	63.7	88.4	70.2	108.2	11.9	860.9	1968
1969	115.5	10.4	3.3	190.3	97.7	50.5	53.1	43.8	32.9	217.1	100.3	15.5	930.4	1969
1970	44.4	53.6	21.3	34.5	121.7	76.7	74.7	55.9	108.8	125.6	97.8	12.5	827.5	1970
1971	25.6	16.9	110.1	87.1	155.0	58.2	74.5	56.9	75.8	39.7	59.7	64.7	824.2	1971
1972	70.2	22.9	67.9	203.4	66.1	68.2	76.2	59.8	39.5	35.6	70.9	13.6	794.3	1972
1973	7.1	8.0	16.0	78.4	79.5	72.5	108.4	78.2	159.8	82.0	109.1	62.5	861.5	1973
1974	15.9	73.0	69.5	70.1	74.0	52.6	64.1	31.9	70.5	84.9	139.2	4.8	750.5	1974
1975	5.1	57.3	32.0	77.7	93.5	84.5	58.3	82.2	73.9	157.2	50.5	66.6	838.8	1975
1976	8.7	32.4	85.5	92.8	101.6	90.7	52.6	50.6	67.2	124.3	74.7	28.2	809.3	1976
1977	3.2	0.0	25.3	173.2	41.9	49.6	54.6	41.5	79.2	70.6	125.2	22.3	686.6	1977
1978	0.3	62.3	46.0	120.4	89.4	59.3	31.2	62.3	52.3	99.1	50.4	29.1	702.1	1978
1979	14.0	28.0	79.0	138.7	151.5	115.0	32.5	72.8	32.5	245.8	173.1	57.0	1139.9	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	115.5	73.0	110.1	203.4	202.0	136.7	108.4	82.2	159.8	245.8	173.1	124.5	1139.9	
CUARTIL SUPERIOR	22.6	51.5	79.8	155.9	124.8	117.8	77.1	69.1	77.5	127.3	125.6	52.0	862.5	
MEDIANA	9.6	26.0	39.0	116.3	98.7	80.6	66.3	63.0	58.6	89.3	99.0	25.2	839.6	
CUARTIL INFERIOR	5.5	12.2	18.6	82.7	77.0	56.5	53.8	56.2	40.0	70.4	72.8	12.4	801.8	
VALOR MINIMO	0.0	0.0	3.3	34.5	41.9	49.6	31.2	31.9	18.0	35.6	50.4	3.2	686.6	
PROMEDIOS	20.7	30.0	48.9	120.5	105.5	85.5	66.5	61.8	63.8	105.2	99.9	33.4	841.8	
PORCENTAJES	2.5	3.6	5.8	14.3	12.5	10.2	7.9	7.3	7.6	12.5	11.9	4.0		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 85.

INDICE DE IRREGULARIDAD INTERANUAL =1.34

DEV. ESTANDAR	28.0	21.6	34.7	46.9	40.4	30.8	21.0	13.2	32.0	54.0	34.1	30.0	96.0
COEF. VARIACION	1.354	0.720	0.709	0.390	0.383	0.360	0.316	0.214	0.502	0.513	0.342	0.897	0.114

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1000.	965.	923.	842.	761.	719.	684.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.522	0.436	0.383	0.223	0.846	0.409	0.176	-0.432	1.400	1.290	0.382	1.604	1.276

IMPRESO EN COLOMBIA POR CANARAN.10

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
24012B	TAFIAS	LENGUAZAQUE	+05 18 00	+073 43 00	2585 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	-9.9	-9.9	71.E	50.1	26.3	43.9	44.3	30.8	101.0	17.1	69.3	-9.9
1961	40.5	24.5	103.8	58.9	6.9	41.2	32.7	22.7	20.0	145.C	117.7	6.1	624.0
1962	30.7	35.9	81.4	80.8	51.1	76.E	45.0	47.8	21.6	158.5	137.7	33.1	840.4
1963	30.7	82.1	51.2	64.5	172.5	33.5	49.2	29.6	7.3	104.5	132.7	5.1	763.3
1964	0.2	13.2	2.0	162.5	98.7	134.E	31.6	23.2	29.1	65.2	97.7	56.8	719.2
1965	5.5	16.3	10.9	118.6	175.3	19.7	59.1	50.7	15.7	118.5	115.8	16.7	723.2
1966	1.5	14.3	62.5	6.3	26.7	65.4	25.8	46.6	57.9	71.8	110.0	129.2	638.0
1967	26.0	17.9	56.0	52.2	104.1	64.2	21.9	45.9	21.2	45.2	89.5	44.4	634.5
1968	23.6	50.6	37.9	143.6	56.5	-9.9	-9.9	30.0	55.6	68.8	120.0	13.7	-9.9
1969	66.6	44.8	13.0	224.4	55.4	42.C	23.6	43.5	47.7	136.5	71.3	16.8	847.6
1970	41.6	48.0	20.9	35.7	149.1	54.4	39.3	23.0	113.1	160.1	114.9	14.9	835.2
1971	87.3	55.5	181.5	127.3	175.3	56.2	54.7	32.7	64.6	70.4	97.3	56.1	1028.9
1972	106.5	60.3	56.9	157.2	63.5	36.2	57.1	41.1	35.1	36.E	71.8	21.0	807.5
1973	0.4	12.2	51.0	65.2	71.3	75.5	73.5	96.3	127.3	51.4	109.6	68.2	866.3
1974	26.0	55.6	64.0	50.4	97.8	50.3	28.6	16.0	68.9	93.6	103.7	11.5	746.8
1975	2.9	73.4	65.7	55.6	75.0	55.C	77.6	47.0	56.6	123.2	57.4	103.3	836.7
1976	22.6	34.0	127.4	114.2	87.3	66.C	20.1	20.0	56.8	111.4	98.5	42.0	802.3
1977	13.E	0.7	72.8	145.5	49.3	43.5	54.5	42.6	120.1	141.5	113.2	23.3	821.6
1978	3.5	53.3	42.7	116.0	51.1	65.6	39.4	32.2	42.2	52.6	37.7	34.7	650.5
1979	15.5	41.8	95.6	108.1	119.6	78.5	24.5	75.6	46.2	224.7	44.9	3.2	876.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANE

ESTACION X TAPIAS MUNICIPIO DE LENGUAZAQUE PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

ESTACION Y EL HATILLO MUNICIPIO DE SUESCA PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	876.	1143.	0.860	-0.181				•	+I				
2	1977	1698.	1834.	1.334	0.079					+			•	
3	1976	2500.	2891.	0.851	-0.098				•	+				
4	1975	3337.	3772.	1.065	-0.034					+	•			
5	1974	4083.	4541.	1.089	0.043					+	•			
6	1973	4950.	5352.	1.198	0.225					I +		•		
7	1972	5757.	6357.	0.901	0.113				•	I+				
8	1971	6786.	7293.	1.233	0.359					I +			•	
9	1970	7621.	8093.	1.171	0.514					I +		•		
10	1969	8469.	9022.	1.023	0.538					I • +				
11	1967	9103.	9961.	0.759	0.282			•		I +				
12	1966	9741.	10802.	0.850	0.140				•	I+				
13	1965	10465.	11745.	0.961	-0.009				•	+				
14	1964	11184.	12416.	1.201	0.144					I+		•		
15	1963	11947.	13367.	0.901	0.038				•	+				
16	1962	12787.	14233.	1.088	0.124					I+	•			
17	1961	13411.	15042.	0.865	0.0				•	+				

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 788.9 884.8

RAZONES PROMEDIOS Y/X = 1.122

X/Y = 0.892

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240128	TAPIAS	LENGUAZAQUE	+05 17 53	+073 42 09	2590 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1962	30.7	35.9	81.4	80.8	91.1	76.8	45.0	47.8	21.6	158.5	137.7	33.1	840.4	1962
1963	30.7	82.1	51.2	84.5	172.5	33.9	49.2	29.6	7.3	104.5	132.7	5.1	763.3	1963
1964	0.2	13.2	2.0	162.9	98.7	134.6	31.6	23.2	29.1	69.2	97.7	56.8	719.2	1964
1965	3.9	10.3	10.9	118.6	175.3	15.7	59.1	50.7	15.7	118.5	115.8	16.7	723.2	1965
1966														1966
1967														1967
1968														1968
1969	86.6	44.8	13.0	224.4	95.4	42.0	23.6	43.5	47.7	138.5	71.3	16.8	847.6	1969
1970	41.8	46.0	20.9	35.7	149.1	54.4	39.3	23.0	113.1	180.1	114.9	14.9	835.2	1970
1971	57.3	55.5	181.5	127.3	175.3	56.2	54.7	32.7	64.6	70.4	97.3	56.1	1028.9	1971
1972	106.5	60.3	56.9	197.2	83.5	38.2	57.1	41.1	35.1	38.6	71.8	21.0	807.5	1972
1973	0.4	12.2	51.0	69.2	71.3	75.9	73.5	96.3	127.3	91.4	109.6	88.2	866.3	1973
1974	20.0	95.6	64.0	90.4	97.8	50.3	28.6	16.0	68.9	93.6	103.7	11.9	746.8	1974
1975	2.9	73.4	65.7	99.6	75.0	55.0	77.6	47.0	56.6	123.2	57.4	103.3	836.7	1975
1976	22.6	34.0	127.4	114.2	87.3	68.0	20.1	20.0	56.8	111.4	96.5	42.0	802.3	1976
1977	13.8	0.7	72.8	145.9	49.3	43.5	54.5	42.6	120.1	141.9	113.2	23.3	821.6	1977
1978	3.5	53.3	42.7	116.0	91.1	65.5	39.4	32.2	42.2	92.6	37.7	34.7	650.9	1978
1979	15.9	41.8	95.6	108.1	119.6	75.9	24.5	75.6	46.2	224.7	44.9	3.2	876.0	1979
NUMERO DE ANOS	15	15	15	15	15	15	15	15	15	15	15	15	15	
VALOR MAXIMO	106.5	95.6	181.5	224.4	175.3	134.6	77.6	96.3	127.3	224.7	137.7	103.3	1028.9	
CUARTIL SUPERIOR	41.8	60.3	81.4	145.9	149.1	75.9	57.1	47.8	68.9	141.9	114.9	56.1	847.6	
MEDIANA	22.6	44.8	56.9	114.2	95.4	55.0	45.0	41.1	47.7	111.4	96.5	23.3	821.6	
CUARTIL INFERIOR	3.5	16.3	20.9	80.8	83.5	42.0	28.6	23.2	29.1	91.4	71.3	14.9	746.8	
VALOR MINIMO	0.2	0.7	2.0	35.7	49.3	15.7	20.1	16.0	7.3	38.6	37.7	3.2	650.9	
PROMEDIOS	29.7	44.5	62.5	117.0	108.8	59.3	45.2	41.4	56.8	117.2	93.6	35.1	811.1	
											TOTAL DE LOS PROMEDIOS MENSUALES =		811.1	
PORCENTAJES	3.7	5.5	7.7	14.4	13.4	7.3	5.6	5.1	7.0	14.4	11.5	4.3		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 62.

DEV. ESTANDAR	31.9	27.1	47.2	50.1	40.4	26.7	17.8	21.4	37.2	47.0	30.5	29.7	87.3	
COEF. VARIACION	1.076	0.608	0.755	0.428	0.371	0.450	0.394	0.517	0.655	0.402	0.325	0.844	0.108	
COEF. ASIMETRIA	1.404	0.187	1.134	0.667	0.709	1.487	0.303	1.383	0.821	0.672	-0.526	1.227	0.608	

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240125	TAPIAS	LENGUAZAQUE	+05 17 53	+073 43 09	2590 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	44.7	63.6	92.6	96.2	67.1	35.2	58.8	59.3	41.3	135.3	22.9	92.8	809.8	1960
1961	59.7	36.1	153.0	86.8	10.2	60.7	48.2	33.5	29.5	219.6	173.5	9.0	919.8	1961
1962	30.7	35.9	81.4	80.8	91.1	76.8	45.0	47.8	21.6	158.5	137.7	33.1	840.4	1962
1963	30.7	82.1	51.2	64.5	172.5	33.9	49.2	29.6	7.3	104.5	132.7	5.1	763.3	1963
1964	0.2	13.2	2.0	162.9	98.7	134.6	31.6	23.2	29.1	69.2	97.7	56.8	719.2	1964
1965	5.9	16.3	10.9	118.6	175.3	19.7	59.1	50.7	15.7	118.5	115.8	16.7	723.2	1965
1966	2.6	24.6	141.8	10.8	45.9	112.4	44.3	80.1	99.5	123.4	189.1	50.2	924.7	1966
1967	32.9	21.0	65.8	108.3	122.2	75.4	25.7	53.9	24.9	57.8	105.1	52.1	745.1	1967
1968	29.2	62.6	46.9	177.6	69.9	70.2	55.4	37.1	68.8	85.1	148.4	16.9	868.1	1968
1969	86.6	44.8	13.0	224.4	95.4	42.0	23.6	43.5	47.7	138.5	71.3	16.8	847.6	1969
1970	41.8	48.0	20.9	35.7	149.1	54.4	39.3	23.0	113.1	180.1	114.9	14.9	835.2	1970
1971	57.3	55.5	181.5	127.3	175.3	56.2	54.7	32.7	64.6	70.4	97.3	56.1	1028.9	1971
1972	106.5	60.3	56.9	197.2	83.5	38.2	57.1	41.1	35.1	38.8	71.8	21.0	807.5	1972
1973	0.4	12.2	51.0	69.2	71.3	75.9	73.5	96.3	127.3	91.4	109.6	88.2	866.3	1973
1974	26.0	95.6	64.0	90.4	97.8	50.3	28.6	16.0	68.9	93.6	103.7	11.9	746.8	1974
1975	2.9	73.4	65.7	99.6	75.0	55.0	77.6	47.0	56.6	123.2	67.4	103.3	836.7	1975
1976	22.6	34.0	127.4	114.2	87.3	68.0	20.1	20.0	56.8	111.4	98.5	42.0	802.3	1976
1977	13.6	0.7	72.8	145.9	49.3	43.5	54.5	42.6	120.1	141.9	113.2	23.3	821.6	1977
1978	3.5	53.3	42.7	110.0	91.1	65.5	39.4	32.2	42.2	92.6	37.7	34.7	650.9	1978
1979	15.9	41.8	95.6	108.1	119.6	75.9	24.5	75.6	46.2	224.7	44.9	3.2	876.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	106.5	95.6	181.5	224.4	175.3	134.6	77.6	96.3	127.3	224.7	189.1	103.3	1028.9	
CUARTIL SUPERIOR	43.2	61.4	94.1	130.6	120.9	75.6	56.2	52.3	68.8	140.2	124.2	54.1	867.2	
MEDIANA	27.6	43.3	64.8	108.2	91.1	58.4	46.6	41.8	46.9	114.9	104.4	28.2	828.4	
CUARTIL INFERIOR	4.7	22.8	44.8	83.8	70.6	42.8	30.1	30.9	29.3	88.2	71.5	15.8	755.0	
VALOR MINIMO	0.2	0.7	2.0	10.8	10.2	19.7	20.1	16.0	7.3	38.8	22.9	3.2	650.9	
PROMEDIOS	30.7	43.8	71.9	111.7	97.4	62.2	45.5	44.3	55.8	118.9	102.2	37.4	821.7	
PORCENTAJES	3.7	5.3	8.7	13.6	11.9	7.6	5.5	5.4	6.8	14.5	12.4	4.6		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 82.

INDICE DE IRREGULARIDAD INTERANUAL =1.31

DEV. ESTANDAR	29.1	25.1	48.7	51.8	44.3	26.7	16.4	20.9	35.0	49.4	43.0	30.0	84.8
COEF. VARIACION	0.948	0.573	0.677	0.463	0.455	0.430	0.360	0.473	0.628	0.415	0.421	0.801	0.103

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	961.	930.	893.	822.	750.	713.	682.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.218	0.231	0.722	0.341	0.364	1.122	0.158	1.013	0.823	0.700	0.072	0.974	0.303

IMPRESO EN COLOMBIA POR DYNARANTO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350716	SECR. AGRICULTURA	MACHETA	+05 05 00	+073 37 00	2100 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1953	18.2	15.2	40.6	52.8	123.2	164.0	161.0	77.0	70.0	124.4	50.0	15.6	932.0
1954	28.4	38.1	53.2	164.0	172.5	148.0	199.4	117.2	71.0	174.8	36.6	26.0	1229.2
1955	19.8	22.6	103.2	67.4	117.8	71.8	126.8	102.8	96.6	57.2	111.0	24.0	921.0
1956	47.0	25.2	61.4	52.8	101.4	158.6	135.2	148.4	101.6	141.8	55.9	42.0	1111.3
1957	0.0	13.4	52.8	68.4	258.9	106.2	158.2	135.4	78.4	122.6	51.4	31.8	1079.5
1958	2.0	1.4	121.1	97.0	93.4	110.4	175.4	140.2	46.6	49.6	54.0	17.4	908.5
1959	4.6	-9.9	47.6	67.4	111.3	125.0	195.1	134.5	118.1	121.8	78.0	35.4	-9.9
1960	17.6	38.5	31.4	97.2	129.0	92.4	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1961	-9.9	0.0	-9.9	31.7	25.5	746.7	222.9	87.5	46.5	108.1	102.3	8.2	-9.9
1962	-9.9	16.7	74.6	39.9	157.6	131.0	191.9	105.5	87.5	74.0	65.6	14.6	-9.9
1963	2.5	85.9	11.3	163.3	169.3	116.9	117.4	155.6	64.0	78.2	81.9	0.0	1046.3
1964	0.0	0.0	0.0	121.0	191.2	144.9	116.1	76.5	119.8	83.3	88.6	16.6	958.0
1965	23.0	17.8	51.4	143.5	159.5	118.4	223.1	126.6	58.0	75.3	91.1	19.6	1107.3
1966	13.1	28.0	95.9	70.8	51.4	132.0	141.2	78.4	65.3	40.2	102.9	75.3	894.5
1967	17.2	6.5	64.6	139.7	121.4	207.6	156.9	218.1	-9.9	56.6	74.1	56.4	-9.9
1968	0.0	17.8	72.9	191.8	141.9	256.6	311.2	168.1	95.8	18.2	6.2	2.7	1283.2
1969	12.0	-9.9	-9.9	184.6	212.4	162.6	152.3	109.9	71.5	83.4	33.5	26.5	-9.9
1970	98.6	29.1	-9.9	86.4	158.7	162.0	202.4	59.3	59.0	-9.9	-9.9	-9.9	-9.9
1971	42.3	0.0	115.4	92.4	116.6	89.3	102.0	68.4	78.4	40.4	95.7	36.9	877.8

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARAJO

ESTACION X SECR. AGRICULTURA MUNICIPIO DE MACHETA PERIODO 1955 - 1971 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1971	877.8	877.8	877.8	-1.116	-0.147				+I			
2	1968	1283.2	2161.0	1080.5	1.675	0.100				+			
3	1966	894.5	3055.5	1018.5	-0.993	-0.031				+			
4	1965	1107.3	4162.8	1040.7	0.677	0.045				+			
5	1964	958.0	5120.8	1024.2	-0.524	-0.024				+			
6	1963	1046.3	6167.1	1027.8	0.127	-0.007				+			
7	1958	908.5	7075.6	1010.8	-0.889	-0.124				+I			
8	1957	1079.5	8155.1	1019.4	0.372	-0.075				+			
9	1956	1111.3	9266.4	1029.6	0.607	0.005				+			
10	1955	921.0	10187.4	1018.7	-0.797	-0.100				+I			
11	1954	1229.2	11416.6	1037.9	1.477	0.094				+			
12	1953	932.0	12348.6	1029.0	-0.716	0.0				+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 12 ANOS = 1029.0
DEVIACION ESTANDAR = 135.5
COEFICIENTE DE VARIACION = 0.132

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350710	SECR. AGRICULTURA	MACHETA	+05 05 00	+073 36 40	2100 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1953	18.2	15.2	40.6	52.8	123.2	184.0	161.0	77.0	70.0	124.4	50.0	15.6	932.0	1953
1954	28.4	38.1	53.2	164.0	172.5	148.0	159.4	117.2	71.0	174.8	36.6	26.0	1229.2	1954
1955	19.8	22.6	103.2	67.4	117.8	71.8	126.8	102.8	96.6	57.2	111.0	24.0	921.0	1955
1956	47.0	25.2	61.4	52.8	101.4	198.6	135.2	148.4	101.6	141.8	55.9	42.0	1111.3	1956
1957	0.0	13.4	52.8	68.4	258.9	108.2	158.2	135.4	78.4	122.6	51.4	31.8	1079.5	1957
1958	2.0	1.4	121.1	97.0	93.4	110.4	175.4	140.2	46.6	49.6	54.0	17.4	908.5	1958
1959	4.6	-9.9	47.6	67.4	111.3	125.0	195.1	134.5	118.1	121.8	78.0	39.4	-9.9	1959
1960	17.6	38.5	31.4	97.2	129.0	92.4	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1960
1961	-9.9	0.0	-9.9	31.7	25.5	746.7	222.9	87.5	46.5	108.1	102.3	8.2	-9.9	1961
1962	-9.9	16.7	74.6	39.9	157.6	131.0	191.9	105.5	67.5	74.0	65.6	14.6	-9.9	1962
1963	2.5	85.9	11.3	163.3	169.3	116.9	117.4	155.6	64.0	78.2	81.9	0.0	1046.3	1963
1964	0.0	0.0	0.0	121.0	191.2	144.9	116.1	76.5	119.8	83.3	86.6	16.6	958.0	1964
1965	23.0	17.8	51.4	143.5	159.5	118.4	223.1	126.6	58.0	75.3	91.1	19.6	1107.3	1965
1966	13.1	28.0	95.9	70.3	91.4	132.0	141.2	78.4	65.3	40.2	102.9	75.3	894.5	1966
1967	17.2	6.5	64.6	139.7	121.4	207.6	156.9	218.1	-9.9	96.6	74.1	56.4	-9.9	1967
1968	0.0	17.8	72.9	191.8	141.9	256.6	311.2	168.1	95.8	18.2	6.2	2.7	1283.2	1968
1969	12.0	-9.9	-9.9	184.6	212.4	162.6	152.3	109.9	71.5	83.4	33.5	26.5	-9.9	1969
1970	98.6	29.1	-9.9	86.4	158.7	162.0	202.4	59.3	59.0	-9.9	-9.9	-9.9	-9.9	1970
1971	42.3	0.0	115.4	92.4	116.6	89.3	102.0	68.4	78.4	40.4	95.7	36.9	677.8	1971
NUMERO DE ANOS	17	17	16	19	19	19	18	18	17	17	17	17	12	
VALOR MAXIMO	98.6	85.9	121.1	191.8	258.9	746.7	311.2	218.1	119.8	174.8	111.0	75.3	1283.2	
CUARTIL SUPERIOR	25.7	28.5	85.2	143.5	169.3	184.0	199.4	140.2	96.8	122.2	93.4	38.1	1109.3	
MEDIANA	17.2	17.8	57.3	92.4	129.0	132.0	159.6	113.5	71.5	83.3	74.1	24.0	1002.1	
CUARTIL INFERIOR	2.3	3.9	44.1	67.4	111.3	110.4	135.2	78.4	61.5	53.4	50.7	15.1	914.8	
VALOR MINIMO	0.0	0.0	0.0	31.7	25.5	71.8	102.0	59.3	46.5	18.2	6.2	0.0	677.8	
PROMEDIOS	20.4	21.0	62.3	101.7	137.5	174.0	171.6	117.2	78.1	87.6	69.3	26.6	1029.0	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1067.4	
PORCENTAJES	1.9	2.0	5.8	9.5	12.9	16.3	16.1	11.0	7.3	8.2	6.5	2.5		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 28. INDICE DE ARAOLOUS = 115.

DEV. ESTANDAR	24.6	20.9	34.4	49.7	53.8	146.0	50.6	40.8	22.2	41.0	28.7	19.2	135.5	
COEF. VARIACION	1.207	0.998	0.552	0.489	0.391	0.839	0.295	0.348	0.285	0.468	0.414	0.722	0.132	
COEF. ASIMETRIA	2.221	1.911	0.075	0.479	0.098	3.694	1.136	0.722	0.500	0.336	-0.500	1.038	0.672	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212542	TIBAITATA	MOSQUERA	+04 42 00	+074 12 00	2547 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1955	6.5	30.0	54.9	120.5	26.8	54.2	56.8	26.5	34.5	107.7	79.0	42.3	639.7
1956	14.3	32.5	14.5	73.9	61.0	35.1	7.4	10.7	72.5	132.7	35.9	34.8	525.3
1957	2.9	1.0	24.8	90.8	81.5	34.0	28.1	26.0	39.8	119.2	45.0	10.8	503.9
1958	8.6	25.5	39.9	65.9	27.2	13.5	1.0	41.1	11.2	55.5	89.8	40.7	423.9
1959	5.2	9.3	54.1	72.1	51.7	113.0	66.0	38.7	22.4	91.8	41.3	17.9	583.5
1960	17.8	50.2	27.7	55.6	61.5	15.3	73.0	40.6	62.3	111.5	29.7	78.5	627.7
1961	22.7	5.8	55.9	95.7	32.1	63.6	40.1	23.7	16.5	152.0	114.9	30.3	653.3
1962	34.7	15.4	68.2	110.4	120.0	54.2	33.9	41.3	36.6	73.5	110.1	40.2	778.5
1963	15.2	69.9	41.6	82.8	89.8	32.3	22.9	37.3	18.8	87.2	80.3	13.3	591.4
1964	6.3	5.8	36.1	119.7	47.4	55.6	78.7	37.1	37.6	55.8	104.6	9.4	634.1
1965	11.4	23.0	18.3	186.5	83.5	16.1	26.0	22.1	8.6	91.5	112.7	37.6	637.3
1966	0.4	17.3	41.1	42.5	50.0	86.2	43.9	58.7	38.6	94.9	119.8	68.4	661.8
1967	16.1	29.3	23.4	61.2	93.6	86.0	40.5	21.7	56.4	96.9	85.8	53.4	664.3
1968	7.2	40.1	28.1	88.8	37.0	115.4	23.2	18.4	101.5	125.4	78.0	20.6	683.7
1969	53.6	33.8	19.3	132.4	49.4	52.8	6.3	33.2	92.4	104.2	49.8	29.8	657.0
1970	49.9	66.7	9.0	44.5	102.2	53.2	48.0	42.3	82.9	135.9	54.5	27.2	716.3
1971	68.5	41.9	95.0	59.9	109.2	72.6	28.9	34.2	57.2	75.6	75.5	34.2	752.7
1972	57.6	40.4	51.7	99.8	90.8	63.6	30.0	32.5	15.9	79.2	106.0	25.9	693.6
1973	2.6	1.2	49.6	34.8	48.5	85.7	52.2	59.8	104.5	85.2	97.4	65.9	657.4
1974	71.4	54.9	51.3	82.2	55.2	32.4	14.1	33.6	87.8	65.3	140.4	4.8	693.4
1975	5.2	73.4	93.2	25.5	108.7	60.2	28.8	59.6	56.5	119.5	69.5	49.6	749.7
1976	20.7	55.0	51.0	90.1	71.2	58.6	10.1	13.9	50.2	78.5	61.6	21.7	582.6
1977	2.6	9.0	55.0	42.8	-9.9	21.6	41.8	35.5	96.9	102.7	74.8	29.4	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR LITOGRAFIA

ESTACION X TIBAITATA MUNICIPIO DE MOSQUERA PERIODO 1955 - 1977 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	F = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1976	582.6	582.6	582.6	-0.704	-0.092				+			
2	1975	749.7	1332.3	666.1	1.296	0.077				+	.		
3	1974	693.4	2025.7	675.2	0.622	0.158				I+	.		
4	1973	657.4	2683.1	670.8	0.151	0.183				I+			
5	1972	693.6	3376.7	675.3	0.625	0.264				I +	.		
6	1971	752.7	4129.4	688.2	1.332	0.436				I +	.		
7	1970	716.3	4845.7	692.2	0.656	0.555				I +	.		
8	1969	657.0	5502.7	687.8	0.167	0.579				I. +			
9	1968	683.7	6186.4	687.4	0.506	0.645				I .+			
10	1967	664.3	6850.7	685.1	0.274	0.681				I . +			
11	1966	661.8	7512.5	683.0	0.244	0.712				I . +			
12	1965	637.3	8149.8	679.1	-0.645	0.706				. +			
13	1964	634.1	8783.9	675.7	-0.088	0.695				. +			
14	1963	591.4	9375.3	669.7	-0.555	0.617				I +			
15	1962	772.5	10153.8	676.5	1.641	0.830				I +	.		
16	1961	653.3	10807.1	675.4	0.142	0.845				I. +			
17	1960	627.7	11434.8	672.6	-0.164	0.827				.I +			
18	1959	583.5	12018.3	667.7	-0.693	0.737				I +			
19	1958	423.9	12442.2	654.9	-2.603	0.398				I +			
20	1957	503.9	12946.1	647.3	-1.646	0.184				I+			
21	1956	525.3	13471.4	641.5	-1.350	0.003				+			
22	1955	639.7	14111.1	641.4	-0.020	0.0				+			

N	AN	T A	CU	MOY	ECR	PCAN	F = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 22 ANOS = 641.4

DEVIACION ESTANDAR = 83.6

COEFICIENTE DE VARIACION = 0.130

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212542	TIBAITATA	MOSQUERA	+04 41 25	+074 12 29	2540 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1959	5.2	9.3	54.1	72.1	81.7	113.0	66.0	38.7	22.4	91.6	41.3	17.9	583.5	1959
1960	17.6	50.2	27.7	55.6	61.5	19.3	73.0	40.6	62.3	111.5	29.7	78.5	627.7	1960
1961	22.7	5.6	55.9	95.7	32.1	63.6	40.1	23.7	16.5	152.0	114.9	30.3	653.3	1961
1962	34.7	15.4	68.2	110.4	120.0	94.2	33.9	41.3	36.6	73.5	110.1	40.2	778.5	1962
1963	15.2	69.9	41.6	82.8	69.8	32.3	22.9	37.3	18.8	87.2	80.3	13.3	591.4	1963
1964	6.3	5.8	36.1	119.7	47.4	95.6	78.7	37.1	37.6	55.6	104.6	9.4	634.1	1964
1965	11.4	23.0	18.3	186.5	63.5	16.1	26.0	22.1	8.6	91.5	112.7	37.6	637.3	1965
1966	0.4	17.3	41.1	42.6	80.0	86.2	43.9	58.7	38.6	94.9	119.8	68.4	661.8	1966
1967	16.1	29.3	23.4	61.2	93.6	86.0	40.5	21.7	56.4	96.9	65.8	53.4	664.3	1967
1968	7.2	40.1	28.1	88.8	37.0	115.4	23.2	18.4	101.5	125.4	76.0	20.6	683.7	1968
1969	53.6	33.6	19.3	132.4	49.4	52.8	6.3	33.2	92.4	104.2	49.8	29.8	657.0	1969
1970	49.9	66.7	9.0	44.5	102.2	53.2	48.0	42.3	82.9	135.5	54.5	27.2	716.3	1970
1971	68.5	41.9	95.0	59.9	109.2	72.6	28.9	34.2	57.2	75.6	75.5	34.2	752.7	1971
1972	57.6	40.4	51.7	99.8	90.8	63.8	30.0	32.5	15.9	79.2	106.0	25.9	693.6	1972
1973	2.6	1.2	49.6	34.8	48.5	55.7	52.2	59.8	104.5	85.2	97.4	65.9	657.4	1973
1974	71.4	54.9	51.3	82.2	55.2	32.4	14.1	33.6	87.8	65.3	140.4	4.8	693.4	1974
1975	5.2	73.4	93.2	25.8	108.7	60.2	28.8	59.6	56.5	119.5	69.5	49.6	749.7	1975
1976	20.7	55.0	51.0	90.1	71.2	58.6	10.1	13.9	50.2	78.5	61.6	21.7	582.6	1976
1977	2.6	9.0	55.0	42.8	-9.9	21.6	41.8	35.5	96.9	102.7	74.8	29.4	-9.9	1977
NUMERO DE ANOS	19	19	19	19	18	19	19	19	19	19	19	19	18	
VALOR MAXIMO	71.4	73.4	95.0	186.5	120.0	115.4	78.7	59.8	104.5	152.0	140.4	78.5	778.5	
CUARTIL SUPERIOR	49.9	54.9	55.0	99.8	93.6	86.2	48.0	41.3	87.8	111.5	110.1	49.6	693.6	
MEDIANA	16.1	33.6	49.6	82.2	66.3	60.2	33.9	35.5	56.4	91.8	80.3	29.8	659.6	
CUARTIL INFERIOR	5.2	9.3	27.7	44.5	49.4	32.4	23.2	23.7	22.4	78.5	61.6	20.6	634.1	
VALOR MINIMO	0.4	1.2	9.0	25.5	32.1	16.1	6.3	13.9	8.6	55.8	25.7	4.8	582.6	
PROMEDIOS	24.7	33.8	45.8	80.4	72.3	62.8	37.3	36.0	54.9	96.1	84.6	34.6	667.7	
												TOTAL DE LOS PROMEDIOS MENSUALES =	663.3	
PORCENTAJES	3.7	5.1	6.9	12.1	10.9	9.5	5.6	5.4	8.3	14.5	12.7	5.2		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 14. INDICE DE ARNOLDUS = 64.

DEV. ESTANDAR	23.7	23.4	23.1	39.4	27.6	30.2	20.0	13.2	31.8	24.5	25.6	20.4	56.6
COEF. VARIACION	0.961	0.692	0.505	0.490	0.382	0.481	0.537	0.365	0.578	0.255	0.350	0.589	0.085
COEF. ASIMETRIA	0.913	0.234	0.641	1.008	0.250	0.120	0.574	0.408	0.183	0.641	-0.067	0.734	0.318

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda
Biblioteca

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212542	TIBAITATA	MOSQUERA	+04 41 25	+074 12 29	2540 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	17.6	50.2	27.7	55.6	61.5	19.3	73.0	40.6	62.3	111.5	29.7	78.5	627.7	1960
1961	22.7	5.8	55.9	95.7	32.1	83.6	40.1	23.7	16.5	152.0	114.9	30.3	653.3	1961
1962	34.7	15.4	68.2	110.4	120.0	94.2	33.9	41.3	36.6	73.5	110.1	40.2	778.5	1962
1963	15.2	69.9	41.6	82.8	89.8	32.3	22.9	37.3	18.8	87.2	80.3	13.3	591.4	1963
1964	6.3	5.8	36.1	119.7	47.4	95.6	78.7	37.1	37.6	55.8	104.6	9.4	634.1	1964
1965	11.4	23.0	18.3	186.5	83.5	16.1	26.0	22.1	8.6	91.5	112.7	37.6	637.3	1965
1966	0.4	17.3	41.1	42.5	50.0	86.2	43.9	58.7	38.6	94.9	119.8	68.4	661.8	1966
1967	16.1	29.3	23.4	61.2	93.6	86.0	40.5	21.7	56.4	96.9	85.8	53.4	664.3	1967
1968	7.2	40.1	28.1	88.3	37.0	115.4	23.2	18.4	101.5	125.4	78.0	20.6	683.7	1968
1969	53.6	33.8	19.3	132.4	49.4	52.8	6.3	33.2	92.4	104.2	49.8	29.8	657.0	1969
1970	49.9	66.7	9.0	44.5	102.2	53.2	48.0	42.3	82.9	135.9	54.5	27.2	716.3	1970
1971	66.5	41.9	95.0	59.9	109.2	72.6	28.9	34.2	57.2	75.6	75.5	34.2	752.7	1971
1972	57.6	40.4	51.7	99.8	90.8	63.8	30.0	32.5	15.9	79.2	106.0	25.9	693.6	1972
1973	2.6	1.2	49.6	34.8	48.5	55.7	52.2	59.8	104.5	85.2	97.4	65.9	657.4	1973
1974	71.4	54.9	51.3	82.2	55.2	32.4	14.1	33.6	87.8	65.3	140.4	4.8	693.4	1974
1975	5.2	73.4	93.2	25.5	108.7	60.2	28.8	59.6	56.5	119.5	69.5	49.6	749.7	1975
1976	20.7	55.0	51.0	90.1	71.2	58.6	10.1	13.9	50.2	78.5	61.6	21.7	582.6	1976
1977	2.6	9.0	55.0	42.8	97.9	21.6	41.8	35.5	96.9	102.7	74.8	29.4	610.0	1977
1978	3.9	16.6	48.9	151.6	69.0	64.8	83.8	15.3	53.4	72.4	27.9	24.4	632.0	1978
1979	12.2	58.2	45.3	88.3	80.2	99.2	30.0	77.4	62.1	111.0	134.7	18.3	816.9	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	71.4	73.4	95.0	186.5	120.0	115.4	83.8	77.4	104.5	152.0	140.4	78.5	816.9	
CUARTIL SUPERIOR	42.3	54.9	53.3	105.1	95.7	86.1	45.9	41.8	85.3	111.3	111.4	44.9	704.9	
MEDIANA	15.6	30.9	47.1	85.5	75.7	61.9	31.9	34.8	56.4	93.2	83.0	29.6	659.6	
CUARTIL INFERIOR	5.7	16.0	27.9	50.0	49.7	42.6	24.6	22.9	37.1	77.0	65.5	21.1	633.0	
VALOR MINIMO	0.4	1.2	9.0	25.5	32.1	16.1	6.3	13.9	8.6	55.8	27.9	4.8	582.6	
PROMEDIOS	24.0	35.4	45.5	84.8	74.9	62.2	37.8	36.9	56.8	95.9	86.4	34.1	674.7	
PORCENTAJES	3.6	5.2	6.7	12.6	11.1	9.2	5.6	5.5	8.4	14.2	12.8	5.1		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 14. INDICE DE ARNOLDUS = 66.

INDICE DE IRREGULARIDAD INTERANUAL =1.27

DEV. ESTANDAR	23.3	23.1	22.4	41.4	26.3	28.3	21.3	16.6	30.0	24.7	32.1	20.0	62.1
COEF. VARIACION	0.972	0.651	0.493	0.489	0.352	0.455	0.563	0.450	0.527	0.257	0.371	0.585	0.092

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	777.	754.	727.	675.	622.	595.	572.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.988	0.116	0.701	0.761	0.016	0.004	0.833	0.804	0.068	0.582	-0.197	0.813	0.731

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212540	CHECUA-NEMOCON	NEMOCON	+05 07 16	+073 52 48	2580 METROS

AÑO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	48.3	35.0	34.5	116.2	8.7	86.5	-9.9
1961	21.5	14.0	43.7	67.7	13.5	43.2	15.7	17.0	16.0	143.0	64.0	1.0	460.3
1962	43.0	45.5	54.0	31.5	117.1	66.9	40.6	48.6	24.0	70.4	95.2	39.0	697.8
1963	5.5	55.0	29.0	79.0	167.5	27.0	32.5	38.0	44.5	85.9	100.7	17.2	681.8
1964	4.5	33.5	0.0	77.5	94.0	56.0	39.5	4.5	15.0	93.5	29.5	5.0	452.5
1965	6.0	3.0	12.3	208.8	70.0	13.5	44.5	42.0	9.5	66.0	139.4	0.0	617.0
1966	0.0	3.5	65.5	61.5	83.0	45.5	15.5	27.0	25.8	116.0	169.5	71.0	683.8
1967	7.5	6.5	65.5	103.0	58.5	96.5	42.0	56.5	23.0	73.0	104.0	42.5	678.5
1968	0.0	54.5	14.5	149.0	75.1	108.0	51.0	40.0	56.0	37.9	75.0	7.0	668.0
1969	46.5	14.0	1.5	163.0	63.0	36.0	28.5	28.5	29.0	131.5	45.0	5.0	593.5
1970	16.8	52.5	36.1	22.5	114.5	35.7	37.3	21.9	70.6	136.4	87.2	8.2	641.7
1971	47.5	27.7	74.1	98.8	79.0	35.0	33.6	44.5	40.0	46.5	60.2	28.8	615.7
1972	79.8	27.7	99.3	171.0	68.5	72.8	34.8	29.8	8.9	44.2	50.8	11.2	698.8
1973	0.8	43.4	20.2	74.3	24.1	52.8	45.0	48.8	132.5	95.1	119.4	78.0	734.4
1974	30.4	42.9	63.7	68.3	83.2	25.6	29.6	22.2	59.1	74.0	68.4	34.4	602.0
1975	8.3	51.0	52.6	101.7	61.9	45.6	32.6	35.2	73.0	84.6	53.1	83.8	683.4
1976	21.4	42.0	89.0	111.6	62.8	49.3	36.2	27.9	35.8	131.4	87.5	8.2	703.1
1977	6.8	1.0	45.0	63.1	43.4	34.0	26.2	33.6	69.6	62.5	73.0	40.0	498.6
1978	0.0	21.8	68.2	149.2	35.5	56.1	29.6	49.2	26.2	61.2	48.5	54.5	600.0
1979	25.0	21.8	64.1	158.3	99.1	107.5	31.7	86.6	32.0	222.3	114.4	38.3	1001.1

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANEVA

ESTACION X CHICUA-NEMOCON MUNICIPIO DE NEMOCON PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1001.1	1001.1	1001.1	2.993	0.545				I +			.
2	1978	800.0	1801.1	900.5	-0.407	0.471			.	I +			
3	1977	998.6	2099.7	699.9	-1.266	0.240				I +			
4	1976	703.1	2802.8	700.7	0.467	0.325				I +.			
5	1975	683.4	3486.2	697.2	0.300	0.380				I *			
6	1974	602.0	4088.2	681.4	-0.390	0.309			.	I +			
7	1973	734.4	4822.6	688.9	0.732	0.442				I + .			
8	1972	698.8	5521.4	690.2	0.431	0.521				I .+			
9	1971	615.7	6137.1	681.9	-0.274	0.471			.	I +			
10	1970	641.7	6778.8	677.9	-0.053	0.461				. +			
11	1969	593.5	7372.3	670.2	-0.462	0.377			.	I +			
12	1968	668.0	8040.3	670.0	0.170	0.408				I. +			
13	1967	678.5	8718.8	670.7	0.259	0.455				I . +			
14	1966	683.8	9402.6	671.6	0.303	0.510				I . +			
15	1965	617.0	10019.6	668.0	-0.263	0.462			.	I +			
16	1964	452.5	10472.1	654.5	-1.657	0.161			.	I+			
17	1963	681.8	11153.9	656.1	0.287	0.213				I *			
18	1962	697.8	11851.7	658.4	0.422	0.290				I + .			
19	1961	460.3	12312.0	648.0	-1.591	0.0			.	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 19 ANOS = 648.0
DESVIACION ESTANDAR = 118.0
COEFICIENTE DE VARIACION = 0.182

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212540	CHECUA-NEMOCON	NEMOCON	+05 07 18	+073 51 48	2580 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	48.3	35.0	34.5	116.2	6.7	66.5	-9.9	1960
1961	21.5	14.0	43.7	67.7	13.5	43.2	15.7	17.0	16.0	143.0	64.0	1.0	460.3	1961
1962	43.0	45.5	54.0	31.5	117.1	88.9	40.6	48.6	24.0	70.4	95.2	39.0	697.8	1962
1963	5.5	55.0	29.0	79.0	167.5	27.0	32.5	38.0	44.5	85.9	100.7	17.2	681.6	1963
1964	4.5	33.5	0.0	77.5	94.0	56.0	39.5	4.5	15.0	93.5	29.5	5.0	452.5	1964
1965	0.0	3.0	12.3	208.8	70.0	13.5	44.5	42.0	9.5	68.0	139.4	0.0	617.0	1965
1966	0.0	3.5	65.5	61.5	83.0	45.5	15.5	27.0	25.8	116.0	169.5	71.0	683.8	1966
1967	7.5	6.5	65.5	103.0	89.5	96.5	42.0	56.5	23.0	73.0	104.0	42.5	678.5	1967
1968	0.0	54.5	14.5	149.0	75.1	108.0	51.0	40.0	56.0	37.5	75.0	7.0	668.0	1968
1969	46.5	14.0	1.5	163.0	63.0	38.0	28.5	28.5	29.0	131.5	45.0	5.0	593.5	1969
1970	16.8	52.5	36.1	22.5	114.5	35.7	37.3	21.9	70.6	138.4	87.2	8.2	641.7	1970
1971	47.5	27.7	74.1	98.8	79.0	35.0	33.6	44.5	40.0	46.5	60.2	28.8	615.7	1971
1972	79.8	27.7	99.3	171.0	68.5	72.8	34.8	29.8	8.9	44.2	50.8	11.2	698.8	1972
1973	0.8	43.4	20.2	74.3	24.1	52.8	45.0	48.8	132.5	95.1	119.4	78.0	734.4	1973
1974	30.4	42.9	63.7	68.3	83.2	25.8	29.6	22.2	89.1	74.0	68.4	34.4	602.0	1974
1975	8.3	51.0	52.6	101.7	61.9	45.6	32.6	35.2	73.0	84.6	53.1	63.8	683.4	1975
1976	21.4	42.0	89.0	111.6	62.8	49.3	36.2	27.9	35.8	131.4	87.5	8.2	703.1	1976
1977	6.8	1.0	45.0	63.1	43.4	34.0	26.2	33.6	69.6	62.9	73.0	40.0	498.6	1977
1978	0.0	21.8	68.2	149.2	35.5	56.1	29.6	49.2	26.2	61.2	48.5	54.5	600.0	1978
1979	25.0	21.8	64.1	158.3	99.1	107.5	31.7	86.6	32.0	222.3	114.4	38.3	1001.1	1979
NUMERO DE ANOS	19	19	19	19	19	19	20	20	20	20	20	20	19	
VALOR MAXIMO	79.8	55.0	99.3	208.8	167.5	108.0	51.0	86.6	132.5	222.3	169.5	86.5	1001.1	
CUARTIL SUPERIOR	30.4	45.5	65.5	149.2	94.0	72.8	41.3	46.5	57.5	123.8	102.3	48.5	697.8	
MEDIANA	8.3	27.7	52.6	98.8	70.0	45.6	34.2	35.1	33.3	85.2	74.0	31.6	668.0	
CUARTIL INFERIOR	4.5	14.0	20.2	67.7	58.5	35.0	29.6	27.4	23.5	65.4	51.9	7.6	600.0	
VALOR MINIMO	0.0	1.0	0.0	22.5	13.5	13.5	15.5	4.5	8.9	37.5	6.7	0.0	452.5	
PROMEDIOS	19.5	29.5	47.3	103.1	74.4	54.3	34.7	36.8	41.3	94.8	79.7	33.0	648.0	
											TOTAL DE LOS PROMEDIOS MENSUALES =		648.5	
PORCENTAJES	3.0	4.6	7.3	15.9	11.5	8.4	5.4	5.7	6.4	14.6	12.3	5.1		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 67.

DEV. ESTANDAR	21.6	18.8	28.6	50.7	35.5	27.9	9.4	17.1	29.3	44.0	38.3	28.9	118.0
COEF. VARIACION	1.105	0.638	0.605	0.491	0.477	0.513	0.271	0.465	0.711	0.464	0.481	0.877	0.182
COEF. ASIMETRIA	1.430	-0.141	-0.115	0.428	0.723	0.830	-0.397	0.997	1.687	1.260	0.477	0.646	1.035

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Material de uso académico

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212540	CHECUA-NEMOCON	NEMOCON	+05 07 18	+073 51 48	2580 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	8.0	18.9	45.6	151.1	85.4	26.0	48.3	35.0	34.5	116.2	8.7	86.5	664.2	1960
1961	21.5	14.0	43.7	67.7	13.5	43.2	15.7	17.0	16.0	143.0	64.0	1.0	460.3	1961
1962	43.0	45.5	54.0	31.5	117.1	88.9	40.6	48.6	24.0	70.4	95.2	39.0	697.8	1962
1963	5.5	55.0	29.0	79.0	167.5	27.0	32.5	38.0	44.5	85.9	100.7	17.2	681.8	1963
1964	4.5	33.5	0.0	77.5	94.0	56.0	39.5	4.5	15.0	93.5	29.5	5.0	452.5	1964
1965	6.0	3.0	12.3	208.8	70.0	13.5	44.5	42.0	9.5	68.0	139.4	0.0	617.0	1965
1966	0.0	3.5	65.5	61.5	83.0	45.5	15.5	27.0	25.8	116.0	169.5	71.0	683.8	1966
1967	7.5	6.5	65.5	103.0	58.5	90.5	42.0	56.5	23.0	73.0	104.0	42.5	678.5	1967
1968	0.0	54.5	14.5	149.0	75.1	108.0	51.0	40.0	56.0	37.9	75.0	7.0	668.0	1968
1969	46.5	14.0	1.5	163.0	63.0	38.0	28.5	28.5	29.0	131.5	45.0	5.0	593.5	1969
1970	16.8	52.5	36.1	22.5	114.5	35.7	37.3	21.9	70.6	138.4	87.2	8.2	641.7	1970
1971	47.5	27.7	74.1	98.8	79.0	35.0	33.6	44.5	40.0	46.5	60.2	28.8	615.7	1971
1972	79.8	27.7	99.3	171.0	68.5	72.8	34.8	29.8	8.9	44.2	50.8	11.2	698.8	1972
1973	0.8	43.4	20.2	74.3	24.1	52.8	45.0	48.8	132.5	95.1	119.4	78.0	734.4	1973
1974	30.4	42.9	63.7	68.3	83.2	25.8	29.6	22.2	59.1	74.0	68.4	34.4	602.0	1974
1975	8.3	51.0	52.6	101.7	61.9	45.6	32.6	35.2	73.0	84.6	53.1	83.8	683.4	1975
1976	21.4	42.0	89.0	111.6	62.8	49.3	36.2	27.9	35.8	131.4	87.5	8.2	703.1	1976
1977	6.8	1.0	45.0	63.1	43.4	34.0	26.2	33.6	69.6	62.9	73.0	40.0	498.6	1977
1978	0.0	21.8	68.2	149.2	35.5	56.1	29.6	49.2	26.2	61.2	48.5	54.5	600.0	1978
1979	25.0	21.8	64.1	158.3	99.1	107.5	31.7	86.6	32.0	222.3	114.4	38.3	1001.1	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	79.8	55.0	99.3	208.8	167.5	108.0	51.0	86.6	132.5	222.3	169.5	86.5	1001.1	
CUARTIL SUPERIOR	27.7	44.4	65.6	150.1	89.7	64.4	41.3	46.5	57.5	123.8	102.3	48.5	690.8	
MEDIANA	8.1	27.7	49.1	100.2	72.5	45.5	34.2	35.1	33.3	85.2	74.0	31.6	666.1	
CUARTIL INFERIOR	5.0	14.0	24.6	68.0	60.2	34.5	29.6	27.4	23.5	65.4	51.9	7.6	601.0	
VALOR MINIMO	0.0	1.0	0.0	22.5	13.5	13.5	15.5	4.5	8.9	37.9	8.7	0.0	452.5	
PROMEDIOS	19.0	29.0	47.2	105.5	75.0	52.9	34.7	36.8	41.3	94.8	79.7	33.0	648.8	
PORCENTAJES	2.9	4.5	7.3	16.3	11.6	8.1	5.4	5.7	6.4	14.6	12.3	5.1		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 67.

INDICE DE IRREGULARIDAD INTERANUAL =1.59

DEV. ESTANDAR	21.2	18.5	27.8	50.5	34.7	27.8	9.4	17.1	29.3	44.0	38.3	28.9	114.9
COEF. VARIACION	1.116	0.638	0.590	0.478	0.462	0.527	0.271	0.465	0.711	0.464	0.481	0.877	0.177

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	838.	796.	746.	649.	552.	502.	460.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.509	-0.055	-0.108	0.300	0.682	0.891	-0.397	0.997	1.687	1.260	0.477	0.646	1.032

606

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212073	SANTA ANA	NEMOCON	+05 06 00	+073 53 00	2575 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	0.0	0.0	84.8	190.1	45.6	12.3	57.5	77.7	21.0	85.7	0.0	114.4	689.1
1961	8.7	4.2	68.8	90.0	13.2	51.8	37.1	37.8	47.3	145.2	86.4	0.5	595.0
1962	18.2	31.9	81.3	63.0	121.5	112.3	54.2	68.6	31.3	75.4	141.8	52.4	851.9
1963	6.2	56.4	13.4	116.9	135.6	41.6	46.2	39.5	49.6	83.0	109.8	16.8	715.0
1964	6.9	33.4	0.0	98.7	96.9	60.6	55.5	13.2	20.7	76.4	30.7	27.5	540.5
1965	3.4	2.0	14.0	249.6	88.9	18.6	46.9	63.8	18.6	86.4	161.2	39.0	792.4
1966	0.0	11.9	79.5	70.8	93.2	47.0	28.0	36.3	43.3	55.7	188.6	82.1	776.4
1967	7.4	24.9	72.6	140.8	47.5	85.5	31.9	55.1	23.6	76.3	142.8	57.4	765.8
1968	2.0	44.1	12.3	179.7	138.3	129.9	52.0	39.0	84.9	48.1	70.4	5.9	806.6
1969	40.6	17.0	2.1	175.0	82.2	40.0	20.9	35.7	28.1	135.5	66.1	8.3	651.5
1970	14.1	63.4	40.5	32.8	98.2	38.0	46.5	25.3	61.2	166.6	84.7	21.0	712.3
1971	71.7	43.1	65.1	124.6	116.8	39.4	34.5	44.0	45.2	40.9	47.9	35.8	709.0
1972	63.3	15.9	55.0	174.0	76.3	73.9	42.9	29.1	17.5	35.3	31.8	9.8	624.8
1973	0.9	4.4	8.1	78.3	18.6	52.9	42.3	49.8	170.8	73.1	117.1	59.1	675.4

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR CAVARAL

ESTACION X SANTA ANA MUNICIPIO DE NEMOCON PERIODO 1960 - 1973 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1973	675.4	675.4	675.4	-0.370	-0.045				+			
2	1972	624.8	1300.2	650.1	-0.953	-0.162				+I			
3	1971	709.0	2009.2	669.7	0.017	-0.160				+.			
4	1970	712.3	2721.5	680.4	0.055	-0.154				+.			
5	1969	651.5	3373.0	674.6	-0.646	-0.233				+ I			
6	1968	806.6	4179.6	696.6	1.141	-0.093				+	.		
7	1967	765.8	4945.4	706.5	0.671	-0.011				+	.		
8	1966	776.4	5721.8	715.2	0.793	0.087				+	.		
9	1965	792.4	6514.2	723.8	0.977	0.207				I +	.		
10	1964	540.5	7054.7	705.5	-1.924	-0.029		.		+			
11	1963	715.0	7769.7	706.3	0.086	-0.019				*			
12	1962	851.9	8621.6	718.5	1.662	0.185				I+	.		
13	1961	595.0	9216.6	709.0	-1.296	0.026			.	+			
14	1960	689.1	9905.7	707.5	-0.212	0.0				. +			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 14 ANOS = 707.5
DEVIACION ESTANDAR = 86.8
COEFICIENTE DE VARIACION = 0.123

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212073	SANTA ANA	NEMOCON	+05 05 38	+073 53 05	2575 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	0.0	0.0	64.8	190.1	45.6	12.3	57.5	77.7	21.0	85.7	0.0	114.4	689.1	1960
1961	8.7	4.2	68.8	90.0	13.2	51.8	37.1	37.8	47.3	149.2	66.4	0.5	595.0	1961
1962	18.2	31.9	81.3	83.0	121.5	112.3	54.2	68.6	31.3	75.4	141.8	52.4	851.9	1962
1963	6.2	56.4	13.4	116.9	135.6	41.6	46.2	39.5	49.6	83.0	105.8	16.8	715.0	1963
1964	6.9	33.4	0.0	98.7	56.9	80.6	55.5	13.2	20.7	76.4	30.7	27.5	540.5	1964
1965	3.4	2.0	14.0	249.6	68.9	18.6	46.9	63.6	18.6	66.4	161.2	39.0	792.4	1965
1966	0.0	11.9	79.5	70.8	93.2	47.0	28.0	36.3	43.3	95.7	188.6	82.1	776.4	1966
1967	7.4	24.9	72.6	140.8	47.5	85.5	31.9	55.1	23.6	76.3	142.8	57.4	765.8	1967
1968	2.0	44.1	12.3	179.7	138.3	129.9	52.0	39.0	64.9	48.1	70.4	5.9	806.6	1968
1969	40.6	17.0	2.1	175.0	82.2	40.0	20.9	35.7	28.1	135.5	66.1	8.3	651.5	1969
1970	14.1	63.4	40.5	32.8	58.2	38.0	46.5	25.3	61.2	186.6	64.7	21.0	712.3	1970
1971	71.7	43.1	65.1	124.6	116.8	39.4	34.5	44.0	45.2	40.9	47.9	35.8	709.0	1971
1972	63.3	15.9	55.0	174.0	76.3	73.9	42.9	29.1	17.5	35.3	31.8	9.8	624.8	1972
1973	0.9	4.4	8.1	78.3	18.6	52.9	42.3	49.8	170.8	73.1	117.1	59.1	675.4	1973
NUMERO DE ANOS	14	14	14	14	14	14	14	14	14	14	14	14	14	
VALOR MAXIMO	71.7	63.4	84.8	249.6	138.3	129.9	57.5	77.7	170.8	186.6	188.6	114.4	851.9	
CUARTIL SUPERIOR	18.2	43.1	72.6	175.0	116.8	80.6	52.0	55.1	49.6	95.7	141.8	57.4	776.4	
MEDIANA	7.1	20.9	47.8	120.7	51.0	49.4	44.5	39.3	37.3	79.7	85.5	31.6	710.6	
CUARTIL INFERIOR	2.0	4.4	12.3	78.3	47.5	39.4	34.5	35.7	21.0	73.1	47.9	9.8	651.5	
VALOR MINIMO	0.0	0.0	0.0	32.8	13.2	12.3	20.9	13.2	17.5	35.3	0.0	0.5	540.5	
PROMEDIOS	17.4	25.2	42.7	127.4	63.8	58.8	42.6	43.9	47.4	89.1	91.4	37.9	707.5	
											TOTAL DE LOS PROMEDIOS MENSUALES =		707.5	
PORCENTAJES	2.5	3.6	6.0	18.0	11.8	8.3	6.0	6.2	6.7	12.6	12.9	5.4		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 23. INDICE DE ARREGUIS = 75.

DEV. ESTANDAR	23.7	20.8	33.0	60.3	39.9	33.7	10.9	17.6	40.4	42.1	54.9	32.6	86.8
COEF. VARIACION	1.366	0.824	0.772	0.473	0.477	0.573	0.257	0.400	0.852	0.472	0.600	0.860	0.123
COEF. ASIMETRIA	1.636	0.494	-0.057	0.380	-0.472	0.813	-0.497	0.377	2.488	1.077	0.131	1.059	-0.243

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
230507	ESCUELA VOCACIONAL	PACHO	+05 10 00	+074 11 00	1940 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1966	-9.9	-9.9	-9.9	-9.9	-9.9	136.1	32.9	-9.9	46.1	224.1	281.4	244.2	-9.9
1967	40.4	134.9	142.1	118.1	184.8	109.0	46.2	19.8	78.2	141.4	207.8	98.1	1320.8
1968	110.3	88.9	115.3	232.8	147.0	149.5	14.1	31.7	120.4	185.4	206.9	122.8	1525.1
1969	82.1	110.7	42.8	246.1	141.1	84.5	5.0	27.9	98.0	221.2	176.1	51.3	1286.8
1970	101.1	143.1	33.1	100.7	123.8	23.5	34.2	23.7	75.9	357.4	232.7	60.3	1309.5
1971	229.1	218.1	151.7	164.0	284.8	16.9	10.9	50.0	82.7	207.3	194.0	98.5	1708.0
1972	169.6	49.1	131.4	294.5	116.2	60.3	32.1	89.5	10.4	65.4	172.1	58.7	1249.3
1973	68.6	33.3	89.6	122.7	77.1	75.9	48.3	56.1	170.1	132.9	311.9	238.6	1425.1
1974	62.7	236.2	146.7	186.2	52.1	27.1	7.1	60.9	102.4	185.8	338.8	61.1	1487.1
1975	16.4	195.8	129.0	180.6	149.2	22.9	104.9	57.0	55.5	226.0	143.2	323.5	1604.0
1976	83.2	149.6	220.0	161.2	49.4	21.7	6.7	25.2	62.6	246.6	152.4	77.0	1255.6
1977	46.8	55.3	136.8	171.1	48.9	63.7	12.0	28.9	58.3	121.0	110.4	80.5	934.1
1978	33.0	68.6	186.5	227.2	148.5	18.2	8.5	40.9	34.0	112.1	170.3	177.5	1225.3
1979	75.7	36.6	187.6	169.2	82.1	57.3	66.3	121.9	97.8	345.4	194.5	43.4	1481.8

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARA

ESTACION X ESCUELA VOCACIONAL MUNICIPIO DE PACHO PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

ESTACION Y LA CARLINA MUNICIPIO DE SAN FRANCISCO PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	CUY	RAN	ECAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
					R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	1482.	2209.	0.919	-0.058					+				
2	1978	2707.	3740.	1.097	-0.016					+				
3	1977	3641.	5026.	0.996	-0.015					*				
4	1976	4657.	6565.	1.125	0.086					+				
5	1975	6501.	8583.	1.084	0.179					I+				
6	1973	7526.	10573.	0.981	0.155					I+				
7	1972	9175.	12309.	0.953	0.113					I+				
8	1969	10462.	14227.	0.949	0.061					+				
9	1968	11587.	15856.	1.283	0.314					I +				
10	1967	13308.	18239.	0.760	0.000					+				

N	AN	CLX	CUY	RAN	ECAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
					R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 1330.8 1823.9

RAZONES PROMEDIOS Y/X = 1.371

X/Y = 0.730

****
* PRUEBAS DE COLE MASA *
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PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA DRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
230507	ESCUELA VOCACIONAL	PACHO	+05 10 00'	+074 11 10	1940 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	-9.9	-9.9	-9.9	-9.9	-9.9	136.1	32.9	-9.9	46.1	224.1	281.4	244.2	-9.9	1966
1967	40.4	134.9	142.1	118.1	184.8	109.0	46.2	19.8	78.2	141.4	207.8	98.1	1320.8	1967
1968	110.3	88.9	115.3	232.8	147.0	149.5	14.1	31.7	120.4	185.4	206.9	122.8	1525.1	1968
1969	82.1	110.7	42.8	246.1	141.1	84.5	5.0	27.9	98.0	221.2	176.1	51.3	1286.8	1969
1970	101.1	143.1	33.1	100.7	123.8	23.5	34.2	23.7	75.9	357.4	232.7	60.3	1309.5	1970
1971	229.1	218.1	151.7	164.3	284.8	16.9	10.9	50.0	82.7	207.3	194.0	98.5	1708.0	1971
1972	169.6	49.1	131.4	294.5	116.2	60.3	32.1	89.5	10.4	65.4	172.1	58.7	1249.3	1972
1973	68.6	33.3	89.6	122.7	77.1	75.9	48.3	56.1	170.1	132.9	311.9	238.6	1425.1	1973
1974	62.7	236.2	146.7	186.2	82.1	27.1	7.1	60.9	102.4	185.8	336.8	81.1	1487.1	1974
1975	16.4	195.8	129.0	180.6	149.2	22.9	104.9	57.0	55.5	226.0	143.2	323.5	1604.0	1975
1976	83.2	149.6	220.0	161.2	49.4	21.7	6.7	25.2	62.6	246.6	182.4	77.0	1255.6	1976
1977	40.6	85.3	136.8	171.1	48.9	63.7	12.0	26.9	58.3	121.0	110.4	60.9	934.1	1977
1978	33.0	68.6	186.5	227.2	148.5	18.2	8.5	40.9	34.0	112.1	170.3	177.5	1225.3	1978
1979	75.7	36.6	187.6	169.2	82.1	57.3	66.3	121.9	97.8	349.4	194.5	43.4	1481.8	1979
NUMERO DE ANOS	13	13	13	13	13	14	14	13	14	14	14	14	13	
VALOR MAXIMO	229.1	236.2	220.0	294.5	284.8	149.5	104.9	121.9	170.1	357.4	336.8	323.5	1708.0	
CUARTIL SUPERIOR	105.7	172.7	169.1	230.0	148.8	84.5	46.2	58.9	98.0	226.0	232.7	177.5	1506.1	
MEDIANA	75.7	110.7	136.8	171.1	123.8	58.8	23.1	40.9	77.0	196.5	194.3	89.6	1320.8	
CUARTIL INFERIOR	43.6	52.2	102.4	141.9	84.6	22.9	8.5	26.5	55.5	132.9	170.3	60.3	1252.4	
VALOR MINIMO	16.4	33.3	33.1	100.7	48.9	16.9	5.0	19.8	10.4	65.4	110.4	43.4	934.1	
PROMEDIOS	80.1	110.9	131.7	182.6	123.5	61.9	30.7	48.7	78.0	198.3	206.6	125.4	1370.2	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1390.5	
PORCENTAJES	6.2	8.4	9.5	13.1	8.9	4.5	2.2	3.5	5.6	14.3	14.9	9.0		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 31. INDICE DE ARNOLDUS = 142.

DEV. ESTANDAR	58.1	69.4	53.5	55.3	65.8	44.6	28.6	29.6	39.6	83.9	64.9	86.6	198.7
COEF. VARIACION	0.675	0.593	0.406	0.303	0.533	0.721	0.933	0.607	0.507	0.423	0.314	0.691	0.145
COEF. ASIMETRIA	1.436	0.441	-0.452	0.475	1.080	0.810	1.495	1.476	0.633	0.567	0.816	1.267	-0.402

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211902	CARACOL	PANDI	+04 15 00	+074 30 00	1600 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1951	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	74.8	111.0	150.2	237.7	26.9	-9.9
1952	96.8	47.1	85.9	200.6	139.0	71.8	111.6	60.0	57.4	157.5	233.5	91.5	1353.1
1953	42.2	25.0	140.4	108.6	198.0	69.0	38.0	37.6	152.2	158.5	202.0	133.0	1324.5
1954	79.8	59.6	63.5	175.2	143.4	120.0	95.0	57.0	49.5	259.0	141.2	144.8	1388.0
1955	52.0	169.6	214.4	241.4	131.8	155.6	105.8	73.8	103.0	169.2	135.6	136.4	1634.6
1956	114.8	133.4	142.6	101.8	127.2	60.8	51.9	40.8	96.0	162.2	83.6	136.9	1272.0
1957	13.8	102.4	204.8	98.6	169.8	47.2	35.3	27.4	48.3	216.6	140.2	98.8	1203.2
1958	41.0	35.0	30.2	63.8	94.4	65.2	17.1	40.0	11.4	187.8	114.0	160.0	899.9
1959	94.0	37.0	36.2	111.2	197.0	133.2	55.2	36.4	68.6	129.0	248.0	48.3	1194.1
1960	132.0	114.2	96.0	122.2	91.4	112.0	124.0	68.0	39.0	-9.9	-9.9	-9.9	-9.9
1961													
1962	40.0	73.0	144.4	132.0	183.0	110.0	60.0	54.0	117.0	213.0	161.2	162.0	1469.6
1963	45.0	153.0	73.0	209.4	269.9	64.0	67.2	52.0	70.2	151.0	298.0	49.0	1501.7
1964	56.0	56.2	24.0	132.0	121.0	128.0	102.6	81.0	132.0	188.0	102.0	119.0	1241.8
1965	49.0	20.0	65.0	156.0	101.0	24.0	22.0	44.0	63.0	165.0	354.0	85.0	1168.0
1966	0.0	75.0	168.0	144.0	107.0	57.0	52.0	87.0	60.0	88.0	278.0	-9.9	-9.9
1967	30.2	60.0	284.0	223.5	296.0	151.0	75.0	22.5	-9.9	92.0	295.0	139.0	-9.9
1968	186.5	90.0	58.0	220.5	49.5	100.0	45.5	54.5	73.0	134.5	132.0	-9.9	-9.9
1969													
1970	92.5	94.3	32.8	85.2	107.2	72.0	50.5	18.4	57.0	-9.9	128.2	6.4	-9.9
1971	95.5	39.8	77.3	-9.9	198.6	91.1	32.8	53.2	32.4	139.8	137.0	77.7	-9.9
1972	199.4	112.2	136.5	-9.9	102.5	-9.9	-9.9	53.1	59.7	140.9	191.6	15.0	-9.9
1973	9.3	45.0	-9.9	107.0	41.3	72.9	28.9	81.0	64.1	120.3	167.6	28.7	-9.9
1974	111.0	99.4	150.7	141.1	79.8	87.6	35.7	29.3	103.9	128.0	166.1	23.4	1096.0
1975	16.4	166.8	85.0	176.7	147.2	43.2	69.9	27.0	95.9	158.7	90.0	151.8	1228.6

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR BANINDA

ESTACION X CARACOL MUNICIPIO DE PANDI PERIODO 1951 - 1975 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1975	1228.6	1228.6	1228.6	-0.301	-0.043				+			
2	1974	1096.0	2324.6	1162.3	-1.024	-0.189				+I			
3	1965	1168.0	3492.6	1164.2	-0.632	-0.280				+I			
4	1964	1241.8	4734.4	1183.6	-0.230	-0.313				+I			
5	1963	1501.7	6236.1	1247.2	1.186	-0.143				+I			
6	1962	1469.6	7705.7	1284.3	1.012	0.002				+			
7	1959	1194.1	8899.8	1271.4	-0.489	-0.068				+			
8	1958	899.9	9799.7	1225.0	-2.092	-0.367				+ I			
9	1957	1203.2	11002.9	1222.5	-0.440	-0.430				* I			
10	1956	1272.0	12274.9	1227.5	-0.085	-0.440				+			
11	1955	1634.6	13909.5	1264.5	1.911	-0.167				+I			
12	1954	1388.0	15297.5	1274.8	0.567	-0.085				+			
13	1953	1324.5	16622.0	1278.6	0.221	-0.054				+			
14	1952	1353.1	17975.1	1283.9	0.377	0.000				+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 14 ANOS = 1283.9

DEVIACION ESTANDAR = 183.5

COEFICIENTE DE VARIACION = 0.143

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211902	CARACOL	PANDI	+04 10 00	+074 27 57	1600 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1951	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	74.8	111.0	150.2	237.7	26.9	-9.9	1951
1952	96.8	47.1	85.9	200.6	139.0	71.8	111.6	60.0	57.4	157.9	233.5	91.5	1353.1	1952
1953	42.2	25.0	140.4	108.6	198.0	69.0	38.0	37.6	152.2	158.5	202.0	133.0	1324.5	1953
1954	79.8	59.6	63.5	175.2	143.4	120.0	95.0	57.0	49.5	259.0	141.2	144.8	1388.0	1954
1955	52.0	169.6	214.4	241.4	131.8	105.6	105.8	73.8	103.0	169.2	135.6	132.4	1634.6	1955
1956	114.8	133.4	142.6	101.8	127.2	80.8	51.9	40.8	96.0	162.2	83.6	136.9	1272.0	1956
1957	13.8	102.4	204.8	98.6	169.8	47.2	35.3	27.4	48.3	216.6	140.2	98.8	1203.2	1957
1958	41.0	35.0	30.2	63.8	94.4	85.2	17.1	40.0	11.4	187.8	114.0	180.0	899.9	1958
1959	94.0	37.0	36.2	111.2	197.0	133.2	55.2	36.4	68.6	129.0	246.0	48.3	1194.1	1959
1960	132.0	114.2	96.0	122.2	91.4	112.0	124.0	68.0	39.0	-9.9	-9.9	-9.9	-9.9	1960
1961														1961
1962														1962
1963	45.0	153.0	73.0	209.4	269.9	64.0	67.2	52.0	70.2	151.0	256.0	49.0	1501.7	1963
1964	56.0	56.2	24.0	132.0	121.0	128.0	102.6	81.0	132.0	188.0	102.0	119.0	1241.8	1964
1965	49.0	20.0	65.0	156.0	101.0	24.0	22.0	44.0	63.0	185.0	354.0	85.0	1168.0	1965
1966	0.0	75.0	168.0	144.0	107.0	97.0	52.0	87.0	60.0	85.0	278.0	-9.9	-9.9	1966
1967	30.2	60.0	284.0	223.5	296.0	151.0	75.0	22.5	-9.9	92.0	295.0	139.0	-9.9	1967
1968	186.5	90.0	58.0	220.5	49.5	100.0	45.5	54.5	73.0	134.5	132.0	-9.9	-9.9	1968
1969														1969
1970	92.5	94.3	32.8	85.2	107.2	72.0	50.5	18.4	57.0	-9.9	128.2	6.4	-9.9	1970
1971	95.5	39.8	77.3	-9.9	198.6	51.1	32.8	53.2	32.4	139.8	137.0	77.7	-9.9	1971
1972	199.4	112.2	136.5	-9.9	102.5	-9.9	-9.9	53.1	59.7	140.9	191.6	15.0	-9.9	1972
1973	9.3	45.0	-9.9	107.0	41.3	72.9	28.9	81.0	64.1	120.3	167.6	28.7	-9.9	1973
1974	111.0	99.4	150.7	141.1	79.8	27.6	35.7	29.3	103.9	128.0	166.1	23.4	1096.0	1974
1975	10.4	166.8	85.0	176.7	147.2	43.2	69.9	27.0	95.9	158.7	90.0	151.8	1228.6	1975
NUMERO DE ANOS	21	21	20	19	21	20	20	22	21	20	21	19	13	
VALOR MAXIMO	199.4	169.6	284.0	241.4	296.0	151.0	124.0	87.0	152.2	259.0	354.0	180.0	1634.6	
CUARTIL SUPERIOR	103.9	113.2	146.6	200.6	183.4	108.8	85.0	68.0	99.5	177.1	242.8	136.9	1370.5	
MEDIANA	56.0	75.0	85.4	141.1	127.2	83.0	51.9	52.5	64.1	154.4	166.1	91.5	1241.8	
CUARTIL INFERIOR	35.6	42.4	60.8	107.0	97.7	57.5	35.5	36.4	53.3	131.8	130.1	28.7	1181.0	
VALOR MINIMO	0.0	20.0	24.0	63.8	41.3	24.0	17.1	18.4	11.4	85.0	83.6	6.4	899.9	
PROMEDIOS	74.2	82.0	108.4	148.4	138.7	83.8	60.8	50.9	73.7	155.7	184.5	88.8	1269.7	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1250.4	
PORCENTAJES	5.9	6.6	8.7	11.9	11.1	6.7	4.9	4.1	5.9	12.5	14.8	7.1		
DEV. ESTANDAR	54.5	46.3	70.2	52.2	64.8	35.2	31.9	20.4	33.8	39.9	76.8	54.0	182.6	
COEF. VARIACION	0.735	0.560	0.648	0.352	0.467	0.420	0.525	0.402	0.459	0.257	0.416	0.608	0.144	
COEF. ASIMETRIA	0.827	0.528	0.944	0.319	0.936	0.059	0.619	0.200	0.581	0.652	0.670	-0.083	0.055	

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 27. INDICE DE ARNOLDUS = 120.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211908	LA PLAYA	PANDI	+04 11 00	+074 30 00	675 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1955	-9.9	-9.9	-9.9	-9.9	-9.9	51.0	55.0	30.0	84.0	158.0	165.0	129.0	-9.9
1956	183.0	87.0	191.0	140.0	93.0	66.0	23.0	13.0	74.0	157.0	85.0	108.0	1220.0
1957	8.0	87.0	248.0	92.0	253.0	11.0	21.0	8.0	40.0	214.0	59.0	53.0	1094.0
1958	22.0	20.0	45.0	44.0	85.0	33.0	5.0	69.0	43.0	151.0	121.0	153.0	791.0
1959	85.0	14.0	44.0	47.0	208.0	56.0	45.0	95.0	51.0	158.0	130.0	25.0	998.0
1960	27.0	79.0	93.0	132.0	48.0	104.0	55.0	80.0	34.0	131.0	101.0	152.0	1036.0
1961	76.0	73.0	112.0	111.0	55.0	64.0	79.0	30.0	10.0	125.0	101.0	22.0	858.0
1962	36.0	153.0	70.0	107.0	200.0	130.0	80.0	20.0	87.0	121.0	183.0	114.0	1301.0
1963	105.0	79.0	134.0	302.0	378.0	192.0	38.0	71.0	74.0	221.0	165.0	26.0	1785.0
1964	15.0	14.0	20.0	190.0	114.0	111.0	93.0	99.0	161.0	97.0	63.0	38.0	1015.0
1965	35.0	5.0	27.0	260.0	130.0	17.0	21.0	25.0	41.0	225.0	288.0	103.0	1177.0
1966	11.0	88.0	205.0	120.0	125.0	222.0	46.0	48.0	59.0	205.0	269.0	168.0	1566.0
1967	34.0	75.0	319.0	194.0	139.0	61.0	66.0	21.0	25.0	95.0	136.0	130.0	1295.0
1968	175.0	116.0	140.0	211.0	236.0	162.0	154.0	80.0	125.0	291.0	274.0	50.0	2014.0
1969	228.0	61.0	52.0	144.0	110.0	60.0	6.0	45.0	145.0	213.0	127.0	17.0	1208.0
1970	72.5	-9.9	46.5	119.5	187.0	72.5	27.0	31.5	53.5	148.0	236.5	29.0	-9.9
1971	72.5	47.0	136.5	129.3	299.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR CARVAJAL

ESTACION X LA PLAYA MUNICIPIO DE PANDI PERIODO 1955 - 1971 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1969	1208.0	1208.0	1208.0	-0.093	-0.026				*			
2	1968	2014.0	3222.0	1611.0	2.254	0.599				I	+		•
3	1967	1295.0	4517.0	1505.7	0.161	0.643				I•	+		
4	1966	1566.0	6083.0	1520.8	0.949	0.906				I	*		
5	1965	1177.0	7260.0	1452.0	-0.183	0.856				•I	+		
6	1964	1015.0	8275.0	1379.2	-0.655	0.674			•	I	+		
7	1963	1785.0	10060.0	1437.1	1.587	1.114				I	+	•	
8	1962	1301.0	11361.0	1420.1	0.178	1.163				I•	+		
9	1961	858.0	12219.0	1357.7	-1.112	0.855			•	I	+		
10	1960	1036.0	13255.0	1325.5	-0.593	0.691			•	I	+		
11	1959	998.0	14253.0	1295.7	-0.704	0.496			•	I	+		
12	1958	791.0	15044.0	1253.7	-1.307	0.134			•	I+			
13	1957	1094.0	16138.0	1241.4	-0.425	0.016			•	+			
14	1956	1220.0	17358.0	1239.9	-0.058	0.000				*			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 14 ANOS = 1239.9
DEVIACION ESTANDAR = 343.5
COEFICIENTE DE VARIACION = 0.277

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211508	LA PLAYA	PANDI	+04 11 31	+074 30 15	0730 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1962	36.0	153.0	70.0	107.0	200.0	130.0	80.0	20.0	87.0	121.0	183.0	114.0	1301.0	1962
1963	105.0	79.0	134.0	302.0	378.0	192.0	38.0	71.0	74.0	221.0	165.0	26.0	1785.0	1963
1964	15.0	14.0	20.0	190.0	114.0	111.0	93.0	99.0	161.0	97.0	63.0	38.0	1015.0	1964
1965	35.0	5.0	27.0	260.0	130.0	17.0	21.0	25.0	41.0	225.0	288.0	103.0	1177.0	1965
1966	11.0	68.0	205.0	120.0	125.0	222.0	46.0	48.0	59.0	205.0	269.0	168.0	1566.0	1966
1967	34.0	75.0	319.0	194.0	139.0	61.0	66.0	21.0	25.0	95.0	136.0	130.0	1295.0	1967
1968	175.0	116.0	140.0	211.0	236.0	162.0	154.0	80.0	125.0	291.0	274.0	50.0	2014.0	1968
1969	228.0	61.0	52.0	144.0	110.0	60.0	6.0	45.0	145.0	213.0	127.0	17.0	1208.0	1969
1970	72.5	-9.9	46.5	119.5	187.0	72.5	27.0	31.5	53.5	148.0	236.5	29.0	-9.9	1970
1971	72.5	47.0	136.5	129.3	299.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1971
NUMERO DE ANOS	10	9	10	10	10	9	9	9	9	9	9	9	8	
VALOR MAXIMO	228.0	153.0	319.0	302.0	378.0	222.0	154.0	99.0	161.0	291.0	288.0	168.0	2014.0	
MEDIANA	54.3	75.0	102.0	167.0	163.0	111.0	46.0	45.0	74.0	205.0	183.0	50.0	1298.0	
VALOR MINIMO	11.0	5.0	20.0	107.0	110.0	17.0	6.0	20.0	25.0	95.0	63.0	17.0	1015.0	
PROMEDIOS	78.4	70.9	115.0	177.7	191.8	114.2	59.0	48.9	85.6	179.6	193.5	75.0	1420.1	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1389.5	
PORCENTAJES	5.6	5.1	8.3	12.8	13.8	8.2	4.2	3.5	6.2	12.9	13.9	5.4		
DEV. ESTANDAR	72.0	46.6	93.5	65.8	89.5	68.2	45.5	28.4	47.8	67.4	78.0	54.6	339.2	
COEF. VARIACION	0.919	0.658	0.813	0.370	0.466	0.597	0.771	0.581	0.559	0.375	0.403	0.728	0.239	
COEF. ASIMETRIA	1.286	0.263	1.199	0.795	1.179	0.274	1.124	0.705	0.491	0.107	-0.290	0.568	0.815	

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 27. INDICE DE ARNOLDUS = 140.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Biblioteca Nacional
Colombia

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211956	PANDI	PANDI	+04 14 00	+074 30 00	0950 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1969	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	23.0	31.7	114.9	246.1	190.0	47.9	-9.9
1970	92.5	94.3	32.8	85.2	107.2	72.0	50.5	18.4	57.0	274.3	128.2	16.4	1028.8
1971	95.5	39.8	77.3	-9.9	198.6	51.1	32.8	53.2	32.4	135.8	137.0	77.7	-9.9
1972	199.4	125.8	136.5	180.5	102.5	61.7	14.6	53.1	59.7	140.9	191.6	-9.9	-9.9
1973	9.3	45.0	86.1	107.0	41.3	72.9	28.9	81.0	64.1	120.3	167.6	287.0	1110.5
1974	111.0	99.4	150.7	141.1	79.8	27.1	36.7	29.3	103.9	128.0	166.1	23.4	1096.5
1975	16.4	166.8	85.0	176.7	147.2	43.2	69.8	27.1	95.9	158.7	90.0	151.8	1228.6
1976	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	8.9	102.4	-9.9	-9.9	-9.9	-9.9
1977	30.9	10.2	111.9	117.5	51.4	99.1	-9.9	24.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X PANDI MUNICIPIO DE PANDI PERIODO 1969 - 1977 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1975	1228.6	1228.6	1228.6	0.771	0.069				+	.		
2	1974	1096.5	2325.1	1162.5	-0.510	0.023			.	+			
3	1973	1110.5	3435.6	1145.2	-0.375	-0.010			.	+			
4	1972	1281.3	4716.9	1179.2	1.282	0.105				I+	.		
5	1970	1028.8	5745.7	1149.1	-1.107	0.0			.	+			
N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 5 ANOS = 1149.1
DEVIACION ESTANDAR = 103.1
COEFICIENTE DE VARIACION = 0.090

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211956	PANDI	PANDI	+04 11 28	+074 29 17	0950 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1969	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	23.0	31.7	114.9	246.1	190.0	47.9	-9.9	1969
1970	92.5	94.3	32.8	85.2	107.2	72.0	50.5	18.4	57.0	274.3	128.2	16.4	1028.8	1970
1971	95.5	39.8	77.3	-9.9	158.6	51.1	32.8	53.2	32.4	139.8	137.0	77.7	-9.9	1971
1972	199.4	125.8	136.5	180.5	102.5	61.7	14.6	53.1	59.7	140.9	191.6	15.0	1281.3	1972
1973	9.3	45.0	86.1	107.0	41.3	72.9	28.9	81.0	64.1	120.3	167.6	287.0	1110.5	1973
1974	111.0	59.4	150.7	141.1	79.8	27.1	36.7	29.3	103.9	128.0	166.1	23.4	1096.5	1974
1975	16.4	166.8	85.0	170.7	147.2	43.2	69.8	27.1	95.9	158.7	90.0	151.8	1228.6	1975
1976	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	8.9	102.4	-9.9	-9.9	-9.9	-9.9	1976
1977	30.9	10.2	111.9	117.5	81.4	99.1	-9.9	24.9	-9.9	-9.9	-9.9	-9.9	-9.9	1977
NUMERO DE ANOS	7	7	7	6	7	7	7	9	8	7	7	7	5	
VALOR MAXIMO	199.4	166.8	150.7	180.5	158.6	99.1	69.8	81.0	114.9	274.3	191.6	287.0	1281.3	
MEDIANA	92.5	94.3	86.1	129.3	102.5	61.7	32.8	29.3	80.0	140.9	166.1	47.9	1110.5	
VALOR MINIMO	9.3	10.2	32.8	85.2	41.3	27.1	14.6	8.9	32.4	120.3	90.0	15.0	1028.8	
PROMEDIOS	79.3	83.0	97.2	134.7	104.0	61.0	36.6	36.4	78.8	172.6	152.9	88.5	1149.1	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1125.0	
PORCENTAJES	7.0	7.4	8.6	12.0	9.2	5.4	3.3	3.2	7.0	15.3	13.6	7.9		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 26. INDICE DE ARREGUDS = 111.

DEV. ESTANDAR	67.2	54.6	39.7	38.5	54.9	23.4	18.4	22.1	29.3	61.6	36.7	100.0	103.1
COEF. VARIACION	0.847	0.657	0.408	0.286	0.528	0.383	0.503	0.608	0.371	0.357	0.240	1.131	0.090
COEF. ASIMETRIA	0.822	0.214	-0.227	0.124	0.733	0.230	0.951	1.017	-0.298	1.148	-0.727	1.625	0.323

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211957	PASCA	PASCA	+04 19 00	+074 18 00	2650 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCv	CIC	TCTAL
1969	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	15.2	25.0	60.6	214.9	76.3	31.0	-9.9
1970	54.0	75.0	37.3	41.2	96.1	64.5	44.1	40.5	62.8	108.7	174.6	10.5	809.3
1971	145.8	100.5	-9.9	125.0	116.3	53.1	31.0	52.7	49.3	56.6	113.3	86.8	-9.9
1972	102.6	46.9	91.4	164.8	92.6	50.9	32.6	31.6	23.8	86.5	92.9	76.3	853.3
1973	15.3	49.4	31.3	60.2	65.1	43.7	52.2	67.2	122.1	55.0	125.7	106.1	833.3
1974	179.3	110.2	154.0	133.5	62.5	29.9	30.8	25.6	90.9	116.1	97.1	27.7	1057.6
1975	48.2	56.6	98.8	80.1	116.5	53.1	47.0	50.7	64.5	129.6	128.2	105.4	978.7
1976	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	19.6	77.8	159.7	-9.9	-9.9	-9.9
1977	8.9	-9.9	-9.9	145.6	-9.9	-9.9	54.6	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA FCR OARANJO

ESTACION X PANDI MUNICIPIO DE PANDI PERIODO 1969 - 1977 COEF DE CORRECCION 1.000

ESTACION Y PASCA MUNICIPIO DE PASCA PERIODO 1969 - 1977 COEF DE CORRECCION 1.000

					P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CUX	CUY	RAN	PCAN I	I	I	I	I	I	I	I	I
					R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1975	1229.	979.	0.999	-0.001				*				
2	1974	2325.	2036.	0.825	-0.203				+ I				
3	1973	3436.	2870.	1.060	-0.148				+I	.			
4	1972	4717.	3763.	1.141	-0.010				+		.		
5	1970	5746.	4572.	1.012	0.0				+.				
					P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CUX	CUY	RAN	PCAN I	I	I	I	I	I	I	I	I
					R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 1149.1 914.4

RAZONES PROMEDIOS Y/X = 0.796

X/Y = 1.257

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211957	PASCA	PASCA	+04 18 28	+074 18 51	2200 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1969	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	15.2	25.0	60.6	214.9	76.3	31.0	-9.9	1969
1970	54.0	75.0	37.3	41.2	96.1	64.5	44.1	40.5	62.8	108.7	174.6	10.5	809.3	1970
1971	145.8	100.5	-9.9	125.0	116.3	53.1	31.0	52.7	49.3	96.6	113.3	86.8	-9.9	1971
1972	102.6	46.9	91.4	164.8	92.6	50.9	32.6	31.6	23.8	86.9	92.9	76.3	893.3	1972
1973	15.3	49.4	31.3	60.2	65.1	43.7	52.2	67.2	122.1	95.0	125.7	106.1	833.3	1973
1974	179.3	110.2	154.0	133.5	62.5	29.9	30.8	25.6	90.9	116.1	97.1	27.7	1057.6	1974
1975	48.2	56.6	98.8	80.1	116.5	53.1	47.0	50.7	64.5	129.6	128.2	105.4	978.7	1975
1976	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	19.6	77.8	159.7	-9.9	-9.9	-9.9	1976
1977	8.9	-9.9	-9.9	145.6	-9.9	-9.9	54.6	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1977
NUMERO DE ANOS	7	6	5	7	6	6	8	8	8	8	7	7	5	
VALOR MAXIMO	179.3	110.2	154.0	164.8	116.5	64.5	54.6	67.2	122.1	214.9	174.6	106.1	1057.6	
MEDIANA	54.0	65.8	91.4	125.0	94.3	52.0	38.3	36.0	63.6	112.4	113.3	76.3	893.3	
VALOR MINIMO	8.9	46.9	31.3	41.2	62.5	29.9	15.2	19.6	23.8	86.9	76.3	10.5	809.3	
PROMEDIOS	79.2	73.1	82.6	107.2	91.5	49.2	38.4	39.1	69.0	125.9	115.4	63.4	914.4	
											TOTAL DE LOS PROMEDIOS MENSUALES =		934.0	
PORCENTAJES	8.5	7.8	8.8	11.5	9.8	5.3	4.1	4.2	7.4	13.5	12.4	6.8		
DEV. ESTANDAR	65.4	27.0	50.3	46.7	23.7	11.6	13.3	16.6	29.1	42.8	32.0	39.6	103.3	
COEF. VARIACION	0.826	0.370	0.609	0.436	0.259	0.235	0.347	0.424	0.422	0.340	0.277	0.625	0.113	
COEF. ASIMETRIA	0.552	0.545	0.465	-0.319	-0.271	-0.706	-0.480	0.545	0.466	1.515	0.543	-0.227	0.561	

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 67.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212096	EL CONSUELO	SESQUILE	+05 00 00	+073 47 00	2920 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	CIC	TCTAL
1967	-9.9	-9.9	74.6	158.0	97.2	156.4	72.0	136.3	39.7	87.4	78.5	54.0	-9.9
1968	21.3	35.0	19.6	71.4	76.8	56.6	90.2	42.4	62.7	106.0	50.6	23.1	655.7
1969	28.9	13.9	13.4	125.3	90.6	69.9	74.9	80.7	45.3	163.0	66.1	24.4	816.4
1970	32.0	36.4	39.5	57.7	106.7	106.5	95.4	59.0	91.0	141.4	77.4	6.3	851.3
1971	28.4	38.1	86.4	97.9	149.6	80.3	87.1	105.0	40.2	77.6	62.3	50.2	903.1
1972	60.0	24.7	67.2	223.8	103.2	122.4	106.4	53.3	41.9	46.9	87.9	36.0	975.7
1973	6.1	71.1	14.8	58.8	83.5	73.0	55.8	80.2	114.4	72.2	94.4	75.2	799.5
1974	36.8	22.7	106.0	77.1	157.3	69.1	134.8	40.8	65.7	103.4	69.0	1.2	883.9
1975	16.5	50.1	71.2	54.0	86.0	120.5	76.7	109.1	126.9	98.6	42.3	120.8	972.7
1976	17.5	26.4	144.0	107.0	126.4	153.6	118.9	49.6	53.0	135.4	88.0	30.7	1050.5
1977	0.0	8.7	38.2	80.3	38.5	52.0	86.9	96.4	82.8	53.8	91.7	27.5	656.8
1978	15.7	13.1	53.7	137.6	77.9	131.6	76.8	48.3	42.6	5.7	25.2	24.8	653.0
1979	9.6	17.5	73.0	97.8	115.4	106.8	54.1	56.8	24.0	206.4	138.0	102.2	1003.6

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR CANARIAS

ESTACION X EL CONSUELO MUNICIPIO DE SESQUILE PERIODO 1967 - 1979 COEF DE CORRECCION 1.000

ESTACION Y LA IBERIA MUNICIPIO DE CHOCONTA PERIODO 1967 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	CUY	RAN	ECAN	E = -4. I R : 0.6	-3. I C.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1978	653.	853.	0.782	-0.217					+ I				
2	1977	1310.	1524.	1.001	-0.216					+ .				
3	1976	2460.	2648.	0.955	-0.276					. + I				
4	1975	3333.	3477.	1.200	-0.082					+	.			
5	1974	4217.	4235.	1.192	0.027					+	.			
6	1973	5016.	5084.	0.986	0.073					.+				
7	1972	5552.	5969.	1.101	0.180					I+	.			
8	1971	6855.	6762.	1.164	0.332					I +	.			
9	1970	7746.	7625.	1.009	0.340					. +				
10	1969	8563.	8511.	0.942	0.280					. I +				
11	1968	9219.	9421.	0.736	0.0					+				

N	AN	CLX	CUY	RAN	ECAN	E = -4. I R : 0.6	-3. I C.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS.= 838.1 856.4

RAZONES PROMEDIOS Y/X = 1.022

X/Y = 0.979

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* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212096	EL CONSUELO	SILVANIA	+04 59 40	+073 47 15	2920 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1967	-9.9	-9.9	74.6	158.0	97.2	158.4	72.0	136.3	39.7	87.4	76.5	54.0	-9.9	1967
1968														1968
1969	29.9	13.5	13.4	125.3	90.6	89.9	74.9	80.7	45.3	163.0	66.1	24.4	816.4	1969
1970	32.0	36.4	39.5	57.7	106.7	108.5	95.4	59.0	91.0	141.4	77.4	6.3	851.3	1970
1971	28.4	38.1	86.4	97.9	149.6	80.3	87.1	105.0	40.2	77.6	62.3	50.2	903.1	1971
1972	60.0	24.7	67.2	223.8	103.2	122.4	106.4	53.3	41.9	48.9	67.9	36.0	975.7	1972
1973	6.1	71.1	14.8	58.8	83.5	73.0	55.8	80.2	114.4	72.2	94.4	75.2	799.5	1973
1974	36.6	22.7	106.0	77.1	157.3	69.1	134.8	40.8	65.7	103.4	69.0	1.2	883.9	1974
1975	16.5	50.1	71.2	54.0	86.0	120.5	76.7	109.1	126.9	98.6	42.3	120.8	972.7	1975
1976														1976
1977	0.0	8.7	38.2	80.3	38.5	52.0	66.9	96.4	82.8	53.8	91.7	27.5	656.8	1977
1978	15.7	13.1	53.7	137.6	77.9	131.6	76.8	48.3	42.6	5.7	25.2	24.8	653.0	1978
1979	9.6	17.5	73.0	97.8	115.4	106.8	54.1	56.8	24.0	208.4	136.0	102.2	1003.6	1979
NUMERO DE ANOS	10	10	11	11	11	11	11	11	11	11	11	11	10	
VALOR MAXIMO	60.0	71.1	106.0	223.8	157.3	158.4	134.8	136.3	126.9	208.4	136.0	120.8	1003.6	
MEDIANA	22.4	23.7	67.2	97.8	97.2	106.8	76.8	80.2	45.3	87.4	77.4	36.0	867.6	
VALOR MINIMO	0.0	8.7	13.4	54.0	38.5	52.0	54.1	40.8	24.0	5.7	25.2	1.2	653.0	
PROMEDIOS	23.4	29.6	58.0	106.2	100.5	101.1	83.7	78.7	65.0	96.4	75.7	47.5	851.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		865.9	
PORCENTAJES	2.7	3.4	6.7	12.3	11.6	11.7	9.7	9.1	7.5	11.1	8.7	5.5		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 13. INDICE DE ARNOLDUS = 62.

DEV. ESTANDAR	17.6	19.5	29.1	51.8	33.0	31.5	22.9	30.2	34.1	56.9	29.4	38.2	123.9
COEF. VARIACION	0.753	0.659	0.502	0.488	0.328	0.311	0.274	0.384	0.525	0.590	0.388	0.804	0.146
COEF. ASIMETRIA	0.787	1.136	-0.193	1.227	0.154	0.193	0.975	0.556	0.774	0.557	0.407	0.823	-0.588

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212060	GUARANI - EL PENON	SIBATE	+04 26 00	+074 18 00	2800 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	119.0	41.0	43.1	110.0	108.5	66.0	59.1	54.6	43.2	135.0	84.0	95.0	978.5
1961	37.0	46.0	101.0	136.5	55.0	76.0	77.0	57.0	27.0	159.0	231.0	13.0	1015.5
1962	100.0	4.0	88.0	72.0	128.0	66.0	27.0	69.0	62.0	171.0	160.5	46.0	1013.5
1963	46.0	49.0	21.0	162.5	186.0	60.0	23.5	42.0	25.5	169.0	135.0	21.0	940.5
1964	16.0	-9.9	0.0	120.0	103.0	-9.9	99.5	55.5	62.0	69.5	80.0	71.0	-9.9
1965	3.0	27.5	37.0	140.0	105.0	24.9	24.9	31.5	33.5	235.0	226.0	46.0	934.3
1966	2.0	26.0	94.0	40.0	120.5	57.5	35.0	94.5	88.7	195.8	264.0	98.5	1156.5
1967	28.0	14.0	122.0	183.0	97.0	74.0	70.0	21.0	44.0	122.5	160.0	111.0	1046.5
1968	69.0	54.0	16.0	201.5	91.5	199.5	28.5	40.0	75.0	141.0	134.5	21.0	1071.5
1969	117.5	6.0	11.0	183.5	123.0	38.0	29.0	36.0	66.0	311.0	123.0	25.0	1069.0
1970	25.0	61.0	23.0	61.0	43.0	11.0	23.0	40.0	-9.9	-9.9	-9.9	10.0	-9.9
1971	181.0	56.0	48.0	92.0	153.0	28.0	45.0	57.0	60.0	73.0	128.0	108.0	1029.0
1972	71.0	71.0	131.0	112.0	139.0	43.0	22.0	19.3	14.5	66.5	97.5	143.0	949.8
1973	7.5	24.3	32.5	84.0	51.5	10.0	21.5	15.0	99.0	78.0	177.5	246.0	846.8
1974	161.0	152.5	109.5	146.4	110.2	21.0	25.0	46.0	63.3	76.0	125.2	54.0	1090.1
1975	21.0	96.0	142.0	58.0	112.0	47.0	59.0	45.0	76.0	136.0	70.0	218.0	1080.0
1976	52.0	120.0	157.2	162.0	99.0	37.0	15.0	14.0	122.0	254.0	58.0	56.0	1146.2
1977	0.0	21.0	52.0	99.0	51.0	39.0	40.0	45.0	74.0	100.0	82.0	41.0	644.0
1978	8.0	20.0	176.0	144.0	75.0	61.0	39.0	19.0	36.0	140.0	103.0	64.0	885.0
1979	25.0	21.0	78.0	117.0	94.0	88.0	43.0	59.0	116.0	276.0	259.0	77.0	1253.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAN C

ESTACION X GUARANI - EL PENON MUNICIPIO DE SIPATE PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	0 =-3. -2. -1. 0.0 +1. +2. +3.
1	1979	1253.0	1253.0	1253.0	1.810	0.243	I +
2	1978	885.0	2138.0	1069.0	-0.912	0.120	I+
3	1977	644.0	2782.0	927.3	-2.695	-0.241	+ I
4	1976	1146.2	3928.2	982.0	1.020	-0.104	+I
5	1975	1080.0	5008.2	1001.6	0.530	-0.033	+
6	1974	1090.1	6098.3	1016.4	0.605	0.048	+
7	1973	846.8	6945.1	992.2	-1.195	-0.112	+I
8	1972	949.8	7894.9	986.9	-0.433	-0.170	+I
9	1971	1029.0	8923.9	991.5	0.153	-0.150	+I
10	1969	1069.0	9992.9	999.3	0.449	-0.090	+
11	1968	1071.5	11064.4	1005.9	0.467	-0.027	+
12	1967	1046.5	12110.9	1009.2	0.282	0.011	+
13	1966	1156.5	13267.4	1020.6	1.096	0.158	I+
14	1965	934.3	14201.7	1014.4	-0.547	0.095	+
15	1963	940.5	15142.2	1009.5	-0.502	0.017	+
16	1962	1013.5	16155.7	1009.7	0.038	0.022	*
17	1961	1015.5	17171.2	1010.1	0.053	0.030	*
18	1960	978.5	18149.7	1008.3	-0.221	0.0	+

N	AN	T A	CU	MOY	ECR	PCAN	0 =-3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 18 ANOS = 1008.3
DEVIACION ESTANDAR = 135.2
COEFICIENTE DE VARIACION = 0.134

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212060	GUARANI - EL PENON	SIBATE	+04 25 33	+074 17 47	2800 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	119.0	41.0	43.1	110.0	108.5	86.0	59.1	54.6	43.2	135.0	64.0	95.0	978.5	1960
1961	37.0	46.0	101.0	136.5	55.0	76.0	77.0	57.0	27.0	159.0	231.0	13.0	1015.5	1961
1962	100.0	4.0	88.0	72.0	128.0	86.0	27.0	69.0	62.0	171.0	160.5	46.0	1013.5	1962
1963	46.0	49.0	21.0	162.5	186.0	60.0	23.5	42.0	25.5	169.0	135.0	21.0	940.5	1963
1964	16.0	-9.9	0.0	120.0	103.0	-9.9	59.5	55.5	62.0	89.5	80.0	71.0	-9.9	1964
1965	3.0	27.5	37.0	140.0	105.0	24.9	24.9	31.5	33.5	235.0	226.0	46.0	934.3	1965
1966	2.0	26.0	94.0	40.0	120.5	57.5	35.0	94.5	88.7	195.8	264.0	98.5	1156.5	1966
1967	28.0	14.0	122.0	183.0	57.0	74.0	70.0	21.0	44.0	122.5	160.0	111.0	1046.5	1967
1968	69.0	54.0	16.0	201.5	51.5	199.5	28.5	40.0	75.0	141.0	134.5	21.0	1071.5	1968
1969	117.5	6.0	11.0	183.5	123.0	38.0	29.0	36.0	66.0	311.0	123.0	25.0	1069.0	1969
1970	25.0	61.0	23.0	61.0	43.0	11.0	23.0	40.0	-9.9	-9.9	-9.9	10.0	-9.9	1970
1971	181.0	56.0	48.0	92.0	153.0	28.0	45.0	57.0	60.0	73.0	128.0	108.0	1029.0	1971
1972	71.0	71.0	131.0	112.0	139.0	43.0	22.0	19.3	14.5	86.5	97.5	143.0	949.8	1972
1973	7.5	24.3	32.5	84.0	51.5	10.0	21.5	15.0	59.0	78.0	177.5	246.0	846.8	1973
1974	161.0	152.5	109.5	146.4	110.2	21.0	25.0	46.0	63.3	76.0	126.2	54.0	1090.1	1974
1975	21.0	96.0	142.0	58.0	112.0	47.0	59.0	45.0	76.0	136.0	70.0	218.0	1080.0	1975
1976	52.0	120.0	157.2	162.0	59.0	37.0	15.0	14.0	122.0	254.0	56.0	56.0	1146.2	1976
1977	0.0	21.0	52.0	99.0	51.0	39.0	40.0	45.0	74.0	100.0	82.0	41.0	644.0	1977
1978	8.0	20.0	176.0	144.0	75.0	61.0	39.0	19.0	36.0	140.0	103.0	64.0	885.0	1978
1979	25.0	21.0	78.0	117.0	94.0	88.0	43.0	59.0	116.0	276.0	259.0	77.0	1253.0	1979
NUMERO DE ANOS	20	19	20	20	20	19	20	20	19	19	19	20	18	
VALOR MAXIMO	181.0	152.5	176.0	201.5	186.0	199.5	99.5	94.5	122.0	311.0	264.0	246.0	1253.0	
CUARTIL SUPERIOR	85.5	61.0	115.8	154.2	121.8	86.0	52.0	56.3	76.0	195.8	177.5	103.3	1080.0	
MEDIANA	32.5	41.0	65.0	118.5	104.0	47.0	32.0	43.5	62.0	140.0	126.0	60.0	1022.3	
CUARTIL INFERIOR	12.0	21.0	27.8	88.0	83.3	28.0	24.2	26.3	36.0	89.5	84.0	33.0	940.5	
VALOR MINIMO	0.0	4.0	0.0	40.0	43.0	10.0	15.0	14.0	14.5	73.0	56.0	10.0	644.0	
PROMEDIOS	54.4	47.9	74.1	121.2	102.3	59.3	40.3	43.0	62.5	155.2	142.0	78.2	1008.3	
												TOTAL DE LOS PROMEDIOS MENSUALES =	980.5	
PORCENTAJES	5.6	4.9	7.6	12.4	10.4	6.0	4.1	4.4	6.4	15.8	14.5	8.0		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 25. INDICE DE ARNOLDUS = 59.

DEV. ESTANDAR	54.4	39.3	53.1	45.2	35.9	43.5	22.1	20.2	29.9	70.9	63.7	63.9	135.2
COEF. VARIACION	0.999	0.821	0.716	0.373	0.351	0.733	0.550	0.469	0.478	0.457	0.448	0.817	0.134
COEF. ASIMETRIA	1.106	1.384	0.388	-0.028	0.253	1.876	1.317	0.576	0.402	0.828	0.720	1.463	-0.897

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212060	GUARANI - EL PENON	SIBATE	+04 25 33	+074 17 47	2800 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	119.0	41.0	43.1	110.0	108.5	86.0	59.1	54.6	43.2	135.0	84.0	95.0	978.5	1960
1961	37.0	46.0	101.0	136.5	55.0	76.0	77.0	57.0	27.0	159.0	231.0	13.0	1015.5	1961
1962	100.0	4.0	88.0	72.0	128.0	86.0	27.0	69.0	62.0	171.0	160.5	46.0	1013.5	1962
1963	46.0	49.0	21.0	162.5	186.0	60.0	23.5	42.0	25.5	169.0	135.0	21.0	940.5	1963
1964	16.0	71.7	0.0	120.0	103.0	115.6	99.5	55.5	62.0	89.5	80.0	71.0	883.8	1964
1965	3.0	27.5	37.0	140.0	105.0	24.9	24.9	31.5	33.5	235.0	226.0	46.0	934.3	1965
1966	2.0	26.0	94.0	40.0	120.5	97.5	35.0	94.5	88.7	195.8	264.0	98.5	1156.5	1966
1967	28.0	14.0	122.0	183.0	97.0	74.0	70.0	21.0	44.0	122.5	160.0	111.0	1046.5	1967
1968	69.0	54.0	16.0	201.5	91.5	199.5	28.5	40.0	75.0	141.0	134.5	21.0	1071.5	1968
1969	117.5	6.0	11.0	183.5	123.0	38.0	29.0	36.0	66.0	311.0	123.0	25.0	1069.0	1969
1970	25.0	61.0	23.0	61.0	43.0	11.0	23.0	40.0	88.9	257.1	197.3	10.0	840.3	1970
1971	181.0	56.0	48.0	92.0	153.0	28.0	45.0	57.0	60.0	73.0	128.0	108.0	1029.0	1971
1972	71.0	71.0	131.0	112.0	139.0	43.0	22.0	19.3	14.5	86.5	97.5	143.0	949.8	1972
1973	7.5	24.3	32.5	84.0	51.5	10.0	21.5	15.0	99.0	78.0	177.5	246.0	846.8	1973
1974	161.0	152.5	109.5	146.4	110.2	21.0	25.0	46.0	63.3	76.0	125.2	54.0	1090.1	1974
1975	21.0	96.0	142.0	58.0	112.0	47.0	59.0	45.0	76.0	136.0	70.0	218.0	1080.0	1975
1976	52.0	120.0	157.2	162.0	99.0	37.0	15.0	14.0	122.0	254.0	58.0	56.0	1146.2	1976
1977	0.0	21.0	52.0	99.0	51.0	39.0	40.0	45.0	74.0	100.0	82.0	41.0	644.0	1977
1978	8.0	20.0	176.0	144.0	75.0	61.0	39.0	19.0	36.0	140.0	103.0	64.0	885.0	1978
1979	25.0	21.0	78.0	117.0	94.0	88.0	43.0	59.0	116.0	276.0	259.0	77.0	1253.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	181.0	152.5	176.0	201.5	186.0	199.5	99.5	94.5	122.0	311.0	264.0	246.0	1253.0	
CUARTIL SUPERIOR	85.5	66.0	115.8	154.2	121.8	86.0	52.0	56.3	82.3	215.4	187.4	103.3	1075.8	
MEDIANA	32.5	43.5	65.0	118.5	104.0	53.5	32.0	43.5	62.6	140.5	131.3	60.0	1014.5	
CUARTIL INFERIOR	12.0	21.0	27.8	88.0	83.3	32.5	24.2	26.3	39.6	94.8	90.8	33.0	909.6	
VALOR MINIMO	0.0	4.0	0.0	40.0	43.0	10.0	15.0	14.0	14.5	73.0	58.0	10.0	644.0	
PROMEDIOS	54.4	49.1	74.1	121.2	102.3	62.1	40.3	43.0	63.8	160.3	144.8	78.2	993.7	
PORCENTAJES	5.5	4.9	7.5	12.2	10.3	6.3	4.1	4.3	6.4	16.1	14.6	7.9		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 26. INDICE DE ARNOLDUS = 101.

INDICE DE IRREGULARIDAD INTERANUAL = 1.42

INDICE DE ESTACIONALIDAD = 1.48

DEV. ESTANDAR	54.4	38.6	53.1	45.2	35.9	44.2	22.1	20.	29.7				135.8	
COEF. VARIACION	0.999	0.787	0.716	0.372	0.350	0.712	0.221	20.2	29.7	72.7	63.2	63.9	0.137	
DEV. ESTANDAR	54.4	38.6	53.1	45.2	35.9	44.2	22.1	0.580	0.469	0.465	0.453	0.436	0.817	0.137
COEF. VARIACION	0.999	0.787	0.716	0.372	0.350	0.712	0.221							

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS VIA GUMBEL

T=	0.10	0.20	0.50	0.80	0.90	0.95		
VALORES	1017.	1106.	1244.	1394.	1492.	1570.		

PRESUPUESTO TSAE-URIBE *** GRUPO DE HIDROCLIMATOLOGIA

HIDROGRAMA URIBE

COEF. ASIMETRIA	1.106	1.285	0.388	-0.028	0.253	1.596	1.317	0.576	0.280	0.652	0.587	1.463	-0.577

IMPRESO EN COLOMBIA POR CANARAN

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212561	MUNA	SIBATE	+04 32 00	+074 15 00	2565 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1966	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	14.8	28.6	39.6	65.9	91.5	38.1	-9.9
1967	20.0	48.4	57.7	78.8	84.7	63.2	36.7	18.4	21.6	72.2	72.7	29.2	603.6
1968	7.3	32.6	23.5	83.3	43.7	74.3	19.4	12.0	96.3	92.7	74.9	9.0	569.0
1969	26.8	14.3	10.9	139.1	43.6	57.3	15.0	27.4	62.5	158.5	35.7	31.2	662.3
1970	29.7	20.8	8.6	34.1	76.5	36.7	29.7	21.7	86.8	96.2	59.4	47.3	547.5
1971	62.9	59.2	95.0	78.0	129.1	64.5	23.8	40.6	58.1	80.7	40.4	52.5	784.8
1972	40.4	16.8	65.0	80.9	85.3	62.7	25.6	19.3	5.5	48.6	96.3	29.3	575.7
1973	3.4	3.7	49.2	29.4	51.1	39.6	27.2	66.7	117.8	66.2	95.2	40.4	589.9
1974	51.0	43.2	29.0	78.3	80.3	33.1	12.1	23.3	52.8	62.7	110.3	9.5	585.6
1975	15.0	71.2	78.5	34.5	82.5	38.9	58.8	51.5	62.9	60.6	69.8	66.9	691.1
1976	26.9	25.2	84.4	63.6	96.4	60.9	9.2	17.0	63.2	121.8	41.2	31.5	641.3
1977	9.0	5.1	49.6	55.1	24.3	26.0	37.3	47.0	50.7	105.8	38.7	11.7	460.3
1978	0.5	12.5	55.7	76.0	98.9	46.5	19.8	20.2	17.8	36.0	32.1	26.2	452.2
1979	20.5	21.2	66.2	87.1	128.6	73.6	39.5	103.5	64.1	118.7	162.3	39.5	924.8

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANANEX

ESTACION X MUNA MUNICIPIO DE SIBATE PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	924.8	924.8	924.8	2.385	0.486				I +		.	
2	1978	452.2	1377.0	688.5	-1.340	0.213			.	I +			
3	1977	460.3	1837.3	612.4	-1.276	-0.047			.	+			
4	1976	641.3	2478.6	619.6	0.151	-0.016				+.			
5	1975	691.1	3169.7	633.9	0.543	0.095				+ .			
6	1974	585.6	3755.3	625.9	-0.288	0.036				. +			
7	1973	589.9	4345.2	620.7	-0.254	-0.016				. +			
8	1972	575.7	4920.9	615.1	-0.366	-0.091				. +			
9	1971	784.8	5705.7	634.0	1.282	0.171				I+	.		
10	1970	547.5	6253.2	625.3	-0.588	0.051			.	+			
11	1969	662.3	6915.5	628.7	0.316	0.115				I+ .			
12	1968	569.0	7484.5	623.7	-0.419	0.030			.	+			
13	1967	603.6	8088.1	622.2	-0.146	0.000				.+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 13 ANOS = 622.2
DESVIACION ESTANDAR = 126.9
COEFICIENTE DE VARIACION = 0.204

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212561	MUNA	SUBATE	+04 32 27	+074 14 59	2565 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	14.8	28.6	39.6	65.9	91.5	38.1	-9.9	1966
1967	20.0	48.4	57.7	78.3	84.7	63.2	36.7	18.4	21.6	72.2	72.7	29.2	603.6	1967
1968	7.3	32.6	23.5	83.3	43.7	74.3	19.4	12.0	56.3	92.7	74.9	9.0	569.0	1968
1969	26.8	14.3	10.9	139.1	43.6	57.3	15.0	27.4	62.5	198.5	35.7	31.2	662.3	1969
1970	29.7	20.8	8.6	34.1	76.5	36.7	29.7	21.7	66.8	96.2	59.4	47.3	547.5	1970
1971	62.9	59.2	95.0	78.0	129.1	64.5	23.8	40.6	58.1	80.7	40.4	52.5	784.8	1971
1972	40.4	16.8	65.0	80.9	85.3	62.7	25.6	19.3	5.5	48.6	96.3	29.3	575.7	1972
1973	3.4	3.7	49.2	29.4	81.1	39.6	27.2	66.7	117.8	66.2	95.2	40.4	589.9	1973
1974	51.0	43.2	29.0	78.3	60.3	33.1	12.1	23.3	52.8	62.7	110.3	9.5	585.6	1974
1975	15.0	71.2	78.5	34.5	82.5	38.9	58.8	51.5	62.9	60.6	69.8	66.9	691.1	1975
1976	26.9	25.2	84.4	63.6	56.4	60.9	9.2	17.0	63.2	121.8	41.2	31.5	641.3	1976
1977	9.0	5.1	49.6	55.1	24.3	26.0	37.3	47.0	50.7	105.8	38.7	11.7	460.3	1977
1978	0.5	12.5	55.7	76.0	58.9	46.5	19.8	20.2	17.8	36.0	32.1	36.2	452.2	1978
1979	20.5	21.2	66.2	87.1	128.6	73.6	39.5	103.5	64.1	118.7	162.3	39.5	924.8	1979
NUMERO DE ANOS	13	13	13	13	13	13	14	14	14	14	14	14	13	
VALOR MAXIMO	62.9	71.2	95.0	139.1	129.1	74.3	58.8	103.5	117.8	198.5	162.3	66.9	924.8	
CUARTIL SUPERIOR	35.0	45.8	72.3	82.1	97.6	63.8	36.7	47.0	64.1	105.8	95.2	40.4	676.7	
MEDIANA	20.5	21.2	55.7	78.0	82.5	57.3	24.7	25.3	60.3	76.4	71.2	33.8	589.9	
CUARTIL INFERIOR	8.1	13.4	26.3	44.8	47.4	37.8	15.0	19.3	39.6	62.7	40.4	29.2	558.3	
VALOR MINIMO	0.5	3.7	8.6	29.4	24.3	26.0	9.2	12.0	5.5	36.0	32.1	9.0	452.2	
PROMEDIOS	24.1	28.8	51.8	70.6	78.8	52.1	26.3	35.5	57.1	87.6	78.9	33.7	622.2	
											TOTAL DE LOS PROMEDIOS MENSUALES =		619.5	
PORCENTAJES	3.9	4.6	8.4	11.4	12.7	8.4	4.3	5.7	9.2	14.1	11.8	5.4		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 12. INDICE DE ARNOLDUS = 60.

DEV. ESTANDAR	18.6	21.0	27.3	29.0	31.7	16.0	13.4	25.0	30.5	40.8	36.4	16.4	126.9
COEF. VARIACION	0.771	0.728	0.527	0.410	0.402	0.308	0.507	0.705	0.534	0.465	0.500	0.485	0.204
COEF. ASIMETRIA	0.785	0.611	-0.211	0.649	-0.021	-0.156	1.027	1.789	0.195	1.568	1.057	0.121	1.086

PROYECTO IGAC-CRSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTGM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212561	MUNA	SIBATE	+04 32 27	+074 14 59	2565 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	16.8	19.2	50.5	62.4	56.7	18.1	44.2	76.2	59.0	64.5	41.7	55.5	560.8	1960
1961	35.6	9.8	75.2	88.9	25.3	49.4	19.9	16.0	45.7	56.6	82.7	38.1	543.2	1961
1962	33.2	27.2	77.1	103.5	84.7	73.9	12.2	48.3	30.5	78.0	75.1	13.8	657.5	1962
1963	12.0	30.9	60.0	79.0	103.7	25.8	13.1	19.8	50.2	57.3	153.2	12.9	618.5	1963
1964	5.0	18.4	15.1	113.2	80.3	75.7	39.2	18.0	84.4	52.7	64.4	33.5	599.5	1964
1965	9.3	22.2	8.2	133.0	101.7	14.4	13.0	25.8	29.8	142.7	81.4	30.3	611.8	1965
1966	2.2	25.6	65.2	50.4	108.5	85.4	14.8	28.6	39.6	65.9	91.5	38.1	615.8	1966
1967	20.0	48.4	57.7	78.6	84.7	63.2	36.7	18.4	21.6	72.2	72.7	29.2	603.6	1967
1968	7.3	32.0	23.5	83.3	43.7	74.3	19.4	12.0	96.3	92.7	74.9	9.0	569.0	1968
1969	26.8	14.3	10.9	139.1	43.6	57.3	15.0	27.4	62.5	198.5	35.7	31.2	662.3	1969
1970	29.7	20.8	8.6	34.1	76.5	36.7	29.7	21.7	86.8	96.2	59.4	47.3	547.5	1970
1971	62.9	59.2	95.0	78.0	129.1	64.5	23.8	40.6	58.1	80.7	40.4	52.5	784.8	1971
1972	40.4	10.8	65.0	80.9	85.3	62.7	25.6	19.3	5.5	48.6	96.3	29.3	575.7	1972
1973	3.4	3.7	49.2	29.4	51.1	39.6	27.2	66.7	117.8	66.2	95.2	40.4	589.9	1973
1974	51.0	43.2	29.0	78.3	80.3	33.1	12.1	23.3	52.8	62.7	110.3	9.5	585.6	1974
1975	15.0	71.2	78.5	34.5	82.5	38.9	58.8	51.5	62.9	60.6	69.8	66.9	691.1	1975
1976	26.9	25.2	84.4	63.6	96.4	60.9	9.2	17.0	63.2	121.8	41.2	31.5	641.3	1976
1977	9.0	5.1	49.0	55.1	24.3	26.0	37.3	47.0	50.7	105.8	38.7	11.7	460.3	1977
1978	0.5	12.5	55.7	76.0	98.9	46.5	19.8	20.2	17.8	36.0	32.1	36.2	452.2	1978
1979	20.5	21.2	66.2	87.1	128.6	73.6	39.5	103.5	64.1	118.7	162.3	39.5	924.8	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	62.9	71.2	95.0	139.1	129.1	85.4	58.8	103.5	117.8	198.5	162.3	66.9	924.8	
CUARTIL SUPERIOR	31.4	31.7	70.7	88.0	100.3	69.0	37.0	47.6	63.6	101.0	93.3	39.9	649.4	
MEDIANA	18.4	21.7	56.7	78.5	83.6	53.3	21.8	24.5	55.4	69.2	73.8	32.5	601.7	
CUARTIL INFERIOR	8.1	14.7	26.3	58.7	53.9	34.9	13.9	18.8	35.0	58.9	41.4	21.5	564.9	
VALOR MINIMO	0.5	3.7	8.2	29.4	24.3	14.4	9.2	12.0	5.5	36.0	32.1	9.0	452.2	
PROMEDIOS	21.4	26.2	51.3	77.4	79.3	51.0	25.5	35.1	55.0	83.9	75.9	32.8	614.8	
PORCENTAJES	3.5	4.3	8.3	12.6	12.9	8.3	4.2	5.7	8.9	13.7	12.4	5.3		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 11. INDICE DE ARNOLDUS = 61.

INDICE DE IRREGULARIDAD INTERANUAL =1.55

DEV. ESTANDAR	17.0	17.5	26.8	29.7	30.3	21.1	13.4	24.1	27.5	38.5	36.1	15.9	103.6
COEF. VARIACION	0.794	0.670	0.523	0.384	0.382	0.414	0.523	0.686	0.500	0.458	0.475	0.484	0.169

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	785.	748.	702.	615.	528.	482.	444.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.907	1.204	-0.371	0.365	-0.297	-0.181	0.877	1.595	0.377	1.594	1.034	0.182	1.384

IMPRESO EN COLOMBIA POR DANAHANIC

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212051	SIBATE APOSTOLICA	SIBATE	+04 30 00	+074 15 00	2618 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1956	-9.9	-9.9	-9.9	79.9	65.4	52.9	17.7	15.6	70.2	213.7	101.0	55.4	-9.9
1957	4.3	11.8	17.6	65.1	128.2	44.4	26.7	12.0	49.6	107.6	37.0	20.7	525.0
1958	6.3	27.3	93.6	64.1	55.2	24.8	7.2	53.8	23.8	105.8	106.0	31.2	599.1
1959	8.1	13.8	14.4	51.5	157.2	47.3	69.6	33.4	49.9	55.1	58.5	48.3	611.1
1960	17.4	18.2	33.9	156.5	72.7	41.4	43.5	29.3	22.0	131.2	35.4	58.6	660.1
1961	15.1	2.9	53.5	97.8	31.6	56.6	33.1	23.4	27.7	111.8	125.2	13.8	592.5
1962	30.0	4.6	76.0	60.4	92.0	76.5	20.8	57.2	23.3	59.4	161.4	9.4	671.0
1963	19.6	45.7	8.5	94.6	159.8	52.1	10.2	37.2	36.6	-9.9	-9.9	13.8	-9.9
1964	2.4	5.1	10.5	92.3	76.6	100.4	66.8	37.2	29.6	60.0	62.8	48.4	592.1
1965	9.0	34.0	13.9	168.1	92.8	17.3	18.1	43.6	35.9	147.2	160.2	52.8	792.9
1966	0.0	8.7	46.2	32.3	88.4	88.2	24.1	34.2	26.7	96.5	116.1	49.2	610.6
1967	26.3	45.3	46.1	92.2	87.8	60.3	48.9	22.9	29.8	64.1	103.5	33.7	660.9
1968	11.4	47.2	31.1	103.1	53.6	87.3	20.2	30.5	91.6	108.4	95.3	14.7	694.4
1969	34.6	27.0	12.5	158.6	115.9	63.0	18.9	24.3	30.5	227.7	48.3	80.0	841.3
1970	32.3	37.0	22.1	36.3	86.7	37.3	40.4	21.7	80.4	115.5	104.1	30.3	644.1
1971	82.9	68.6	67.3	78.5	134.3	61.0	18.9	39.3	74.5	115.1	95.2	114.7	950.3
1972	44.1	24.9	47.5	124.4	90.7	44.5	21.9	17.4	5.3	36.9	-9.9	-9.9	-9.9
1973	-9.9	-9.9	38.3	31.1	57.7	42.6	19.2	69.4	134.8	66.1	94.9	127.2	-9.9
1974	47.5	72.0	39.5	113.1	89.0	34.8	20.3	28.5	41.6	67.6	146.7	24.8	725.4
1975	17.2	70.8	61.7	64.8	132.8	48.6	55.2	44.5	100.9	102.0	92.1	97.6	888.2
1976	49.6	43.9	96.7	128.2	94.9	60.7	13.0	14.6	54.1	126.2	63.9	62.0	807.8
1977	17.4	7.0	76.7	45.1	19.9	32.6	37.9	55.0	86.0	93.0	102.5	29.4	602.5
1978	2.1	24.1	65.1	228.4	73.5	57.8	25.7	16.6	20.5	45.7	88.9	30.9	679.3
1979	19.9	20.3	41.0	119.0	84.4	65.9	58.1	76.6	71.0	152.9	197.6	26.6	933.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

FFCYECTC IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION : SIBATE APOSTOLICA MUNICIPIO DE SIBATE PERIODO 1956 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	933.3	933.3	933.3	1.855	0.326				I +			
2	1978	679.3	1612.6	806.3	-0.201	0.290				. I +			
3	1977	602.5	2215.1	738.4	-0.822	0.146				I+			
4	1976	807.8	3022.9	755.7	0.839	0.293				I + .			
5	1975	688.2	3711.1	782.2	1.490	0.555				I + .			
6	1974	725.4	4436.5	772.7	0.172	0.585				I. +			
7	1971	950.3	5585.8	798.1	1.993	0.925				I + .			
8	1970	644.1	5230.9	778.9	-0.486	0.850				. I +			
9	1969	841.3	7072.2	785.8	1.111	1.044				I +.			
10	1968	694.4	7766.6	776.7	-0.078	1.031				. +			
11	1967	660.9	8427.5	766.1	-0.350	0.969				. I +			
12	1966	610.6	9038.1	753.2	-0.757	0.836				. I +			
13	1965	792.9	9831.0	756.2	0.719	0.963				I . +			
14	1964	592.1	10423.1	744.5	-0.906	0.804				. I +			
15	1962	671.0	11094.1	739.6	-0.268	0.757				. I +			
16	1961	592.5	11686.6	730.4	-0.903	0.598				. I +			
17	1960	660.1	12346.7	726.3	-0.356	0.536				. I +			
18	1959	611.1	12957.8	719.9	-0.753	0.403				. I +			
19	1958	599.1	13556.9	713.5	-0.850	0.254				. I +			
20	1957	525.0	14081.9	704.1	-1.450	0.0				. +			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 20 ANOS = 704.1

DEVIACION ESTANDAR = 123.5

COEFICIENTE DE VARIACION = 0.175

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212051	SIBATE APOSTOLICA	SIBATE	+04 30 26	+074 15 02	2580 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1969	34.0	27.0	12.5	158.0	115.9	63.0	18.9	24.3	30.5	227.7	46.3	80.0	841.3	1969
1970	32.3	37.0	22.1	30.3	80.7	37.3	40.4	21.7	80.4	115.5	104.1	30.3	644.1	1970
1971	82.9	66.0	67.3	78.3	134.3	61.0	18.9	39.3	74.5	115.1	95.2	114.7	950.3	1971
1972	44.1	24.9	47.5	124.4	90.7	44.5	21.9	17.4	5.3	36.9	-9.9	-9.9	-9.9	1972
1973	-9.9	-9.9	38.3	31.1	87.7	42.6	19.2	69.4	134.8	68.1	94.9	127.2	-9.9	1973
1974	47.5	72.0	39.5	113.1	89.0	34.8	20.3	28.5	41.6	67.6	146.7	24.8	725.4	1974
1975	17.2	70.8	61.7	64.6	132.8	48.6	55.2	44.5	100.9	102.0	92.1	97.6	888.2	1975
1976	49.6	43.9	96.7	128.2	94.9	60.7	13.0	14.6	54.1	126.2	63.9	62.0	807.8	1976
1977	17.4	7.0	76.7	45.1	19.9	32.6	37.9	55.0	86.0	93.0	102.5	29.4	602.5	1977
1978	2.1	24.1	65.1	228.4	73.5	57.8	25.7	16.6	20.5	45.7	88.9	30.9	679.3	1978
1979	19.9	20.3	41.0	119.0	84.4	65.9	58.1	76.6	71.0	152.9	197.6	26.6	933.3	1979
NUMERO DE ANOS	10	10	11	11	11	11	11	11	11	11	10	10	9	
VALOR MAXIMO	82.9	72.0	96.7	228.4	134.3	65.9	58.1	76.6	134.8	227.7	197.6	127.2	950.3	
MEDIANA	33.4	32.0	47.5	113.1	89.0	48.6	21.9	28.5	71.0	102.0	95.0	46.4	807.8	
VALOR MINIMO	2.1	7.0	12.5	31.1	19.9	32.6	13.0	14.6	5.3	36.9	48.3	24.8	602.5	
PROMEDIOS	34.8	39.0	51.7	102.5	89.1	49.9	30.0	37.1	63.6	104.6	103.4	62.3	785.8	
									TOTAL DE LOS PROMEDIOS MENSUALES =				768.5	
PORCENTAJES	4.5	5.1	6.7	13.3	11.6	6.5	3.9	4.8	8.3	13.6	13.5	8.1		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 14. INDICE DE ARNOLDUS = 76.

DEV. ESTANDAR	22.8	23.4	24.6	59.4	32.8	12.2	15.6	21.8	37.9	53.9	41.9	39.8	128.2
COEF. VARIACION	0.657	0.592	0.476	0.580	0.368	0.245	0.520	0.589	0.596	0.515	0.405	0.639	0.163
COEF. ASIMETRIA	0.805	0.418	0.187	0.755	-0.590	-0.111	0.961	0.794	0.235	1.071	1.284	0.586	-0.117

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240115	SIMIJACA	SIMIJACA	+05 30 00	+073 51 00	2590 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1958	-9.9	13.0	50.0	172.0	13.0	49.0	-9.9	121.0	42.0	63.0	156.0	39.0	-9.9
1959	0.0	0.0	139.0	75.0	158.0	75.0	0.0	26.0	0.0	175.0	54.0	-9.9	-9.9
1960	0.0	0.0	45.0	180.0	144.0	37.0	90.0	51.0	40.0	178.0	101.0	70.0	936.0
1961	0.0	0.0	92.0	132.0	5.0	50.0	27.5	18.0	19.0	137.0	153.0	58.0	691.5
1962	34.0	16.0	120.0	58.0	114.0	123.0	10.0	79.0	64.0	120.0	245.0	21.0	1004.0
1963	16.0	86.0	198.0	133.0	136.0	72.0	28.0	29.0	19.0	175.0	164.0	19.0	1075.0
1964	14.0	34.0	78.0	180.0	150.0	130.0	80.0	26.0	67.0	102.0	100.0	39.0	1000.0
1965	13.0	27.0	47.0	157.0	113.0	0.0	7.0	44.0	42.0	155.0	194.0	28.0	827.0
1966	4.0	5.0	14.0	62.0	105.0	102.0	39.0	59.0	91.0	156.0	97.0	49.0	785.0
1967	44.0	127.0	69.0	162.0	140.0	68.0	33.0	54.0	21.0	75.0	75.0	76.0	944.0
1968	24.0	31.0	89.0	274.0	103.0	120.0	3.0	33.0	177.0	145.0	50.0	13.0	1066.0
1969	26.0	33.0	19.0	240.0	86.0	24.0	5.0	9.0	87.0	193.0	71.0	46.0	839.0
1970	16.0	12.0	38.0	71.7	135.0	36.0	26.0	33.0	60.0	112.0	87.0	42.0	668.7
1971	107.0	65.0	104.0	219.0	179.0	59.0	15.0	59.0	71.0	140.0	99.0	50.0	1167.0
1972	65.0	34.0	36.0	264.0	129.0	67.0	37.0	92.0	11.0	70.2	50.0	38.0	913.2
1973	1.0	10.0	120.0	86.0	77.0	101.0	106.2	47.0	158.0	142.0	239.5	67.0	1154.7
1974	11.0	50.0	-9.9	187.0	-9.9	-9.9	23.0	31.0	141.0	176.0	211.0	13.0	-9.9
1975	6.0	38.0	97.0	101.0	132.0	36.0	122.0	77.0	58.0	150.0	127.0	102.0	1046.0
1976	23.0	51.0	125.0	119.0	78.0	41.0	0.0	18.2	57.0	160.0	110.0	53.0	835.2
1977	7.0	12.0	105.0	47.0	11.0	32.0	53.0	41.0	116.0	126.0	117.0	22.0	689.0
1978	17.0	53.3	102.4	177.9	130.3	56.0	50.4	10.0	37.0	107.0	29.0	48.6	818.9
1979	9.0	10.0	102.0	129.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR BANARAL S.C.

ESTACION X SIMIJACA MUNICIPIO DE SIMIJACA PERIODO 1958 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1978	818.9	818.9	818.9	-0.615	-0.104				+I			
2	1977	689.0	1507.9	753.9	-1.451	-0.351			+	I			
3	1976	835.2	2343.1	781.0	-0.510	-0.438			+	I			
4	1975	1046.0	3389.1	847.3	0.846	-0.294				+ I	•		
5	1973	1154.7	4543.8	908.8	1.546	-0.031				+		•	
6	1972	913.2	5457.0	909.5	-0.008	-0.033				*			
7	1971	1167.0	6624.0	946.3	1.625	0.244				I +		•	
8	1970	668.7	7292.7	911.6	-1.581	-0.025			•	+			
9	1969	839.0	8131.7	903.5	-0.485	-0.108				• +I			
10	1968	1066.0	9197.7	919.8	0.975	0.058				+	•		
11	1967	944.0	10141.7	922.0	0.190	0.090				+•			
12	1966	785.0	10926.7	910.6	-0.833	-0.051			•	+			
13	1965	827.0	11753.7	904.1	-0.563	-0.147				• +I			
14	1964	1000.0	12753.7	911.0	0.550	-0.053				+	•		
15	1963	1075.0	13828.7	921.9	1.033	0.122				I+	•		
16	1962	1004.0	14832.7	927.0	0.576	0.220				I +	•		
17	1961	691.5	15524.2	913.2	-1.434	-0.024			•	+			
18	1960	936.0	16460.2	914.5	0.139	0.0				+•			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 18 ANOS = 914.5
DEVIACION ESTANDAR = 155.4
COEFICIENTE DE VARIACION = 0.170

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240115	SIMIJACA	SIMIJACA	+05 30 25	+073 51 15	2590 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	-9.9	14.0	50.0	172.0	13.0	49.0	-9.9	121.0	42.0	63.0	156.0	39.0	-9.9	1958
1959	0.0	0.0	139.0	75.0	158.0	75.0	0.0	26.0	0.0	179.0	54.0	-9.9	-9.9	1959
1960	0.0	0.0	45.0	180.0	144.0	37.0	90.0	51.0	40.0	178.0	101.0	70.0	936.0	1960
1961	0.0	0.0	92.0	132.0	5.0	50.0	27.5	18.0	19.0	137.0	153.0	58.0	691.5	1961
1962	34.0	16.0	120.0	58.0	114.0	123.0	10.0	79.0	64.0	120.0	245.0	21.0	1004.0	1962
1963	16.0	66.0	198.0	133.0	136.0	72.0	28.0	29.0	19.0	175.0	164.0	19.0	1075.0	1963
1964	14.0	34.0	78.0	180.0	150.0	130.0	80.0	26.0	67.0	102.0	100.0	39.0	1000.0	1964
1965	13.0	27.0	47.0	157.0	113.0	0.0	7.0	44.0	42.0	155.0	154.0	28.0	827.0	1965
1966	4.0	5.0	14.0	62.0	105.0	102.0	39.0	59.0	91.0	158.0	97.0	49.0	785.0	1966
1967	44.0	127.0	69.0	162.0	140.0	68.0	33.0	54.0	21.0	75.0	75.0	76.0	944.0	1967
1968	24.0	31.0	89.0	274.0	103.0	120.0	3.0	33.0	177.0	149.0	80.0	13.0	1066.0	1968
1969	26.0	33.0	19.0	240.0	66.0	24.0	5.0	9.0	87.0	193.0	71.0	46.0	839.0	1969
1970	16.0	12.0	38.0	71.7	135.0	36.0	26.0	33.0	60.0	112.0	87.0	42.0	668.7	1970
1971	107.0	65.0	104.0	219.0	179.0	59.0	15.0	59.0	71.0	140.0	99.0	50.0	1167.0	1971
1972	65.0	34.0	36.0	264.0	129.0	87.0	37.0	92.0	11.0	70.2	80.0	38.0	913.2	1972
1973	1.0	10.0	120.0	86.0	77.0	101.0	106.2	47.0	158.0	142.0	239.5	67.0	1154.7	1973
1974	11.0	50.0	-9.9	187.0	-9.9	-9.9	23.0	31.0	141.0	176.0	211.0	13.0	-9.9	1974
1975	6.0	36.0	97.0	101.0	132.0	36.0	122.0	77.0	58.0	150.0	127.0	102.0	1046.0	1975
1976	23.0	51.0	125.0	119.0	78.0	41.0	0.0	18.2	57.0	160.0	110.0	53.0	835.2	1976
1977	7.0	12.0	105.0	47.0	11.0	32.0	53.0	41.0	116.0	126.0	117.0	22.0	689.0	1977
1978	17.0	53.3	102.4	177.9	130.3	56.0	50.4	10.0	37.0	107.0	29.0	48.6	818.9	1978
1979	9.0	10.0	102.0	129.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1979
NUMERO DE ANOS	21	22	21	22	20	20	20	21	21	21	21	20	18	
VALOR MAXIMO	107.0	127.0	198.0	274.0	179.0	130.0	122.0	121.0	177.0	193.0	245.0	102.0	1167.0	
CUARTIL SUPERIOR	25.0	50.0	112.5	180.0	138.0	94.0	51.7	59.0	69.0	167.5	160.0	55.5	1046.0	
MEDIANA	14.0	29.0	92.0	145.0	121.5	57.5	27.8	41.0	58.0	142.0	101.0	44.0	924.6	
CUARTIL INFERIOR	5.0	10.0	46.0	86.0	62.0	36.5	8.5	26.0	29.0	109.5	73.0	25.0	818.9	
VALOR MINIMO	0.0	0.0	14.0	47.0	5.0	0.0	0.0	9.0	0.0	63.0	29.0	13.0	668.7	
PROMEDIOS	20.8	32.1	85.2	146.7	106.9	64.9	37.8	45.6	65.6	136.5	120.5	44.7	914.5	
											TOTAL DE LOS PROMEDIOS MENSUALES =		907.3	
PORCENTAJES	2.3	3.5	9.4	16.2	11.8	7.2	4.2	5.0	7.2	15.0	13.3	4.9		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 24. INDICE DE ARNOLDUS = 56.

DEV. ESTANDAR	25.4	31.2	44.7	66.4	49.3	35.9	36.0	28.4	48.3	37.5	62.4	22.8	155.4
COEF. VARIACION	1.222	0.970	0.524	0.453	0.461	0.554	0.954	0.623	0.736	0.275	0.518	0.510	0.170
COEF. ASIMETRIA	2.330	1.550	0.446	0.291	-1.011	0.353	1.112	1.064	0.955	-0.555	0.654	0.687	-0.016

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Biblioteca de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240115	SIMIJACA	SIMIJACA	+05 30 25	+073 51 15	2590 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	0.0	0.0	45.0	180.0	144.0	37.0	90.0	51.0	40.0	178.0	101.0	70.0	936.0	1960
1961	0.0	0.0	92.0	132.0	5.0	50.0	27.5	18.0	19.0	137.0	153.0	58.0	691.5	1961
1962	34.0	16.0	120.0	58.0	114.0	123.0	10.0	79.0	64.0	120.0	245.0	21.0	1004.0	1962
1963	16.0	86.0	198.0	133.0	136.0	72.0	28.0	29.0	19.0	175.0	164.0	19.0	1075.0	1963
1964	14.0	34.0	78.0	180.0	150.0	130.0	80.0	26.0	67.0	102.0	100.0	39.0	1000.0	1964
1965	13.0	27.0	47.0	157.0	113.0	0.0	7.0	44.0	42.0	155.0	194.0	28.0	827.0	1965
1966	4.0	5.0	14.0	62.0	105.0	102.0	39.0	59.0	91.0	158.0	97.0	49.0	785.0	1966
1967	44.0	127.0	69.0	162.0	140.0	68.0	33.0	54.0	21.0	75.0	75.0	76.0	944.0	1967
1968	24.0	31.0	89.0	274.0	103.0	120.0	3.0	33.0	177.0	149.0	50.0	13.0	1066.0	1968
1969	26.0	33.0	19.0	240.0	86.0	24.0	5.0	9.0	87.0	193.0	71.0	46.0	839.0	1969
1970	16.0	12.0	38.0	71.7	135.0	36.0	26.0	33.0	60.0	112.0	87.0	42.0	668.7	1970
1971	107.0	65.0	104.0	219.0	179.0	59.0	15.0	59.0	71.0	140.0	99.0	50.0	1167.0	1971
1972	65.0	34.0	36.0	264.0	129.0	87.0	37.0	92.0	11.0	70.2	50.0	38.0	913.2	1972
1973	1.0	10.0	120.0	86.0	77.0	101.0	106.2	47.0	158.0	142.0	239.5	67.0	1154.7	1973
1974	11.0	50.0	86.5	187.0	79.6	76.6	23.0	31.0	141.0	176.0	211.0	13.0	1085.7	1974
1975	6.0	38.0	97.0	101.0	132.0	36.0	122.0	77.0	58.0	150.0	127.0	102.0	1046.0	1975
1976	23.0	51.0	125.0	119.0	78.0	41.0	0.0	18.2	57.0	160.0	110.0	53.0	835.2	1976
1977	7.0	12.0	105.0	47.0	11.0	32.0	53.0	41.0	116.0	126.0	117.0	22.0	689.0	1977
1978	17.0	53.3	102.4	177.9	130.3	56.0	50.4	10.0	37.0	107.0	29.0	48.6	818.9	1978
1979	9.0	10.0	102.0	129.0	132.3	79.9	57.3	135.5	82.8	223.0	187.9	56.8	1205.5	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	107.0	127.0	198.0	274.0	179.0	130.0	122.0	135.5	177.0	223.0	245.0	102.0	1205.5	
CUARTIL SUPERIOR	25.0	50.5	104.5	183.5	135.5	94.0	55.1	59.0	89.0	167.5	175.9	57.4	1070.5	
MEDIANA	15.0	32.0	90.5	145.0	121.5	63.5	30.5	42.5	62.0	145.5	105.5	47.3	940.0	
CUARTIL INFERIOR	6.5	11.0	46.0	93.5	82.8	36.5	12.5	27.5	38.5	116.0	81.0	25.0	822.9	
VALOR MINIMO	0.0	0.0	14.0	47.0	5.0	0.0	0.0	9.0	11.0	70.2	29.0	13.0	668.7	
PROMEDIOS	21.8	34.7	84.3	149.0	109.0	66.5	40.6	47.3	70.9	142.4	125.4	45.6	937.6	
PORCENTAJES	2.3	3.7	9.0	15.9	11.6	7.1	4.3	5.0	7.6	15.2	13.4	4.9		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 24. INDICE DE ARNOLDUS = 101.

INDICE DE IRREGULARIDAD INTERANUAL =1.58

DEV. ESTANDAR	25.6	31.5	43.4	67.6	43.5	35.9	35.1	30.8	46.8	38.2	63.3	22.9	164.5
COEF. VARIACION	1.172	0.908	0.514	0.454	0.399	0.540	0.864	0.652	0.659	0.268	0.505	0.502	0.175

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1208.	1148.	1076.	938.	799.	727.	667.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.305	1.478	0.502	0.261	-1.133	0.213	1.010	1.303	0.905	-0.057	0.530	0.557	-0.093

642

IMPRESO EN COLOMBIA POR DANE/1.0

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212551	EL FUTE	SOACHA	+04 36 00	+074 17 00	2607 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	40.2	28.2	61.9	47.3	48.3	21.5	35.2	37.8	31.2	74.5	6.4	59.5	492.0
1961	27.7	4.0	41.1	52.4	16.5	56.0	23.9	15.0	7.6	109.6	84.4	7.4	445.6
1962	20.5	9.2	64.0	46.3	70.8	57.0	25.6	22.8	25.4	44.0	108.6	26.1	520.3
1963	10.0	52.4	9.1	55.2	155.3	49.7	10.0	33.7	22.0	140.0	111.2	8.6	657.2
1964	8.8	38.4	12.0	68.8	61.0	98.3	49.8	38.7	12.3	45.8	72.9	59.9	566.7
1965	14.9	3.0	6.3	112.6	93.3	9.1	15.8	23.3	23.1	74.2	116.1	39.5	531.2
1966	0.7	8.7	59.9	75.3	79.4	47.6	32.6	31.7	30.6	62.0	59.1	24.0	511.6
1967	8.4	13.5	77.6	83.2	100.3	77.9	29.9	19.6	12.2	54.5	147.0	54.7	678.8
1968	21.0	39.5	23.8	181.7	53.3	59.3	19.5	20.7	89.6	106.6	66.5	12.4	693.9
1969	73.2	10.1	5.9	79.7	56.9	37.0	7.7	31.4	25.6	214.7	29.0	12.2	583.4
1970	29.8	36.1	28.4	20.0	54.2	34.2	37.0	25.9	-9.9	-9.9	-9.9	-9.9	-9.9
1971	57.0	40.6	47.3	39.6	88.9	57.6	25.4	28.7	49.6	53.6	44.8	61.4	594.7
1972	53.4	58.2	74.8	143.5	82.3	37.6	19.5	20.9	5.9	44.3	60.8	19.5	620.9
1973	4.8	22.6	33.0	35.6	43.0	30.0	39.7	45.0	127.6	51.6	59.6	39.0	531.5
1974	64.0	38.4	41.6	66.4	21.0	35.2	8.4	10.9	49.1	35.5	78.0	11.6	460.1
1975	33.2	36.0	80.8	42.6	71.0	43.6	35.4	44.0	30.9	46.6	37.8	80.8	582.7
1976	19.5	36.5	193.4	125.7	45.3	39.0	4.7	10.0	64.4	98.6	24.3	46.6	708.0
1977	5.6	10.1	65.7	92.5	16.7	15.7	24.5	36.2	55.6	57.9	73.6	1.4	495.5
1978	0.4	69.0	95.0	126.0	111.0	65.0	47.5	21.0	36.0	113.0	82.0	28.0	793.9
1979	40.0	11.0	53.0	120.0	87.0	50.0	36.0	61.0	42.0	206.0	100.0	111.0	917.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA FCR DANARANJO

ESTACION X EL PUTE MUNICIPIO DE SOACHA PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AÑO	T /	CU	MCY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1979	917.0	917.0	917.0	2.645	0.530	
2	1978	793.9	1710.9	855.4	1.621	0.655	
3	1977	495.5	2206.4	735.5	-0.863	0.682	
4	1976	708.0	2914.4	728.6	0.506	0.664	
5	1975	582.7	3497.1	699.4	-0.137	0.636	
6	1974	460.1	3957.2	659.5	-1.158	0.604	
7	1973	531.5	4488.7	641.2	-0.564	0.491	
8	1972	620.9	5109.6	638.7	0.181	0.527	
9	1971	594.7	5704.3	633.8	-0.038	0.520	
10	1969	583.4	6287.7	628.8	-0.132	0.493	
11	1968	693.9	6981.6	634.7	0.788	0.651	
12	1967	676.8	7660.4	638.4	0.663	0.784	
13	1966	511.6	8172.0	628.6	-0.725	0.638	
14	1965	531.2	8703.2	621.7	-0.566	0.524	
15	1964	566.7	9269.9	618.0	-0.271	0.470	
16	1963	657.2	9927.1	620.4	0.463	0.567	
17	1962	520.3	10447.4	614.6	-0.657	0.435	
18	1961	445.6	10893.0	605.2	-1.275	0.175	
19	1960	492.0	11385.0	599.2	-0.852	0.0	

N	AÑO	T /	CU	MCY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 19 AÑOS = 599.2
DESVIACION ESTANDAR = 120.1
COEFICIENTE DE VARIACION = 0.200

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CRSTEN *** CURSO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTGN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212551	EL FUTE	SOACHA	+04 37 10	+074 17 08	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	40.2	28.2	61.9	47.3	48.3	21.5	35.2	37.8	31.2	74.5	6.4	59.5	492.0	1960
1961														1961
1962	20.5	9.2	64.0	46.3	70.8	57.0	25.6	22.8	25.4	44.0	106.6	26.1	520.3	1962
1963	10.0	52.4	9.1	55.2	155.3	49.7	10.0	33.7	22.0	140.0	111.2	8.6	657.2	1963
1964	8.8	38.4	12.0	66.8	61.0	98.3	49.8	38.7	12.3	45.8	72.9	59.9	566.7	1964
1965	14.9	3.0	6.3	112.6	53.3	9.1	15.8	23.3	23.1	74.2	116.1	39.5	531.2	1965
1966	0.7	8.7	59.9	75.3	79.4	47.6	32.6	31.7	30.6	62.0	55.1	24.0	511.6	1966
1967	8.4	13.5	77.6	83.2	100.3	77.9	29.9	19.6	12.2	54.5	147.0	54.7	678.8	1967
1968	21.0	39.5	23.8	181.7	53.3	59.3	19.5	20.7	69.6	106.6	66.5	12.4	693.9	1968
1969	73.2	10.1	5.9	79.7	56.9	37.0	7.7	31.4	25.6	214.7	29.0	12.2	583.4	1969
1970	29.8	36.1	28.4	20.0	54.2	34.2	37.0	25.9	-9.9	-9.9	-9.9	-9.9	-9.9	1970
1971	57.0	40.6	47.3	39.6	68.9	57.8	25.4	28.7	49.6	53.6	44.8	61.4	594.7	1971
1972	53.4	58.2	74.8	143.5	82.3	37.8	19.5	20.9	5.9	44.3	60.8	19.5	620.9	1972
1973	4.8	22.6	33.0	35.6	43.0	30.0	39.7	45.0	127.6	51.6	59.6	39.0	531.5	1973
1974	64.0	36.4	41.6	66.4	21.0	35.2	8.4	10.9	49.1	35.5	78.0	11.6	460.1	1974
1975	33.2	36.0	80.8	42.6	71.0	43.6	35.4	44.0	30.9	46.6	37.8	80.8	582.7	1975
1976	19.5	36.5	193.4	125.7	45.3	39.0	4.7	10.0	64.4	98.6	24.3	46.6	708.0	1976
1977	5.6	10.1	65.7	92.5	16.7	15.7	24.5	36.2	55.6	97.9	73.6	1.4	495.5	1977
1978														1978
1979	40.0	11.0	53.0	120.0	87.0	50.0	36.0	61.0	42.0	206.0	100.0	111.0	917.0	1979
NUMERO DE ANOS	18	18	18	18	18	18	18	18	17	17	17	17	17	
VALOR MAXIMO	73.2	58.2	193.4	181.7	155.3	98.3	49.8	61.0	127.6	214.7	147.0	111.0	917.0	
CUARTIL SUPERIOR	40.2	38.4	65.7	112.6	87.0	57.0	35.4	37.8	52.6	102.6	104.3	59.7	668.0	
MEDIANA	20.8	32.1	50.1	72.0	65.9	41.3	25.5	30.0	30.9	62.0	66.5	39.0	582.7	
CUARTIL INFERIOR	8.8	10.1	23.8	46.3	48.3	34.2	15.8	20.9	22.5	46.2	41.3	12.3	515.9	
VALOR MINIMO	0.7	3.0	5.9	20.0	16.7	9.1	4.7	10.0	5.9	35.5	6.4	1.4	460.1	
PROMEDIOS	28.1	27.4	52.1	79.8	68.2	44.5	25.4	30.1	41.0	85.3	70.3	39.3	596.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		591.5	
PORCENTAJES	4.7	4.6	8.8	13.5	11.5	7.5	4.3	5.1	6.9	14.4	11.9	6.6		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 12. INDICE DE ARNOLDUS = 56.

DEV. ESTANDAR	22.2	16.7	43.4	42.7	32.0	21.4	12.7	12.7	30.7	54.7	37.1	29.5	111.3
COEF. VARIACION	0.790	0.610	0.832	0.536	0.469	0.481	0.501	0.421	0.750	0.641	0.528	0.749	0.186
COEF. ASIMETRIA	0.691	0.136	2.020	0.857	0.855	0.778	-0.046	0.581	1.627	1.559	0.295	0.871	1.516

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
21251	EL FUTE	SOACHA	+04 37 10	+074 17 08	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	40.2	28.2	61.9	47.3	48.3	21.5	35.2	37.8	31.2	74.5	6.4	59.5	492.0	1960
1961	35.8	9.2	53.1	67.7	21.3	72.4	30.9	19.4	9.8	141.6	109.1	9.6	575.9	1961
1962	20.5	9.2	64.0	46.3	70.8	57.0	25.6	22.8	25.4	44.0	108.6	26.1	520.3	1962
1963	10.0	52.4	9.1	55.2	155.3	49.7	10.0	33.7	22.0	140.0	111.2	8.6	657.2	1963
1964	8.8	38.4	12.0	68.8	61.0	98.3	49.8	38.7	12.3	45.8	72.9	59.9	566.7	1964
1965	14.9	3.0	6.3	112.6	93.3	9.1	15.8	23.3	23.1	74.2	116.1	39.5	531.2	1965
1966	0.7	8.7	59.9	75.3	79.4	47.6	32.6	31.7	30.6	62.0	59.1	24.0	511.6	1966
1967	8.4	13.5	77.6	83.2	100.3	77.9	29.9	19.6	12.2	54.5	147.0	54.7	678.8	1967
1968	21.0	39.5	23.8	181.7	53.3	59.3	19.5	20.7	69.6	106.6	66.5	12.4	693.9	1968
1969	73.2	10.1	5.9	79.7	56.9	37.0	7.7	31.4	25.6	214.7	29.0	12.2	583.4	1969
1970	29.8	30.1	28.4	20.0	54.2	34.2	37.0	25.9	42.1	65.0	54.6	49.4	476.7	1970
1971	57.0	40.6	47.3	39.6	88.9	57.8	25.4	28.7	49.6	53.6	44.8	61.4	594.7	1971
1972	53.4	58.2	74.8	143.5	82.3	37.8	19.5	20.9	5.9	44.3	60.8	19.5	620.9	1972
1973	4.8	22.0	33.0	35.6	43.0	30.0	39.7	45.0	127.6	51.6	59.6	39.0	531.5	1973
1974	64.0	38.4	41.6	66.4	21.0	35.2	8.4	10.9	49.1	35.5	78.0	11.6	460.1	1974
1975	33.2	36.0	80.8	42.6	71.0	43.6	35.4	44.0	30.9	46.6	37.8	80.8	582.7	1975
1976	19.5	36.5	193.4	125.7	45.3	39.0	4.7	10.0	64.4	98.6	24.3	46.6	708.0	1976
1977	5.6	10.1	65.7	92.5	16.7	15.7	24.5	36.2	55.6	97.9	73.6	1.4	495.5	1977
1978	0.3	50.5	69.6	92.3	81.3	47.6	34.8	15.4	26.4	82.8	60.1	20.5	581.6	1978
1979	40.0	11.0	53.0	120.0	87.0	50.0	36.0	61.0	42.0	206.0	100.0	111.0	917.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	73.2	58.2	193.4	181.7	155.3	98.3	49.8	61.0	127.6	214.7	147.0	111.0	917.0	
CUARTIL SUPERIOR	40.1	38.9	67.6	102.5	84.6	57.4	35.3	37.0	49.3	102.6	104.3	57.1	639.0	
MEDIANA	20.8	32.1	53.0	72.0	65.9	45.6	27.7	27.3	30.7	69.6	63.6	32.5	578.7	
CUARTIL INFERIOR	8.6	10.1	26.1	46.8	46.8	34.7	17.6	20.1	22.5	49.1	49.7	12.3	515.9	
VALOR MINIMO	0.3	3.0	5.9	20.0	16.7	9.1	4.7	10.0	5.9	35.5	6.4	1.4	460.1	
PROMEDIOS	27.1	27.4	53.1	79.8	66.5	46.0	26.1	28.9	38.8	87.0	71.0	37.4	589.0	
PORCENTAJES	4.6	4.7	9.0	13.5	11.3	7.8	4.4	4.9	6.6	14.8	12.1	6.3		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 13. INDICE DE ARNOLDUS = 58.

INDICE DE IRREGULARIDAD INTERANUAL =1.60

DEV. ESTANDAR	22.0	17.4	41.2	40.6	32.2	21.2	12.3	12.6	29.2	52.0	35.5	28.2	105.6
COEF. VARIACION	0.812	0.635	0.777	0.509	0.484	0.460	0.469	0.438	0.753	0.598	0.500	0.755	0.179

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	763.	724.	678.	589.	500.	454.	415.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.665	0.113	2.011	0.880	0.773	0.598	-0.217	0.728	1.744	1.460	0.290	0.961	1.623

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212078	SAN JORGE	SOACHA	+04 30 36	+074 11 39	2895 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	-9.9	-9.9	121.0	48.3	35.2	50.8	63.8	49.6	113.2	30.4	83.1	-9.9
1961	23.6	12.0	68.0	64.8	40.4	82.3	48.9	53.1	34.5	230.7	168.1	34.0	880.4
1962	54.6	6.8	79.9	105.0	96.7	55.7	50.4	61.5	41.6	62.6	118.1	16.3	769.2
1963	9.2	59.1	22.6	104.6	180.4	71.4	19.3	24.6	41.3	57.0	161.9	12.7	764.1
1964	3.3	57.1	0.0	169.0	124.7	119.1	66.0	44.3	60.1	135.6	56.8	47.2	887.2
1965	17.2	24.5	23.0	178.3	155.7	41.5	47.1	50.3	6.3	125.1	154.0	18.2	841.2
1966	0.0	57.2	67.8	86.8	55.1	96.5	58.8	51.5	53.8	42.4	292.2	61.5	866.0
1967	16.4	28.5	49.6	73.1	103.3	92.7	69.2	54.0	48.4	66.4	84.8	16.7	705.5
1968	5.2	50.7	16.0	123.7	32.6	105.6	73.9	40.5	65.5	87.2	128.4	7.1	736.6
1969	32.2	30.9	4.6	149.2	72.3	62.2	39.0	43.2	52.0	150.4	52.6	66.0	794.6
1970	32.4	30.8	18.6	26.6	85.8	67.1	57.1	31.1	91.9	110.0	91.4	27.8	676.6
1971	82.5	57.0	63.2	126.5	160.2	91.6	63.3	45.0	69.1	52.2	72.1	40.4	943.5
1972	65.7	39.7	29.4	55.3	101.6	66.5	38.9	36.9	9.6	64.8	141.9	15.0	715.7
1973	9.7	3.7	10.7	65.6	69.2	65.3	40.7	75.5	94.5	73.0	107.6	54.9	714.6
1974	31.0	114.6	52.7	75.2	95.0	44.6	39.8	29.8	34.1	76.2	182.0	18.5	795.7
1975	6.1	50.0	31.5	54.5	116.4	50.9	45.1	83.9	84.1	103.7	97.5	148.6	814.5
1976	11.2	13.1	61.9	65.9	100.8	62.5	38.6	35.8	37.7	71.8	77.6	58.9	679.8
1977	0.0	9.6	44.1	65.1	34.1	40.2	53.3	21.0	77.0	55.7	109.7	22.0	540.8
1978	3.3	19.0	53.0	126.0	77.0	72.1	33.8	22.2	50.3	73.6	33.6	20.1	564.0
1979	18.4	8.6	57.8	114.0	58.6	117.5	51.5	54.0	62.2	130.5	172.8	25.5	851.4

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X SAN JORGE MUNICIPIO DE SOACHA PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

ESTACION Y LA REGADERA MUNICIPIO DE USME PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	891.	1003.	1.185	0.180					I+				
2	1978	1475.	1840.	0.931	0.123					I+				
3	1977	2016.	2692.	0.847	-0.002					+				
4	1976	2696.	3864.	0.773	-0.259					+ I				
5	1975	3610.	5004.	1.070	-0.182					+I				
6	1974	4406.	5953.	1.118	-0.073					+				
7	1973	5121.	6975.	0.933	-0.140					+I				
8	1972	5836.	8059.	0.881	-0.265					+ I				
9	1971	6780.	9243.	1.063	-0.193					+I				
10	1970	7457.	10409.	0.774	-0.447					+ I				
11	1969	8251.	11417.	1.051	-0.397					+ I				
12	1968	8988.	12440.	0.961	-0.436					+ I				
13	1967	9693.	13536.	0.859	-0.586					+ I				
14	1966	10559.	14574.	1.112	-0.473					+ I				
15	1965	11400.	15547.	1.154	-0.329					+ I				
16	1964	12288.	16471.	1.280	-0.078					+				
17	1963	13052.	17466.	1.025	-0.054					+				
18	1962	13941.	18537.	0.983	-0.072					+I				
19	1961	14721.	19637.	1.068	0.0					+				
						P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CUX	CUY	RAN	PCAN	I	I	I	I	I	I	I	I	I
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 774.8 1033.5

RAZONES PROMEDIOS Y/X = 1.334

X/Y = 0.750

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212078	SAN JORGE	SOACHA	+04 30 31	+074 11 40	2900 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1967	16.4	28.9	49.6	73.1	103.3	92.7	69.2	54.0	48.4	66.4	84.8	18.7	705.5	1967
1968	5.2	50.7	16.0	123.7	32.6	105.8	73.9	40.5	65.5	87.2	126.4	7.1	736.6	1968
1969	32.2	30.9	4.8	149.2	72.3	62.2	39.0	43.2	52.0	190.4	82.6	66.0	794.6	1969
1970	32.4	30.8	18.6	28.6	69.8	67.1	57.1	31.1	91.9	110.0	91.4	27.8	676.6	1970
1971	82.9	57.0	63.2	120.5	180.2	91.6	63.3	45.0	69.1	52.2	72.1	40.4	943.5	1971
1972	69.7	39.7	29.4	99.3	101.6	68.9	38.9	36.9	9.6	64.6	141.9	15.0	715.7	1972
1973	9.7	3.7	10.7	65.8	69.2	69.3	40.7	75.5	94.5	73.0	107.6	94.9	714.6	1973
1974	31.0	114.6	52.7	75.2	95.0	44.6	39.8	29.8	34.1	78.2	182.0	18.5	795.7	1974
1975	6.1	50.0	31.5	54.5	118.4	90.9	45.1	83.9	84.1	103.7	97.5	148.8	914.5	1975
1976	11.2	13.1	81.9	89.9	100.8	62.5	38.6	35.8	37.7	71.8	77.6	58.9	679.8	1976
1977	0.0	9.6	44.1	69.1	24.1	40.2	53.3	21.0	77.0	59.7	109.7	23.0	540.8	1977
1978	3.3	19.0	53.0	126.0	77.0	72.1	33.8	22.2	50.3	73.6	33.6	20.1	584.0	1978
1979	18.4	8.6	37.8	114.0	98.6	117.5	51.5	54.0	62.2	130.5	172.8	25.5	891.4	1979
NUMERO DE ANOS	13	13	13	13	13	13	13	13	13	13	13	13	13	
VALOR MAXIMO	82.9	114.6	81.9	149.2	180.2	117.5	73.9	83.9	94.5	190.4	182.0	148.8	943.5	
CUARTIL SUPERIOR	32.3	50.3	52.8	124.8	102.4	92.1	60.2	54.0	80.5	106.8	135.1	62.4	843.5	
MEDIANA	16.4	30.8	37.8	89.9	95.0	69.3	45.1	40.5	62.2	73.6	97.5	25.5	715.7	
CUARTIL INFERIOR	5.6	11.3	17.3	67.4	70.7	62.3	38.9	30.4	43.0	65.6	74.8	18.6	678.2	
VALOR MINIMO	0.0	3.7	4.6	28.6	32.6	40.2	33.8	21.0	9.6	52.2	33.6	7.1	540.8	
PROMEDIOS	24.5	36.1	37.9	91.9	90.2	75.8	49.6	44.1	59.7	89.3	104.0	43.4	745.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		745.6	
PORCENTAJES	3.3	4.7	5.1	12.3	12.1	10.2	6.6	5.9	8.0	12.0	13.9	5.8		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO ENE FEB MAR

INDICE DE FOURNIER = 15. INDICE DE ARREDONDAS = 73.

DEV. ESTANDAR	25.6	29.5	22.4	34.7	37.4	22.7	13.0	18.9	24.5	37.5	43.6	40.2	120.6
COEF. VARIACION	1.046	0.840	0.590	0.377	0.415	0.299	0.262	0.429	0.410	0.420	0.419	0.926	0.162
COEF. ASIMETRIA	1.467	1.681	0.296	-0.082	0.697	0.256	0.707	0.983	-0.403	1.856	0.386	1.801	0.131

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
231216	SAN CAYETANO	SAN CAYETANO	+05 18 00	+074 04 00	2200 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TOTAL
1964	51.0	48.0	66.0	294.0	145.0	152.0	39.0	28.0	117.0	176.0	276.0	70.0	1502.0
1965	27.0	94.0	73.0	327.0	123.0	27.0	0.0	20.0	71.0	527.0	390.0	14.0	1693.0
1966	25.0	15.0	22.0	77.0	384.0	179.0	61.0	103.0	291.0	359.0	726.0	322.0	2564.0
1967	20.0	0.0	131.0	324.0	145.0	104.0	55.0	36.0	133.0	249.0	194.0	218.0	1609.0
1968	163.0	220.0	75.0	259.0	174.0	128.0	-9.9	32.0	52.0	134.0	115.0	20.0	-9.9
1969	118.0	75.0	35.0	229.0	67.0	36.0	0.0	2.0	89.0	151.0	104.5	60.0	966.5
1970	38.5	62.0	15.5	138.0	131.0	106.0	102.5	20.0	156.0	442.0	273.0	57.0	1541.5
1971	380.0	88.0	193.0	96.0	126.0	24.0	12.5	72.5	70.0	114.0	32.0	27.0	1235.0
1972	65.0	18.0	75.0	47.0	25.0	46.5	27.5	12.0	5.0	76.0	55.0	21.0	473.0
1973	5.0	5.0	35.0	53.0	33.0	22.0	11.0	7.0	31.0	40.0	28.0	7.0	277.0
1974	14.0	39.0	14.0	42.0	14.0	-9.9	0.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1975	10.6	207.4	159.6	-9.9	163.8	66.6	135.8	57.3	151.3	222.2	185.0	321.4	-9.9
1976													
1977	22.5	24.6	147.6	180.2	56.1	59.5	18.9	62.5	86.0	200.1	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X SAN CAYETANO MUNICIPIO DE SAN CAYETANO PERIODO 1964 - 1977 COEF DE CORRECCION 1.000

N	AN	T /	CU	MOY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1973	277.0	277.0	277.0	-1.512	-0.790	
2	1972	473.0	750.0	375.0	-1.228	-1.431	
3	1971	1235.0	1985.0	661.7	-0.120	-1.494	
4	1970	1541.5	3526.5	881.6	0.325	-1.324	
5	1969	966.5	4493.0	898.6	-0.511	-1.591	
6	1967	1609.0	6102.0	1017.0	0.423	-1.370	
7	1966	2564.0	8666.0	1238.0	1.610	-0.424	
8	1965	1693.0	10359.0	1294.9	0.545	-0.140	
9	1964	1502.0	11861.0	1317.9	0.267	0.000	

N	AN	T /	CU	MOY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 9 ANOS = 1317.9
DEVIACION ESTANDAR = 688.3
COEFICIENTE DE VARIACION = 0.522

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CRSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
230613	LA CARLINA	SAN FRANCISCO	+04 58 00	+074 20 00	1665 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1965	-9.9	-9.9	-9.9	-9.9	-9.9	10.6	1.0	0.8	10.0	154.6	211.0	65.0	-9.9
1966	52.0	43.0	38.0	108.0	298.0	227.0	56.0	8.0	166.6	250.0	-9.9	-9.9	-9.9
1967	24.0	328.8	287.4	304.6	389.6	260.2	79.4	35.2	85.0	91.6	286.0	210.9	2362.7
1968	139.8	158.1	95.9	239.9	131.3	101.6	35.0	23.8	124.3	160.3	323.1	96.4	1629.5
1969	168.0	152.6	53.2	258.4	130.1	95.7	0.0	31.8	113.9	533.3	255.3	65.8	1858.1
1970	89.8	310.5	58.0	26.6	178.9	7.4	51.5	33.1	82.6	-9.9	-9.9	-9.9	-9.9
1971	476.2	240.4	246.3	251.8	-9.9	29.8	12.3	76.7	70.3	247.0	218.5	210.0	-9.9
1972	271.5	150.5	343.4	408.0	202.5	7.0	12.0	48.0	6.0	96.0	152.0	139.0	1795.9
1973	44.0	49.0	104.0	64.0	184.0	162.0	231.0	192.0	217.0	302.0	183.0	256.0	1990.0
1974	272.0	352.0	244.0	117.0	82.0	72.0	10.0	70.0	189.0	-9.9	305.0	148.0	-9.9
1975	168.0	262.0	267.0	175.0	160.0	19.0	126.0	49.0	82.0	235.0	175.0	310.0	2028.0
1976	106.0	190.0	301.0	195.0	61.0	21.0	15.0	6.0	78.0	321.0	62.0	163.0	1529.0
1977	87.0	9.0	182.0	188.0	88.0	47.0	20.0	51.0	94.0	160.0	214.0	146.0	1286.0
1978	112.0	158.0	123.0	257.0	161.0	38.0	53.0	32.0	77.0	245.0	132.0	139.0	1531.0
1979	170.0	87.0	230.0	235.0	133.0	136.0	19.0	98.0	86.0	482.0	339.0	154.0	2209.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DINARAYO

ESTACION X VENTALARGA MUNICIPIO DE ZIPAQUIRA PERIODO 1965 - 1979 COEF DE CORRECCION 1.000

ESTACION Y LA CARLINA MUNICIPIO DE SAN FRANCISCO PERIODO 1965 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	CUY	RAN	FCAN	F = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	1168.	2209.	0.902	-0.122					+I				
2	1978	2146.	3740.	1.090	-0.045					+				
3	1977	3089.	5026.	1.250	0.136					I+				
4	1976	4035.	6555.	1.060	0.187					I+				
5	1975	5162.	8583.	0.945	0.124					I+				
6	1973	6147.	10573.	0.845	-0.050					+				
7	1972	7266.	12369.	1.063	0.014					+				
8	1969	8341.	14227.	0.987	0.0					+I				

N	AN	CLX	CUY	RAN	FCAN	F = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 1042.6 1778.4

RAZONES PROMEDIOS Y/X = 1.706

X/Y = 0.586

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* PRUEBAS DE DOBLE MASA *

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PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA OFSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
23013	LA CARLINA	SAN FRANCISCO	+04 57 44	+074 20 08	1665 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1965	-9.9	-9.9	-9.9	-9.9	-9.9	10.6	1.0	0.8	10.0	154.6	211.0	65.0	-9.9	1965
1966	52.0	43.0	38.0	108.0	298.0	227.0	56.0	8.0	166.6	290.0	-9.9	-9.9	-9.9	1966
1967	24.0	328.2	287.4	304.6	389.6	260.2	79.4	35.2	65.0	91.6	286.0	210.9	2382.7	1967
1968	139.6	158.1	95.9	239.9	131.3	101.6	35.0	23.8	124.3	160.3	323.1	96.4	1629.5	1968
1969	168.0	152.6	53.2	258.4	130.1	95.7	0.0	31.8	113.9	533.3	255.3	65.8	1858.1	1969
1970	89.8	310.5	58.0	20.6	178.9	7.4	51.5	33.1	82.6	-9.9	-9.9	-9.9	-9.9	1970
1971	476.2	240.4	246.3	251.8	-9.9	29.8	12.3	76.7	70.3	247.0	216.5	210.0	-9.9	1971
1972	271.5	150.5	343.4	408.0	202.5	7.0	12.0	48.0	6.0	56.0	152.0	139.0	1795.9	1972
1973	44.0	49.0	104.0	64.0	184.0	162.0	231.0	192.0	217.0	302.0	183.0	258.0	1990.0	1973
1974	272.0	352.0	244.0	117.0	82.0	72.0	10.0	70.0	189.0	-9.9	305.0	148.0	-9.9	1974
1975	168.0	262.0	267.0	175.0	160.0	19.0	126.0	49.0	82.0	235.0	175.0	310.0	2028.0	1975
1976	106.0	190.0	301.0	195.0	61.0	21.0	15.0	6.0	78.0	331.0	62.0	163.0	1529.0	1976
1977	87.0	9.0	182.0	188.0	88.0	47.0	20.0	51.0	94.0	160.0	214.0	146.0	1286.0	1977
1978	112.0	158.0	123.0	257.0	161.0	38.0	53.0	32.0	77.0	249.0	132.0	139.0	1531.0	1978
1979	170.0	87.0	230.0	235.0	123.0	136.0	19.0	98.0	86.0	482.0	339.0	194.0	2209.0	1979
NUMERO DE ANOS	14	14	14	14	13	15	15	15	15	13	13	13	10	
VALOR MAXIMO	476.2	352.0	343.4	408.0	389.6	260.2	231.0	192.0	217.0	533.3	339.0	310.0	2382.7	
CUARTIL SUPERIOR	170.0	262.0	267.0	257.0	193.3	136.0	56.0	70.0	124.3	316.5	295.5	210.4	******	
MEDIANA	125.9	158.0	206.0	215.0	160.0	47.0	20.0	35.2	85.0	247.0	214.0	148.0	1827.0	
CUARTIL INFERIOR	87.0	87.0	95.9	117.0	109.1	19.0	12.0	23.8	77.0	157.3	163.5	117.7	******	
VALOR MENIMO	24.0	9.0	38.0	20.6	61.0	7.0	0.0	0.8	6.0	56.0	62.0	65.0	1286.0	
PROMEDIOS	155.7	177.9	183.8	202.0	169.2	82.3	48.1	50.4	98.8	253.2	219.7	165.0	1823.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1806.1	
PORCENTAJES	8.6	9.9	10.2	11.2	9.4	4.6	2.7	2.8	5.5	14.0	12.2	9.1		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 36. INDICE DE ARNOLDUS = 177.

DEV. ESTANDAR	119.1	109.4	103.2	100.4	89.9	81.3	61.0	47.5	57.8	139.4	80.9	71.4	338.6
COEF. VARIACION	0.765	0.615	0.561	0.497	0.531	0.989	1.268	0.943	0.585	0.550	0.368	0.433	0.186
COEF. ASIMETRIA	1.616	0.114	-0.066	0.078	1.392	1.127	2.244	2.042	0.498	0.732	-0.239	0.464	0.111

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212031	CERRO DE SUBA	SUBA	+04 45 00	+074 04 00	2691 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1955	15.8	29.6	84.4	143.9	66.6	50.5	100.1	24.0	79.7	211.8	123.4	142.9	1112.7
1956	48.3	145.3	56.4	58.9	90.0	100.1	18.7	32.0	49.2	205.2	84.6	81.9	970.6
1957	-9.9	-9.9	-9.9	-9.9	192.2	30.5	23.5	22.4	44.5	110.6	62.5	62.1	-9.9
1958	29.2	35.5	50.4	72.6	80.9	32.6	18.4	61.6	43.6	118.6	154.7	32.5	730.6
1959	-9.9	25.0	41.6	79.5	77.2	52.6	70.2	48.8	38.5	154.3	102.3	34.5	-9.9
1960	22.8	56.4	68.1	73.3	53.0	19.2	62.4	63.9	47.4	119.0	29.5	123.8	738.8
1961	59.6	20.3	184.3	75.4	22.8	75.6	33.9	13.7	42.3	200.6	107.8	31.5	867.8
1962	116.2	28.0	118.6	110.4	152.5	51.2	20.6	57.4	47.8	89.5	127.0	60.9	980.1
1963	47.5	94.0	34.0	144.9	104.7	44.6	21.7	17.3	23.8	161.6	184.0	25.7	904.4
1964	30.6	23.9	6.1	164.0	114.0	87.6	65.6	44.1	17.6	61.9	51.4	66.8	733.6
1965	16.8	35.7	22.1	158.2	90.5	14.9	19.2	27.8	32.3	142.1	143.3	137.6	841.5
1966	1.1	42.8	69.4	82.5	91.3	117.0	39.6	52.7	36.9	190.0	170.8	94.8	988.9
1967	23.1	45.6	41.6	87.1	80.3	87.8	64.3	18.9	44.5	107.6	119.2	38.8	758.8
1968	1.4	46.8	85.4	188.6	62.3	107.8	17.3	16.2	77.2	110.9	122.4	20.5	856.8
1969	46.9	32.3	16.5	156.4	111.2	71.8	5.3	38.4	110.2	246.0	112.1	132.7	1079.8
1970	39.0	93.8	32.0	33.8	135.6	40.8	58.0	29.0	68.6	227.6	79.0	47.0	884.2
1971	79.6	87.4	130.6	164.4	211.5	41.6	32.8	42.5	96.4	80.3	101.0	82.6	1150.7
1972	120.7	59.8	-9.9	140.1	140.9	68.6	45.8	44.4	23.4	106.4	155.9	44.4	-9.9
1973	25.3	19.5	77.8	58.0	75.1	80.5	40.5	49.8	-9.9	117.7	128.8	145.4	-9.9
1974	82.4	113.6	-9.9	146.2	101.3	31.8	8.3	19.7	85.6	114.9	105.8	5.8	-9.9
1975	1.8	41.2	-9.9	64.3	76.9	43.1	103.5	49.1	86.9	150.5	91.2	113.2	-9.9
1976	27.3	104.7	76.4	137.4	83.6	51.7	5.2	8.6	53.5	247.5	90.4	41.8	928.1
1977	5.5	11.8	34.7	55.2	74.7	20.9	57.3	26.9	83.8	132.2	94.3	14.8	612.1
1978	6.4	23.7	87.8	109.7	111.3	54.1	47.2	37.8	110.3	148.9	42.7	29.2	809.1
1979	15.4	22.0	71.6	154.3	99.2	100.5	64.4	114.0	96.9	120.4	176.7	40.3	1075.7

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X CERRO DE SUBA MUNICIPIO DE SUBA PERIODO 1955 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1075.7	1075.7	1075.7	1.219	0.201				I +	.		
2	1978	809.1	1884.8	942.4	-0.590	0.104			.	I+			
3	1977	612.1	2496.9	832.3	-1.926	-0.213		.		+ I			
4	1976	928.1	3425.0	856.2	0.218	-0.178				+I .			
5	1971	1150.7	4575.7	915.1	1.728	0.107				I+	.		
6	1970	884.2	5459.9	910.0	-0.080	0.094				*			
7	1969	1079.8	6539.7	934.2	1.247	0.299				I +	.		
8	1968	856.8	7396.5	924.6	-0.266	0.255				. I +			
9	1967	758.8	8155.3	906.1	-0.531	0.102			.	I+			
10	1966	988.9	9144.2	914.4	0.630	0.205				I + .			
11	1965	841.5	9985.7	907.8	-0.370	0.145				. I+			
12	1964	733.6	10719.3	893.3	-1.102	-0.037			.	+			
13	1963	904.4	11623.7	894.1	0.057	-0.027				*			
14	1962	980.1	12603.8	900.3	0.570	0.066				+ .			
15	1961	867.8	13471.6	898.1	-0.191	0.035				.+			
16	1960	738.8	14210.4	888.1	-1.066	-0.140			.	+I			
17	1958	730.6	14941.0	878.9	-1.122	-0.325			.	+ I			
18	1956	970.6	15911.6	884.0	0.506	-0.242				+ I .			
19	1955	1112.7	17024.3	896.0	1.470	0.0				+ .			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 19 ANOS = 896.0
DEVIACION ESTANDAR = 147.4
COEFICIENTE DE VARIACION = 0.165

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* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212031	CERRO DE SUEA	SUEA	+04 44 56	+074 04 55	2690 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1955	15.8	29.6	84.4	143.9	66.6	90.5	100.1	24.0	79.7	211.6	123.4	142.9	1112.7	1955
1956	43.3	145.3	56.4	58.9	90.0	100.1	18.7	32.0	49.2	205.2	64.6	81.9	970.6	1956
1957	-9.9	-9.9	-9.9	-9.9	192.2	30.5	23.5	22.4	44.5	110.6	62.5	82.1	-9.9	1957
1958	29.2	35.5	50.4	72.0	80.9	32.6	18.4	61.6	43.6	118.6	154.7	32.5	730.6	1958
1959	-9.9	25.0	41.6	79.5	77.2	52.6	70.2	48.8	38.5	154.3	102.3	34.5	-9.9	1959
1960	22.8	56.4	68.1	73.3	53.0	19.2	62.4	63.9	47.4	119.0	29.5	123.8	738.8	1960
1961	59.6	20.3	184.3	75.4	22.8	75.6	33.9	13.7	42.3	200.6	107.8	31.5	867.8	1961
1962	116.2	28.0	116.6	110.4	152.5	51.2	20.6	57.4	47.8	89.5	127.0	60.9	980.1	1962
1963	47.5	94.6	34.0	144.9	104.7	44.6	21.7	17.3	23.8	161.6	184.0	25.7	904.4	1963
1964	30.6	23.9	6.1	164.0	114.0	87.6	65.6	44.1	17.6	61.9	51.4	66.8	733.6	1964
1965	16.8	35.7	22.1	158.2	90.5	14.9	19.2	27.8	32.3	143.1	143.3	137.6	841.5	1965
1966	1.1	42.8	69.4	82.9	91.3	117.0	39.6	52.7	36.9	190.0	170.8	94.8	988.9	1966
1967	23.1	45.0	41.6	87.1	80.3	87.8	64.3	18.9	44.5	107.6	119.2	38.8	758.8	1967
1968	1.4	46.8	85.4	188.6	62.3	107.8	17.3	16.2	77.2	110.9	122.4	20.5	856.8	1968
1969	40.9	32.3	16.5	156.4	111.2	71.8	5.3	38.4	110.2	246.0	112.1	132.7	1079.8	1969
1970	39.0	95.8	32.0	33.8	135.6	40.8	58.0	29.0	68.6	227.6	75.0	47.0	884.2	1970
1971	79.6	87.4	130.6	164.4	211.5	41.6	32.8	42.5	96.4	80.3	101.0	82.6	1150.7	1971
1972	120.7	59.8	-9.9	140.1	140.9	68.6	45.8	44.4	23.4	106.4	155.9	44.4	-9.9	1972
1973	25.3	19.5	77.8	58.0	75.1	80.5	40.5	49.8	-9.9	117.7	128.8	145.4	-9.9	1973
1974	82.4	113.6	-9.9	146.2	101.3	31.8	8.3	19.7	65.6	114.9	105.8	5.8	-9.9	1974
1975	1.8	41.2	-9.9	64.3	76.9	43.1	103.5	49.1	86.9	190.5	91.2	113.2	-9.9	1975
1976	27.3	104.7	76.4	137.4	83.6	51.7	5.2	8.6	53.5	247.5	90.4	41.8	928.1	1976
1977	5.5	11.8	34.7	55.2	74.7	20.9	57.3	26.9	83.8	132.2	94.3	14.8	612.1	1977
1978	6.4	23.7	87.8	109.7	111.3	54.1	47.2	37.8	110.3	148.9	42.7	29.2	809.1	1978
1979	15.4	22.0	71.6	154.3	99.2	100.5	64.4	114.0	96.9	120.4	176.7	40.3	1075.7	1979
NUMERO DE ANOS	23	24	21	24	25	25	25	25	24	25	25	25	19	
VALOR MAXIMO	120.7	145.3	184.3	188.6	211.5	117.0	103.5	114.0	110.3	247.5	184.0	145.4	1150.7	
CUARTIL SUPERIOR	48.3	73.6	84.9	150.2	112.6	87.7	63.3	49.4	64.7	195.5	136.0	104.0	988.9	
MEDIANA	27.3	38.4	68.1	110.0	90.5	52.6	39.6	37.8	48.5	132.2	107.8	47.0	884.2	
CUARTIL INFERIOR	15.4	24.4	34.3	72.9	76.0	36.7	18.9	21.0	40.4	110.7	87.5	32.0	758.8	
VALOR MINIMO	1.1	11.8	6.1	33.8	22.8	14.9	5.2	8.6	17.6	61.9	29.5	5.8	612.1	
PROMEDIOS	37.5	51.6	66.2	110.8	100.0	60.7	41.8	38.4	60.0	148.7	110.4	66.9	896.0	
											TOTAL DE LOS PROMEDIOS MENSUALES =		893.0	
PORCENTAJES	4.2	5.8	7.4	12.4	11.2	6.8	4.7	4.3	6.7	16.6	12.4	7.5		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 25. INDICE DE ARNOLDUS = 90.

DEV. ESTANDAR	34.2	35.7	41.9	44.8	41.5	29.7	27.3	22.3	28.1	52.5	40.5	44.0	147.4
COEF. VARIACION	0.913	0.692	0.633	0.404	0.415	0.490	0.654	0.580	0.468	0.353	0.367	0.658	0.165
COEF. ASIMETRIA	1.239	1.200	1.145	-0.006	1.077	0.267	0.668	1.586	0.372	0.474	-0.058	0.583	0.027

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212031	CERRO DE SUBA	SUBA	+04 44 56	+074 04 55	2690 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	22.8	50.4	68.1	73.3	53.0	19.2	62.4	63.9	47.4	119.0	29.5	123.8	738.8	1960
1961	59.6	20.3	184.3	75.4	22.8	75.6	33.9	13.7	42.3	200.6	107.8	31.5	867.8	1961
1962	116.2	28.0	118.6	110.4	152.5	51.2	20.6	57.4	47.8	89.5	127.0	60.9	980.1	1962
1963	47.5	94.6	34.0	144.9	104.7	44.6	21.7	17.3	23.8	161.6	184.0	25.7	904.4	1963
1964	30.6	23.9	6.1	164.0	114.0	87.6	65.6	44.1	17.6	61.9	51.4	66.8	733.6	1964
1965	10.8	35.7	22.1	158.2	90.5	14.9	19.2	27.8	32.3	143.1	143.3	137.6	841.5	1965
1966	1.1	42.8	69.4	82.5	91.3	117.0	39.6	52.7	36.9	190.0	170.8	94.8	988.9	1966
1967	23.1	45.6	41.6	87.1	80.3	87.8	64.3	18.9	44.5	107.6	119.2	38.8	758.8	1967
1968	1.4	46.8	85.4	188.6	62.3	107.8	17.3	16.2	77.2	110.9	122.4	20.5	856.8	1968
1969	46.9	32.3	16.5	156.4	111.2	71.8	5.3	38.4	110.2	246.0	112.1	132.7	1079.8	1969
1970	39.0	93.8	32.0	33.8	135.6	40.8	58.0	29.0	68.6	227.6	79.0	47.0	884.2	1970
1971	79.6	87.4	130.6	164.4	211.5	41.6	32.8	42.5	96.4	80.3	101.0	82.6	1150.7	1971
1972	120.7	59.8	57.3	140.1	140.9	68.6	45.8	44.4	23.4	106.4	155.9	44.4	1007.7	1972
1973	25.3	19.5	77.8	58.0	75.1	80.5	40.5	49.8	75.9	117.7	128.8	145.4	894.3	1973
1974	82.4	113.6	33.3	146.2	101.3	31.8	8.3	19.7	85.6	114.9	105.8	5.8	848.7	1974
1975	1.8	41.2	58.3	94.3	76.9	43.1	103.5	49.1	86.9	190.5	91.2	113.2	920.0	1975
1976	27.3	104.7	76.4	137.4	83.6	51.7	5.2	8.6	53.5	247.5	90.4	41.8	928.1	1976
1977	5.5	11.8	34.7	55.2	74.7	20.9	57.3	26.9	83.8	132.2	94.3	14.8	612.1	1977
1978	6.4	23.7	87.8	109.7	111.3	54.1	47.2	37.8	110.3	148.9	42.7	29.2	809.1	1978
1979	15.4	22.0	71.6	154.3	99.2	100.5	64.4	114.0	96.9	120.4	176.7	40.3	1075.7	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	120.7	113.6	184.3	188.6	211.5	117.0	103.5	114.0	110.3	247.5	184.0	145.4	1150.7	
CUARTIL SUPERIOR	53.5	73.6	81.6	155.3	112.6	84.0	60.2	49.4	86.2	190.3	136.0	104.0	984.5	
MEDIANA	20.3	42.0	63.2	123.9	95.2	52.9	40.0	38.1	61.0	126.3	109.9	45.7	889.2	
CUARTIL INFERIOR	10.9	23.8	33.6	74.3	76.0	41.2	19.9	19.3	39.6	109.2	90.8	30.3	825.3	
VALOR MINIMO	1.1	11.8	6.1	33.8	22.8	14.9	5.2	8.6	17.6	61.9	29.5	5.8	612.1	
PROMEDIOS	38.5	50.2	65.3	115.2	99.6	60.6	40.6	38.6	63.1	145.8	111.7	64.9	894.1	
PORCENTAJES	4.3	5.6	7.3	12.9	11.1	6.8	4.5	4.3	7.1	16.3	12.5	7.3		
DEV. ESTANDAR	36.3	31.7	42.9	45.6	40.3	29.9	25.4	23.8	29.7	54.4	42.4	44.6	131.1	
COEF. VARIACION	0.945	0.631	0.657	0.396	0.404	0.494	0.625	0.616	0.471	0.373	0.380	0.688	0.147	
COEF. ASIMETRIA	1.139	0.823	1.177	-0.214	0.904	0.272	0.537	1.629	0.083	0.596	-0.132	0.623	-0.038	

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 24. INDICE DE ARNOLDUS = 90.

INDICE DE IRREGULARIDAD INTERANUAL =1.46

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1110.	1062.	1004.	894.	784.	726.	678.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

IMPRESO EN COLOMBIA POR DANARAY'S

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212559	GUAYMARAL	SUBA	+04 49 00	+074 04 00	2560 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1965	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	14.5	116.9	124.7	67.5	-9.9
1966	11.5	26.3	73.8	63.6	87.2	64.0	45.6	80.2	84.6	70.0	183.7	71.7	882.2
1967	36.5	64.3	72.9	91.7	79.5	110.1	88.7	39.0	23.9	62.1	104.8	25.6	799.1
1968	13.4	56.4	24.2	154.5	94.5	93.4	39.0	17.3	94.2	93.2	76.1	16.5	772.7
1969	55.1	24.7	36.1	145.5	100.9	101.0	30.0	50.3	89.4	174.2	94.2	35.6	937.0
1970	27.3	55.2	14.6	44.0	86.2	35.3	38.6	30.1	81.5	155.1	109.0	31.4	712.3
1971	46.0	57.1	104.4	169.4	80.8	49.5	40.5	78.6	100.6	69.6	105.6	72.3	974.8
1972	76.4	35.2	76.0	192.6	191.0	116.0	28.0	17.0	15.0	37.0	127.0	9.0	920.2
1973	1.0	0.0	82.0	66.7	50.4	46.9	54.3	58.4	149.5	100.0	69.8	50.6	771.6
1974	48.0	48.1	36.6	85.8	113.0	17.0	30.0	35.0	92.5	72.4	105.0	28.5	711.9
1975	1.9	73.3	77.0	56.1	68.3	34.5	51.8	57.3	75.8	136.0	79.4	93.8	805.2
1976	17.6	50.5	63.6	154.5	88.7	43.8	41.1	30.5	80.3	152.2	66.9	23.4	813.1
1977	11.8	15.1	-9.9	91.9	72.8	50.1	50.0	59.5	83.9	75.6	125.5	19.9	-9.9
1978	0.0	19.4	100.8	96.8	79.0	60.1	34.1	16.2	68.9	91.7	25.7	9.9	602.6
1979	23.8	49.9	66.6	131.4	203.2	78.9	41.9	81.1	60.0	151.5	118.7	36.8	1083.8

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAK

ESTACION X GUAYMARAL MUNICIPIO DE SUBA PERIODO 1965 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1083.8	1083.8	1063.8	1.585	0.306				I +			
2	1978	802.6	1886.4	843.2	-1.778	0.032				+			
3	1976	813.1	2499.5	833.2	-0.130	0.012				.+			
4	1975	805.2	3304.7	826.2	-0.192	-0.017				.+			
5	1974	711.5	4016.2	803.3	-0.523	-0.155				+I			
6	1973	771.6	4788.2	798.0	-0.455	-0.229				. + I			
7	1972	820.2	5708.4	815.5	0.708	-0.120				+I			
8	1971	874.8	6883.2	835.4	1.136	0.055				+			
9	1970	712.3	7595.5	821.7	-0.919	-0.087				+			
10	1969	837.0	8332.5	833.2	0.840	0.042				+			
11	1968	772.7	9105.2	827.7	-0.447	-0.026				. +			
12	1967	795.1	9904.3	825.4	-0.240	-0.063				. +			
13	1966	882.2	10786.5	829.7	0.411	0.000				+			
N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 13 ANOS = 829.7
DESVIACION ESTANDAR = 127.7
COEFICIENTE DE VARIACION = 0.154

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212559	GUAYMARAL	SUBA	+04 48 56	+074 04 01	2560 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1965	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	14.5	116.9	124.7	67.5	-9.9	1965
1966	11.5	20.3	73.8	63.6	87.2	84.0	45.6	80.2	84.6	70.0	183.7	71.7	882.2	1966
1967	36.5	64.3	72.9	91.7	79.5	110.1	88.7	39.0	23.9	62.1	104.8	25.6	799.1	1967
1968	13.4	56.4	24.2	154.5	94.5	93.4	39.0	17.3	94.2	93.2	76.1	16.5	772.7	1968
1969	55.1	24.7	36.1	145.5	100.9	101.0	30.0	50.3	89.4	174.2	94.2	35.6	937.0	1969
1970	27.3	56.2	14.6	44.0	80.2	39.3	28.6	30.1	81.5	155.1	105.0	31.4	712.3	1970
1971	46.0	57.1	104.4	169.4	80.8	49.9	40.5	78.6	100.6	69.6	105.6	72.3	974.8	1971
1972	76.4	35.2	76.0	192.6	191.0	116.0	28.0	17.0	15.0	37.0	127.0	9.0	920.2	1972
1973	1.0	0.0	82.0	66.7	80.4	48.9	54.3	58.4	149.5	100.0	69.8	90.6	771.6	1973
1974	48.0	48.1	36.6	85.8	113.0	17.0	30.0	35.0	92.5	72.4	105.0	28.5	711.9	1974
1975	1.9	73.3	77.0	56.1	68.3	34.5	51.8	57.3	75.8	136.0	75.4	93.8	805.2	1975
1976	17.6	50.5	63.6	154.5	88.7	43.8	41.1	30.5	80.3	152.2	66.9	23.4	813.1	1976
1977	11.8	15.1	-9.9	91.9	72.8	90.1	50.0	59.5	83.9	75.6	125.5	19.9	-9.9	1977
1978	0.0	19.4	100.8	96.8	79.0	60.1	34.1	16.2	68.9	91.7	25.7	9.9	602.6	1978
1979	23.8	49.9	66.6	131.4	203.2	78.9	41.9	81.1	60.0	191.5	116.7	36.8	1083.8	1979
NUMERO DE ANOS	14	14	13	14	14	14	14	14	15	15	15	15	13	
VALOR MAXIMO	76.4	73.3	104.4	192.6	203.2	116.0	88.7	81.1	149.5	191.5	183.7	93.8	1083.8	
CUARTIL SUPERIOR	46.0	56.4	79.5	154.5	100.9	93.4	50.0	59.5	92.5	152.2	124.7	71.7	928.6	
MEDIANA	20.7	49.0	72.9	94.3	86.7	69.5	40.8	44.6	81.5	93.2	105.0	31.4	805.2	
CUARTIL INFERIOR	11.5	24.7	36.3	66.7	79.0	43.8	34.1	30.1	60.0	70.0	76.1	19.9	741.9	
VALOR MINIMO	0.0	0.0	14.6	44.0	80.4	17.0	28.0	16.2	14.5	37.0	25.7	9.0	602.6	
PROMEDIOS	26.4	41.1	63.7	110.3	99.7	69.1	43.8	46.5	74.3	106.5	101.1	42.2	829.7	
											TOTAL DE LOS PROMEDIOS MENSUALES =		824.7	
PORCENTAJES	3.2	5.0	7.7	13.4	12.1	8.4	5.3	5.6	9.0	12.9	12.3	5.1		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 60.

DEV. ESTANDAR	23.1	21.2	27.9	47.0	43.9	31.1	15.3	23.5	35.3	45.7	35.9	28.9	127.7
COEF. VARIACION	0.872	0.516	0.438	0.426	0.440	0.450	0.348	0.505	0.475	0.429	0.355	0.686	0.154
COEF. ASIMETRIA	0.787	-0.443	-0.413	0.276	1.776	-0.024	2.063	0.208	-0.169	0.486	0.162	0.704	0.290

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212559	GUAYMARAL	SUBA	+04 48 56	+074 04 01	2560 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	17.5	52.3	52.3	73.1	40.0	66.2	78.5	91.5	75.9	85.6	49.2	59.3	741.4	1960
1961	50.2	28.8	118.3	91.1	28.6	83.7	48.5	35.4	53.2	126.1	99.9	31.8	795.6	1961
1962	33.1	29.9	85.5	107.4	140.5	59.3	34.4	48.8	72.0	114.6	78.6	45.7	849.8	1962
1963	28.8	67.1	68.2	100.7	176.4	61.0	32.2	35.0	47.0	97.0	107.5	13.5	834.4	1963
1964	18.8	30.5	19.2	108.3	118.1	68.5	77.7	53.8	88.4	83.5	78.1	43.3	788.2	1964
1965	6.4	27.3	9.1	163.8	129.5	67.2	26.9	32.2	14.5	116.9	124.7	67.5	786.0	1965
1966	11.5	20.3	73.8	63.6	87.2	84.0	45.6	80.2	84.6	70.0	183.7	71.7	882.2	1966
1967	30.5	64.3	72.9	91.7	79.5	110.1	88.7	39.0	23.9	62.1	104.8	25.6	799.1	1967
1968	13.4	50.4	24.2	154.5	54.5	93.4	39.0	17.3	94.2	93.2	76.1	16.5	772.7	1968
1969	55.1	24.7	36.1	145.5	100.9	101.0	30.0	50.3	89.4	174.2	94.2	35.6	937.0	1969
1970	27.3	55.2	14.6	44.0	66.2	39.3	38.6	30.1	81.5	155.1	109.0	31.4	712.3	1970
1971	40.0	57.1	104.4	169.4	80.8	49.9	40.5	78.6	100.6	69.6	105.6	72.3	974.8	1971
1972	76.4	35.2	76.0	192.6	191.0	116.0	28.0	17.0	15.0	37.0	127.0	9.0	920.2	1972
1973	1.0	0.0	82.0	66.7	50.4	48.9	54.3	58.4	149.5	100.0	69.8	90.6	771.6	1973
1974	48.0	48.1	36.6	85.8	113.0	17.0	30.0	35.0	92.5	72.4	105.0	28.5	711.9	1974
1975	1.9	73.3	77.0	56.1	68.3	34.5	51.8	57.3	75.8	136.0	79.4	93.8	805.2	1975
1976	17.6	50.5	63.6	154.5	88.7	43.8	41.1	30.5	80.3	152.2	66.9	23.4	813.1	1976
1977	11.8	15.1	99.6	91.9	72.8	90.1	50.0	59.5	83.9	75.6	125.5	19.9	795.7	1977
1978	0.0	19.4	100.8	96.8	79.0	60.1	34.1	16.2	68.9	91.7	25.7	9.9	602.6	1978
1979	23.8	49.9	66.6	131.4	203.2	78.9	41.9	81.1	60.0	191.5	118.7	36.8	1083.8	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	76.4	73.3	118.3	192.6	203.2	116.0	88.7	91.5	149.5	191.5	183.7	93.8	1083.8	
CUARTIL SUPERIOR	41.3	55.8	83.8	150.0	123.8	87.0	50.9	58.9	88.9	131.0	113.8	63.4	866.0	
MEDIANA	21.3	41.6	70.5	98.7	87.9	66.7	40.8	43.9	78.1	95.1	102.3	33.7	797.4	
CUARTIL INFERIOR	11.6	20.8	36.3	79.4	75.9	49.4	33.1	31.3	56.6	74.0	77.1	21.6	772.1	
VALOR MINIMO	0.0	0.0	9.1	44.0	28.6	17.0	26.9	16.2	14.5	37.0	25.7	9.0	602.6	
PROMEDIOS	26.3	40.6	64.0	109.4	101.4	68.6	45.6	47.4	72.6	105.2	96.5	41.3	818.9	
PORCENTAJES	3.2	5.0	7.8	13.4	12.4	8.4	5.6	5.8	8.9	12.8	11.8	5.0		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 79.

INDICE DE IRREGULARIDAD INTERANUAL =1.39

DEV. ESTANDAR	20.6	19.5	31.8	42.0	47.2	26.1	17.5	22.6	31.5	40.2	33.6	26.1	104.5
COEF. VARIACION	0.785	0.480	0.497	0.383	0.466	0.380	0.385	0.477	0.433	0.382	0.348	0.632	0.128

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	991.	953.	907.	819.	731.	685.	647.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.780	-0.186	-0.260	0.399	0.795	0.033	1.344	0.456	-0.035	0.600	0.349	0.726	0.614

662

IMPRESO EN COLOMBIA POR DANAGRAFIC

CODIGO 212030 | ESTACION TIBABUYES | MUNICIPIO SUBA | LATITUD +04_44_00 | LONGITUD +074_05_00 | ALTITUD 2655 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1947	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	53.2	160.4	42.0	24.2	-9.9
1948	23.7	31.9	32.5	208.7	61.2	30.7	29.3	18.1	64.7	112.1	130.0	63.7	806.6
1949	70.1	96.7	72.7	47.7	66.7	53.7	75.2	85.4	81.7	131.5	37.8	27.3	846.5
1950	81.3	153.2	63.1	102.2	197.8	187.4	49.3	31.5	59.4	89.1	224.2	95.0	1333.5
1951	61.8	81.4	133.3	87.0	141.7	22.1	39.4	84.5	20.0	122.6	123.5	68.1	985.4
1952	11.9	58.0	114.3	188.9	203.0	46.5	34.0	43.1	108.3	70.9	272.9	100.1	1251.9
1953	33.5	35.0	71.8	156.4	83.8	62.4	22.1	6.8	84.1	175.3	136.1	28.4	895.7
1954	51.5	20.7	58.8	98.3	136.0	81.4	58.7	49.3	60.6	218.2	109.0	116.5	1059.0
1955													
1956													
1957													
1958													
1959	19.0	37.4	37.2	59.7	90.6	66.3	69.8	42.0	22.0	104.4	126.5	19.0	693.9
1960													
1961													
1962													
1963													
1964	-9.9	-9.9	79.0	159.4	115.4	56.5	66.6	48.1	29.5	73.0	58.7	32.1	-9.9
1965	20.4	22.3	24.7	-9.9	101.1	14.6	19.3	30.8	39.5	112.5	143.1	116.8	-9.9
1966	1.7	26.6	65.0	89.1	89.0	137.0	40.6	53.3	45.8	205.0	140.7	89.6	983.4
1967	34.4	43.8	34.6	81.7	79.9	58.0	58.3	23.8	41.5	-9.9	-9.9	36.8	-9.9
1968	5.2	52.9	98.7	166.0	77.5	122.1	27.2	20.4	46.9	114.3	105.6	26.2	863.0
1969	37.9	33.2	17.2	154.5	87.3	90.4	9.0	41.9	121.6	216.3	151.5	110.3	1073.1
1970	17.9	95.1	35.3	45.0	147.9	61.1	56.6	34.5	67.1	182.1	96.0	47.6	886.2
1971	103.2	100.5	138.8	114.3	146.4	53.6	35.4	46.8	90.4	130.5	88.6	85.0	1133.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

FECYECTC IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAFO

ESTACION X TIEABUYES MUNICIPIO DE SUBA PERIODO 1947 - 1971 COEF DE CORRECCION 1.000

N	AN	T /	CO	MOY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1971	1133.5	1133.5	1133.5	0.814	0.150	I+
2	1970	886.2	2019.7	1009.8	-0.540	0.049	+
3	1969	1073.1	3092.8	1030.9	0.482	0.138	I+
4	1968	863.0	3955.8	988.9	-0.674	0.014	+
5	1966	982.4	4939.2	987.8	-0.012	0.012	+
6	1959	893.9	5833.1	938.8	-1.605	-0.284	+ I
7	1954	1059.0	6892.1	956.0	0.404	-0.210	+ I
8	1953	895.7	7787.8	948.5	-0.454	-0.201	+ I
9	1952	1251.9	8839.7	982.2	1.466	-0.030	+
10	1951	985.4	9825.1	982.5	0.001	-0.030	+
11	1950	1332.5	11158.6	1014.4	1.515	0.323	I +
12	1949	846.5	12005.1	1000.4	-0.765	0.182	I+
13	1948	806.6	12811.7	985.5	-0.984	0.000	+

F = -3. -2. -1. 0.0 +1. +2. +3.

N AN T / CO MOY ECR PCAN

PROMEDIO DE LOS 13 ANOS = 985.5

DEVIACION ESTANDAR = 181.7

COEFICIENTE DE VARIACION = 0.184

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212030	TIBABUYES	SUBA	+04 44 54	+074 07 17	2550 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1947	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	53.2	160.4	42.0	24.2	-9.9	1947
1948	23.7	31.9	32.5	208.7	61.2	30.7	29.3	18.1	64.7	112.1	130.0	63.7	806.6	1948
1949	70.1	90.7	72.7	47.7	66.7	53.7	75.2	85.4	61.7	131.5	37.8	27.3	846.5	1949
1950	81.3	153.2	63.1	102.2	197.8	187.4	49.3	31.5	59.4	89.1	224.2	95.0	1333.5	1950
1951	61.8	81.4	133.3	67.0	141.7	22.1	39.4	84.5	20.0	122.6	123.5	68.1	985.4	1951
1952	11.9	56.0	114.3	188.9	203.0	46.5	34.0	43.1	108.3	70.9	272.9	100.1	1251.9	1952
1953	33.5	35.0	71.8	156.4	83.8	62.4	22.1	6.8	84.1	175.3	136.1	28.4	895.7	1953
1954	51.5	20.7	58.8	98.3	136.0	81.4	58.7	49.3	60.6	218.2	109.0	116.5	1059.0	1954
1955														1955
1956														1956
1957														1957
1958														1958
1959	19.0	37.4	37.2	59.7	90.6	66.3	69.8	42.0	22.0	104.4	126.5	19.0	693.9	1959
1960														1960
1961														1961
1962														1962
1963														1963
1964	-9.9	-9.9	79.0	159.4	115.4	96.5	66.6	48.1	29.5	73.0	58.7	32.1	-9.9	1964
1965	20.4	22.3	24.7	-9.9	101.1	14.6	19.3	30.8	39.5	112.5	143.1	116.8	-9.9	1965
1966	1.7	20.8	65.0	89.1	89.0	137.0	40.6	53.3	45.8	205.0	140.7	89.6	983.4	1966
1967	34.4	43.8	34.6	81.7	79.9	98.0	58.3	23.8	41.5	-9.9	-9.9	36.8	-9.9	1967
1968	5.2	52.5	98.7	166.0	77.5	122.1	27.2	20.4	46.9	114.3	105.6	26.2	863.0	1968
1969	37.9	33.2	17.2	154.5	87.3	90.4	9.0	41.9	121.6	218.3	151.5	110.3	1073.1	1969
1970	17.9	95.1	35.3	45.0	147.9	61.1	56.6	34.5	67.1	182.1	96.0	47.6	886.2	1970
1971	103.2	100.5	138.8	114.3	146.4	53.6	35.4	46.8	90.4	130.5	66.6	85.0	1133.5	1971
NUMERO DE ANOS	15	15	16	15	16	16	16	16	17	16	16	17	13	
VALOR MAXIMO	103.2	153.2	138.8	208.7	203.0	187.4	75.2	85.4	121.6	218.3	272.9	116.8	1333.5	
CUARTIL SUPERIOR	61.8	95.1	88.8	159.4	144.0	97.3	58.5	48.7	82.9	178.7	141.9	97.5	1103.3	
MEDIANA	33.5	43.8	64.0	102.2	95.8	64.3	40.0	41.9	59.4	126.5	125.0	63.7	983.4	
CUARTIL INFERIOR	17.9	31.9	34.9	81.7	81.8	50.0	28.2	27.3	40.5	108.2	92.3	27.8	854.8	
VALOR MINIMO	1.7	20.7	17.2	45.0	61.2	14.6	9.0	6.8	20.0	70.9	37.8	19.0	693.9	
PROMEDIOS	38.2	59.2	67.3	117.3	114.1	76.5	43.2	41.3	61.0	138.8	124.1	63.9	985.5	
									TOTAL DE LOS PROMEDIOS MENSUALES =				944.8	
PORCENTAJES	4.0	6.3	7.1	12.4	12.1	8.1	4.6	4.4	6.5	14.7	13.1	6.8		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 53.

DEV. ESTANDAR	29.6	36.2	37.8	51.8	43.9	45.1	19.6	21.3	28.9	48.8	60.5	36.0	181.7
COEF. VARIACION	0.775	0.644	0.562	0.441	0.385	0.589	0.454	0.517	0.473	0.351	0.487	0.563	0.184
COEF. ASIMETRIA	0.869	1.185	0.630	0.252	0.877	0.956	0.035	0.780	0.570	0.406	0.956	0.211	0.468

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212105	LA FRAGERA	SUBACHOQUE	+05 00 00	+074 08 00	2703 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1955	31.9	48.8	53.7	181.9	75.1	77.5	117.3	37.9	95.7	293.1	132.8	84.5	1230.2
1956	37.4	71.7	72.9	49.3	105.0	138.1	51.4	59.7	110.0	239.7	95.9	111.8	1142.9
1957	65.1	34.0	78.7	96.5	161.4	61.0	53.2	28.9	43.5	130.9	42.3	29.0	814.5
1958	10.5	-9.9	99.4	79.6	82.8	57.5	28.2	57.6	30.0	121.7	83.6	216.7	-9.9
1959	9.5	21.9	40.3	84.1	110.1	93.8	76.6	58.3	80.0	87.9	107.5	55.9	825.9
1960	63.1	48.5	37.7	91.3	97.6	66.2	75.6	72.6	35.6	181.4	37.6	90.8	858.0
1961	78.9	3.8	44.8	110.0	40.1	94.4	85.3	40.8	42.2	160.7	136.1	10.5	847.6
1962	100.5	26.0	72.7	78.7	108.0	183.5	55.9	76.6	101.3	145.6	120.6	46.2	1115.8
1963	33.2	74.5	103.3	99.1	151.5	76.1	44.0	59.8	39.7	89.4	161.4	28.9	962.9
1964													
1965	33.7	39.7	16.1	135.9	58.2	29.9	32.3	27.9	19.8	160.0	183.9	38.5	795.9
1966	13.8	15.5	70.5	62.6	114.6	77.5	43.2	120.5	75.9	145.1	140.4	91.9	971.5
1967	53.8	35.4	78.4	79.1	114.2	104.2	37.3	60.4	61.4	66.1	111.0	56.5	879.8
1968	20.3	41.5	34.3	155.1	-9.9	108.1	-9.9	-9.9	-9.9	155.8	120.6	63.2	-9.9
1969	44.4	41.0	13.0	226.7	133.1	154.5	70.7	43.7	-9.9	-9.9	-9.9	-9.9	-9.9
1970	11.5	17.0	15.5	67.3	111.0	33.5	57.4	43.5	132.8	154.0	125.4	47.4	816.3
1971	33.5	22.6	158.7	138.5	98.8	50.9	30.9	2.8	30.6	145.0	156.0	90.0	958.3
1972	78.0	20.0	126.0	254.0	108.0	115.0	85.0	13.0	22.0	72.0	86.0	32.0	1011.0
1973	2.0	11.0	18.0	71.0	79.0	53.0	63.0	51.0	112.0	56.0	51.0	93.0	702.0
1974	52.0	76.0	111.0	107.0	91.0	54.0	9.0	85.0	61.0	142.0	125.0	28.0	941.0
1975	15.0	97.0	79.0	102.0	109.0	27.0	94.0	88.0	51.0	130.4	116.2	141.8	1050.4
1976	17.0	74.8	91.2	108.5	74.0	61.0	31.0	30.0	50.0	215.0	98.0	38.0	888.5
1977	10.0	0.0	54.0	84.0	82.0	69.0	22.0	50.0	149.5	62.0	137.0	40.0	799.5
1978	0.0	15.0	94.0	125.0	95.0	37.0	10.0	40.0	62.0	102.0	97.0	70.0	747.0
1979	29.0	15.0	77.0	135.0	75.0	144.0	35.0	155.0	35.0	300.0	150.0	35.0	1185.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANABRANJC

ESTACION X LA PRADERA MUNICIPIO DE SUBACHOQUE PERIODO 1955 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1185.0	1185.0	1185.0	1.723	0.271				I +			
2	1978	747.0	1932.0	966.0	-1.267	0.072				+			
3	1977	799.5	2731.5	910.5	-0.508	-0.071				+			
4	1976	888.5	3620.0	905.0	-0.301	-0.116				+ I			
5	1975	1050.4	4670.4	934.1	0.804	0.008				+			
6	1974	941.0	5611.4	935.2	0.858	0.017				*			
7	1973	702.0	6313.4	901.9	-1.574	-0.230				+ I			
8	1972	1011.0	7324.4	915.5	0.535	-0.146				+ I			
9	1971	956.3	8282.7	920.3	0.176	-0.118				+ I			
10	1970	816.3	9099.0	909.9	-0.754	-0.243				+ I			
11	1967	879.8	9978.8	907.2	-0.360	-0.300				+ I			
12	1966	971.5	10950.3	912.5	0.266	-0.258				+ I			
13	1965	795.9	11746.2	903.6	-0.533	-0.405				+ I			
14	1963	962.9	12709.1	907.8	0.207	-0.372				+ I			
15	1962	1115.8	13824.9	921.7	1.251	-0.176				+ I			
16	1961	847.6	14672.5	917.0	-0.560	-0.267				+ I			
17	1960	898.0	15570.5	915.9	-0.236	-0.304				+ I			
18	1959	825.9	16396.4	910.9	-0.728	-0.418				+ I			
19	1957	814.5	17210.9	905.8	-0.806	-0.545				+ I			
20	1956	1142.9	18353.8	917.7	1.436	-0.319				+ I			
21	1955	1230.2	19584.0	932.6	2.031	0.0				+			

N	AN	T A	CU	MOY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 21 ANOS = 932.6

DEVIACION ESTANDAR = 146.5

COEFICIENTE DE VARIACION = 0.157

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212105	LA PRADERA	SUBACHOQUE	+05 00 19	+074 08 10	2700 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	65.1	34.0	78.7	96.5	161.4	51.0	53.2	28.5	43.5	130.9	42.3	29.0	814.5	1957
1958	10.5	-9.9	99.4	79.6	62.8	57.5	28.2	57.6	30.0	121.7	83.6	216.7	-9.9	1958
1959	9.5	21.9	40.3	84.1	110.1	93.8	76.6	58.3	80.0	87.9	107.5	55.9	825.9	1959
1960	63.1	48.5	37.7	91.3	97.6	66.2	75.6	72.6	35.6	181.4	37.6	90.8	898.0	1960
1961	78.5	3.8	44.8	110.0	40.1	94.4	85.3	40.8	42.2	160.7	136.1	10.5	847.6	1961
1962	100.5	26.0	72.7	78.7	108.0	183.5	55.9	76.6	101.3	145.8	120.6	46.2	1115.8	1962
1963	33.2	74.5	103.3	99.1	161.5	78.1	44.0	59.8	39.7	89.4	161.4	28.9	962.9	1963
1964														1964
1965	33.7	39.7	16.1	135.9	58.2	29.9	32.3	27.9	19.8	180.0	183.9	38.5	795.9	1965
1966	13.8	15.5	70.5	62.6	114.6	77.5	43.2	120.5	75.9	145.1	140.4	91.9	971.5	1966
1967	53.8	35.4	78.4	79.1	114.2	104.2	37.3	60.4	61.4	88.1	111.0	56.5	879.8	1967
1968	20.3	41.5	34.3	155.1	-9.9	108.1	-9.9	-9.9	-9.9	155.8	120.6	63.2	-9.9	1968
1969	44.4	41.0	13.0	220.7	133.1	154.5	70.7	43.7	-9.9	-9.9	-9.9	-9.9	-9.9	1969
1970	11.5	17.0	15.5	67.3	111.0	33.5	57.4	43.5	132.8	154.0	125.4	47.4	816.3	1970
1971	33.5	22.6	158.7	138.5	98.8	50.9	30.9	2.8	30.6	145.0	156.0	90.0	958.3	1971
1972	78.0	20.0	126.0	254.0	108.0	115.0	85.0	13.0	22.0	72.0	66.0	32.0	1011.0	1972
1973	2.0	11.0	18.0	71.0	75.0	53.0	63.0	51.0	112.0	98.0	51.0	93.0	702.0	1973
1974	52.0	76.0	111.0	107.0	91.0	54.0	9.0	85.0	61.0	142.0	125.0	28.0	941.0	1974
1975	15.0	97.0	79.0	102.0	109.0	27.0	94.0	88.0	51.0	130.4	116.2	141.8	1050.4	1975
1976	17.0	74.6	91.2	108.5	74.0	61.0	31.0	30.0	50.0	215.0	98.0	38.0	888.5	1976
1977	10.0	0.0	84.0	84.0	82.0	89.0	22.0	50.0	149.5	82.0	137.0	40.0	799.5	1977
1978	0.0	15.0	94.0	125.0	95.0	37.0	10.0	40.0	62.0	102.0	97.0	70.0	747.0	1978
1979	29.0	15.0	77.0	135.0	75.0	144.0	35.0	155.0	35.0	300.0	150.0	35.0	1185.0	1979

NUMERO DE ANOS	22	21	22	22	21	22	21	21	20	21	21	21	19
VALOR MAXIMO	100.5	97.0	158.7	254.0	161.4	183.5	94.0	155.0	149.5	300.0	183.9	216.7	1185.0
CUARTIL SUPERIOR	53.8	45.0	94.0	135.0	112.6	104.2	73.1	74.6	77.9	158.2	138.7	90.4	971.5
MEDIANA	31.1	26.0	74.8	100.5	98.8	71.8	44.0	51.0	50.5	142.0	120.6	47.4	888.5
CUARTIL INFERIOR	11.5	15.3	37.7	79.6	80.5	51.0	30.9	35.0	35.3	93.7	91.5	33.5	814.5
VALOR MINIMO	0.0	0.0	13.0	62.6	40.1	27.0	9.0	2.8	19.8	72.0	37.6	10.5	702.0
PROMEDIOS	35.2	34.8	68.8	113.2	99.7	80.1	49.5	57.4	61.8	139.4	113.6	64.0	905.8
											TOTAL DE LOS PROMEDIOS MENSUALES =		917.6
PORCENTAJES	3.8	3.8	7.5	12.3	10.9	8.7	5.4	6.3	6.7	15.2	12.4	7.0	

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 21. INDICE DE ARNOLDUS = 90.

DEV. ESTANDAR	28.2	26.3	38.9	48.3	28.4	41.9	25.0	34.8	36.7	52.5	36.4	46.6	125.4
COEF. VARIACION	0.800	0.757	0.566	0.427	0.285	0.523	0.505	0.607	0.594	0.377	0.338	0.729	0.138
COEF. ASIMETRIA	0.775	0.969	0.333	1.799	0.205	0.918	0.167	1.185	1.148	1.416	-0.468	2.024	0.583

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212105	LA PRADERA	SUBACHOQUE	+05 00 19	+074 08 10	2700 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	63.1	48.5	37.7	91.3	97.6	66.2	75.6	72.6	35.6	181.4	37.6	90.8	898.0	1960
1961	78.9	3.8	44.8	110.0	40.1	94.4	85.3	40.8	42.2	160.7	136.1	10.5	847.6	1961
1962	100.5	20.0	72.7	78.7	108.0	183.5	55.9	76.6	101.3	145.8	120.6	46.2	1115.8	1962
1963	33.2	74.5	103.3	99.1	151.5	78.1	44.0	59.8	39.7	89.4	161.4	28.9	962.9	1963
1964	12.3	18.4	25.3	91.8	90.3	65.6	40.2	46.6	56.5	129.8	103.8	58.5	739.1	1964
1965	33.7	39.7	16.1	135.9	58.2	29.9	32.3	27.9	19.8	180.0	183.9	38.5	795.9	1965
1966	13.8	15.5	70.5	62.0	114.6	77.5	43.2	120.5	75.9	145.1	140.4	91.9	971.5	1966
1967	53.8	35.4	78.4	79.1	114.2	104.2	37.3	60.4	61.4	88.1	111.0	56.5	879.8	1967
1968	20.3	41.5	34.3	155.1	103.7	108.1	46.2	60.2	53.0	155.8	120.6	63.2	962.0	1968
1969	44.4	41.0	13.0	226.7	133.1	154.5	70.7	43.7	40.1	90.3	78.4	30.8	966.7	1969
1970	11.5	17.0	15.5	67.3	111.0	33.5	57.4	43.5	132.8	154.0	125.4	47.4	816.3	1970
1971	33.5	22.6	158.7	138.5	98.8	50.9	30.9	2.8	30.6	145.0	156.0	90.0	958.3	1971
1972	78.0	20.0	126.0	254.0	108.0	115.0	85.0	13.0	22.0	72.0	86.0	32.0	1011.0	1972
1973	2.0	11.0	18.0	71.0	79.0	53.0	63.0	51.0	112.0	98.0	51.0	93.0	702.0	1973
1974	52.0	76.0	111.0	107.0	91.0	54.0	9.0	85.0	61.0	142.0	125.0	28.0	941.0	1974
1975	15.0	97.0	79.0	102.0	109.0	27.0	94.0	88.0	51.0	130.4	116.2	141.8	1050.4	1975
1976	17.0	74.8	91.2	108.5	74.0	61.0	31.0	30.0	50.0	215.0	98.0	38.0	888.5	1976
1977	10.0	0.0	54.0	84.0	82.0	89.0	22.0	50.0	149.5	82.0	137.0	40.0	799.5	1977
1978	0.0	15.0	94.0	125.0	55.0	37.0	10.0	40.0	62.0	102.0	97.0	70.0	747.0	1978
1979	29.0	15.0	77.0	135.0	75.0	144.0	35.0	155.0	35.0	300.0	150.0	35.0	1185.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	100.5	97.0	158.7	254.0	151.5	183.5	94.0	155.0	149.5	300.0	183.9	141.8	1185.0	
CUARTIL SUPERIOR	52.9	45.0	92.6	135.4	110.0	106.1	66.8	74.6	68.9	158.2	138.7	80.0	969.1	
MEDIANA	31.1	24.3	71.6	104.5	98.2	71.8	43.6	50.5	52.0	143.5	120.6	46.8	919.5	
CUARTIL INFERIOR	13.0	15.3	29.8	81.5	80.5	51.9	31.6	40.4	37.6	94.1	97.5	33.5	807.9	
VALOR MINIMO	0.0	0.0	13.0	62.6	40.1	27.0	9.0	2.8	19.8	72.0	37.6	10.5	702.0	
PROMEDIOS	35.1	34.6	66.0	116.1	96.7	81.3	48.4	58.4	61.6	140.3	116.8	56.5	911.9	
PORCENTAJES	3.8	3.8	7.2	12.7	10.6	8.9	5.3	6.4	6.8	15.4	12.8	6.2		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 22. INDICE DE ARNOLDUS = 90.

INDICE DE IRREGULARIDAD INTERANUAL =1.43

DEV. ESTANDAR	28.1	27.1	40.9	49.8	25.0	43.3	24.5	35.2	35.9	53.6	36.0	31.6	126.1
COEF. VARIACION	0.801	0.783	0.619	0.428	0.259	0.532	0.506	0.603	0.583	0.382	0.308	0.558	0.138
COEF. ASIMETRIA	0.866	0.949	0.472	1.671	-0.141	0.865	0.295	1.151	1.272	1.359	-0.457	1.097	0.293

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1119.	1074.	1018.	912.	806.	750.	704.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

IMPRESO EN COLOMBIA POR BANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212557	LA PRIMAVERA	SUBACHOQUE	+04 52 00	+074 13 00	2590 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1965	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	28.4	38.4	25.0	141.8	199.4	39.9	-9.9
1966	0.4	9.4	56.1	98.0	127.7	67.4	47.0	40.0	45.1	108.7	129.9	55.5	785.2
1967	16.4	52.5	58.5	74.5	96.3	110.6	57.0	59.3	54.1	97.3	69.6	43.9	790.0
1968	41.5	35.4	24.4	222.3	89.9	121.8	71.2	23.0	184.4	101.2	98.7	38.2	1052.0
1969	60.2	7.5	29.4	168.0	82.1	85.7	21.2	94.4	59.5	153.3	109.8	46.4	921.5
1970	11.5	17.0	15.5	67.3	111.0	33.5	57.4	43.5	132.8	154.0	125.4	47.4	816.3
1971	137.4	65.5	134.1	60.3	215.8	45.8	23.8	91.2	57.5	145.1	94.0	37.8	1112.3
1972	61.0	75.9	113.4	194.8	196.1	114.2	72.0	55.9	37.7	38.1	55.8	40.8	1055.7
1973	3.7	4.4	45.4	23.7	60.2	102.3	53.3	89.7	126.2	64.7	135.1	69.1	777.8
1974	48.0	32.2	93.5	99.7	60.0	32.8	37.4	51.7	144.8	111.0	80.2	27.5	819.2
1975	11.6	79.8	72.3	22.4	109.8	80.5	89.8	56.5	54.6	105.5	111.0	63.0	827.2
1976	28.5	56.4	104.3	125.1	85.2	55.7	46.1	10.1	44.5	212.4	38.7	21.4	828.4
1977	26.4	14.0	53.6	57.3	57.0	64.4	28.6	75.3	69.2	162.5	82.8	34.5	726.0
1978	15.0	8.1	87.3	152.7	70.0	81.9	37.8	32.9	47.6	115.9	54.9	27.6	735.7
1979	24.4	19.5	40.6	103.5	86.6	114.3	49.9	65.8	94.2	211.9	81.6	58.5	950.8

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X LA PRIMAVERA MUNICIPIO DE SUBACHOQUE PERIODO 1965 - 1979 COEF DE CORRECCION 1.000

ESTACION Y CLAYMARAL MUNICIPIO DE SUBA PERIODO 1965 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	CUY	RAN	FCAN	F = -4. I F : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	551.	1084.	0.825	-0.229					+ I				
2	1978	1686.	1680.	1.148	-0.121					+I				
3	1976	2515.	2499.	0.958	-0.163					+I				
4	1975	3342.	3305.	0.966	-0.196					+I				
5	1974	4161.	4017.	1.082	-0.125					+I				
6	1973	4535.	4700.	0.948	-0.174					+I				
7	1972	5595.	5708.	1.075	-0.067					+				
8	1971	7107.	6864.	1.073	-0.001					+				
9	1970	7523.	7295.	1.078	0.066					+				
10	1969	8645.	8332.	0.925	-0.020					+				
11	1968	9697.	9105.	1.280	0.241					I +				
12	1967	10667.	9904.	0.930	0.173					I+				
13	1966	11472.	10700.	0.837	0.0					+				

N	AN	CLX	CUY	RAN	FCAN	F = -4. I F : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 662.5 829.7

RAZONES PROMEDIOS Y/X = 0.940

X/Y = 1.064

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IDAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212557	LA PRIMAVERA	SUBACHOQUE	+04 51 37	+074 12 55	2590 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1965	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	28.4	38.4	25.0	141.8	199.4	39.9	-9.9	1965
1966	0.4	9.4	56.1	98.0	127.7	67.4	47.0	40.0	45.1	108.7	129.9	55.5	785.2	1966
1967	10.4	52.5	58.5	74.3	56.3	110.6	57.0	59.3	54.1	97.3	69.6	43.9	790.0	1967
1968	41.5	35.4	24.4	222.3	89.9	121.8	71.2	23.0	184.4	101.2	98.7	38.2	1052.0	1968
1969	60.2	7.5	29.4	168.0	82.1	89.7	21.2	94.4	59.5	153.3	109.8	46.4	921.5	1969
1970	11.5	17.0	15.5	67.3	111.0	33.5	57.4	43.5	132.8	154.0	128.4	47.4	816.3	1970
1971	137.4	65.5	134.1	60.3	215.8	45.8	23.8	91.2	57.5	149.1	94.0	37.8	1112.3	1971
1972	61.0	75.9	113.4	194.8	196.1	114.2	72.0	55.9	37.7	38.1	55.8	40.8	1055.7	1972
1973	3.7	4.4	45.4	23.7	60.2	102.3	53.3	89.7	126.2	64.7	135.1	69.1	777.8	1973
1974	48.0	32.2	93.5	99.7	60.0	32.8	37.4	51.7	144.8	111.0	80.2	27.9	819.2	1974
1975	11.6	79.8	72.3	22.4	109.8	50.5	89.8	56.5	54.6	105.9	111.0	63.0	827.2	1975
1976	28.5	56.4	104.3	125.1	85.2	55.7	46.1	10.1	44.5	212.4	38.7	21.4	828.4	1976
1977	20.4	14.0	53.6	57.3	57.0	64.4	26.6	75.3	69.2	162.9	82.8	34.5	726.0	1977
1978	15.0	8.1	87.3	152.7	70.0	81.9	37.8	32.9	47.6	119.9	54.9	27.6	735.7	1978
1979	24.4	19.5	40.6	103.5	86.6	114.3	49.9	65.8	94.2	211.9	81.6	58.5	950.8	1979
NUMERO DE ANOS	14	14	14	14	14	14	15	15	15	15	15	15	14	
VALOR MAXIMO	137.4	79.8	134.1	222.3	215.8	121.8	89.8	94.4	184.4	212.4	199.4	69.1	1112.3	
CUARTIL SUPERIOR	48.0	56.4	93.5	152.7	111.0	110.6	57.4	75.3	126.2	154.0	128.4	55.5	950.8	
MEDIANA	25.4	25.8	57.3	98.8	88.2	74.6	47.0	55.9	57.5	119.9	94.0	40.8	823.2	
CUARTIL INFERIOR	11.6	9.4	40.6	60.3	70.0	50.5	28.6	38.4	45.1	101.2	69.6	34.5	785.2	
VALOR MINIMO	0.4	4.4	15.5	22.4	57.0	32.8	21.2	10.1	25.0	38.1	38.7	21.4	726.0	
PROMEDIOS	34.7	34.1	66.3	105.0	103.4	77.5	48.1	55.2	78.5	128.8	97.8	43.5	871.3	
												TOTAL DE LOS PROMEDIOS MENSUALES =	872.8	
PORCENTAJES	4.0	3.9	7.6	12.0	11.8	8.9	5.5	6.3	9.0	14.8	11.2	5.0		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 19. INDICE DE ARNOLDUS = 88.

DEV. ESTANDAR	35.4	27.0	35.7	61.1	48.2	31.6	19.5	25.1	47.0	48.0	40.1	13.6	125.7	
COEF. VARIACION	1.019	0.790	0.539	0.583	0.466	0.407	0.407	0.454	0.599	0.373	0.410	0.312	0.144	
COEF. ASIMETRIA	2.048	0.561	0.424	0.521	1.527	0.001	0.547	0.062	1.098	0.111	0.976	0.328	0.847	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2125s7	LA PRIMAVERA	SUBACHOQUE	+04 51 37	+074 12 55	2590 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	38.3	49.6	37.0	111.0	55.7	24.2	75.7	125.6	72.1	135.2	42.8	99.9	807.1	1960
1961	47.5	10.5	51.8	64.5	43.2	80.0	37.2	66.5	21.2	189.1	165.4	12.5	789.4	1961
1962	42.6	23.5	69.1	60.4	98.1	103.2	46.0	78.2	67.5	170.8	158.3	73.4	991.1	1962
1963	32.0	64.1	89.2	90.4	132.5	93.9	63.2	48.6	53.0	114.5	78.3	12.4	872.1	1963
1964	4.6	15.0	38.5	94.9	123.0	105.6	33.4	36.1	93.2	88.6	110.7	30.4	774.0	1964
1965	7.9	24.4	13.4	180.2	149.3	21.8	28.4	38.4	25.0	141.8	195.4	39.9	869.9	1965
1966	0.4	9.4	56.1	98.0	127.7	67.4	47.0	40.0	45.1	108.7	129.9	55.5	785.2	1966
1967	16.4	52.5	58.5	74.5	96.3	110.6	57.0	59.3	54.1	97.3	69.6	43.9	790.0	1967
1968	41.5	35.4	24.4	222.3	89.9	121.8	71.2	23.0	184.4	101.2	96.7	38.2	1052.0	1968
1969	60.2	7.5	29.4	168.0	82.1	89.7	21.2	94.4	59.5	153.3	109.8	46.4	921.5	1969
1970	11.5	17.0	15.5	67.3	111.0	33.5	57.4	43.5	132.8	154.0	125.4	47.4	816.3	1970
1971	137.4	65.5	134.1	60.3	215.8	45.8	23.8	91.2	57.5	149.1	94.0	37.8	1112.3	1971
1972	61.0	75.9	113.4	194.8	196.1	114.2	72.0	55.9	37.7	38.1	55.8	40.8	1055.7	1972
1973	3.7	4.4	45.4	23.7	60.2	102.3	53.3	89.7	126.2	64.7	135.1	69.1	777.8	1973
1974	48.0	32.2	93.5	99.7	60.0	32.8	37.4	51.7	144.8	111.0	80.2	27.9	819.2	1974
1975	11.6	79.8	72.3	22.4	109.8	50.5	89.8	56.5	54.6	105.9	111.0	63.0	827.2	1975
1976	28.5	56.4	104.3	125.1	85.2	55.7	46.1	10.1	44.5	212.4	38.7	21.4	828.4	1976
1977	26.4	14.0	53.6	57.3	57.0	64.4	28.6	75.3	69.2	162.9	82.8	34.5	726.0	1977
1978	15.0	8.1	87.3	152.7	70.0	81.9	37.8	32.9	47.6	119.9	54.9	27.6	735.7	1978
1979	24.4	19.5	40.6	103.5	86.6	114.3	49.9	65.8	94.2	211.9	81.6	58.5	950.8	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	137.4	79.8	134.1	222.3	215.8	121.8	89.8	125.6	184.4	212.4	199.4	99.9	1112.3	
CUARTIL SUPERIOR	45.0	54.4	88.2	138.9	125.3	104.4	60.3	76.7	93.7	158.4	127.6	57.0	936.1	
MEDIANA	27.4	23.9	54.8	96.4	93.1	80.9	46.5	56.2	58.5	127.5	96.3	40.3	827.8	
CUARTIL INFERIOR	11.5	12.3	37.8	82.4	65.1	48.1	35.3	39.2	46.3	103.5	73.9	29.1	787.3	
VALOR MINIMO	0.4	4.4	13.4	22.4	43.2	21.8	21.2	10.1	21.2	38.1	38.7	12.4	726.0	
PROMEDIOS	32.9	33.2	61.4	103.5	102.5	75.7	48.8	59.1	74.2	131.5	101.1	44.0	868.1	
PORCENTAJES	3.8	3.8	7.1	11.9	11.8	8.7	5.6	6.8	8.5	15.2	11.6	5.1		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 85.

INDICE DE IRREGULARIDAD INTERANUAL =1.39

DEV. ESTANDAR	30.8	24.8	33.5	55.3	45.6	32.9	18.7	27.6	42.8	45.5	42.4	21.5	111.4
COEF. VARIACION	0.936	0.747	0.545	0.534	0.445	0.435	0.384	0.467	0.577	0.346	0.419	0.487	0.128

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1051.	1011.	962.	868.	774.	725.	685.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.117	0.619	0.542	0.636	1.124	-0.276	0.485	0.538	1.211	0.034	0.601	0.828	0.898

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212055	LA UNION EL ROSAL	SUBACHOQUE	+04 53 00	+074 15 00	2725 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	27.8	71.0	100.8	93.7	103.8	80.4	85.8	134.3	51.1	117.5	16.2	117.2	999.6
1961	55.9	69.2	49.3	128.8	17.3	137.9	84.0	29.3	33.8	148.3	141.2	20.7	955.7
1962	22.4	16.5	57.2	63.0	115.6	62.0	58.5	106.5	80.5	128.1	137.5	61.0	908.8
1963	27.5	73.1	75.0	116.5	87.5	47.5	75.0	32.5	25.5	65.5	138.5	20.5	784.6
1964	3.5	21.0	46.5	117.0	42.5	159.5	45.0	106.0	36.6	78.0	42.5	63.5	761.6
1965	17.0	0.0	14.5	61.1	96.0	26.1	21.0	58.5	56.0	133.5	156.5	13.0	653.2
1966	0.0	30.5	31.0	117.0	116.7	92.5	56.0	45.5	27.0	60.5	102.0	121.0	799.7
1967	12.7	42.0	52.5	86.0	87.5	114.5	31.0	31.0	38.5	64.0	151.0	82.5	793.2
1968	25.0	52.5	50.5	163.5	98.0	68.0	96.5	14.1	109.8	124.0	40.0	32.5	894.4
1969	36.0	33.0	21.0	154.0	74.0	115.5	21.5	27.5	27.5	167.0	139.0	39.0	855.0
1970	25.0	71.5	22.0	77.5	92.5	65.0	52.0	16.5	92.0	-9.9	133.0	67.5	-9.9
1971	126.5	119.0	97.5	100.0	174.5	56.5	32.0	87.5	64.5	182.5	97.0	53.5	1191.0
1972	75.9	25.2	72.6	194.0	181.0	109.0	54.0	76.5	36.5	42.0	67.5	78.5	1012.7
1973	8.0	14.5	63.5	53.0	78.0	180.0	57.5	93.5	147.5	114.5	149.0	170.0	1129.0
1974	79.0	66.5	186.5	105.5	65.5	57.5	47.5	61.5	148.5	131.0	134.0	29.5	1112.5
1975	8.0	103.0	69.5	60.5	92.0	47.0	106.0	74.0	96.5	182.5	180.0	97.0	1116.0
1976	30.0	80.0	161.3	164.0	144.0	90.5	111.5	16.0	86.0	202.5	48.0	43.5	1177.3
1977	26.5	30.0	100.5	88.0	73.0	110.0	77.0	140.5	82.0	188.5	88.0	55.0	1059.0
1978	34.5	41.0	136.0	232.5	96.5	-9.9	55.0	41.0	104.0	213.5	132.0	74.0	-9.9
1979	60.0	20.0	68.0	203.0	93.0	158.5	77.5	94.0	146.5	256.0	82.0	151.0	1449.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAPLA S.

ESTACION X LA UNION EL ROSAL MUNICIPIO DE SUEACHOQUE PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	T /	CU	MOY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1979	1449.5	1449.5	1449.5	2.382	C.478	
2	1977	1059.0	2508.5	1254.3	C.398	C.558	
3	1976	1177.3	3685.8	1228.6	C.555	C.758	
4	1975	1116.0	4801.8	1200.4	C.687	C.896	
5	1974	1112.5	5914.3	1182.9	C.670	1.031	
6	1973	1129.0	7043.3	1173.9	C.753	1.182	
7	1972	1012.7	8056.0	1150.9	C.163	1.214	
8	1971	1191.0	9247.0	1155.9	1.C66	1.429	
9	1969	855.0	10102.0	1122.4	-C.635	1.301	
10	1968	694.4	10996.4	1099.6	-C.439	1.213	
11	1967	793.2	11789.6	1071.8	-C.553	1.C21	
12	1966	795.7	12589.3	1049.1	-C.520	C.837	
13	1965	653.2	13242.5	1018.7	-1.664	C.503	
14	1964	761.6	14004.1	1000.3	-1.113	C.28C	
15	1963	784.6	14788.7	985.9	-C.556	C.C8C	
16	1962	908.8	15697.5	981.1	-C.365	C.C06	
17	1961	955.7	16653.2	979.6	-C.127	-C.C19	
18	1960	999.6	17652.8	980.7	C.C56	C.0	

N	AN	T /	CU	MOY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 18 ANOS = 980.7
DEVIACION ESTANDAR = 196.8
COEFICIENTE DE VARIACION = 0.201

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212071	LAS MARGARITAS	SUBACHOQUE	+04 50 00	+074 15 00	2606 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1960	29.0	32.5	118.0	83.0	36.5	57.0	73.0	63.5	37.0	169.5	48.0	127.9	874.9
1961	68.8	11.2	59.1	108.6	27.1	115.9	54.3	26.1	33.7	110.0	127.2	31.5	773.5
1962	38.0	26.5	67.5	71.0	104.5	71.5	48.0	81.2	71.7	119.0	122.0	43.5	864.4
1963	18.0	56.0	80.5	87.0	90.6	45.0	19.5	56.0	20.0	109.5	141.5	30.0	753.6
1964	8.0	6.0	63.5	90.5	62.0	143.0	68.0	94.5	57.3	94.5	111.5	40.0	838.8
1965	26.5	20.0	22.5	157.3	105.5	6.5	25.0	67.5	67.0	174.0	245.4	67.5	1004.7
1966	1.0	10.2	31.0	108.3	128.5	25.0	48.0	38.4	64.5	62.0	98.5	54.5	669.9
1967	23.0	28.0	42.5	67.4	104.0	258.0	35.0	38.0	64.0	51.0	68.5	34.0	813.4
1968	16.0	2.0	18.0	105.0	44.5	81.0	44.0	19.5	109.0	226.0	153.0	23.0	841.0
1969	50.0	15.0	20.6	185.0	78.0	75.0	6.0	67.5	34.0	71.0	51.5	22.0	675.6
1970	11.5	11.5	12.0	38.0	97.0	33.0	94.0	117.0	242.0	213.5	149.0	54.0	1072.5
1971	128.0	89.5	173.0	132.0	210.5	36.0	39.0	74.0	70.5	148.0	128.0	40.0	1268.5
1972	99.0	83.5	163.5	251.0	156.0	79.5	103.5	96.5	31.0	67.0	75.5	84.5	1290.5
1973	16.5	24.0	83.5	55.5	88.5	150.5	84.5	99.0	176.5	72.5	87.0	143.5	1081.5
1974	70.5	60.0	174.0	120.0	79.0	98.0	42.0	73.0	114.5	220.5	229.5	46.5	1287.5
1975	3.5	143.0	140.9	91.9	186.7	73.8	175.5	157.5	179.0	168.5	302.0	225.0	1847.3
1976	26.0	75.0	196.0	145.0	103.0	101.0	62.0	82.0	65.0	252.0	86.0	48.0	1281.0
1977	7.2	24.0	82.0	98.0	79.0	79.0	61.0	134.5	57.0	158.0	137.0	27.0	943.7
1978	12.0	41.0	60.0	205.0	143.0	112.0	31.0	40.0	118.0	137.0	98.0	59.0	1056.0
1979	21.0	43.0	38.0	164.0	125.0	107.0	85.0	98.0	131.0	114.0	90.0	28.0	1044.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X LAS MARGARITAS MUNICIPIO DE SUBACHOQUE PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	T #	CU	MOV	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1044.0	1044.0	1044.0	0.106	0.029				+			
2	1978	1056.0	2100.0	1050.0	0.149	0.071				+			
3	1977	943.7	3043.7	1014.6	-0.281	0.001				+			
4	1976	1281.0	4324.7	1081.2	0.550	0.265				+			
5	1975	1847.4	6172.0	1234.4	2.567	1.086					+		
6	1974	1287.5	7459.5	1243.2	0.573	1.356					+		
7	1973	1081.5	8541.0	1220.1	0.240	1.422					+		
8	1972	1290.5	9831.5	1228.9	0.584	1.695					+		
9	1971	1268.5	11100.0	1233.3	0.506	1.546					+		
10	1970	1072.5	12172.5	1217.2	0.206	2.003					+		
11	1969	675.6	12848.1	1168.0	-1.205	1.609					+		
12	1968	641.0	13489.1	1140.8	-0.616	1.495					+		
13	1967	813.4	14302.5	1115.6	-0.715	1.301					+		
14	1966	869.9	15172.4	1083.7	-1.226	0.961					+		
15	1965	1004.7	16177.1	1078.5	-0.034	0.952					+		
16	1964	838.8	17015.9	1063.5	-0.624	0.779					+		
17	1963	753.6	17769.5	1045.3	-0.928	0.522					+		
18	1962	864.4	18633.9	1035.2	-0.533	0.375					+		
19	1961	773.5	19407.4	1021.4	-0.857	0.137					+		
20	1960	874.9	20282.3	1014.1	-0.496	0.0					+		

N	AN	T #	CU	MOV	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 20 ANOS = 1014.1

DESVIACION ESTANDAR = 280.8

COEFICIENTE DE VARIACION = 0.277

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212071	LAS MARGARITAS	SUBACHOQUE	+04 50 09	+074 15 00	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	29.0	32.5	118.0	83.0	36.5	57.0	73.0	63.5	37.0	169.5	46.0	127.9	874.9	1960
1961	68.8	11.2	59.1	108.6	27.1	115.9	54.3	26.1	33.7	110.0	127.2	31.5	773.5	1961
1962	38.0	26.5	87.5	71.0	104.5	71.5	48.0	81.2	71.7	119.0	122.0	43.5	864.4	1962
1963	18.0	56.0	80.5	87.0	90.6	45.0	19.5	56.0	20.0	109.5	141.5	30.0	753.6	1963
1964	8.0	6.0	63.5	90.5	62.0	143.0	68.0	94.5	57.3	94.5	111.5	40.0	838.8	1964
1965	26.5	20.0	22.5	157.3	105.5	6.5	25.0	67.5	67.0	174.0	248.4	87.5	1004.7	1965
1966	1.0	10.2	51.0	108.5	128.5	25.0	48.0	38.4	64.5	62.0	98.5	54.5	669.9	1966
1967	23.0	28.0	42.5	87.4	104.0	258.0	35.0	38.0	64.0	51.0	66.5	34.0	813.4	1967
1968	10.0	2.0	18.0	105.0	44.5	81.0	44.0	19.5	109.0	226.0	183.0	23.0	841.0	1968
1969	50.0	15.0	20.6	185.0	78.0	75.0	6.0	67.5	34.0	71.0	81.5	22.0	675.6	1969
NUMERO DE ANOS	10	10	10	10	10	10	10	10	10	10	10	10	10	
VALOR MAXIMO	68.8	56.0	118.0	185.0	128.5	258.0	73.0	94.5	109.0	226.0	248.4	127.9	1004.7	
MEDIANA	24.8	17.6	50.8	97.8	84.3	73.3	46.0	59.8	60.6	109.8	116.8	37.0	826.1	
VALOR MINIMO	1.0	2.0	18.0	67.4	27.1	6.5	6.0	19.5	20.0	51.0	46.0	22.0	669.9	
PROMEDIOS	27.8	20.7	52.3	106.3	78.1	87.8	42.1	55.2	55.6	118.6	116.7	49.4	811.0	
											TOTAL DE LOS PROMEDIOS MENSUALES =		811.0	
PORCENTAJES	3.4	2.6	6.5	13.1	9.6	10.8	5.2	6.8	6.9	14.6	14.4	6.1		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 83.

DEV. ESTANDAR	20.1	15.9	31.9	37.6	34.2	72.0	21.1	24.2	25.7	55.7	58.0	33.6	99.5	
COEF. VARIACION	0.724	0.766	0.609	0.354	0.438	0.820	0.501	0.439	0.461	0.470	0.497	0.680	0.123	
COEF. ASIMETRIA	0.866	1.179	0.865	1.287	-0.212	1.573	-0.216	0.022	0.679	0.740	1.050	1.772	0.308	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212076	PUENTE MANRIQUE	SUBACHOQUE	+04 54 00	+074 10 00	2640 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	-9.9	-9.9	96.1	91.2	38.8	76.6	52.2	37.6	114.6	39.6	72.2	-9.9
1961	40.2	-9.9	68.0	92.6	15.0	100.2	51.0	24.4	19.7	122.4	104.1	13.9	-9.9
1962	18.5	10.2	72.3	51.4	93.1	128.9	32.0	90.8	58.7	58.3	146.4	20.0	780.6
1963	27.8	51.9	64.2	97.8	141.7	73.1	80.0	49.9	26.4	92.0	128.4	28.3	861.5
1964	3.9	7.4	55.3	109.8	88.0	133.8	68.4	69.0	44.8	65.6	79.8	36.2	762.0
1965	19.7	23.5	29.6	128.6	59.4	30.2	-9.9	35.1	27.4	126.7	144.4	24.0	-9.9
1966	0.0	7.8	41.3	103.4	105.3	64.4	52.0	48.3	44.6	34.0	153.2	54.5	708.8
1967	22.7	48.3	70.4	62.0	81.4	54.7	53.5	40.3	29.7	79.7	72.4	53.3	708.4
1968	36.0	43.2	46.7	130.6	110.9	116.9	76.8	50.1	175.2	98.4	112.5	16.8	1014.1
1969	57.3	34.3	9.5	172.7	72.6	116.9	19.8	35.3	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANIGRAF

ESTACION X PUENTE MANRIQUE MUNICIPIO DE SUBACHOQUE PERIODO 1960 - 1969 COEF DE CORRECCION 1.000

N	AN	T A	CU	MUY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1968	1014.1	1014.1	1014.1	1.786	0.258				I +			
2	1967	708.4	1722.5	861.2	-0.636	0.137				I+			
3	1966	708.8	2431.3	810.4	-0.833	0.017				+			
4	1964	762.0	3193.3	798.3	-0.377	-0.038				+			
5	1963	801.5	4054.8	811.0	0.477	0.031				+			
6	1962	780.6	4835.4	805.9	-0.217	0.0				+			

N	AN	T A	CU	MUY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LLS 6 ANOS = 805.9

DEVIACION ESTANDAR = 110.6

COEFICIENTE DE VARIACION = 0.145

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
21207a	PUENTE MANRIQUE	SUESCHQQUE	+04 55 10	+074 10 30	2640 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	-9.9	-9.9	96.1	91.2	38.8	76.6	52.2	37.6	114.6	39.6	72.2	-9.9	1960
1961	40.2	-9.9	68.0	92.6	15.0	100.2	51.0	24.4	19.7	122.4	104.1	13.9	-9.9	1961
1962	18.5	10.2	72.3	51.4	93.1	128.9	32.0	90.8	58.7	58.3	146.4	20.0	780.6	1962
1963	27.8	51.9	64.2	97.8	141.7	73.1	60.0	49.9	26.4	92.0	128.4	28.3	861.5	1963
1964	3.9	7.4	55.3	109.8	88.0	133.8	68.4	69.0	44.8	65.6	79.8	36.2	762.0	1964
1965	19.7	23.5	29.6	128.6	89.4	30.2	-9.9	35.1	27.4	126.7	144.4	24.0	-9.9	1965
1966	0.0	7.8	41.3	103.4	105.3	64.4	52.0	48.3	44.6	34.0	153.2	54.5	708.8	1966
1967	22.7	48.3	70.4	62.0	81.4	94.7	53.5	40.3	29.7	79.7	72.4	53.3	708.4	1967
1968	36.0	43.2	46.7	130.6	110.9	116.9	76.8	50.1	175.2	98.4	112.5	16.8	1014.1	1968
1969	57.3	34.3	9.5	172.7	72.6	116.9	19.8	35.3	-9.9	-9.9	-9.9	-9.9	-9.9	1969
NUMERO DE ANOS	9	8	9	10	10	10	9	10	9	9	9	9	6	
VALOR MAXIMO	57.3	51.9	72.3	172.7	141.7	133.8	80.0	90.8	175.2	126.7	153.2	72.2	1014.1	
MEDIANA	22.7	28.9	55.3	100.6	89.6	97.4	53.5	49.1	37.6	92.0	112.5	28.3	771.3	
VALOR MINIMO	0.0	7.4	9.5	51.4	15.0	30.2	19.8	24.4	19.7	34.0	39.6	13.9	708.4	
PROMEDIOS	25.1	28.3	50.8	104.5	85.9	89.8	56.7	49.5	51.6	88.0	109.0	35.5	605.9	
									TOTAL DE LOS PROMEDIOS MENSUALES =				774.6	
PORCENTAJES	3.2	3.7	6.6	13.5	11.1	11.6	7.3	6.4	6.7	11.4	14.1	4.6		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 77.

DEV. ESTANDAR	17.8	16.6	21.2	34.7	33.5	36.7	21.0	18.9	47.9	31.4	36.8	20.2	116.6
COEF. VARIACION	0.711	0.587	0.418	0.332	0.391	0.409	0.370	0.382	0.928	0.357	0.336	0.570	0.145
COEF. ASIMETRIA	0.344	0.021	-0.941	0.400	-0.659	-0.502	-0.613	1.130	2.657	-0.395	-0.599	0.780	1.373

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212095	BARRANCAS	SUESCA	+05 10 00	+073 50 00	2720 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	45.0	102.0	108.7	93.0	-9.9
1967	12.0	13.0	108.0	92.0	57.0	85.0	51.0	52.0	38.0	74.0	100.0	59.0	741.0
1968	11.0	101.0	16.0	152.0	42.0	156.0	51.0	44.0	70.0	62.0	59.0	11.0	777.0
1969	50.6	16.3	1.4	191.8	71.8	38.3	36.7	27.0	25.0	136.4	64.9	10.4	670.6
1970	22.8	57.8	17.6	29.1	78.0	40.5	55.2	16.9	96.4	141.8	65.4	10.0	631.5
1971	50.2	57.6	69.6	88.8	82.5	41.5	47.4	33.9	36.6	82.9	48.4	50.6	660.0
1972	94.2	6.8	35.5	135.3	77.1	75.1	62.8	37.5	29.1	42.0	73.5	13.0	681.9
1973	5.1	33.8	12.4	36.5	63.6	46.3	54.2	61.3	129.3	96.0	104.0	89.0	731.5
1974	35.0	69.2	53.8	80.3	92.6	31.6	33.0	23.2	55.8	55.1	117.6	20.0	667.2
1975	4.8	65.3	59.8	53.0	78.5	56.5	39.6	40.4	43.3	114.4	49.6	118.8	724.0
1976	7.9	21.5	84.9	32.3	86.9	108.9	17.2	34.0	40.5	108.0	88.8	12.9	643.8
1977	6.3	1.3	54.0	79.4	29.5	36.1	19.0	56.5	66.6	61.8	117.5	35.7	563.7
1978	1.3	28.5	36.2	143.2	50.9	50.8	49.1	40.7	49.4	106.5	55.8	30.7	643.1
1979	26.5	44.1	65.6	148.2	73.0	67.2	39.9	68.8	18.6	286.0	112.8	51.7	1022.4

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANANA S

ESTACION X BARRANCAS MUNICIPIO DE SUESCA PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1022.4	1022.4	1022.4	2.879	0.451				I +			•
2	1978	643.1	1665.5	832.7	-0.555	0.364			•	I +			
3	1977	563.7	2229.2	743.1	-1.274	0.165		•		I+			
4	1976	643.8	2873.0	718.2	-0.549	0.078			•	+			
5	1975	724.0	3597.0	719.4	0.177	0.106				I*			
6	1974	667.2	4264.2	710.7	-0.347	0.053			•	+			
7	1973	731.5	4995.7	713.7	0.245	0.092				+ •			
8	1972	681.9	5677.6	709.7	-0.204	0.060			•	+			
9	1971	660.0	6337.6	704.2	-0.402	-0.003			•	+			
10	1970	631.5	6969.1	696.9	-0.660	-0.107			•	+I			
11	1969	670.6	7639.7	694.5	-0.306	-0.155			•	+I			
12	1968	777.0	8416.7	701.4	0.657	-0.052				+ •			
13	1967	741.0	9157.7	704.4	0.331	0.000				+ •			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 13 ANOS = 704.4
DEVIACION ESTANDAR = 110.5
COEFICIENTE DE VARIACION = 0.157

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212095	BARRANCAS	SUESCA	+05 09 40	+073 50 05	2720 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	45.0	102.0	108.7	93.0	-9.9	1966
1967	12.0	13.0	108.0	92.0	57.0	85.0	51.0	52.0	38.0	74.0	100.0	59.0	741.0	1967
1968	11.0	101.0	16.0	152.0	42.0	158.0	51.0	44.0	70.0	62.0	55.0	11.0	777.0	1968
1969	50.6	16.3	1.4	191.8	71.8	38.3	36.7	27.0	25.0	136.4	64.9	10.4	670.6	1969
1970	22.6	57.8	17.6	29.1	78.0	40.5	55.2	16.9	96.4	141.8	65.4	10.0	631.5	1970
1971	50.2	57.6	69.6	88.5	82.5	41.5	47.4	33.9	36.6	52.9	48.4	50.6	660.0	1971
1972	94.2	6.8	35.5	135.3	77.1	75.1	62.8	37.5	29.1	42.0	73.5	13.0	681.9	1972
1973	5.1	33.8	12.4	36.5	63.6	46.3	54.2	61.3	129.3	96.0	104.0	89.0	731.5	1973
1974	35.0	69.2	53.8	80.3	52.6	31.6	33.0	23.2	55.6	55.1	117.6	20.0	667.2	1974
1975	4.8	65.3	59.8	53.0	78.5	56.5	39.6	40.4	43.3	114.4	49.6	118.8	724.0	1975
1976	7.9	21.5	64.9	32.3	86.9	108.9	17.2	34.0	40.5	108.0	88.8	12.9	643.8	1976
1977	6.3	1.3	54.0	79.4	29.5	36.1	19.0	56.5	66.6	61.8	117.5	35.7	563.7	1977
1978	1.3	28.5	36.2	143.2	50.9	50.8	49.1	40.7	49.4	106.5	55.8	30.7	643.1	1978
1979	26.5	44.1	65.6	148.2	73.0	87.2	39.9	68.8	18.6	286.0	112.8	51.7	1022.4	1979
NUMERO DE ANOS	13	13	13	13	13	13	13	13	14	14	14	14	13	
VALOR MAXIMO	94.2	101.0	108.0	191.8	92.6	158.0	62.8	68.8	129.3	286.0	117.6	118.8	1022.4	
CUARTIL SUPERIOR	42.6	61.5	67.6	145.7	80.5	86.1	52.6	54.3	66.6	114.4	108.7	59.0	736.3	
MEDIANA	12.0	33.6	53.8	88.8	73.0	50.8	47.4	40.4	44.1	99.0	61.1	33.2	670.6	
CUARTIL INFERIOR	5.7	14.6	16.8	44.8	53.9	39.4	34.8	30.4	36.6	61.8	55.0	12.9	643.4	
VALOR MINIMO	1.3	1.3	1.4	29.1	29.5	31.6	17.2	16.9	18.6	42.0	48.4	10.0	563.7	
PROMEDIOS	25.2	39.7	47.3	97.1	68.0	65.8	42.8	41.2	53.1	102.8	83.3	43.3	704.4	
											TOTAL DE LOS PROMEDIOS MENSUALES =		709.8	
PORCENTAJES	3.6	5.6	6.7	13.7	9.6	9.3	6.0	5.8	7.5	14.5	11.7	6.1		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 66.

DEV. ESTANDAR	26.7	29.2	31.1	52.7	18.5	36.5	13.7	15.2	29.8	61.4	26.4	35.6	110.5
COEF. VARIACION	1.059	0.736	0.658	0.543	0.272	0.555	0.320	0.368	0.561	0.596	0.317	0.822	0.157
COEF. ASIMETRIA	1.623	0.601	0.319	0.269	-0.823	1.519	-0.708	0.276	1.498	2.179	0.037	0.951	2.103

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2401 30	EL HATILLO	SUESCA	+05 10 00	+073 48 00	2885 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1960	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	69.5	93.5	40.5	93.0	-9.9
1961	23.0	6.5	77.5	84.0	35.5	121.5	57.0	85.0	31.2	162.0	115.5	10.5	809.2
1962	23.5	32.0	54.0	27.5	152.0	115.0	105.0	65.5	37.0	105.5	107.5	42.0	866.5
1963	7.0	38.5	20.5	169.5	196.5	76.0	86.5	80.0	53.0	93.0	110.0	20.0	950.5
1964	3.0	6.5	5.0	78.0	140.5	118.5	81.5	40.0	38.0	94.5	37.5	28.5	671.5
1965	35.5	9.5	18.5	202.5	97.5	74.0	120.5	98.0	35.5	129.5	102.5	19.0	942.5
1966	7.0	19.0	124.5	37.5	105.0	82.0	75.0	55.0	41.0	82.5	118.0	95.0	841.5
1967	33.5	18.5	96.0	102.5	59.2	123.4	111.1	125.6	58.2	65.6	88.8	55.6	938.2
1968	32.5	19.5	26.6	128.0	44.0	136.7	131.5	75.7	80.1	72.2	56.8	12.0	816.6
1969	51.3	29.3	4.0	221.3	87.9	63.3	88.8	61.4	33.4	160.8	108.6	19.4	929.5
1970	32.1	89.4	21.7	45.8	89.2	88.4	92.8	43.3	89.8	116.3	68.9	18.0	799.7
1971	64.1	47.1	96.8	109.8	112.6	84.9	117.2	58.4	69.3	35.2	61.5	74.8	935.7
1972	105.2	12.9	65.7	184.0	88.6	136.4	141.3	68.3	58.4	48.3	89.1	16.9	1005.1
1973	11.2	32.9	14.7	53.1	72.5	71.2	119.6	86.2	107.9	90.5	92.8	58.3	810.9
1974	34.6	68.6	42.9	89.1	110.7	59.5	89.9	59.1	54.2	46.8	87.9	26.0	769.3
1975	9.8	67.3	46.1	53.2	60.8	111.3	62.2	80.9	67.7	117.4	41.2	163.5	881.4
1976	15.0	30.0	99.1	122.0	103.2	139.0	145.5	98.5	87.5	94.0	91.5	31.5	1056.8
1977	11.0	5.0	17.5	96.5	63.5	77.5	84.5	67.0	93.0	68.0	64.0	43.5	691.0
1978	0.0	22.5	-9.9	209.5	48.0	100.0	80.0	66.0	48.5	114.0	24.0	37.5	-9.9
1979	8.5	30.5	123.0	173.5	94.5	108.0	72.5	107.5	18.5	204.0	144.0	58.5	1143.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X EL HATILLO MUNICIPIO DE SUESCA PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	1143.0	1143.0	1143.0	2.172	0.297				I +		•	
2	1977	691.0	1834.0	917.0	-1.576	0.082		•		+			
3	1975	1056.8	2890.8	963.6	1.457	0.281				I +	•		
4	1975	881.4	3772.2	943.0	0.003	0.281				• +			
5	1974	769.3	4541.5	908.3	-0.927	0.155			•	I+			
6	1973	810.9	5352.4	892.1	-0.582	0.075			•	+			
7	1972	1005.1	6357.5	908.2	1.029	0.216				I +	•		
8	1971	935.7	7293.2	911.6	0.453	0.278				I + •			
9	1970	799.7	8092.9	899.2	-0.675	0.186			•	I+			
10	1969	929.5	9022.4	902.2	0.402	0.241				I + •			
11	1968	816.6	9839.0	894.5	-0.534	0.167			•	I+			
12	1967	938.2	10777.2	898.1	0.474	0.232				I + •			
13	1966	841.5	11618.7	893.7	-0.328	0.187			•	I+			
14	1965	942.5	12561.2	897.2	0.510	0.257				I + •			
15	1964	671.5	13232.7	882.2	-1.738	0.019		•		+			
16	1963	950.5	14183.2	886.4	0.576	0.098				+ •			
17	1962	866.5	15049.7	885.3	-0.121	0.082				•+			
18	1961	809.2	15858.9	881.0	-0.596	0.0			•	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 18 ANOS = 881.0
DEVIACION ESTANDAR = 120.6
COEFICIENTE DE VARIACION = 0.137

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240130	EL HATILLO	SIBSCA	+05 09 48	+073 47 45	2890 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	69.5	93.5	40.5	93.0	-9.9	1960
1961	23.0	6.5	77.5	84.0	35.5	121.5	57.0	85.0	31.2	162.0	115.5	10.5	809.2	1961
1962	23.5	32.0	54.0	27.5	152.0	115.0	105.0	65.5	37.0	105.5	107.5	42.0	866.5	1962
1963	7.0	38.5	20.5	169.5	196.5	76.0	86.5	80.0	53.0	93.0	110.0	20.0	950.5	1963
1964	3.0	6.5	5.0	74.0	140.5	118.5	81.5	40.0	38.0	94.5	37.5	28.5	671.5	1964
1965	35.5	9.5	18.5	202.5	97.5	74.0	120.5	98.0	35.5	129.5	102.5	19.0	942.5	1965
1966	7.0	19.0	124.5	37.5	105.0	82.0	75.0	55.0	41.0	82.5	118.0	95.0	841.5	1966
1967	33.5	18.5	96.0	102.5	89.2	123.4	111.1	125.6	58.2	65.6	88.8	55.8	938.2	1967
1968	32.5	19.5	26.0	126.0	44.0	136.7	121.5	75.7	60.1	73.2	56.8	12.0	816.6	1968
1969	51.3	29.3	4.0	221.3	87.9	63.3	88.8	61.4	33.4	160.8	108.6	19.4	929.5	1969
1970	32.1	89.4	21.7	49.8	89.2	88.4	92.8	43.3	89.8	116.3	66.9	18.0	799.7	1970
1971	64.1	47.1	96.8	109.8	112.6	84.9	117.2	58.4	69.3	39.2	61.5	74.8	935.7	1971
1972	105.2	12.9	65.7	164.0	88.6	136.4	131.3	68.3	58.4	48.3	89.1	16.9	1005.1	1972
1973	11.2	32.9	14.7	53.1	72.5	71.2	119.6	86.2	107.9	90.5	92.8	58.3	810.9	1973
1974	34.6	68.6	42.9	89.1	110.7	59.5	89.9	59.1	54.2	46.8	87.9	26.0	769.3	1974
1975	9.8	67.3	46.1	53.2	60.8	111.3	62.2	80.9	67.7	117.4	41.2	163.5	881.4	1975
1976	15.0	30.0	99.1	122.0	103.2	139.0	145.5	98.5	87.5	94.0	91.5	31.5	1056.8	1976
1977	11.0	5.0	17.5	96.5	63.5	77.5	84.5	67.0	93.0	68.0	64.0	43.5	691.0	1977
1978	0.0	22.5	-9.9	209.5	48.0	100.0	80.0	66.0	48.5	114.0	24.0	37.5	-9.9	1978
1979	8.5	30.5	123.0	173.5	94.5	108.0	72.5	107.5	18.5	204.0	144.0	58.5	1143.0	1979
NUMERO DE ANOS	19	19	18	19	19	19	19	19	20	20	20	20	18	
VALOR MAXIMO	105.2	89.4	124.5	221.3	196.5	139.0	145.5	125.6	107.9	204.0	144.0	163.5	1143.0	
CUARTIL SUPERIOR	34.6	38.5	96.0	173.5	110.7	121.5	119.6	86.2	74.8	116.6	108.0	58.4	942.5	
MEDIANA	23.0	29.3	44.5	102.5	89.2	100.0	89.9	68.3	56.2	93.6	88.9	34.5	873.9	
CUARTIL INFERIOR	8.5	12.9	18.5	53.2	60.8	76.0	80.0	59.1	37.5	70.6	59.1	19.2	809.2	
VALOR MINIMO	0.0	5.0	4.0	27.5	35.5	59.5	57.0	40.0	18.5	39.2	24.0	10.5	671.5	
PROMEDIOS	26.7	30.8	53.0	115.3	92.7	99.3	97.5	74.8	58.6	99.9	82.5	46.2	881.0	
												TOTAL DE LOS PROMEDIOS MENSUALES =	877.4	
PORCENTAJES	3.0	3.5	6.0	13.1	10.6	11.3	11.1	8.5	6.7	11.4	9.4	5.3		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 64.

DEV. ESTANDAR	25.5	23.1	40.7	61.6	39.9	26.0	25.0	21.9	24.2	41.5	32.0	37.6	120.6
COEF. VARIACION	0.955	0.751	0.768	0.534	0.430	0.262	0.257	0.292	0.412	0.415	0.388	0.813	0.137
COEF. ASIMETRIA	1.807	1.210	0.521	0.358	0.933	0.084	0.280	0.597	0.373	0.835	-0.169	1.824	0.272

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2401 30	EL HATILLO	SUESCA	+05 09 48	+073 47 45	2890 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	19.8	31.0	101.5	88.4	76.9	86.2	77.5	64.7	69.5	93.5	40.5	93.0	842.5	1960
1961	23.0	6.5	77.5	84.0	35.5	121.5	57.0	85.0	31.2	162.0	115.5	10.5	809.2	1961
1962	23.5	32.0	54.0	27.5	152.0	115.0	105.0	65.5	37.0	105.5	107.5	42.0	866.5	1962
1963	7.0	38.5	20.5	169.5	156.5	76.0	86.5	80.0	53.0	93.0	110.0	20.0	950.5	1963
1964	3.0	0.5	5.0	78.0	140.5	118.5	81.5	40.0	38.0	94.5	37.5	28.5	671.5	1964
1965	35.5	9.5	18.5	202.5	97.5	74.0	120.5	98.0	35.5	129.5	102.5	19.0	942.5	1965
1966	7.0	19.0	124.5	37.5	105.0	82.0	75.0	55.0	41.0	82.5	118.0	95.0	841.5	1966
1967	33.5	18.5	96.0	102.5	59.2	123.4	111.1	125.6	58.2	65.6	88.8	55.8	938.2	1967
1968	32.5	19.5	26.6	128.0	44.0	136.7	131.5	75.7	80.1	73.2	56.8	12.0	816.6	1968
1969	51.3	29.3	4.0	221.3	87.9	63.3	88.8	61.4	33.4	160.8	108.6	19.4	929.5	1969
1970	32.1	89.4	21.7	49.8	89.2	88.4	92.8	43.3	89.8	116.3	68.9	18.0	799.7	1970
1971	64.1	47.1	90.8	109.8	112.6	84.9	117.2	58.4	69.3	39.2	61.5	74.8	935.7	1971
1972	105.2	12.9	65.7	184.0	88.6	136.4	131.3	68.3	58.4	48.3	89.1	16.9	1005.1	1972
1973	11.2	32.9	14.7	53.1	72.5	71.2	119.6	86.2	107.9	90.5	92.8	58.3	810.9	1973
1974	34.6	68.6	42.9	89.1	110.7	59.5	89.9	59.1	54.2	46.8	87.9	26.0	769.3	1974
1975	9.8	67.3	40.1	53.2	60.8	111.3	62.2	80.9	67.7	117.4	41.2	163.5	881.4	1975
1976	15.0	30.0	99.1	122.0	103.2	139.0	145.5	98.5	87.5	94.0	91.5	31.5	1056.8	1976
1977	11.0	5.0	17.5	96.5	63.5	77.5	84.5	67.0	93.0	68.0	64.0	43.5	691.0	1977
1978	0.0	22.5	93.2	209.5	48.0	100.0	80.0	66.0	48.5	114.0	24.0	37.5	843.2	1978
1979	8.5	30.5	123.0	173.5	94.5	108.0	72.5	107.5	18.5	204.0	144.0	58.5	1143.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	105.2	89.4	124.5	221.3	156.5	139.0	145.5	125.6	107.9	204.0	144.0	163.5	1143.0	
CUARTIL SUPERIOR	34.0	35.7	96.4	171.5	107.8	120.0	118.4	85.6	74.8	116.8	108.0	58.4	940.3	
MEDIANA	21.4	29.8	50.0	99.5	88.9	94.2	89.3	67.6	56.2	93.8	88.9	34.5	854.8	
CUARTIL INFERIOR	9.1	15.7	19.5	65.6	62.1	76.8	78.8	60.2	37.5	70.6	59.1	19.2	810.0	
VALOR MINIMO	0.0	5.0	4.0	27.5	35.5	59.5	57.0	40.0	18.5	39.2	24.0	10.5	671.5	
PROMEDIOS	26.4	30.8	57.4	114.0	91.9	98.6	96.5	74.3	58.6	99.9	82.5	46.2	877.2	
PORCENTAJES	3.0	3.5	6.5	13.0	10.5	11.2	11.0	8.5	6.7	11.4	9.4	5.3		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 64.

INDICE DE IRREGULARIDAD INTERANUAL =1.40

DEV. ESTANDAR	24.9	22.5	40.9	60.3	39.0	25.5	24.8	21.4	24.2	41.5	32.0	37.6	114.7
COEF. VARIACION	0.944	0.731	0.712	0.529	0.424	0.259	0.257	0.288	0.412	0.415	0.388	0.813	0.131
COEF. ASIMETRIA	1.880	1.235	0.245	0.429	1.005	0.162	0.376	0.672	0.373	0.835	-0.169	1.824	0.386

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1066.	1024.	974.	877.	781.	730.	688.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

IMPRESO EN COLOMBIA POR DANARAN

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212042	SAN PEDRO	SUESCA	+05 06 00	+073 47 00	2600 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	CIC	TCTAL
1951	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	36.6	16.0	109.3	59.9	6.1	-9.9
1952	1.0	44.3	13.7	158.1	84.7	57.2	76.6	61.1	36.8	42.3	97.0	17.5	650.3
1953	12.7	15.0	50.2	42.9	89.1	68.4	46.1	21.4	83.9	107.8	37.2	4.0	578.7
1954	7.3	23.5	6.6	69.4	87.2	63.5	78.2	37.1	30.7	142.6	86.8	18.2	671.1
1955	23.8	5.4	78.4	95.3	59.4	23.7	73.0	21.7	76.9	98.4	126.0	24.8	706.8
1956	24.5	49.5	100.4	18.5	34.6	74.4	46.2	57.1	62.1	156.7	71.2	76.3	773.5
1957	1.3	22.7	75.9	66.9	84.7	34.8	44.0	57.9	42.0	66.9	21.5	37.9	556.5
1958	14.2	19.0	67.6	-9.9	-9.9	17.0	22.8	25.6	1.0	11.0	10.5	-9.9	-9.9
1959	4.8	12.9	36.5	22.7	60.8	55.6	107.4	75.0	42.5	113.7	58.5	12.8	603.2
1960	15.3	16.1	62.4	130.4	63.6	30.0	-9.9	42.3	35.7	71.9	32.4	104.9	-9.9
1961	6.7	22.0	22.8	65.0	23.1	72.5	36.7	39.1	23.8	137.0	82.1	2.5	533.3
1962	23.6	31.0	49.2	20.8	136.6	63.5	62.5	51.9	31.7	103.8	93.7	20.5	708.8
1963	6.2	52.7	13.6	103.4	198.7	36.9	41.4	46.5	29.1	51.4	90.7	6.2	676.8
1964	6.0	14.2	0.0	68.6	108.3	68.7	52.8	21.0	30.2	71.2	23.9	27.1	492.0
1965	11.9	6.0	17.6	174.7	88.8	34.3	70.9	63.0	18.7	101.7	142.5	14.1	744.2
1966	0.4	10.2	90.4	48.8	88.1	71.0	36.2	43.3	17.3	81.6	125.8	55.9	669.0
1967	8.3	0.9	60.2	104.2	64.9	100.5	53.6	89.1	46.6	62.0	72.1	54.1	717.5
1968	26.1	33.0	28.5	65.3	35.5	-9.9	-9.9	-9.9	52.5	45.1	40.5	6.7	-9.9
1969	36.2	19.6	4.3	183.7	94.1	43.6	55.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARAYO

ESTACION X SAN PEDRO MUNICIPIO DE SUESCA PERIODO 1951 - 1969 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1967	717.5	717.5	717.5	0.779	0.101				I+			
2	1966	669.0	1386.5	693.3	0.206	0.128				I+			
3	1965	744.2	2130.7	710.2	1.095	0.270				I +			
4	1964	492.0	2622.7	655.7	-1.885	0.025				+			
5	1963	676.8	3299.5	659.9	0.298	0.064				+			
6	1962	708.8	4008.3	668.0	0.677	0.152				I+			
7	1961	533.3	4541.6	648.8	-1.397	-0.030				+			
8	1959	603.2	5144.8	643.1	-0.571	-0.104				+I			
9	1957	556.5	5701.3	633.5	-1.123	-0.250				+ I			
10	1956	773.5	6474.8	647.5	1.441	-0.062				+			
11	1955	706.8	7181.6	652.9	0.653	0.022				+			
12	1954	671.1	7852.7	654.4	0.231	0.052				+			
13	1953	578.7	8431.4	648.6	-0.661	-0.059				+			
14	1952	690.3	9121.7	651.5	0.458	0.0				+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 14 ANOS = 651.5

DESVIACION ESTANDAR = 84.6

COEFICIENTE DE VARIACION = 0.130

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212042	SAN PEDRO	SUESCA	+05 06 00	+073 47 00	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1951	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	36.6	16.0	109.3	55.9	6.1	-9.9	1951
1952	1.0	44.3	13.7	158.1	84.7	57.2	76.6	61.1	36.8	42.3	97.0	17.5	690.3	1952
1953	12.7	15.0	50.2	42.9	89.1	68.4	46.1	21.4	83.9	107.8	37.2	4.0	578.7	1953
1954	7.3	23.5	6.6	69.4	87.2	83.5	78.2	37.1	30.7	142.6	86.8	18.2	671.1	1954
1955	23.8	5.4	78.4	95.3	59.4	23.7	73.0	21.7	76.9	98.4	126.0	24.8	706.8	1955
1956	24.5	49.5	100.4	18.5	34.6	74.4	46.2	57.1	62.1	158.7	71.2	76.3	773.5	1956
1957	1.3	22.7	75.9	66.9	84.7	34.8	44.0	57.9	42.0	66.9	21.5	37.9	556.5	1957
1958	14.2	19.0	67.6	-9.9	-9.9	17.0	22.8	25.6	1.0	11.0	10.5	-9.9	-9.9	1958
1959	4.8	12.9	36.5	22.7	60.8	55.6	107.4	75.0	42.5	113.7	58.5	12.8	603.2	1959
1960	15.3	16.1	62.4	130.4	63.6	30.0	-9.9	42.3	35.7	71.9	32.4	104.9	-9.9	1960
1961	6.7	22.0	22.8	65.0	23.1	72.5	36.7	39.1	23.8	137.0	82.1	2.5	533.3	1961
1962	23.6	31.0	49.2	20.8	136.6	83.5	62.5	51.5	31.7	103.8	93.7	20.5	708.8	1962
1963	6.2	52.7	13.6	103.4	158.7	36.9	41.4	46.5	29.1	51.4	90.7	6.2	676.8	1963
1964	6.0	14.2	0.0	68.6	108.3	68.7	52.6	21.0	30.2	71.2	23.9	27.1	492.0	1964
1965	11.9	6.0	17.6	174.7	88.8	34.3	70.9	63.0	18.7	101.7	142.5	14.1	744.2	1965
1966	0.4	10.2	50.4	48.8	88.1	71.0	36.2	43.3	17.3	81.6	125.8	55.9	669.0	1966
1967	8.3	0.9	60.2	104.2	64.9	100.5	53.6	89.1	46.6	63.0	72.1	54.1	717.5	1967
1968	26.1	33.0	28.5	65.3	35.5	-9.9	-9.9	-9.9	52.5	45.1	40.5	6.7	-9.9	1968
1969	36.2	19.6	4.3	183.7	94.1	43.6	55.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1969
NUMERO DE ANOS	18	18	18	17	17	17	16	17	18	18	18	17	14	
VALOR MAXIMO	36.2	52.7	100.4	183.7	158.7	100.5	107.4	89.1	83.9	158.7	142.5	104.9	773.5	
CUARTIL SUPERIOR	23.6	31.0	67.6	117.3	91.6	73.4	71.9	59.5	46.6	109.3	93.7	46.0	708.8	
MEDIANA	10.1	19.3	42.8	68.6	84.7	57.2	53.2	43.3	33.7	90.0	71.6	18.2	673.9	
CUARTIL INFERIOR	6.0	12.9	13.7	45.8	60.1	34.5	42.7	31.1	23.8	63.0	37.2	6.4	578.7	
VALOR MINIMO	0.4	0.9	0.0	18.5	23.1	17.0	22.8	21.0	1.0	11.0	10.5	2.5	492.0	
PROMEDIOS	12.8	22.1	43.2	84.6	82.5	56.2	56.5	46.5	37.6	87.6	70.7	28.8	651.5	
											TOTAL DE LOS PROMEDIOS MENSUALES =		629.1	
PORCENTAJES	2.0	3.5	6.9	13.5	13.1	8.9	9.0	7.4	6.0	13.9	11.2	4.6		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 12. INDICE DE ARNOLDUS = 63.

DEV. ESTANDAR	10.2	14.5	31.6	51.9	41.1	24.1	20.9	19.3	21.2	38.6	38.5	28.6	84.6
COEF. VARIACION	0.799	0.672	0.730	0.614	0.499	0.429	0.370	0.416	0.562	0.440	0.545	0.995	0.130
COEF. ASIMETRIA	0.790	0.807	0.267	0.648	1.313	0.013	0.807	0.515	0.695	-0.012	0.217	1.527	-0.555

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
230620	SUPATA	SUPATA	+05 04 00	+074 15 00	1798 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1974	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	123.0	298.0	425.0	184.0	-9.9
1975	39.0	267.0	254.0	252.0	195.0	44.0	193.0	96.0	157.0	274.0	268.0	364.0	2403.0
1976	72.0	244.0	302.0	206.0	108.0	38.0	6.0	35.0	112.0	379.0	135.0	108.0	1745.0
1977	85.0	29.0	218.0	196.0	87.0	63.0	30.0	98.0	83.0	262.0	237.0	227.0	1615.0
1978	102.0	83.0	187.0	334.0	157.0	62.0	37.0	23.0	104.0	210.0	210.0	166.0	1675.0
1979	162.0	97.0	298.0	283.0	207.0	151.0	38.0	113.0	187.0	380.0	321.0	77.0	2314.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR CANARANJO

ESTACION X SUPATA MUNICIPIO DE SUPATA PERIODO 1974 — 1979 COEF DE CORRECCION 1.000

ESTACION Y ESCUELA VOCACIONAL MUNICIPIO DE PACHO PERIODO 1974 — 1979 COEF DE CORRECCION 1.000

N	AN	CLX	CUY	RAN	ECAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						I	I	I	I	I	I	I	I	I
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	2314.	1462.	1.041	0.097					+				
2	1978	3589.	2707.	0.911	-0.037					+				
3	1977	5604.	3641.	1.193	0.073					+				
4	1976	7349.	4897.	0.926	0.002					+				
5	1975	9752.	6501.	0.995	0.0					*				

N	AN	CLX	CUY	RAN	ECAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						I	I	I	I	I	I	I	I	I
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 1550.4 1300.2

RAZONES PROMEDIOS Y/X = 0.667

X/Y = 1.500

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA OFSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
230620	SUPATA	SUPATA	+05 03 30	+074 14 30	1800 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1974	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	123.0	298.0	425.0	184.0	-9.9	1974
1975	39.0	267.0	254.0	252.0	195.0	44.0	193.0	96.0	157.0	274.0	266.0	364.0	2403.0	1975
1976	72.0	244.0	302.0	200.0	108.0	38.0	6.0	35.0	112.0	379.0	135.0	108.0	1745.0	1976
1977	85.0	29.0	218.0	196.0	87.0	63.0	30.0	98.0	83.0	262.0	237.0	227.0	1615.0	1977
1978	102.0	83.0	187.0	334.0	157.0	62.0	37.0	23.0	104.0	210.0	210.0	166.0	1675.0	1978
1979	162.0	97.0	298.0	283.0	207.0	151.0	38.0	113.0	187.0	380.0	321.0	77.0	2314.0	1979
NUMERO DE ANOS	5	5	5	5	5	5	5	5	6	6	6	6	5	
VALOR MAXIMO	162.0	267.0	302.0	334.0	207.0	151.0	193.0	113.0	187.0	380.0	425.0	364.0	2403.0	
MEDIANA	85.0	97.0	254.0	252.0	157.0	62.0	37.0	96.0	117.5	286.0	252.5	175.0	1745.0	
VALOR MINIMO	39.0	29.0	187.0	196.0	87.0	38.0	6.0	23.0	83.0	210.0	135.0	77.0	1615.0	
PROMEDIOS	92.0	144.0	251.8	254.2	150.8	71.6	60.8	73.0	127.7	300.5	266.0	187.7	1950.4	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1980.0	
PORCENTAJES	4.6	7.3	12.7	12.8	7.6	3.6	3.1	3.7	6.4	15.2	13.4	9.5		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 46. INDICE DE ARNOLDUS = 205.

DEV. ESTANDAR	45.4	105.2	50.0	56.8	82.6	45.7	75.0	40.9	38.0	67.6	99.4	101.7	376.7
COEF. VARIACION	0.494	0.731	0.199	0.224	0.549	0.639	1.234	0.561	0.297	0.225	0.374	0.542	0.193
COEF. ASIMETRIA	0.830	0.361	-0.285	0.507	-0.212	1.919	2.063	-0.536	0.701	0.164	0.530	1.047	0.573

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240144	TRES ESQUINAS	SUSA	+05 23 00	+073 52 00	3130 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1966	11.0	21.5	82.5	73.6	100.0	52.5	81.0	58.0	81.0	147.0	137.0	15.0	900.1
1967	32.0	18.0	83.0	117.0	91.0	60.0	22.0	17.0	49.0	74.5	74.0	73.8	711.3
1968	8.0	24.0	47.0	96.0	109.0	126.0	56.0	41.0	110.0	114.0	69.0	26.0	826.0
1969	30.0	67.0	46.0	155.0	116.0	52.0	35.0	3.0	134.0	95.0	110.0	33.0	916.0
1970	36.0	11.0	22.0	26.0	73.0	47.0	24.0	19.0	32.0	73.0	69.0	115.0	547.0
1971	101.0	22.0	79.4	90.0	76.0	26.0	40.0	32.0	141.0	88.0	269.0	68.0	1032.4
1972	43.1	12.4	34.0	112.0	49.0	33.0	15.0	42.0	28.0	27.0	70.0	11.0	476.5
1973	20.0	0.0	75.0	264.0	81.0	110.0	69.4	153.0	336.0	174.0	184.0	41.0	1507.4
1974	4.0	149.0	121.0	203.0	71.0	129.0	63.0	51.0	181.0	116.0	154.0	25.0	1267.0
1975	18.0	55.0	123.1	72.0	87.0	67.0	137.0	99.0	106.0	100.0	106.0	142.0	1112.1
1976	51.0	54.0	121.0	215.0	113.0	50.0	82.0	17.0	71.0	177.0	88.0	45.0	1084.0
1977	25.0	15.0	62.0	87.0	153.0	61.0	60.0	44.0	187.0	151.0	198.0	12.0	1115.0
1978	14.0	56.0	143.0	153.0	190.0	102.0	72.0	41.0	67.0	7.0	36.0	40.0	921.0
1979	13.0	38.0	105.0	159.0	115.0	112.0	31.0	162.0	91.0	255.0	193.0	38.0	1316.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR CAVARIS

ESTACION X TRES ESQUINAS MUNICIPIO DE SUSA PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1316.0	1316.0	1316.0	1.166	0.342				I +	•		
2	1978	921.0	2237.0	1118.5	-0.208	0.281			•	I +			
3	1977	1115.0	3352.0	1117.3	0.467	0.417				I *			
4	1976	1084.0	4436.0	1109.0	0.359	0.523				I • +			
5	1975	1112.1	5548.1	1109.6	0.457	0.656				I • +			
6	1974	1267.0	6815.1	1135.8	0.996	0.948				I *			
7	1973	1507.4	8322.5	1188.9	1.832	1.485				I + •			
8	1972	476.5	8799.0	1099.9	-1.755	0.971		•		I +			
9	1971	1032.4	9831.4	1092.4	0.179	1.023				I• +			
10	1970	547.0	10378.4	1037.8	-1.510	0.581		•		I +			
11	1969	916.0	11294.4	1026.8	-0.226	0.515			•	I +			
12	1968	826.0	12120.4	1010.0	-0.539	0.357			•	I +			
13	1967	711.3	12831.7	987.1	-0.938	0.082			•	+			
14	1966	900.1	13731.8	980.8	-0.281	0.0			•	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 14 ANOS = 980.8

DEVIACION ESTANDAR = 287.4

COEFICIENTE DE VARIACION = 0.293

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240144	TRES ESQUINAS	SUSA	+05 23 17	+073 51 41	3130 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1973	20.0	0.0	75.0	264.0	81.0	110.0	69.4	153.0	336.0	174.0	184.0	41.0	1507.4	1973
1974	4.0	149.0	121.0	203.0	71.0	129.0	63.0	51.0	181.0	116.0	154.0	25.0	1267.0	1974
1975	18.0	83.0	123.1	72.0	87.0	67.0	137.0	99.0	106.0	100.0	106.0	142.0	1112.1	1975
1976	51.0	54.0	121.0	215.0	113.0	50.0	82.0	17.0	71.0	177.0	88.0	45.0	1084.0	1976
1977	25.0	15.0	62.0	87.0	153.0	81.0	60.0	44.0	187.0	191.0	198.0	12.0	1115.0	1977
1978	14.0	56.0	143.0	153.0	150.0	102.0	72.0	41.0	67.0	7.0	36.0	40.0	921.0	1978
1979	13.0	38.0	105.0	159.0	115.0	112.0	31.0	162.0	91.0	259.0	193.0	38.0	1316.0	1979
NUMERO DE ANOS	7	7	7	7	7	7	7	7	7	7	7	7	7	
VALOR MAXIMO	51.0	149.0	143.0	264.0	150.0	129.0	137.0	162.0	336.0	259.0	198.0	142.0	1507.4	
MEDIANA	18.0	54.0	121.0	159.0	113.0	102.0	69.4	51.0	106.0	174.0	154.0	40.0	1115.0	
VALOR MINIMO	4.0	0.0	62.0	72.0	71.0	50.0	31.0	17.0	67.0	7.0	36.0	12.0	921.0	
PROMEDIOS	20.7	52.4	107.2	164.7	115.7	93.0	73.5	81.0	148.4	146.3	137.0	49.0	1188.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1188.9	
PORCENTAJES	1.7	4.4	9.0	13.9	9.7	7.8	6.2	6.8	12.5	12.3	11.5	4.1		
DEV. ESTANDAR	14.9	47.6	28.9	69.1	42.7	28.0	32.2	57.8	96.1	80.5	61.8	42.6	190.6	
COEF. VARIACION	0.718	0.912	0.269	0.420	0.369	0.301	0.438	0.713	0.648	0.550	0.451	0.869	0.160	
COEF. ASIMETRIA	1.589	1.466	-0.678	-0.075	0.919	-0.423	1.233	0.613	1.424	-0.563	-0.659	2.229	0.457	

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 23. INDICE DE ARNOLDUS = 116.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240149	EL PEGREGAL	SUTATAUSA	+05 14 00	+073 53 00	2900 METROS

AÑO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	37.0	25.0	127.5	142.0	141.6	-9.9
1967	35.8	35.7	123.0	72.1	92.0	148.0	53.0	60.0	45.0	75.0	188.0	66.5	1018.1
1968	21.0	74.0	28.0	284.0	156.0	166.0	102.0	45.0	63.0	66.0	246.0	7.0	1282.0
1969	84.0	30.0	13.0	336.0	79.0	48.0	52.0	17.0	73.0	166.0	59.0	9.0	938.0
1970	52.0	51.0	24.0	69.0	104.0	55.0	35.0	26.0	64.0	100.5	104.5	10.0	715.0
1971	66.0	96.0	152.0	127.0	132.0	24.0	51.0	23.0	66.0	100.0	99.5	65.5	1024.0
1972	71.0	23.0	126.5	191.0	54.0	100.0	45.0	33.0	22.0	46.0	75.0	14.0	800.5
1973	1.0	30.0	13.0	50.0	37.5	165.0	79.0	190.0	298.0	166.0	170.0	100.0	1325.5
1974	87.0	144.0	57.0	146.0	66.0	72.0	58.0	43.5	78.8	91.0	112.0	39.0	1026.3
1975	9.0	62.0	82.0	102.0	106.0	121.0	98.0	65.0	107.0	255.0	146.0	150.0	1345.0
1976	18.0	40.0	101.0	139.0	101.0	43.0	20.0	28.0	58.0	166.0	110.0	44.0	868.0
1977	21.0	3.0	116.0	66.0	30.0	13.0	14.0	42.0	80.0	60.0	126.0	23.0	616.0
1978	5.0	30.0	70.0	200.0	46.0	66.0	70.0	30.0	27.0	133.0	48.0	35.0	761.0
1979	20.0	30.0	110.0	170.0	127.0	145.0	20.0	110.0	10.0	310.0	230.0	86.0	1368.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR PANAMCO

ESTACION X EL PEDREGAL MUNICIPIO DE SUTATAUSA PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

ESTACION Y LA BOYERA MUNICIPIO DE UBATE PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	1368.	1122.	0.950	-0.071					+				
2	1978	2129.	1853.	0.812	-0.246					+ I				
3	1977	2745.	2436.	0.823	-0.378					+ I				
4	1976	3613.	3334.	0.753	-0.660				+	I				
5	1975	4958.	4143.	1.297	-0.355					+ I				
6	1974	5984.	4779.	1.257	-0.147					+I				
7	1973	7310.	5548.	1.345	0.191					I+				
8	1972	8110.	6339.	0.788	-0.023					+				
9	1971	9134.	7286.	0.844	-0.212					+ I				
10	1970	9849.	7965.	0.820	-0.367					+ I				
11	1969	10787.	8755.	0.925	-0.443					+ I				
12	1968	12069.	9526.	1.297	-0.151					+I				
13	1967	13087.	10201.	1.175	-0.000					+				

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 1006.7 784.7

RAZONES PROMEDIOS Y/X = 0.779

X/Y = 1.283

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240127	EL PINO	SUTATAUSA	+05 16 00	+073 51 00	2575 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	-9.9	73.5	118.2	10.7	15.8	30.3	27.4	19.8	83.7	7.4	89.3	-9.9
1961	120.8	44.7	79.1	27.9	8.6	28.7	16.2	11.0	8.5	166.1	79.8	13.4	604.8
1962	69.9	47.4	93.3	96.4	78.1	59.7	21.5	54.3	18.6	61.4	129.8	21.3	733.6
1963	10.0	32.9	58.7	93.8	223.9	41.3	25.3	17.0	11.1	67.4	117.4	17.0	715.8
1964	27.1	8.0	2.0	119.8	89.5	53.1	18.6	11.2	8.1	57.1	71.7	66.9	533.1
1965	7.1	29.5	10.5	229.8	87.1	11.0	22.5	32.6	3.8	99.1	148.4	24.7	706.1
1966	2.3	20.3	70.3	22.2	41.8	85.8	15.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1967	11.7	28.5	78.4	85.6	41.5	74.6	22.8	21.0	37.0	28.6	19.8	39.7	489.2
1968	4.1	17.4	34.6	191.0	66.2	106.9	28.9	20.5	37.0	55.0	145.6	4.8	712.0
1969	57.6	47.6	8.7	144.8	47.2	52.9	11.5	0.5	60.5	148.1	61.9	25.6	666.9
1970	21.2	31.3	14.6	30.8	66.0	22.8	30.0	31.8	47.4	153.2	116.4	6.1	571.6
1971	59.8	82.6	118.0	136.8	128.7	-9.9	-9.9	-9.9	53.0	66.5	101.8	52.7	-9.9
1972	81.4	46.0	80.6	178.0	35.8	53.3	56.6	36.9	9.1	31.8	108.2	18.6	736.3
1973	25.1	26.3	18.5	5.8	42.6	3.1	25.2	78.7	93.9	76.8	106.0	52.7	554.7
1974	26.1	89.1	76.2	105.8	57.6	20.1	11.7	25.2	66.8	80.8	119.0	41.8	720.2
1975	3.5	50.1	69.0	71.6	68.8	25.6	24.7	45.7	37.5	132.7	66.0	122.3	717.5
1976	17.0	27.3	72.4	122.7	64.3	24.9	10.6	11.7	68.5	151.8	87.4	47.9	706.5
1977	13.8	9.4	105.1	89.3	19.4	35.8	15.9	31.8	72.1	67.5	68.0	35.4	567.5
1978	4.5	39.4	75.6	160.5	85.9	34.3	18.9	14.0	48.1	126.4	42.3	55.8	707.7
1979	15.9	38.8	125.4	125.4	87.0	49.4	17.0	44.1	28.7	195.9	150.5	48.2	926.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAPER

ESTACION X EL PINO MUNICIPIO DE SUTATAUSA PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

ESTACION Y LA BOYERA MUNICIPIO DE UBATE PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	926.	1122.	0.920	-0.120					+I				
2	1978	1634.	1853.	1.080	-0.042					+	.			
3	1977	2201.	2436.	1.085	0.025					+	.			
4	1976	2908.	3334.	0.877	-0.124				.	+I				
5	1975	3625.	4143.	0.989	-0.135					*I				
6	1974	4346.	4779.	1.261	0.088					+			.	
7	1973	4900.	5548.	0.805	-0.113			.		+I				
8	1972	5637.	6339.	1.037	-0.074					+	.			
9	1970	6208.	7019.	0.938	-0.131				.	+I				
10	1969	6875.	7809.	0.941	-0.193				.	+I				
11	1968	7587.	8579.	1.031	-0.102					+I	.			
12	1967	8076.	9255.	0.808	-0.336			.		+ I				
13	1965	8782.	9902.	1.217	-0.148					+I			.	
14	1964	9316.	10536.	0.937	-0.201				.	+ I				
15	1963	10031.	11226.	1.155	-0.057					+		.		
16	1962	10765.	12034.	1.013	-0.043					+.				
17	1961	11370.	12676.	1.050	0.0					+	.			

N	AN	CUX	CUY	RAN	PCAN	P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						R : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 668.8 745.6

RAZONES PROMEDIOS Y/X = 1.115

X/Y = 0.897

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240127	EL PINO	SUTATAUSA	+05 15 53	+073 51 00	2575 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	-9.9	73.5	118.2	10.7	15.8	36.3	27.4	19.6	83.7	7.4	89.3	-9.9	1960
1961	120.8	44.7	79.1	27.9	8.6	28.7	16.2	11.0	8.5	166.1	79.8	13.4	604.8	1961
1962	69.9	47.4	93.3	98.4	78.1	69.7	21.5	34.3	18.5	61.4	129.8	21.3	733.6	1962
1963	10.0	32.9	58.7	93.6	223.9	41.3	25.3	17.0	11.1	67.4	117.4	17.0	715.8	1963
1964	27.1	8.0	2.0	119.8	89.5	53.1	18.6	11.2	8.1	57.1	71.7	66.9	533.1	1964
1965	7.1	29.5	10.5	229.8	87.1	11.0	22.5	32.6	3.8	99.1	146.4	24.7	706.1	1965
1966	2.3	20.3	70.3	22.2	41.8	85.8	15.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1966
1967	11.7	28.5	78.4	85.6	41.5	74.6	22.8	21.0	37.0	28.6	19.8	39.7	489.2	1967
1968	4.1	17.4	34.6	191.0	66.2	106.9	28.9	20.5	37.0	55.0	145.6	4.8	712.0	1968
1969	57.6	47.6	8.7	144.8	47.2	52.9	11.5	0.5	60.5	148.1	61.9	25.6	666.9	1969
1970	21.2	31.3	14.6	30.8	66.0	22.8	30.0	31.8	47.4	153.2	116.4	6.1	571.6	1970
1971	59.8	82.6	118.0	136.8	128.7	-9.9	-9.9	-9.9	53.0	66.5	101.8	52.7	-9.9	1971
1972	81.4	46.0	80.6	176.0	35.8	53.3	56.6	36.9	9.1	31.8	108.2	18.6	736.3	1972
1973	25.1	20.3	18.5	5.8	42.6	3.1	25.2	78.7	93.9	76.8	106.0	52.7	554.7	1973
1974	26.1	69.1	76.2	105.8	57.6	20.1	11.7	25.2	66.8	80.8	115.0	41.8	720.2	1974
1975	3.5	50.1	69.0	71.6	68.8	25.6	24.7	45.7	37.5	132.7	66.0	122.3	717.5	1975
1976	17.0	27.3	72.4	122.7	64.3	24.9	10.6	11.7	68.5	151.8	67.4	47.9	706.5	1976
1977	13.8	9.4	105.1	89.3	19.4	39.8	15.9	31.8	72.1	67.5	66.0	35.4	567.5	1977
1978	4.5	39.4	75.6	160.5	65.9	24.3	18.9	14.0	48.1	128.4	42.3	55.8	707.7	1978
1979	15.9	38.8	125.4	125.4	87.0	49.4	17.0	44.1	28.7	195.9	150.5	48.2	926.3	1979
NUMERO DE ANOS	19	19	20	20	20	19	19	18	19	19	19	19	17	
VALOR MAXIMO	120.8	89.1	125.4	229.8	223.9	106.9	56.6	78.7	93.9	195.9	150.5	122.3	926.3	
CUARTIL SUPERIOR	57.6	47.4	79.8	140.8	66.4	53.3	25.3	34.3	60.5	148.1	119.0	52.7	718.8	
MEDIANA	17.0	32.9	72.9	112.0	65.1	39.8	21.5	26.3	37.0	80.8	101.8	39.7	706.5	
CUARTIL INFERIOR	7.1	20.3	26.5	78.6	41.6	22.8	15.9	14.0	11.1	61.4	66.0	18.6	569.5	
VALOR MINIMO	2.3	8.0	2.0	5.8	8.6	3.1	10.6	0.5	3.8	28.6	7.4	4.8	489.2	
PROMEDIOS	30.5	37.7	63.2	107.9	67.5	42.3	22.6	27.5	38.4	97.5	92.0	41.3	668.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		668.3	
PORCENTAJES	4.6	5.6	9.5	16.1	10.1	6.3	3.4	4.1	5.7	14.6	13.8	6.2		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 70.

DEV. ESTANDAR	32.4	21.1	36.7	58.5	47.2	26.6	10.7	17.7	26.1	48.7	41.5	29.3	104.9	
COEF. VARIACION	1.064	0.558	0.581	0.542	0.699	0.629	0.472	0.643	0.680	0.500	0.451	0.711	0.157	
COEF. ASIMETRIA	1.563	1.090	-0.286	0.060	1.938	0.842	1.850	1.301	0.414	0.492	-0.455	1.254	0.382	

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Biblioteca Colombiana

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240127	EL PINO	SUTATAUSA	+05 15 53	+073 51 00	2575 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	43.4	83.0	73.5	118.2	10.7	15.8	36.3	27.4	19.8	83.7	77.4	89.3	678.5	1960
1961	120.8	44.7	79.1	27.9	8.6	28.7	16.2	11.0	8.5	166.1	79.8	13.4	604.8	1961
1962	69.9	47.4	93.3	98.4	78.1	59.7	21.5	34.3	18.5	61.4	129.8	21.3	733.6	1962
1963	10.0	32.9	58.7	93.8	223.9	41.3	25.3	17.0	11.1	67.4	117.4	17.0	715.8	1963
1964	27.1	8.0	2.0	119.8	89.5	53.1	18.6	11.2	8.1	57.1	71.7	66.9	533.1	1964
1965	7.1	29.5	10.5	229.8	87.1	11.0	22.5	32.6	3.8	99.1	148.4	24.7	706.1	1965
1966	2.5	20.3	70.3	22.2	41.8	85.8	15.0	35.6	52.0	132.1	137.9	56.1	671.4	1966
1967	11.7	28.5	78.4	85.6	41.5	74.6	22.8	21.0	37.0	28.6	19.8	39.7	489.2	1967
1968	4.1	17.4	34.6	191.0	66.2	106.9	28.9	20.5	37.0	55.0	145.6	4.8	712.0	1968
1969	57.6	47.6	8.7	144.8	47.2	52.9	11.5	0.5	60.5	148.1	61.9	25.6	666.9	1969
1970	21.2	31.3	14.6	30.8	66.0	22.8	30.0	31.8	47.4	153.2	116.4	6.1	571.6	1970
1971	59.8	82.6	118.0	136.8	128.7	41.7	22.5	28.8	53.0	66.5	101.8	52.7	892.9	1971
1972	81.4	46.0	80.6	178.0	35.8	53.3	56.6	36.9	9.1	31.8	108.2	18.6	736.3	1972
1973	25.1	26.3	18.5	5.8	42.6	3.1	25.2	78.7	93.9	76.8	106.0	52.7	554.7	1973
1974	26.1	89.1	76.2	105.8	57.6	20.1	11.7	25.2	66.8	80.8	119.0	41.8	720.2	1974
1975	3.5	50.1	69.0	71.0	68.8	25.6	24.7	45.7	37.5	132.7	66.0	122.3	717.5	1975
1976	17.0	27.3	72.4	122.7	64.3	24.9	10.6	11.7	68.5	151.8	87.4	47.9	706.5	1976
1977	13.8	9.4	105.1	89.3	19.4	39.8	15.9	31.8	72.1	67.5	68.0	35.4	567.5	1977
1978	4.5	39.4	75.6	160.5	85.9	34.3	18.9	14.0	48.1	128.4	42.3	55.8	707.7	1978
1979	15.9	36.8	125.4	125.4	87.0	49.4	17.0	44.1	28.7	195.9	150.5	48.2	926.3	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	120.8	89.1	125.4	229.8	223.9	106.9	56.6	78.7	93.9	195.9	150.5	122.3	926.3	
CUARTIL SUPERIOR	50.5	47.5	79.8	140.8	86.4	53.2	25.2	34.9	56.8	140.4	124.4	54.2	718.8	
MEDIANA	19.1	35.8	72.9	112.0	65.1	40.5	22.0	28.1	37.3	82.2	103.9	40.7	706.3	
CUARTIL INFERIOR	8.6	26.8	26.5	78.6	41.6	23.8	16.0	15.5	14.8	63.9	69.8	19.9	588.2	
VALOR MINIMO	2.3	8.0	2.0	5.8	8.6	3.1	10.6	0.5	3.8	28.6	19.8	4.8	489.2	
PROMEDIOS	31.1	40.0	63.2	107.9	67.5	42.2	22.6	28.0	39.1	99.2	97.8	42.0	680.0	
PORCENTAJES	4.6	5.9	9.3	15.9	9.9	6.2	3.3	4.1	5.7	14.6	14.4	6.2		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 71.

INDICE DE IRREGULARIDAD INTERANUAL =1.51

DEV. ESTANDAR	31.7	22.9	36.7	58.5	47.2	25.9	10.4	16.8	25.6	48.0	36.6	28.8	108.5
COEF. VARIACION	1.019	0.572	0.581	0.542	0.699	0.613	0.460	0.602	0.655	0.484	0.375	0.684	0.159

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	859.	820.	772.	681.	589.	542.	502.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.513	0.926	-0.286	0.066	1.938	0.864	1.932	1.249	0.334	0.385	-0.325	1.177	0.436

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
241521	SUTATAUSA	SUTATAUSA	+05 15 00	+073 51 00	2700 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1965	-9.9	-9.9	-9.9	-9.9	74.7	12.5	26.9	40.3	9.6	98.1	195.9	21.5	-9.9
1966	3.0	18.2	71.4	35.6	58.0	78.6	20.0	25.4	34.5	-9.9	-9.9	127.4	-9.9
1967	8.6	29.0	82.5	107.2	53.4	62.8	36.7	31.6	31.4	66.2	129.7	42.1	701.2
1968	2.0	50.6	34.7	177.7	81.9	108.4	32.1	24.6	40.8	77.6	140.9	4.4	775.7
1969	59.0	37.1	3.3	140.4	81.7	33.1	20.8	25.9	68.0	160.2	89.5	10.0	729.0
1970	43.3	44.5	12.5	32.3	65.5	19.5	31.7	36.4	49.6	155.9	92.1	6.1	589.4
1971	77.9	71.1	111.9	141.3	136.0	39.6	34.3	21.1	67.0	57.0	94.6	65.8	937.8
1972	111.5	41.8	84.9	176.1	65.2	51.1	65.1	32.1	12.5	36.0	99.5	21.0	796.8
1973	38.0	35.0	17.5	38.0	42.5	63.5	36.5	97.0	123.0	139.0	117.5	65.0	832.5
1974	34.0	86.5	85.5	117.5	58.5	14.5	10.5	19.0	52.5	76.0	147.5	40.0	742.0
1975	1.0	57.5	53.5	54.5	93.5	40.0	39.0	50.5	53.5	175.5	73.0	121.0	812.5
1976	13.0	23.5	99.0	153.0	68.5	35.0	19.0	9.5	50.0	157.0	106.0	66.0	803.5
1977	23.0	9.5	106.0	124.0	34.0	72.0	12.0	33.0	80.0	71.5	73.0	30.0	668.0
1978	0.0	36.2	71.8	170.3	90.5	28.5	15.6	12.4	51.8	-9.9	-9.9	29.1	-9.9
1979	19.5	25.8	84.9	124.6	96.9	77.6	24.7	66.3	27.7	201.6	122.5	44.1	916.2

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-DRSTCN *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR BANARANJO

ESTACION : SUTATAUSA MUNICIPIO DE SUTATAUSA PERIODO COEF DE CORRECCION

1965 - 1979 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	916.2	916.2	916.2	1.428	0.182				I+	•		
2	1977	668.0	1584.2	792.1	-1.089	0.043			•	+			
3	1976	803.5	2387.7	795.9	0.285	0.079				+•			
4	1975	812.5	3200.2	800.0	0.376	0.127				I+•			
5	1974	742.0	3942.2	788.4	-0.338	0.084			•	+			
6	1973	832.5	4774.7	795.8	0.579	0.158				I+ •			
7	1972	796.8	5571.5	795.9	0.217	0.185				I+•			
8	1971	937.8	6509.3	813.7	1.647	0.395				I +	•		
9	1970	589.4	7098.7	788.7	-1.886	0.155		•		I+			
10	1969	729.0	7827.7	782.8	-0.470	0.095			•	+			
11	1968	775.7	8603.4	782.1	0.003	0.096				*			
12	1967	701.2	9304.6	775.4	-0.752	0.000			•	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 12 ANOS = 775.4

DEVIACION ESTANDAR = 98.6

COEFICIENTE DE VARIACION = 0.127

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
241521	SUTATAUSA	SUTATAUSA	+05 14 56	+073 51 19	2700 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1965	-9.9	-9.9	-9.9	-9.9	74.7	12.5	26.9	40.3	9.6	98.1	195.9	21.5	-9.9	1965
1966	3.0	18.2	71.4	35.6	52.0	78.6	20.0	25.4	34.5	-9.9	-9.9	127.4	-9.9	1966
1967	8.6	29.0	82.5	107.2	53.4	82.8	36.7	31.6	31.4	66.2	129.7	42.1	701.2	1967
1968	2.0	50.6	34.7	177.7	61.9	108.4	32.1	24.6	40.6	77.6	140.9	4.4	775.7	1968
1969	59.0	37.1	3.3	140.4	61.7	33.1	20.8	25.9	68.0	160.2	89.5	10.0	729.0	1969
1970	43.3	44.5	12.5	32.5	65.5	19.5	31.7	36.4	49.6	155.9	92.1	6.1	589.4	1970
1971	77.9	71.1	111.9	141.3	136.0	39.8	34.3	21.1	67.0	57.0	94.6	85.8	937.8	1971
1972	111.5	41.6	84.9	176.1	65.2	51.1	65.1	32.1	12.5	36.0	99.5	21.0	796.8	1972
1973	38.0	35.0	17.5	38.0	42.5	83.5	36.5	97.0	123.0	139.0	117.5	65.0	832.5	1973
1974	34.0	86.5	85.5	117.5	58.5	14.5	10.5	19.0	62.5	76.0	147.5	40.0	742.0	1974
1975	1.0	57.5	53.5	54.5	53.5	40.0	39.0	50.5	53.5	175.5	73.0	121.0	812.5	1975
1976	13.0	23.5	99.0	153.0	68.5	39.0	19.0	9.5	50.0	157.0	106.0	66.0	803.5	1976
1977	23.0	9.5	106.0	124.0	34.0	72.0	12.0	33.0	60.0	71.5	73.0	30.0	668.0	1977
1978	0.0	36.2	71.8	170.3	90.5	28.5	15.6	12.4	51.8	-9.9	-9.9	29.1	-9.9	1978
1979	19.5	26.8	84.9	124.6	96.9	77.6	24.7	66.3	27.7	201.6	122.5	44.1	916.2	1979
NUMERO DE ANOS	14	14	14	14	15	15	15	15	15	13	13	15	12	
VALOR MAXIMO	111.5	86.5	111.9	177.7	136.0	108.4	65.1	97.0	123.0	201.6	195.9	127.4	937.8	
CUARTIL SUPERIOR	43.3	50.6	85.5	153.0	90.5	78.6	36.5	40.3	67.0	158.6	135.3	66.0	822.5	
MEDIANA	21.3	36.6	77.1	124.3	68.5	40.0	26.9	31.6	50.0	98.1	106.0	40.0	786.2	
CUARTIL INFERIOR	3.0	25.8	34.7	54.5	58.0	28.5	19.0	21.1	31.4	68.8	90.8	21.0	715.1	
VALOR MINIMO	0.0	9.5	3.3	32.3	34.0	12.5	10.5	9.5	9.6	36.0	73.0	4.4	589.4	
PROMEDIOS	31.0	40.4	65.7	113.8	73.4	52.1	28.3	35.0	50.1	113.2	114.0	47.6	775.4	
											TOTAL DE LOS PROMEDIOS MENSUALES =		764.5	
PORCENTAJES	4.1	5.2	8.6	14.9	9.6	6.8	3.7	4.6	6.6	14.8	14.9	6.2		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 17. INDICE DE ARREGUIS = 79.

DEV. ESTANDAR	33.0	20.8	35.6	53.0	25.1	29.6	13.7	22.4	28.1	53.4	34.1	38.7	98.6
COEF. VARIACION	1.066	0.514	0.543	0.466	0.342	0.569	0.485	0.639	0.561	0.472	0.299	0.814	0.127
COEF. ASIMETRIA	1.314	0.820	-0.610	-0.528	0.865	0.340	1.224	1.728	1.045	0.195	1.085	1.020	-0.103

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212563	SANTA ISABEL	TABIO	+05 00 00	+074 04 00	2680 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1969	43.0	20.0	4.0	130.0	52.0	45.0	21.0	23.0	33.0	127.0	69.0	0.0	571.0
1970	0.0	24.0	60.0	47.0	0.0	36.0	49.0	12.0	48.0	113.0	39.0	0.0	428.0
1971	28.0	65.0	70.0	76.0	81.0	47.0	10.0	79.0	60.0	86.0	67.0	38.0	707.0
1972	56.0	28.0	95.0	94.0	74.0	57.0	50.0	19.0	14.0	17.0	62.0	15.0	581.0
1973	13.0	2.0	66.0	82.0	85.0	66.0	77.0	83.0	148.0	165.0	118.0	83.0	1012.0
1974	29.0	136.0	110.0	173.0	99.0	53.0	26.0	110.0	95.0	185.0	220.0	27.0	1267.0
1975	30.0	162.0	135.0	131.0	99.0	64.0	141.0	93.0	55.5	173.0	127.0	152.0	1362.5
1976	25.0	47.0	124.0	162.0	114.0	75.0	37.0	73.0	105.0	152.0	154.0	0.0	1068.0
1977	12.0	15.0	34.0	107.0	108.0	90.0	32.0	60.0	85.0	157.0	186.0	64.0	950.0
1978	0.0	0.0	65.0	155.0	130.0	75.0	33.0	93.0	35.0	101.0	58.0	77.0	822.0
1979	13.0	11.0	80.0	128.0	150.0	154.0	57.0	141.0	49.0	321.0	246.0	20.0	1370.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAN

ESTACION X - SANTA ISABEL MUNICIPIO DE TABIO PERIODO 1969 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOV	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1370.0	1370.0	1370.0	1.345	0.483				I +	.		
2	1978	822.0	2192.0	1096.0	-0.306	0.374			.	I +			
3	1977	554.0	3142.0	1047.3	0.060	0.402				. +			
4	1976	1068.0	4210.0	1052.5	0.435	0.555				I .+			
5	1975	1382.5	5592.5	1118.5	1.383	1.056				I + .			
6	1974	1267.0	6859.5	1143.3	1.035	1.428				I . +			
7	1973	1012.0	7871.5	1124.5	0.267	1.524				I . +			
8	1972	581.0	8452.5	1056.9	-1.032	1.153			.	I +			
9	1971	707.0	9159.5	1017.7	-0.652	0.918			.	I +			
10	1970	426.0	9587.5	958.8	-1.493	0.382			.	I +			
11	1969	571.0	10158.5	923.5	-1.062	0.0			.	+			

N	AN	T A	CU	MOV	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 11 ANOS = 923.5

DESVIACION ESTANDAR = 331.9

COEFICIENTE DE VARIACION = 0.359

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRSTGM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTGM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212565	TABIO	TABIO	+04 55 00	+074 06 00	2620 METROS

AÑO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1955	25.3	42.0	93.2	204.8	71.1	116.4	107.7	46.2	84.9	211.4	113.6	119.6	1236.2
1956	52.9	90.6	88.3	96.7	73.8	144.3	38.8	51.6	91.7	216.2	101.9	90.3	1137.1
1957	27.7	20.7	96.1	102.7	163.7	76.6	32.5	40.2	61.8	105.5	35.8	44.2	807.5
1958	34.2	19.6	53.8	72.8	86.3	66.2	24.6	51.1	18.1	116.8	218.5	47.0	811.0
1959	38.6	31.4	56.3	89.6	114.0	83.6	94.7	63.8	50.9	70.8	85.0	39.5	818.6
1960	33.2	40.2	56.8	95.4	90.9	69.2	63.2	54.1	26.4	122.2	44.9	67.2	763.7
1961	108.7	24.9	75.2	92.1	18.5	79.9	94.9	45.6	42.2	146.8	117.1	4.6	850.5
1962	74.1	36.5	65.5	68.1	120.7	161.9	59.2	92.8	92.8	71.6	184.8	80.3	1108.3
1963	31.2	74.1	75.5	112.2	151.6	49.6	46.8	34.5	47.0	141.0	146.8	11.0	921.3
1964													
1965	45.4	29.4	55.3	230.9	88.7	39.6	44.4	38.7	19.6	136.2	92.7	47.9	868.8
1966	0.0	34.9	12.6	19.9	104.1	49.6	27.5	20.6	45.4	131.7	162.7	108.4	717.4
1967	23.1	69.5	74.1	56.3	89.2	109.5	46.0	48.2	59.2	77.2	88.1	44.0	784.4
1968	9.2	64.6	44.6	130.8	142.5	120.0	46.7	38.8	65.7	143.5	122.8	20.9	950.1
1969	87.2	24.2	14.8	224.4	99.6	93.4	56.1	60.1	22.8	76.0	54.5	49.7	862.8
1970	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	40.0	31.0	87.0	164.0	61.0	22.0	-9.9
1971	77.0	68.0	113.0	144.0	136.5	36.5	34.5	82.0	56.0	50.0	88.0	46.0	931.5
1972	58.0	33.5	63.5	160.5	118.0	104.5	37.5	40.0	66.0	44.0	91.0	15.5	832.0
1973	28.5	4.0	66.6	42.0	53.5	87.5	79.5	50.5	94.5	93.0	38.0	69.6	677.2
1974	29.5	75.0	76.0	93.5	69.4	24.0	18.0	37.0	81.0	123.0	140.0	20.0	786.4
1975	0.0	49.0	50.0	36.0	54.0	42.0	78.8	69.0	81.0	107.0	93.0	107.0	766.8
1976	15.0	54.0	86.0	146.0	116.0	60.0	2.0	54.0	35.0	83.0	69.0	40.0	760.0
1977	60.0	25.0	71.0	65.0	56.0	43.0	30.0	35.0	69.0	141.0	58.0	18.0	671.0
1978	4.0	21.0	58.0	154.0	90.0	85.0	23.0	45.0	52.0	160.0	49.0	43.0	784.0
1979	27.0	19.0	30.0	144.0	116.0	150.0	104.0	112.0	84.0	318.0	159.0	25.0	1288.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARAJO

ESTACION X TAEIC MUNICIPIO DE TABIO PERIODO 1955 - 1979 COEF DE CORRECCION 1.000

N	AN	T /	CO	MOY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1979	1286.0	1286.0	1286.0	2.464	0.471	
2	1978	784.0	2070.0	1035.0	-0.546	0.367	
3	1977	671.0	2741.0	914.3	-1.221	0.133	
4	1976	761.0	3502.0	875.5	-0.665	0.002	
5	1975	706.6	4208.6	841.7	-0.645	-0.123	
6	1974	780.4	4989.0	831.5	-0.532	-0.224	
7	1973	677.2	5666.2	809.5	-1.184	-0.451	
8	1972	832.0	6498.2	812.3	-0.255	-0.500	
9	1971	991.5	7489.7	832.2	0.335	-0.436	
10	1969	862.8	8352.5	835.3	-0.075	-0.451	
11	1968	956.1	9308.6	846.3	0.446	-0.365	
12	1967	784.4	10093.0	841.1	-0.544	-0.465	
13	1966	717.4	10810.4	831.6	-0.944	-0.650	
14	1965	848.8	11659.2	832.8	-0.040	-0.657	
15	1963	921.3	12580.5	838.7	0.274	-0.605	
16	1962	1108.3	13688.8	855.3	1.391	-0.339	
17	1961	850.5	14539.3	855.2	-0.145	-0.367	
18	1960	783.7	15323.0	851.3	-0.667	-0.495	
19	1959	818.6	16141.6	849.6	-0.335	-0.560	
20	1958	811.0	16952.6	847.6	-0.385	-0.633	
21	1957	807.5	17760.1	845.7	-0.406	-0.711	
22	1956	1137.1	18897.2	859.0	1.563	-0.412	
23	1955	1236.2	20133.4	875.4	2.165	0.0	

N	AN	T /	CO	MOY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 23 ANOS = 875.4

DESVIACION ESTANDAR = 167.4

COEFICIENTE DE VARIACION = 0.191

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IDAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212565	TABIO	TABIO	+04 54 38	+074 06 06	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	27.7	20.7	96.1	102.7	163.7	76.6	32.5	40.2	61.8	105.5	35.8	44.2	807.5	1957
1958	34.2	19.6	53.8	72.8	86.3	66.2	24.6	51.1	18.1	118.8	218.5	47.0	811.0	1958
1959	38.6	31.4	56.3	89.9	114.0	83.6	94.7	63.8	60.9	70.8	85.0	39.9	818.6	1959
1960	33.2	40.2	56.8	95.4	90.9	69.2	63.2	54.1	26.4	122.2	44.9	67.2	763.7	1960
1961	108.7	24.9	75.2	92.1	18.5	79.9	94.9	45.6	42.2	146.8	117.1	4.6	850.5	1961
1962	74.1	36.5	65.5	68.1	120.7	161.9	59.2	92.8	92.8	71.6	164.6	60.3	1108.3	1962
1963	31.2	74.1	75.5	112.2	151.6	49.6	46.8	34.5	47.0	141.0	146.8	11.0	921.3	1963
1964														1964
1965	45.4	29.4	55.3	230.9	88.7	39.6	44.4	38.7	19.6	136.2	92.7	47.9	868.6	1965
1966	0.0	34.9	12.6	19.9	104.1	49.6	27.5	20.6	45.4	131.7	162.7	108.4	717.4	1966
1967	23.1	69.5	74.1	56.3	89.2	109.5	46.0	48.2	59.2	77.2	88.1	44.0	784.4	1967
1968	9.2	64.6	44.6	130.8	142.5	120.0	46.7	38.6	65.7	143.5	122.8	20.9	950.1	1968
1969	87.2	24.2	14.8	224.4	99.6	93.4	56.1	60.1	22.8	76.0	84.5	49.7	862.8	1969
1970	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	40.0	31.0	87.0	164.0	61.0	22.0	-9.9	1970
1971	77.0	68.0	113.0	144.0	136.5	36.5	34.5	82.0	56.0	50.0	88.0	46.0	931.5	1971
1972	58.0	33.5	63.5	160.5	118.0	104.5	37.5	40.0	66.0	44.0	91.0	15.5	832.0	1972
1973	28.5	4.0	66.6	42.0	83.5	57.5	79.5	50.5	94.5	93.0	38.0	69.6	677.2	1973
1974	29.5	75.0	76.0	93.5	69.4	24.0	18.0	37.0	81.0	123.0	140.0	20.0	786.4	1974
1975	3.0	49.0	50.0	36.0	84.0	42.0	78.8	69.0	81.0	107.0	93.0	107.0	766.8	1975
1976	15.0	54.0	86.0	146.0	116.0	60.0	2.0	54.0	35.0	83.0	69.0	40.0	760.0	1976
1977	60.0	25.0	71.0	65.0	56.0	43.0	30.0	35.0	69.0	141.0	88.0	18.0	671.0	1977
1978	4.0	21.0	58.0	154.0	90.0	85.0	23.0	45.0	52.0	160.0	49.0	43.0	784.0	1978
1979	27.0	19.0	30.0	144.0	116.0	150.0	104.0	112.0	84.0	318.0	159.0	25.0	1288.0	1979
NUMERO DE ANOS	21	21	21	21	21	21	22	22	22	22	22	22	21	
VALOR MAXIMO	108.7	75.0	113.0	230.9	163.7	161.9	104.0	112.0	94.5	318.0	218.5	108.4	1288.0	
CUARTIL SUPERIOR	59.0	59.3	75.3	145.0	119.3	98.9	63.2	60.1	81.0	141.0	140.0	49.7	895.0	
MEDIANA	31.2	33.5	63.5	95.4	99.6	69.2	45.2	46.9	57.6	120.5	89.5	43.5	811.0	
CUARTIL INFERIOR	19.0	22.6	51.9	66.5	77.8	46.3	30.0	38.7	42.2	77.2	56.0	20.9	765.2	
VALOR MINIMO	0.0	4.0	12.6	19.9	18.5	24.0	2.0	20.6	18.1	44.0	35.8	4.6	671.0	
PROMEDIOS	38.6	39.0	61.7	108.6	99.0	76.3	49.3	52.0	57.2	119.3	100.0	44.1	845.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		845.0	
PORCENTAJES	4.6	4.6	7.3	12.9	11.7	9.0	5.8	6.2	6.8	14.1	11.8	5.2		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 61.

DEV. ESTANDAR	29.4	20.9	24.0	56.5	35.9	36.8	27.1	21.4	23.7	56.5	50.6	28.3	141.4
COEF. VARIACION	0.760	0.537	0.389	0.520	0.362	0.483	0.550	0.412	0.415	0.473	0.507	0.641	0.167
COEF. ASIMETRIA	0.809	0.506	-0.235	0.627	-0.264	0.879	0.562	1.357	-0.102	1.994	0.743	0.938	1.796

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212506	TABIO	TABIO	+04 54 38	+074 06 06	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	33.2	40.2	56.8	95.4	90.9	69.2	63.2	54.1	26.4	122.2	44.9	67.2	763.7	1960
1961	108.7	24.9	75.2	92.1	18.5	79.9	94.9	45.6	42.2	146.8	117.1	4.6	850.5	1961
1962	74.1	36.5	65.5	68.1	120.7	161.9	59.2	92.8	92.8	71.6	184.8	80.3	1108.3	1962
1963	31.2	74.1	75.5	112.2	151.6	49.6	46.8	34.5	47.0	141.0	146.8	11.0	921.3	1963
1964	24.4	41.9	28.7	127.5	113.4	84.4	89.5	43.2	58.8	89.1	80.1	52.2	833.2	1964
1965	45.4	29.4	55.3	230.9	88.7	39.6	44.4	38.7	19.6	136.2	92.7	47.9	868.8	1965
1966	0.0	34.9	12.6	19.9	104.1	49.6	27.5	20.6	45.4	131.7	162.7	108.4	717.4	1966
1967	23.1	69.5	74.1	56.3	89.2	109.5	46.0	48.2	59.2	77.2	88.1	44.0	784.4	1967
1968	9.2	64.6	44.6	130.8	142.5	120.0	46.7	38.8	65.7	143.5	122.8	20.9	950.1	1968
1969	87.2	24.2	14.8	224.4	99.6	93.4	56.1	60.1	22.8	76.0	54.5	49.7	862.8	1969
1970	28.2	39.6	19.9	35.7	126.9	44.7	40.0	31.0	87.0	164.0	61.0	22.0	700.0	1970
1971	77.0	68.0	113.0	144.0	136.5	36.5	34.5	82.0	56.0	50.0	88.0	46.0	931.5	1971
1972	58.0	33.5	63.5	160.5	118.0	104.5	37.5	40.0	66.0	44.0	91.0	15.5	832.0	1972
1973	28.5	4.0	66.6	42.0	53.5	57.5	79.5	50.5	94.5	93.0	38.0	69.6	677.2	1973
1974	29.5	75.0	76.0	93.5	69.4	24.0	18.0	37.0	81.0	123.0	140.0	20.0	786.4	1974
1975	0.0	49.0	50.0	36.0	54.0	42.0	78.8	69.0	81.0	107.0	93.0	107.0	766.8	1975
1976	15.0	54.0	86.0	146.0	116.0	60.0	2.0	54.0	35.0	83.0	69.0	40.0	760.0	1976
1977	60.0	25.0	71.0	65.0	56.0	43.0	30.0	35.0	69.0	141.0	58.0	18.0	671.0	1977
1978	4.0	21.0	58.0	154.0	90.0	85.0	23.0	45.0	52.0	160.0	49.0	43.0	784.0	1978
1979	27.0	19.0	30.0	144.0	116.0	150.0	104.0	112.0	84.0	318.0	159.0	25.0	1288.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	108.7	75.0	113.0	230.9	151.6	161.9	104.0	112.0	94.5	318.0	184.8	108.4	1288.0	
CUARTIL SUPERIOR	59.0	59.3	74.6	145.0	119.3	98.9	71.0	57.1	81.0	142.3	131.4	59.7	895.0	
MEDIANA	29.0	38.0	60.8	103.8	101.8	64.6	46.3	45.3	59.0	122.6	89.5	43.5	809.2	
CUARTIL INFERIOR	19.0	24.9	37.3	60.6	79.0	43.8	32.3	37.8	43.8	80.1	59.5	20.4	761.8	
VALOR MINIMO	0.0	4.0	12.6	19.9	18.5	24.0	2.0	20.6	19.6	44.0	38.0	4.6	671.0	
PROMEDIOS	38.2	41.4	56.9	108.9	97.8	75.2	51.1	51.6	59.3	120.9	97.0	44.6	842.9	
PORCENTAJES	4.5	4.9	6.7	12.9	11.6	8.9	6.1	6.1	7.0	14.3	11.5	5.3		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 61.

INDICE DE IRREGULARIDAD INTERANUAL =1.58

DEV. ESTANDAR	30.3	20.4	25.7	59.7	34.1	38.4	27.1	22.3	23.1	58.6	43.3	29.8	148.3
COEF. VARIACION	0.793	0.492	0.452	0.548	0.349	0.511	0.531	0.432	0.390	0.485	0.447	0.667	0.176

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1087.	1033.	968.	843.	718.	653.	599.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.827	0.276	-0.083	0.452	-0.593	0.881	0.374	1.402	-0.146	1.924	0.543	0.847	1.662

IMPRESO EN COLOMBIA POR DANAGRAN

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
241510	EL ENCANTO	TAUSA	+05 11 00	+073 54 00	3150 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	CIC	TCTAL
1960	43.5	70.0	113.0	101.0	32.6	29.2	77.0	38.2	28.8	132.5	1.0	135.0	801.8
1961	55.0	10.0	70.0	74.0	18.5	54.5	44.0	29.5	18.5	162.5	70.5	8.0	615.0
1962	69.0	70.0	79.5	55.0	128.0	97.0	59.0	48.0	23.0	97.0	178.0	46.5	950.0
1963	24.0	53.0	54.0	111.5	156.0	24.5	12.0	41.0	19.0	74.0	120.0	25.0	714.0
1964	48.0	61.0	0.0	86.0	93.0	76.0	41.0	24.0	14.0	53.0	75.0	13.0	584.0
1965	8.0	26.0	12.0	313.0	104.0	17.0	28.0	37.0	10.5	145.5	204.5	72.0	981.5
1966	1.0	5.0	66.0	36.0	102.0	47.0	26.0	29.0	30.6	112.0	229.5	103.0	788.1
1967	6.0	36.0	122.0	77.0	62.0	77.0	19.0	41.0	21.0	54.0	101.0	89.0	705.0
1968	3.5	36.0	18.0	153.6	101.0	124.0	27.0	41.0	51.0	53.5	149.8	-9.9	-9.9
1969	53.5	20.0	2.0	165.0	73.0	43.0	18.0	17.0	43.0	166.0	73.0	13.0	686.5
1970	37.0	49.4	70.2	41.5	68.8	45.6	11.0	0.0	136.0	146.0	97.0	8.0	710.5
1971	-9.9	5.6	5.3	9.2	-9.9	-9.9	-9.9	43.6	58.0	56.0	80.0	110.0	-9.9
1972	91.0	16.5	72.3	170.5	112.5	95.7	49.0	59.0	13.6	50.0	104.0	10.0	844.1
1973	8.5	26.0	15.0	43.5	38.0	56.8	39.5	78.5	158.5	145.5	108.5	60.0	778.3
1974	48.5	78.0	58.2	76.0	66.0	24.0	21.5	30.0	87.0	86.6	90.0	28.0	693.8
1975	2.0	65.0	68.0	66.0	58.0	34.0	65.0	45.0	76.0	107.0	76.0	112.8	774.8
1976	2.0	58.0	115.0	131.0	74.0	50.0	24.0	17.0	35.0	141.0	143.5	19.5	810.0
1977	0.0	2.0	25.0	104.0	50.0	46.0	40.0	28.0	83.0	92.0	83.0	41.0	594.0
1978	0.0	42.0	69.0	180.0	84.0	56.0	39.0	47.0	60.0	79.0	88.0	36.0	780.0
1979	26.0	51.0	125.0	176.0	132.0	116.0	26.0	81.0	38.0	251.0	197.0	4.0	1223.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARAJO

ESTACION X EL ENCANTO MUNICIPIO DE TAUSA PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. -2. -1. 0.0 +1. +2. +3.
1	1979	1223.0	1223.0	1223.0	2.681	0.569	
2	1978	780.0	2003.0	1001.5	0.002	0.569	
3	1977	594.0	2597.0	865.7	-1.207	0.331	
4	1976	810.0	3407.0	851.8	0.197	0.370	
5	1975	774.8	4181.8	836.4	-0.032	0.363	
6	1974	693.8	4875.6	812.6	-0.558	0.253	
7	1973	778.3	5653.9	807.7	-0.009	0.251	
8	1972	844.1	6498.0	812.2	0.419	0.334	
9	1970	710.5	7208.5	800.9	-0.450	0.245	
10	1969	686.5	7895.0	789.5	-0.606	0.126	
11	1967	705.0	8600.0	781.8	-0.485	0.030	
12	1966	786.1	9386.1	782.3	0.055	0.041	
13	1965	981.5	10369.6	797.7	1.311	0.300	
14	1964	584.0	10953.6	782.4	-1.272	0.049	
15	1963	714.0	11667.6	777.8	-0.427	-0.036	
16	1962	950.0	12617.6	788.6	1.107	0.183	
17	1961	615.0	13232.6	778.4	-1.070	-0.028	
18	1960	801.8	14034.4	779.7	0.144	0.0	

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 18 ANOS = 779.7

DESVIACION ESTANDAR = 153.9

COEFICIENTE DE VARIACION = 0.197

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
241510	EL ENCANTO	TAUSA	+05 10 49	+073 53 42	3150 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	43.5	70.0	113.0	101.0	32.6	29.2	77.0	38.2	28.8	132.5	1.0	135.0	801.8	1960
1961	35.0	10.0	70.0	74.0	12.5	54.5	44.0	29.5	18.5	162.5	70.5	8.0	615.0	1961
1962	69.0	70.0	79.5	55.0	128.0	97.0	59.0	48.0	23.0	97.0	176.0	46.5	950.0	1962
1963	24.0	55.0	54.0	111.5	156.0	24.5	12.0	41.0	19.0	74.0	120.0	25.0	714.0	1963
1964	48.0	61.0	0.0	80.0	93.0	76.0	41.0	24.0	14.0	53.0	75.0	13.0	584.0	1964
1965	8.0	26.0	12.0	313.0	104.0	17.0	28.0	37.0	10.5	149.5	204.5	72.0	981.5	1965
1966	1.0	5.0	60.0	36.0	102.0	47.0	26.0	29.0	30.6	113.0	229.5	103.0	788.1	1966
1967	6.0	36.0	122.0	77.0	62.0	77.0	19.0	41.0	21.0	54.0	101.0	89.0	705.0	1967
1968	3.5	36.0	18.0	153.6	101.0	124.0	27.0	41.0	51.0	53.5	145.8	-9.9	-9.9	1968
1969	53.5	20.0	2.0	165.0	73.0	43.0	18.0	17.0	43.0	166.0	73.0	13.0	686.5	1969
1970	37.0	49.4	70.2	41.5	68.8	45.6	11.0	0.0	136.0	146.0	97.0	8.0	710.5	1970
1971	-9.9	5.6	5.3	9.2	-9.9	-9.9	-9.9	43.6	58.0	58.0	80.0	110.0	-9.9	1971
1972	91.0	16.5	72.3	170.5	112.5	95.7	49.0	59.0	13.6	50.0	104.0	10.0	844.1	1972
1973	8.5	20.0	15.0	43.5	38.0	56.8	39.5	78.5	158.5	145.5	106.5	60.0	778.3	1973
1974	48.5	78.0	58.2	76.0	66.0	24.0	21.5	30.0	87.0	86.6	90.0	28.0	693.8	1974
1975	2.0	65.0	68.0	66.0	58.0	34.0	65.0	45.0	76.0	107.0	76.0	112.8	774.8	1975
1976	2.0	58.0	115.0	131.0	74.0	50.0	24.0	17.0	35.0	141.0	143.5	19.5	810.0	1976
1977	0.0	2.0	25.0	104.0	80.0	46.0	40.0	28.0	83.0	92.0	83.0	41.0	594.0	1977
1978	0.0	42.0	69.0	180.0	84.0	56.0	39.0	47.0	60.0	79.0	66.0	36.0	780.0	1978
1979	26.0	51.0	125.0	176.0	132.0	116.0	26.0	81.0	38.0	251.0	197.0	4.0	1223.0	1979
NUMERO DE ANOS	19	20	20	20	19	19	19	20	20	20	20	19	18	
VALOR MAXIMO	91.0	78.0	125.0	313.0	156.0	124.0	77.0	81.0	158.5	251.0	229.5	135.0	1223.0	
CUARTIL SUPERIOR	48.5	59.5	75.9	159.3	104.0	77.0	44.0	46.0	68.0	145.8	146.6	89.0	810.0	
MEDIANA	24.0	39.0	67.0	93.5	74.0	50.0	28.0	39.6	36.5	102.0	99.0	36.0	776.5	
CUARTIL INFERIOR	2.0	18.3	16.5	60.3	58.0	34.0	21.5	28.5	20.0	66.0	78.0	13.0	693.8	
VALOR MINIMO	0.0	2.0	0.0	9.2	18.5	17.0	11.0	0.0	10.5	50.0	1.0	4.0	584.0	
PROMEDIOS	27.7	39.0	58.0	108.5	81.8	58.6	35.1	38.7	50.2	110.6	113.5	49.1	779.7	
									TOTAL DE LOS PROMEDIOS MENSUALES =				770.7	
PORCENTAJES	3.6	5.1	7.5	14.1	10.6	7.6	4.5	5.0	6.5	14.3	14.7	6.4		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 78.

DEV. ESTANDAR	27.6	24.2	41.1	70.1	36.0	31.1	18.0	19.3	40.7	51.6	55.2	42.2	153.9
COEF. VARIACION	0.996	0.620	0.708	0.646	0.441	0.531	0.514	0.497	0.810	0.467	0.487	0.858	0.197
COEF. ASIMETRIA	0.735	-0.064	0.120	1.267	0.233	0.793	0.816	0.515	1.491	0.954	0.508	0.755	1.447

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
24151 D	EL ENCANTO	TAUSA	+05 10 49	+073 53 42	3150 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	43.5	70.0	113.0	101.0	32.6	29.2	77.0	38.2	28.8	132.5	1.0	135.0	801.8	1960
1961	55.0	10.0	70.0	74.0	18.5	54.5	44.0	29.5	18.5	162.5	70.5	8.0	615.0	1961
1962	69.0	70.0	79.5	55.0	128.0	97.0	59.0	48.0	23.0	97.0	178.0	46.5	950.0	1962
1963	24.0	53.0	54.0	111.5	156.0	24.5	12.0	41.0	19.0	74.0	120.0	25.0	714.0	1963
1964	48.0	61.0	0.0	86.0	53.0	76.0	41.0	24.0	14.0	53.0	75.0	13.0	584.0	1964
1965	8.0	20.0	12.0	313.0	104.0	17.0	28.0	37.0	10.5	149.5	204.5	72.0	981.5	1965
1966	1.0	5.0	66.0	36.0	102.0	47.0	20.0	29.0	30.6	113.0	229.5	103.0	788.1	1966
1967	6.0	30.0	122.0	77.0	62.0	77.0	19.0	41.0	21.0	54.0	101.0	89.0	705.0	1967
1968	3.4	36.0	18.0	153.6	101.0	124.0	27.0	41.0	51.0	53.5	149.8	40.6	798.9	1968
1969	53.5	20.0	2.0	165.0	73.0	43.0	18.0	17.0	43.0	166.0	73.0	13.0	686.5	1969
1970	37.0	49.4	70.2	41.5	68.8	45.6	11.0	0.0	136.0	146.0	97.0	8.0	710.5	1970
1971	56.3	5.6	5.3	109.2	134.9	44.2	24.8	43.6	58.0	58.0	80.0	110.0	729.9	1971
1972	91.0	16.5	72.3	170.5	112.5	95.7	49.0	59.0	13.6	50.0	104.0	10.0	844.1	1972
1973	8.5	26.0	15.0	43.5	38.0	56.8	39.5	78.5	158.5	145.5	108.5	60.0	778.3	1973
1974	48.5	78.0	58.2	76.0	66.0	24.0	21.5	30.0	87.0	86.6	90.0	28.0	693.8	1974
1975	2.0	65.0	68.0	66.0	58.0	34.0	65.0	45.0	76.0	107.0	76.0	112.8	774.8	1975
1976	2.0	58.0	115.0	131.0	74.0	50.0	24.0	17.0	35.0	141.0	143.5	19.5	810.0	1976
1977	0.0	2.0	25.0	104.0	50.0	46.0	40.0	28.0	83.0	92.0	83.0	41.0	594.0	1977
1978	0.0	42.0	69.0	180.0	84.0	56.0	39.0	47.0	60.0	79.0	88.0	36.0	780.0	1978
1979	26.0	51.0	125.0	176.0	132.0	116.0	26.0	81.0	38.0	251.0	197.0	4.0	1223.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	91.0	78.0	125.0	313.0	156.0	124.0	77.0	81.0	158.5	251.0	229.5	135.0	1223.0	
CUARTIL SUPERIOR	51.0	59.5	75.9	159.3	108.3	76.5	42.5	46.0	68.0	145.8	146.6	80.5	805.9	
MEDIANA	25.0	39.0	67.0	102.5	79.0	48.5	27.5	29.6	36.5	102.0	99.0	38.3	776.5	
CUARTIL INFERIOR	2.7	18.3	16.5	70.0	60.0	38.5	22.8	28.5	20.0	66.0	78.0	13.0	699.4	
VALOR MINIMO	0.0	2.0	0.0	36.0	18.5	17.0	11.0	0.0	10.5	50.0	1.0	4.0	584.0	
PROMEDIOS	29.1	39.0	58.0	113.5	84.4	57.9	34.5	38.7	50.2	110.6	113.5	48.7	778.2	
PORCENTAJES	3.7	5.0	7.5	14.6	10.8	7.4	4.4	5.0	6.5	14.2	14.6	6.3		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 17. INDICE DE ARNOLDUS = 79.

INDICE DE IRREGULARIDAD INTERANUAL =1.63

DEV. ESTANDAR	27.6	24.2	41.1	66.1	37.0	30.5	17.7	19.3	40.7	51.6	55.2	41.1	146.1
COEF. VARIACION	0.948	0.620	0.708	0.583	0.439	0.526	0.512	0.497	0.810	0.467	0.487	0.843	0.188

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1019.	965.	901.	778.	655.	591.	538.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.583	-0.064	0.120	1.457	0.136	0.869	0.898	0.515	1.491	0.954	0.508	0.803	1.528

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212088	EL SALITRE	TAUSA	+05 09 41	+073 59 49	3100 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TOTAL
1963	-9.9	-9.9	-9.9	-9.9	-9.9	57.7	52.9	65.0	-9.9	69.5	108.9	31.7	-9.9
1964	6.4	38.5	7.6	11.7	76.2	-9.9	-9.9	-9.9	32.6	67.0	26.9	16.3	-9.9
1965	24.7	10.2	18.8	181.9	95.5	36.9	63.6	81.2	25.4	217.0	212.0	34.0	1001.2
1966	-9.9	25.5	75.1	61.6	134.8	66.5	57.9	62.9	66.7	94.6	161.8	54.3	-9.9
1967	25.9	32.1	37.1	108.1	87.6	113.1	52.8	64.3	43.1	72.4	129.1	53.8	820.4
1968	17.4	55.2	76.8	177.6	127.6	117.5	87.5	60.4	77.9	193.9	96.5	7.5	1055.8
1969	56.5	36.3	5.5	142.9	100.1	58.0	51.7	49.6	91.6	181.3	56.6	56.7	886.8
1970	21.2	39.5	36.8	59.9	85.6	73.8	60.0	32.6	103.9	133.3	80.3	33.0	759.9
1971	83.6	82.8	114.3	78.9	191.4	81.5	62.6	90.9	76.7	98.6	109.0	50.2	1090.5
1972	79.1	25.9	75.0	221.8	123.3	129.4	82.1	67.8	54.9	53.1	101.0	17.1	1026.5
1973	3.1	16.8	58.1	92.9	52.2	84.3	61.4	54.6	142.9	86.7	127.7	69.6	850.3
1974	43.9	93.5	81.1	92.4	73.7	44.6	73.1	67.9	119.2	117.1	166.9	39.6	1013.0
1975	6.6	76.7	68.7	63.2	80.1	66.8	105.8	74.3	85.4	149.2	85.1	127.1	989.0
1976	28.8	45.0	113.8	134.7	53.8	14.7	10.8	46.1	46.0	129.1	55.2	87.7	765.7
1977	12.8	16.0	54.6	108.4	48.2	91.4	56.0	46.2	98.7	76.7	84.3	64.6	757.9
1978	4.9	24.5	116.9	157.1	130.3	84.7	53.4	45.0	50.8	118.5	53.3	52.6	892.0
1979	18.9	41.1	106.1	150.4	118.1	123.6	48.7	108.4	68.1	222.5	184.5	61.9	1252.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DIANA

ESTACION X EL SALITRE MUNICIPIO DE TAUSA PERIODO 1963 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1252.3	1252.3	1252.3	2.143	0.332				I +		•	
2	1978	892.0	2144.3	1072.1	-0.330	0.281				• I +			
3	1977	757.9	2902.2	967.4	-1.250	0.087			•	+			
4	1976	765.7	3667.9	917.0	-1.197	-0.098			•	+			
5	1975	989.0	4656.9	931.4	0.336	-0.046				+ •			
6	1974	1013.0	5669.9	945.0	0.500	0.031				+ •			
7	1973	850.3	6520.2	931.5	-0.616	-0.064			•	+			
8	1972	1026.5	7546.7	943.3	0.593	0.028				+ •			
9	1971	1090.5	8637.2	959.7	1.032	0.188				I+ •			
10	1970	759.9	9397.1	939.7	-1.237	-0.004			•	+			
11	1969	886.8	10283.9	934.9	-0.366	-0.061				• +			
12	1968	1055.8	11339.7	945.0	0.794	0.062				+ •			
13	1967	820.4	12160.1	935.4	-0.621	-0.065			•	+			
14	1965	1001.2	13161.3	940.1	0.419	0.0				+ •			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 14 ANOS = 940.1
DEVIACION ESTANDAR = 145.7
COEFICIENTE DE VARIACION = 0.155

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2120d8	EL SALITRE	TAUSA	+05 10 49	+074 0C 24	3140 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1963	-9.9	-9.9	-9.9	-9.9	-9.9	57.7	52.9	65.0	-9.9	69.5	108.9	31.7	-9.9	1963
1964														1964
1965	24.7	10.2	18.8	181.9	55.5	36.9	63.6	81.2	25.4	217.0	212.0	34.0	1001.2	1965
1966	-9.9	25.5	75.1	61.6	134.8	66.5	57.9	62.9	66.7	94.6	161.8	94.3	-9.9	1966
1967	25.9	32.1	37.1	108.1	87.6	113.1	52.8	64.3	43.1	73.4	129.1	53.8	820.4	1967
1968	17.4	55.2	70.8	177.6	127.6	117.5	87.5	60.4	77.9	153.9	96.5	7.5	1055.8	1968
1969	56.5	36.3	5.5	142.9	100.1	58.0	51.7	49.6	91.6	181.3	56.6	56.7	886.8	1969
1970	21.2	35.5	36.8	59.9	85.6	73.8	60.0	32.6	103.9	133.3	80.3	33.0	759.9	1970
1971	83.6	82.8	114.3	78.9	151.4	51.5	62.6	90.9	76.7	98.6	109.0	50.2	1090.5	1971
1972	79.1	25.9	75.0	221.8	123.3	125.4	82.1	67.8	54.9	53.1	101.0	17.1	1026.5	1972
1973	3.1	10.8	58.1	92.9	52.2	84.3	61.4	54.6	142.9	86.7	127.7	69.6	850.3	1973
1974	43.9	93.5	81.1	92.4	73.7	44.6	73.1	67.9	119.2	117.1	166.9	39.6	1013.0	1974
1975	6.6	70.7	68.7	63.2	80.1	66.8	105.8	74.3	85.4	149.2	85.1	127.1	989.0	1975
1976	28.8	45.0	113.8	134.7	53.8	14.7	10.8	46.1	46.0	129.1	55.2	87.7	765.7	1976
1977	12.8	16.0	54.6	108.4	48.2	91.4	56.0	46.2	98.7	76.7	84.3	64.6	757.9	1977
1978	4.9	24.5	116.9	157.1	130.3	84.7	53.4	45.0	50.8	118.5	53.3	52.6	892.0	1978
1979	18.9	41.1	106.1	150.4	118.1	123.6	48.7	108.4	68.1	222.5	164.5	61.9	1252.3	1979
NUMERO DE ANOS	14	15	15	15	15	16	16	16	15	16	16	16	14	
VALOR MAXIMO	83.6	93.5	116.9	221.8	151.4	125.4	105.8	108.4	142.9	222.5	212.0	127.1	1252.3	
CUARTIL SUPERIOR	43.9	55.2	106.1	157.1	127.6	102.2	68.3	71.1	98.7	151.5	145.4	67.1	1026.5	
MEDIANA	22.9	36.3	75.0	108.4	95.5	70.3	58.9	63.6	76.7	117.8	104.9	53.2	940.5	
CUARTIL INFERIOR	12.8	24.5	37.1	78.9	73.7	54.6	52.8	47.9	50.8	81.7	82.3	33.5	820.4	
VALOR MINIMO	3.1	10.2	5.5	59.9	48.2	14.7	10.8	32.6	25.4	53.1	53.3	7.5	757.9	
PROMEDIOS	30.5	41.4	69.2	122.1	100.2	75.7	61.3	63.6	76.8	123.4	113.3	55.1	940.1	
											TOTAL DE LOS PROMEDIOS MENSUALES =		932.5	
PORCENTAJES	3.3	4.4	7.4	13.1	10.7	8.1	6.6	6.8	8.2	13.2	12.1	5.9		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 69.

DEV. ESTANDAR	26.0	25.3	34.8	49.4	38.4	32.6	20.5	19.0	31.3	51.0	47.5	30.1	145.7
COEF. VARIACION	0.851	0.612	0.502	0.405	0.384	0.430	0.334	0.299	0.408	0.413	0.420	0.547	0.155
COEF. ASIMETRIA	1.137	0.529	-0.232	0.442	0.705	0.050	-0.144	0.745	0.451	0.696	0.651	0.763	0.487

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212088	EL SALITRE	TAUSA	+05 10 49	+074 00 24	3140 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	33.9	34.3	59.4	107.6	99.4	38.5	75.5	65.0	79.7	105.7	53.1	79.8	831.9	1960
1961	79.6	18.8	79.2	86.2	30.6	91.8	84.6	33.4	48.8	152.0	132.0	13.2	851.2	1961
1962	44.2	25.0	142.2	43.9	115.1	106.3	73.2	89.4	57.8	118.6	152.6	23.6	991.9	1962
1963	21.8	108.1	87.5	122.0	150.3	57.7	52.9	65.0	97.0	69.6	108.9	31.7	972.5	1963
1964	6.4	38.5	36.9	71.0	91.5	83.3	42.2	104.2	48.4	117.1	101.0	32.3	772.8	1964
1965	24.7	10.2	18.8	181.9	95.5	36.9	63.6	81.2	25.4	217.0	212.0	34.0	1001.2	1965
1966	37.8	25.5	75.1	61.6	134.8	66.5	57.9	62.9	66.7	94.6	161.8	94.3	939.5	1966
1967	25.9	32.1	37.1	108.1	87.6	113.1	52.8	64.3	43.1	73.4	129.1	53.8	820.4	1967
1968	17.4	55.2	76.8	177.6	127.6	117.5	87.5	60.4	77.9	153.9	96.5	7.5	1055.8	1968
1969	50.5	30.3	5.5	142.9	100.1	58.0	51.7	49.6	91.6	181.3	56.6	56.7	886.8	1969
1970	21.2	39.5	36.8	59.9	85.6	73.8	60.0	32.6	103.9	133.3	80.3	33.0	759.9	1970
1971	83.6	82.8	114.3	78.9	191.4	51.5	62.6	90.9	76.7	98.6	109.0	50.2	1090.5	1971
1972	79.1	25.9	75.0	221.8	123.3	125.4	82.1	67.8	54.9	53.1	101.0	17.1	1026.5	1972
1973	3.1	16.8	58.1	92.9	52.2	84.3	61.4	54.6	142.9	86.7	127.7	69.6	850.3	1973
1974	43.9	93.5	81.1	92.4	73.7	44.6	73.1	67.9	119.2	117.1	166.9	39.6	1013.0	1974
1975	0.6	76.7	68.7	63.2	80.1	66.8	105.8	74.3	85.4	149.2	85.1	127.1	989.0	1975
1976	28.8	45.0	113.8	134.7	53.8	14.7	10.8	46.1	46.0	129.1	55.2	87.7	765.7	1976
1977	12.8	10.0	54.6	108.4	48.2	91.4	56.0	46.2	98.7	76.7	84.3	64.6	757.9	1977
1978	4.9	24.5	116.9	157.1	130.3	84.7	53.4	45.0	50.8	118.5	53.3	52.6	892.0	1978
1979	18.9	41.1	106.1	150.4	118.1	123.6	48.7	108.4	68.1	222.5	184.5	61.9	1252.3	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	83.6	108.1	142.2	221.8	191.4	125.4	105.8	108.4	142.9	222.5	212.0	127.1	1252.3	
CUARTIL SUPERIOR	44.0	50.1	96.8	146.6	125.4	99.0	74.3	77.7	94.3	150.6	142.8	67.1	1007.1	
MEDIANA	25.3	35.3	75.0	107.8	97.4	78.5	60.7	64.6	72.4	117.8	104.9	51.4	915.8	
CUARTIL INFERIOR	15.1	24.8	45.8	74.9	76.9	54.6	52.8	47.9	49.8	90.6	82.3	32.0	826.1	
VALOR MINIMO	3.1	10.2	5.5	43.9	30.6	14.7	10.8	32.6	25.4	53.1	53.1	7.5	757.9	
PROMEDIOS	32.6	42.3	72.2	113.1	99.5	76.5	62.8	65.5	74.1	123.4	112.6	51.5	926.1	
PORCENTAJES	3.5	4.6	7.8	12.2	10.7	8.3	6.8	7.1	8.0	13.3	12.2	5.6		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE APARCEDOS = 87.

INDICE DE IRREGULARIDAD INTERANUAL =1.44

DEV. ESTANDAR	25.1	27.4	35.3	47.5	38.6	31.2	19.9	21.2	29.0	46.0	45.6	30.1	130.5
COEF. VARIACION	0.772	0.648	0.489	0.420	0.388	0.408	0.316	0.325	0.391	0.373	0.405	0.584	0.141

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1141.	1093.	1036.	926.	816.	759.	711.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.940	1.211	0.043	0.632	0.342	-0.083	-0.299	0.459	0.601	0.740	0.520	0.766	0.631

IMPRESO EN COLOMBIA POR DANARAND

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212033	GUANQUICA N1	TAUSA	+05 11 00	+073 56 00	2950 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1947	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	68.5	67.3	105.8	138.2	50.2	13.5	-9.9
1948	18.6	40.1	58.3	138.7	57.1	34.3	51.0	45.5	34.0	101.0	67.0	55.0	700.6
1949	42.0	89.0	100.5	89.0	59.0	43.0	69.9	54.6	71.0	125.3	122.0	27.0	892.3
1950	90.1	124.5	96.6	139.8	161.6	128.4	47.5	82.7	47.0	184.5	136.0	93.6	1332.7
1951	30.4	53.3	119.9	86.3	163.8	36.3	42.4	34.6	34.5	126.9	145.2	27.9	903.5
1952	28.4	36.3	74.0	157.4	46.5	42.8	49.7	58.8	74.2	42.0	165.8	14.8	790.7
1953	26.5	36.8	56.3	67.6	140.4	77.7	62.4	57.5	122.8	146.7	98.8	69.3	982.8
1954	34.0	47.0	61.3	120.1	108.9	93.7	82.8	121.2	35.8	156.0	151.1	65.5	1117.4
1955	61.9	-9.9	-9.9	172.8	92.2	71.2	91.0	54.2	134.6	175.3	139.5	68.6	-9.9
1956	21.9	60.8	-9.9	34.6	99.9	65.7	48.8	47.1	88.0	221.0	110.0	-9.9	-9.9
1957	52.0	-9.9	-9.9	-9.9	153.8	45.6	55.0	53.3	43.8	103.7	74.8	14.9	-9.9
1958	8.5	29.1	35.9	64.3	74.3	65.8	46.5	52.6	14.2	105.9	120.3	35.4	656.8
1959	12.0	64.1	42.2	44.8	133.1	60.2	-9.9	58.6	47.1	163.1	115.2	-9.9	-9.9
1960	27.8	35.0	-9.9	-9.9	46.8	43.4	59.5	48.4	28.1	133.2	20.8	-9.9	-9.9
1961	40.9	6.2	106.8	67.8	14.6	74.2	24.1	25.7	30.3	127.7	86.4	8.2	632.9
1962	74.6	69.1	87.6	64.5	119.4	50.7	57.0	57.1	23.1	-9.9	193.1	38.4	-9.9
1963	6.6	26.1	37.6	-9.9	132.4	43.7	49.2	40.6	31.3	-9.9	117.2	11.9	-9.9
1964	30.0	27.2	7.6	122.9	85.4	117.4	42.6	24.4	23.7	66.1	109.2	60.0	716.5
1965	16.0	17.8	10.1	224.0	98.5	24.0	46.1	43.2	13.9	164.4	127.6	41.1	826.7
1966	0.9	4.4	89.0	32.9	129.8	45.3	39.4	39.8	-9.9	-9.9	-9.9	-9.9	-9.9
1967	24.8	42.2	59.0	-9.9	113.7	-9.9	-9.9	-9.9	37.6	-9.9	-9.9	65.2	-9.9
1968	7.2	26.9	-9.9	-9.9	66.2	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1969	-9.9	-9.9	-9.9	-9.9	76.2	40.3	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1970	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	83.0	-9.9	-9.9	7.4	-9.9
1971	-9.9	-9.9	-9.9	92.8	43.8	33.3	35.6	54.9	53.9	62.7	65.3	10.7	-9.9
1972	70.1	15.1	61.8	131.8	84.8	85.9	32.5	32.6	27.2	39.4	68.0	9.4	658.6

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR BANAVEN

ESTACION X GUANGUICA NI MUNICIPIO DE TALSA PERIODO 1947 - 1972 CCEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1972	658.6	658.6	658.6	-0.909	-0.226				+ I			
2	1965	826.7	1485.3	742.6	-0.115	-0.255				+.I			
3	1964	716.5	2201.8	733.9	-0.636	-0.413			. +	I			
4	1961	632.9	2834.7	708.7	-1.031	-0.605			. +	I			
5	1958	656.8	3491.5	698.3	-0.918	-0.897			.+	I			
6	1954	1117.4	4608.9	768.1	1.260	-0.584			+	I	.		
7	1953	982.8	5591.7	798.8	0.623	-0.429			+	I			
8	1952	790.7	6382.4	797.8	-0.285	-0.500			+	. I			
9	1951	903.5	7285.9	809.5	0.248	-0.438			+	I .			
10	1950	1332.7	8618.6	861.9	2.278	0.128				I+		.	
11	1949	892.3	9510.9	864.6	0.195	0.177				I*			
12	1948	700.6	10211.5	851.0	-0.711	0.000			.	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 12 ANOS = 851.0

DESVIACION ESTANDAR = 211.5

COEFICIENTE DE VARIACION = 0.249

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
231219	LOS PINOS	TAUSA	+05 14 00	+074 02 00	3477 METROS

AÑO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1973	14.0	23.0	93.0	68.0	43.0	76.0	15.0	57.0	178.0	136.0	222.0	160.0	1085.0
1974	74.3	186.0	212.0	166.0	98.0	35.0	16.4	54.0	135.0	151.0	203.0	55.9	1426.6
1975	8.0	162.0	79.3	134.9	70.8	13.9	61.3	37.0	67.1	128.6	163.9	236.8	1163.8
1976	74.5	88.3	86.2	203.0	100.6	55.5	34.0	16.0	73.1	192.5	138.8	78.0	1140.5
1977	15.0	23.0	77.0	151.0	46.0	70.0	28.0	29.0	124.0	50.0	163.0	109.0	925.0
1978	0.0	25.0	172.0	291.0	155.7	25.0	38.0	30.0	40.0	182.0	82.0	82.0	1122.7
1979	52.0	114.0	159.0	204.0	109.0	116.0	53.0	138.0	56.0	423.0	256.0	57.0	1777.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X EL SALITRE MUNICIPIO DE TAUSA PERIODO 1973 - 1979 COEF DE CORRECCION 1.000

ESTACION Y LOS PINOS MUNICIPIO DE TAUSA PERIODO 1973 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	CUY	RAN	FCAN	F = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	1252.	1777.	0.934	-0.095					+				
2	1978	2144.	2900.	1.053	-0.047					+	•			
3	1977	2902.	3825.	1.086	0.017					+	•			
4	1976	3668.	4965.	0.890	-0.085				•	+				
5	1975	4657.	6129.	1.126	0.034					+	•			
6	1974	5670.	7956.	0.941	-0.034				•	+				
7	1973	6520.	8041.	1.039	0.0					+	•			

N	AN	CLX	CUY	RAN	FCAN	F = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 931.5 1234.4

RAZONES PROMEDIOS Y/X = 1.325 X/Y = 0.755

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
231219	LOS PINOS	TAUSA	+05 14 19	+074 02 03	3480 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1973	14.0	23.0	93.0	68.0	43.0	76.0	15.0	57.0	178.0	136.0	222.0	160.0	1085.0	1973
1974	74.3	186.0	212.0	166.0	98.0	35.0	16.4	54.0	135.0	191.0	203.0	55.9	1426.6	1974
1975	8.0	162.0	79.3	134.9	70.8	13.9	61.3	37.0	67.1	128.8	163.9	236.8	1163.8	1975
1976	74.5	88.3	66.2	203.0	100.6	55.5	34.0	16.0	73.1	192.5	136.8	78.0	1140.5	1976
1977	15.0	23.0	77.0	151.0	46.0	70.0	28.0	29.0	124.0	90.0	163.0	109.0	925.0	1977
1978	0.0	25.0	172.0	291.0	155.7	25.0	38.0	30.0	40.0	182.0	82.0	82.0	1122.7	1978
1979	52.0	114.0	159.0	204.0	109.0	116.0	53.0	138.0	56.0	423.0	256.0	97.0	1777.0	1979
NUMERO DE ANOS	7	7	7	7	7	7	7	7	7	7	7	7	7	
VALOR MAXIMO	74.5	186.0	212.0	291.0	155.7	116.0	61.3	138.0	178.0	423.0	256.0	236.8	1777.0	
MEDIANA	15.0	88.3	93.0	166.0	98.0	55.5	34.0	37.0	73.1	182.0	163.9	97.0	1140.5	
VALOR MINIMO	0.0	23.0	77.0	68.0	43.0	13.9	15.0	16.0	40.0	90.0	82.0	55.9	925.0	
PROMEDIOS	34.0	88.8	125.5	174.0	89.0	55.9	35.1	51.6	96.2	191.9	175.5	117.0	1234.4	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1234.4	
PORCENTAJES	2.8	7.2	10.2	14.1	7.2	4.5	2.8	4.2	7.8	15.5	14.2	9.5		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 30. INDICE DE ANNELOUS = 130.

DEV. ESTANDAR	32.1	68.5	54.6	69.3	39.5	35.0	17.4	40.7	50.2	108.8	57.4	62.1	281.6
COEF. VARIACION	0.945	0.772	0.435	0.398	0.444	0.627	0.496	0.790	0.522	0.567	0.327	0.531	0.228
COEF. ASIMETRIA	0.469	0.383	0.687	0.274	0.469	0.623	0.385	1.988	0.644	1.968	-0.282	1.425	1.373

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212541	REPRESA DEL NEUSA	TAUSA	+05 08 40	+073 58 24	2980 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1954	42.4	46.9	32.2	52.9	122.3	141.5	92.4	88.2	45.0	240.0	147.2	113.0	1164.0
1955	57.2	45.8	115.7	189.0	96.4	100.6	112.8	45.6	135.7	246.8	128.0	96.3	1369.9
1956	39.1	93.0	105.2	55.7	124.8	113.2	75.0	57.2	93.9	250.3	116.5	80.2	1204.1
1957	22.7	17.3	61.2	125.8	209.9	62.7	76.1	90.3	46.6	95.7	122.6	30.4	961.3
1958	65.0	25.7	71.8	74.6	80.0	90.8	82.6	86.4	20.7	106.8	131.4	22.5	858.3
1959	6.4	67.1	44.2	78.3	154.0	77.2	116.3	79.8	66.0	171.8	149.7	39.0	1049.8
1960	56.6	41.9	100.2	195.0	78.0	96.4	80.4	57.8	69.2	166.4	25.9	100.7	1068.5
1961	18.5	1.0	51.6	89.7	15.4	96.6	44.2	46.1	62.3	177.0	114.6	7.3	724.3
1962	44.7	45.2	67.6	74.7	141.2	103.0	71.8	65.1	43.2	82.9	208.5	47.0	995.9
1963	17.8	48.1	76.7	77.1	232.4	67.9	52.8	71.6	44.2	53.4	153.1	42.2	937.3
1964	18.9	51.4	14.3	200.2	109.3	120.7	59.0	32.6	32.2	74.1	57.2	38.9	808.8
1965	49.4	30.0	10.1	218.6	108.6	34.1	91.5	88.1	25.1	190.4	180.5	24.7	1051.1
1966	3.2	32.0	98.8	41.0	139.7	72.2	58.4	102.9	74.8	102.9	193.9	92.3	1012.1
1967	19.4	27.5	49.0	100.1	105.0	112.5	52.2	67.1	48.9	54.9	117.3	52.8	806.7
1968	9.6	61.1	76.8	177.3	127.7	152.2	103.9	55.4	79.3	61.4	140.2	23.1	1128.0
1969	71.1	79.8	4.1	194.4	106.2	98.1	52.5	58.2	99.2	174.3	74.1	25.3	1037.3
1970	38.8	49.4	44.9	87.5	122.5	66.9	71.1	33.3	123.7	155.7	137.5	27.0	978.3
1971	70.3	83.4	92.2	141.4	155.7	60.4	63.4	102.7	101.1	120.3	105.6	80.8	1177.3
1972	134.6	63.6	97.3	191.0	131.2	134.6	64.8	56.7	55.8	69.8	113.0	17.9	1130.3
1973	9.8	16.1	40.4	142.9	57.0	66.8	34.0	95.7	180.4	156.2	76.3	103.0	998.6
1974	52.4	74.7	61.5	83.8	81.3	62.8	57.6	69.4	133.9	123.2	101.0	42.1	943.7
1975	10.7	133.6	81.6	29.2	52.9	89.1	131.2	66.4	101.4	146.7	81.6	107.8	1032.2
1976	3.7	53.6	113.0	167.6	127.0	122.1	105.3	49.2	63.4	105.0	118.5	41.5	1069.9
1977	12.6	23.7	67.6	146.4	90.5	126.6	69.2	84.4	165.8	133.6	110.1	91.7	1122.2
1978	0.0	31.5	79.0	224.9	83.4	-9.9	50.0	55.5	79.7	94.4	32.1	63.2	-9.9
1979	0.0	44.1	115.7	231.1	93.2	140.1	57.2	133.0	45.4	204.3	159.2	61.6	1284.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X REPRESA DEL NEUSA MUNICIPIO DE TAUSA PERIODO 1954 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1284.9	1284.9	1284.9	1.672	0.240				I +			
2	1977	1122.2	2407.1	1203.5	0.577	0.322				I +			
3	1976	1069.9	3477.0	1159.0	0.224	0.354				I +			
4	1975	1032.2	4509.2	1127.3	-0.030	0.350				+			
5	1974	943.7	5452.9	1090.6	-0.626	0.260				I +			
6	1973	998.6	6451.5	1075.2	-0.256	0.224				I +			
7	1972	1130.3	7581.8	1083.1	0.631	0.314				I +			
8	1971	1177.3	8759.1	1094.9	0.948	0.450				I +			
9	1970	978.3	9737.4	1081.9	-0.393	0.394				I +			
10	1969	1037.3	10774.7	1077.5	0.005	0.394				+			
11	1968	1128.0	11902.7	1082.1	0.616	0.483				I +			
12	1967	806.7	12709.4	1059.1	-1.598	0.261				I +			
13	1966	1012.1	13721.5	1055.5	-0.165	0.237				I +			
14	1965	1051.1	14772.6	1055.2	0.098	0.251				+			
15	1964	808.8	15581.4	1038.8	-1.534	0.031				+			
16	1963	937.3	16518.7	1032.4	-0.669	-0.064				+			
17	1962	995.9	17514.6	1030.3	-0.274	-0.104				+ I			
18	1961	724.3	18238.9	1013.3	-2.103	-0.405				I			
19	1960	1068.5	19307.4	1016.2	0.215	-0.374				I			
20	1959	1049.8	20357.2	1017.9	0.089	-0.361				+			
21	1958	858.3	21215.5	1010.3	-1.201	-0.533				I			
22	1957	961.3	22176.8	1008.0	-0.507	-0.606				I			
23	1956	1204.1	23380.9	1016.6	1.128	-0.444				I			
24	1956	1369.9	24750.8	1031.3	2.245	-0.123				+ I			
25	1954	1164.0	25914.8	1036.6	0.858	0.0				+			
N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 25 ANOS = 1036.6

DEVIACION ESTANDAR = 148.5

COEFICIENTE DE VARIACION = 0.143

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212541	REPRESA DEL NEUSA	TAUSA	+05 08 30	+073 58 28	3100 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1963	17.8	46.1	76.7	77.1	232.4	67.9	52.8	71.6	44.2	53.4	153.1	42.2	937.3	1963
1964	18.9	51.4	14.3	200.2	109.3	120.7	59.0	32.6	32.2	74.1	57.2	38.9	808.8	1964
1965	49.4	30.0	10.1	218.6	108.6	34.1	51.5	88.1	25.1	190.4	180.5	24.7	1051.1	1965
1966	3.2	32.0	98.8	41.0	139.7	72.2	98.4	102.9	74.8	102.9	193.9	92.3	1012.1	1966
1967	19.4	27.5	49.0	100.1	105.0	112.5	52.2	67.1	48.9	54.9	117.3	52.8	806.7	1967
1968	9.6	61.1	76.8	177.3	127.7	192.2	103.9	55.4	79.3	81.4	140.2	23.1	1128.0	1968
1969	71.1	79.8	4.1	194.4	106.2	98.1	52.5	58.2	99.2	174.3	74.1	25.3	1037.3	1969
1970	38.8	49.4	44.9	87.5	122.5	66.9	71.1	33.3	123.7	155.7	137.5	27.0	978.3	1970
1971	70.3	63.4	92.2	141.4	155.7	60.4	63.4	102.7	101.1	120.3	105.6	80.8	1177.3	1971
1972	134.6	63.6	97.3	191.0	131.2	134.6	64.8	56.7	55.8	69.8	113.0	17.9	1130.3	1972
1973	9.8	16.1	40.4	142.9	57.0	86.8	34.0	95.7	160.4	156.2	76.3	103.0	998.6	1973
1974	52.4	74.7	61.5	83.8	81.3	62.8	57.6	69.4	133.9	123.2	101.0	42.1	943.7	1974
1975	10.7	133.6	81.6	29.2	52.9	89.1	131.2	66.4	101.4	146.7	81.6	107.8	1032.2	1975
1976	3.7	53.6	113.0	107.6	127.0	122.1	105.3	49.2	63.4	105.0	118.5	41.5	1069.9	1976
1977	12.6	23.7	67.6	146.4	90.5	126.6	69.2	84.4	165.8	133.6	110.1	91.7	1122.2	1977
1978	0.0	31.5	79.0	224.9	83.4	-9.9	50.0	55.5	79.7	94.4	32.1	63.2	-9.9	1978
1979	0.0	44.1	115.7	231.1	93.2	140.1	57.2	133.0	45.4	204.3	159.2	61.6	1284.9	1979
NUMERO DE ANOS	17	17	17	17	17	16	17	17	17	17	17	17	16	
VALOR MAXIMO	134.6	133.6	115.7	231.1	232.4	192.2	131.2	133.0	180.4	204.3	193.9	107.8	1284.9	
CUARTIL SUPERIOR	50.9	69.1	94.7	197.3	129.4	124.3	81.3	91.9	112.5	155.9	146.6	86.2	1125.1	
MEDIANA	17.8	49.4	76.7	146.4	108.6	93.6	59.0	67.1	79.3	120.3	113.0	42.2	1034.7	
CUARTIL INFERIOR	6.6	30.8	42.6	85.6	86.9	70.0	52.6	55.4	47.1	77.7	78.9	26.1	961.0	
VALOR MINIMO	0.0	16.1	4.1	29.2	52.9	34.1	34.0	32.6	25.1	53.4	32.1	17.9	806.7	
PROMEDIOS	30.7	53.2	66.1	144.4	113.2	100.4	69.1	71.9	85.5	120.0	114.8	55.1	1032.4	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1024.3	
PORCENTAJES	3.0	5.2	6.4	14.1	11.0	9.8	6.7	7.0	8.4	11.7	11.2	5.4		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 57.

DEV. ESTANDAR	35.6	28.7	34.6	64.4	41.3	38.9	24.8	26.5	45.2	46.4	43.2	30.0	125.4
COEF. VARIACION	1.159	0.541	0.523	0.446	0.365	0.387	0.359	0.368	0.528	0.387	0.377	0.544	0.121
COEF. ASIMETRIA	1.771	1.352	-0.456	-0.172	1.336	0.571	1.260	0.619	0.733	0.242	0.027	0.539	-0.109

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212541	REPRESA DEL NEUSA	TAUSA	+05 08 30	+073 58 28	3100 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	50.6	37.4	89.5	174.2	69.7	86.1	71.8	51.6	61.8	148.7	67.8	45.3	954.5	1960
1961	20.1	1.4	72.9	120.7	21.7	136.4	62.4	65.1	88.0	250.0	161.8	10.3	1022.8	1961
1962	49.3	49.9	74.6	82.4	155.7	113.6	79.2	71.8	47.6	92.5	230.0	51.8	1098.4	1962
1963	17.8	48.1	70.7	77.1	232.4	67.9	52.8	71.6	44.2	53.4	153.1	42.2	937.3	1963
1964	18.9	51.4	14.3	200.2	109.3	120.7	59.0	32.6	32.2	74.1	57.2	38.9	808.8	1964
1965	49.4	30.0	10.1	218.6	108.6	34.1	91.5	88.1	25.1	190.4	180.5	24.7	1051.1	1965
1966	3.2	32.0	98.8	41.0	139.7	72.2	58.4	102.9	74.8	102.9	193.9	92.3	1012.1	1966
1967	19.4	27.5	49.0	100.1	105.0	112.5	52.2	67.1	48.9	54.9	117.3	52.8	806.7	1967
1968	9.6	61.1	76.8	177.3	127.7	192.2	103.9	55.4	79.3	81.4	140.2	23.1	1128.0	1968
1969	71.1	79.8	4.1	194.4	106.2	98.1	52.5	58.2	99.2	174.3	74.1	25.3	1037.3	1969
1970	38.8	49.4	44.9	87.5	122.5	86.9	71.1	33.3	123.7	155.7	137.5	27.0	978.3	1970
1971	70.3	83.4	92.2	141.4	155.7	60.4	63.4	102.7	101.1	120.3	105.6	80.8	1177.3	1971
1972	134.6	63.6	97.3	191.0	131.2	134.6	64.8	56.7	55.8	69.8	113.0	17.9	1130.3	1972
1973	9.8	16.1	40.4	142.9	57.0	86.8	34.0	95.7	180.4	156.2	76.3	103.0	998.6	1973
1974	52.4	74.7	61.5	83.8	81.3	62.8	57.6	69.4	133.9	123.2	101.0	42.1	943.7	1974
1975	10.7	133.6	81.6	29.2	52.9	89.1	131.2	66.4	101.4	146.7	81.6	107.8	1032.2	1975
1976	3.7	53.6	113.0	107.6	127.0	122.1	105.3	49.2	63.4	105.0	118.5	41.5	1069.9	1976
1977	12.6	23.7	67.6	140.4	90.5	126.6	69.2	84.4	165.8	133.6	110.1	91.7	1122.2	1977
1978	3.0	31.5	79.0	224.9	83.4	167.6	50.0	55.5	79.7	94.4	32.1	63.2	961.3	1978
1979	0.0	44.1	115.7	231.1	93.2	140.1	57.2	133.0	45.4	204.3	159.2	61.6	1284.9	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	134.6	133.6	115.7	231.1	232.4	192.2	131.2	133.0	180.4	250.0	230.0	107.8	1284.9	
CUARTIL SUPERIOR	50.0	62.3	90.8	192.7	129.4	130.6	75.5	86.2	101.2	155.9	156.1	72.0	1110.3	
MEDIANA	19.1	48.7	75.6	144.6	107.4	105.3	62.9	66.7	77.0	121.7	115.1	43.7	1027.5	
CUARTIL INFERIOR	9.7	30.8	46.9	85.6	82.3	79.1	55.0	55.4	48.2	86.9	78.9	26.1	957.9	
VALOR MINIMO	0.0	1.4	4.1	29.2	21.7	34.1	34.0	32.6	25.1	53.4	32.1	10.3	806.7	
PROMEDIOS	32.4	49.6	68.0	141.9	108.5	105.5	69.4	70.5	82.6	126.6	120.5	52.2	1027.8	
PORCENTAJES	3.2	4.8	6.6	13.8	10.6	10.3	6.7	6.9	8.0	12.3	11.7	5.1		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 98.

INDICE DE IRREGULARIDAD INTERANUAL =1.33

DEV. ESTANDAR	33.2	28.9	32.2	61.2	45.3	38.6	22.9	24.7	42.6	52.4	49.7	29.3	114.9
COEF. VARIACION	1.026	0.583	0.474	0.431	0.417	0.366	0.331	0.351	0.516	0.414	0.412	0.562	0.112

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1217.	1175.	1125.	1028.	931.	880.	839.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.650	1.159	-0.642	-0.276	0.694	0.359	1.274	0.776	0.902	0.615	0.356	0.595	0.008

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212017	LA ALDEA	TENJO	+04 49 00	+074 03 00	2600 METROS

ANO	ENE	FEB	MAR	APR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1940	0.0	0.0	30.0	79.0	55.0	46.0	28.0	36.0	30.0	163.0	110.0	67.0	644.0
1941	48.3	20.7	29.0	61.5	46.7	44.9	44.1	34.0	50.5	91.0	54.5	49.0	574.2
1942	43.0	76.5	66.5	165.5	165.0	94.0	32.5	38.5	13.5	155.3	122.7	107.0	1080.0
1943	70.5	56.7	95.5	112.5	54.0	46.2	36.5	56.5	61.0	175.5	50.5	96.5	911.9
1944	42.0	29.0	38.0	121.5	212.8	118.0	49.0	45.5	65.0	166.0	91.5	33.3	1011.6
1945	0.0	22.0	43.5	204.5	265.0	46.0	40.0	18.0	28.0	125.0	128.0	71.0	991.0
1946	58.0	63.0	59.0	113.0	67.0	27.5	25.0	38.5	13.5	121.5	62.5	18.0	666.5
1947	63.0	10.0	57.0	30.0	89.0	108.5	82.0	18.0	98.0	182.0	21.0	20.0	778.5
1948	6.0	47.5	136.0	186.5	91.0	31.0	37.0	19.5	42.0	73.0	73.0	96.0	838.5
1949	33.0	46.0	49.5	44.0	104.0	53.0	68.5	48.5	103.0	92.0	68.5	20.0	730.0
1950	91.5	94.0	46.0	125.0	179.5	113.5	88.5	93.5	53.5	153.5	82.5	75.0	1196.0
1951	64.0	50.0	42.0	84.0	124.0	49.0	46.0	79.0	26.0	158.0	137.0	47.0	906.0
1952	14.5	17.0	47.5	144.0	101.5	40.5	73.5	31.0	56.0	44.5	126.0	94.0	790.0
1953	54.5	32.0	23.5	123.5	125.5	88.0	21.0	55.0	136.0	198.5	175.0	12.5	1045.0
1954	21.5	44.0	46.0	167.0	102.0	84.0	67.0	33.0	20.0	230.5	74.0	51.0	940.0
1955	21.0	33.0	61.0	114.0	88.0	73.0	99.0	32.0	110.0	199.0	98.5	45.0	973.5
1956	29.0	50.0	122.0	81.5	40.0	126.5	39.0	48.0	100.5	209.0	53.5	78.0	977.0
1957	21.0	0.0	79.0	88.5	125.5	43.0	29.0	22.5	21.0	135.0	45.5	11.0	621.0
1958	0.0	0.0	44.0	55.5	74.0	34.5	20.0	44.5	60.5	92.0	124.0	38.0	567.0
1959	0.0	45.0	53.0	99.0	130.0	102.0	96.0	47.0	50.0	141.0	142.0	28.0	933.0
1960	40.0	23.0	59.0	133.0	130.0	38.0	82.0	73.0	48.0	123.0	39.5	78.0	866.5
1961	70.0	0.0	105.0	99.0	22.0	113.0	57.0	32.0	36.0	179.0	193.0	40.0	946.0
1962	73.0	50.0	118.0	85.0	160.0	105.0	55.0	109.0	66.0	139.0	141.0	46.0	1147.0
1963	56.0	75.0	64.0	124.0	192.0	79.0	53.0	44.0	35.0	62.0	181.0	8.0	973.0
1964	24.0	42.0	9.0	93.0	139.0	91.0	104.0	40.0	72.0	108.0	130.0	17.0	869.0
1965	49.0	35.0	53.0	227.0	179.0	53.0	44.0	29.0	29.0	352.0	131.0	115.0	1297.0
1966	2.5	11.0	61.5	65.5	121.0	72.0	59.5	103.5	64.5	94.0	178.5	60.0	893.5
1967	40.0	14.5	51.0	153.5	175.0	126.5	79.0	41.5	65.5	76.5	162.0	50.0	1037.0
1968	17.5	93.0	39.5	167.0	95.0	124.0	61.5	31.5	125.0	169.0	106.0	28.0	1057.0
1969	69.5	18.5	42.5	242.0	100.5	120.5	19.0	61.0	103.0	237.0	129.0	34.0	1176.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARAJO

ESTACION X LA ALDEA MUNICIPIO DE TENJO PERIODO 1940 - 1959 COEF DE CORRECCION 1.000

N	AN	TA	CU	MOY	ECR	PCAN	F = -3. -2. -1. 0.0 +1. +2. +3.
1	1969	1176.5	1176.5	1176.5	1.422	0.285	
2	1968	1057.0	2233.5	1116.8	0.772	0.440	
3	1967	1037.0	3270.5	1090.2	0.663	0.573	
4	1966	893.5	4164.0	1041.0	-0.118	0.550	
5	1965	1297.0	5461.0	1092.2	2.078	0.967	
6	1964	869.0	6330.0	1055.0	-0.252	0.916	
7	1963	973.0	7303.0	1043.3	0.314	0.979	
8	1962	1147.0	8450.0	1056.3	1.262	1.233	
9	1961	946.0	9396.0	1044.0	0.167	1.266	
10	1960	806.5	10202.5	1026.3	-0.265	1.213	
11	1959	933.0	11135.5	1017.8	0.097	1.232	
12	1958	587.0	11782.5	981.9	-1.787	0.874	
13	1957	621.0	12403.5	954.1	-1.602	0.552	
14	1956	977.0	13380.5	955.8	0.336	0.620	
15	1955	973.5	14354.0	956.9	0.317	0.683	
16	1954	940.0	15294.0	955.9	0.135	0.710	
17	1953	1045.0	16339.0	961.1	0.706	0.852	
18	1952	790.0	17129.0	951.6	-0.682	0.715	
19	1951	906.0	18035.0	949.2	-0.050	0.705	
20	1950	1196.0	19231.0	961.5	1.528	1.012	
21	1949	730.0	19961.0	950.5	-1.008	0.810	
22	1948	838.5	20799.5	945.4	-0.418	0.726	
23	1947	776.5	21578.0	938.2	-0.744	0.576	
24	1946	666.5	22244.5	926.9	-1.354	0.305	
25	1945	991.0	23235.5	929.4	0.412	0.387	
26	1944	1011.6	24247.1	932.6	0.525	0.493	
27	1943	911.9	25159.0	931.8	-0.018	0.489	
28	1942	1080.0	26239.0	937.1	0.697	0.665	
29	1941	574.2	26813.2	924.6	-1.657	0.296	
30	1940	644.0	27457.2	915.2	-1.477	0.0	

N	AN	TA	CU	MOY	ECR	PCAN	P = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 30 ANOS = 915.2

DEVIACION ESTANDAR = 183.7

COEFICIENTE DE VARIACION = 0.201

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212017	LA ALDEA	TENJO	+04 48 45	4074 08 15	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1950	91.5	94.0	46.0	125.0	179.5	113.5	68.5	93.5	53.5	153.5	82.5	75.0	1196.0	1950
1951	64.0	50.0	42.0	84.0	124.0	49.0	46.0	79.0	26.0	158.0	137.0	47.0	906.0	1951
1952	14.5	17.0	47.5	144.0	101.5	40.5	73.5	31.0	56.0	44.5	126.0	94.0	790.0	1952
1953	54.5	32.0	23.5	123.5	125.5	88.0	21.0	55.0	136.0	198.5	175.0	12.5	1045.0	1953
1954	21.5	44.0	46.0	167.0	102.0	84.0	67.0	33.0	20.0	230.5	74.0	51.0	940.0	1954
1955	21.0	33.0	61.0	114.0	68.0	73.0	99.0	32.0	110.0	199.0	96.5	45.0	973.5	1955
1956	29.0	50.0	122.0	81.5	40.0	126.5	39.0	48.0	100.5	209.0	83.5	78.0	977.0	1956
1957														1957
1958														1958
1959	0.0	45.0	53.0	99.0	130.0	102.0	96.0	47.0	50.0	141.0	142.0	28.0	933.0	1959
1960	40.0	23.0	59.0	133.0	130.0	38.0	82.0	73.0	48.0	123.0	39.5	78.0	866.5	1960
1961	70.0	0.0	105.0	99.0	22.0	113.0	57.0	32.0	36.0	179.0	193.0	40.0	946.0	1961
1962	73.0	50.0	118.0	85.0	160.0	105.0	55.0	109.0	66.0	139.0	141.0	46.0	1147.0	1962
1963	56.0	75.0	64.0	124.0	192.0	79.0	53.0	44.0	35.0	62.0	161.0	8.0	973.0	1963
1964	24.0	42.0	9.0	93.0	139.0	91.0	104.0	40.0	72.0	108.0	130.0	17.0	869.0	1964
1965	49.0	35.0	53.0	227.0	179.0	53.0	44.0	29.0	29.0	353.0	131.0	115.0	1297.0	1965
1966	2.5	11.0	61.5	65.5	121.0	72.0	59.5	103.5	64.5	94.0	176.5	60.0	893.5	1966
1967	40.0	14.5	51.0	153.5	175.0	126.5	79.0	41.5	65.5	78.5	162.0	50.0	1037.0	1967
1968	17.5	93.0	39.5	167.0	95.0	124.0	61.5	31.5	125.0	169.0	106.0	28.0	1057.0	1968
1969	69.5	16.5	42.5	242.0	100.5	120.5	19.0	61.0	103.0	237.0	129.0	34.0	1176.5	1969
NUMERO DE ANOS	18	18	18	18	18	18	18	18	18	18	18	18	18	
VALOR MAXIMO	91.5	94.0	122.0	242.0	192.0	126.5	104.0	109.0	136.0	353.0	193.0	115.0	1297.0	
CUARTIL SUPERIOR	64.0	50.0	61.5	153.5	160.0	113.5	82.0	73.0	100.5	199.0	162.0	75.0	1057.0	
MEDIANA	40.0	36.5	52.0	123.8	124.8	89.5	60.5	45.5	60.3	155.6	130.5	46.5	973.3	
CUARTIL INFERIOR	21.0	18.5	42.5	93.0	100.5	72.0	46.0	32.0	36.0	108.0	96.5	28.0	906.0	
VALOR MINIMO	0.0	0.0	9.0	65.5	22.0	38.0	19.0	29.0	20.0	44.5	39.5	8.0	790.0	
PROMEDIOS	41.0	40.4	58.0	129.3	122.4	88.8	63.6	54.6	66.4	159.8	126.6	50.4	1001.3	
% PORCENTAJES	4.1	4.0	5.8	12.9	12.2	8.9	6.3	5.5	6.6	16.0	12.6	5.0	TOTAL DE LOS PROMEDIOS MENSUALES = 1001.3	

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 26. INDICE DE ARNOLDUS = 168.

DEV. ESTANDAR	26.4	26.3	29.6	48.4	46.0	29.9	25.0	26.2	34.9	73.9	44.1	28.8	132.5
COEF. VARIACION	0.645	0.652	0.511	0.374	0.376	0.336	0.393	0.480	0.525	0.462	0.348	0.572	0.132
COEF. ASIMETRIA	0.176	0.744	1.035	1.074	-0.513	-0.359	-0.102	1.010	0.649	0.782	-0.430	0.598	0.706

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
21 2017	LA ALDEA	TENJO	+04 48 45	+074 08 15	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	40.0	23.0	59.0	133.0	130.0	38.0	82.0	73.0	48.0	123.0	39.5	78.0	866.5	1960
1961	70.0	0.0	105.0	99.0	22.0	113.0	57.0	32.0	36.0	179.0	193.0	40.0	946.0	1961
1962	73.0	50.0	118.0	85.0	160.0	105.0	55.0	109.0	66.0	139.0	141.0	46.0	1147.0	1962
1963	56.0	75.0	64.0	124.0	192.0	79.0	53.0	44.0	35.0	62.0	181.0	8.0	973.0	1963
1964	24.0	42.0	9.0	93.0	139.0	91.0	104.0	40.0	72.0	108.0	130.0	17.0	869.0	1964
1965	49.0	35.0	53.0	227.0	179.0	53.0	44.0	29.0	29.0	353.0	131.0	115.0	1297.0	1965
1966	2.5	11.0	61.5	65.5	121.0	72.0	59.5	103.5	64.5	94.0	178.5	60.0	893.5	1966
1967	40.0	14.5	51.0	153.5	175.0	126.5	79.0	41.5	65.5	78.5	162.0	50.0	1037.0	1967
1968	17.5	93.0	39.5	167.0	95.0	124.0	61.5	31.5	125.0	169.0	106.0	28.0	1057.0	1968
1969	69.5	18.5	42.5	242.0	100.5	120.5	19.0	61.0	103.0	237.0	129.0	34.0	1176.5	1969
1970	20.9	100.2	38.5	37.1	172.6	82.1	75.1	46.1	78.9	160.0	123.2	26.1	966.8	1970
1971	48.5	48.2	113.5	158.6	159.4	79.6	44.3	78.0	83.5	112.1	113.1	75.5	1114.3	1971
1972	119.6	11.9	119.8	208.7	82.3	91.8	85.3	45.7	38.7	71.3	160.5	30.1	1065.7	1972
1973	56.8	40.7	63.8	49.9	75.0	85.9	55.6	75.4	118.0	106.4	80.6	108.9	917.0	1973
1974	62.4	30.4	37.7	121.6	94.1	91.9	22.6	26.2	108.1	157.2	132.7	15.1	906.0	1974
1975	5.4	36.5	83.0	49.6	81.2	99.3	73.7	115.5	70.6	211.7	106.1	83.6	1016.2	1975
1976	40.4	51.8	120.1	213.1	113.4	103.1	14.5	87.5	73.8	194.5	94.9	68.7	1175.8	1976
1977	15.7	14.8	102.4	82.4	51.5	91.6	55.6	43.1	89.4	100.3	154.7	27.9	869.4	1977
1978	7.9	104.2	75.0	210.7	126.6	96.6	46.8	6.6	54.9	167.3	34.1	35.6	966.3	1978
1979	97.7	50.3	62.5	175.5	73.4	88.1	25.2	97.3	96.9	280.0	140.6	33.9	1221.4	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	119.6	106.2	120.1	242.0	192.0	126.5	104.0	115.5	125.0	353.0	193.0	115.0	1297.0	
CUARTIL SUPERIOR	65.9	51.0	103.7	192.1	159.7	104.0	74.4	82.8	93.1	186.8	157.6	72.1	1130.6	
MEDIANA	44.4	38.6	63.1	128.5	117.2	91.7	55.6	45.9	71.3	148.1	130.5	37.8	994.6	
CUARTIL INFERIOR	19.2	16.6	46.8	83.7	86.9	80.8	44.1	36.0	51.4	103.3	106.0	27.9	911.5	
VALOR MINIMO	2.5	0.0	9.0	37.1	22.0	38.0	14.5	6.6	29.0	62.0	34.1	8.0	866.5	
PROMEDIOS	45.8	43.1	70.9	134.8	119.1	91.6	55.6	59.3	72.8	155.2	126.6	49.1	1024.1	
PORCENTAJES	4.5	4.2	6.9	13.2	11.6	8.9	5.4	5.8	7.1	15.2	12.4	4.8		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 24. INDICE DE ARNOLDUS = 102.

INDICE DE IRREGULARIDAD INTERANUAL =1.39

DEV. ESTANDAR	31.1	30.8	32.5	64.2	44.3	21.9	23.6	31.2	28.0	73.7	42.3	30.4	129.1
COEF. VARIACION	0.679	0.715	0.458	0.476	0.372	0.239	0.425	0.526	0.385	0.475	0.334	0.619	0.126

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1237.	1190.	1133.	1024.	915.	859.	812.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.614	0.839	0.186	0.126	-0.128	-0.603	-0.013	0.385	0.198	1.156	-0.689	0.843	0.552

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211917	LA VUELTA	TIBACUY	+04 19 00	+074 29 00	1500 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1968	192.9	92.0	102.8	313.2	76.2	140.9	48.9	38.0	127.7	265.6	194.3	29.7	1622.2
1969	105.9	22.5	15.5	233.5	170.1	43.1	26.7	18.8	108.0	376.7	175.8	36.8	1333.4
1970	73.0	209.6	13.7	106.3	106.6	27.9	49.8	61.0	118.2	-9.9	-9.9	-9.9	-9.9
1971	225.2	144.8	132.7	101.3	244.2	27.5	48.1	50.7	43.8	154.7	123.1	164.8	1460.9
1972	170.7	50.8	194.2	176.1	52.6	68.5	10.0	24.5	40.5	125.5	232.5	123.0	1272.9
1973	29.8	70.5	57.0	27.6	50.5	20.3	72.5	85.0	118.6	161.0	254.9	-9.9	-9.9
1974	129.9	298.4	234.7	156.0	67.7	53.0	20.5	27.9	107.8	221.7	152.3	31.1	1501.0
1975	60.6	195.2	116.7	169.1	65.1	29.4	153.9	66.8	-9.9	196.1	106.0	166.0	-9.9
1976	30.0	58.1	248.3	84.1	56.9	21.9	18.6	23.9	117.3	323.8	97.9	65.1	1145.9
1977	14.7	6.6	142.0	204.4	22.9	73.2	31.5	27.3	145.2	84.2	237.5	99.1	1088.6
1978	6.0	-9.9	-9.9	-9.9	118.5	39.6	35.0	33.0	149.0	128.2	140.5	158.6	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION A LA VUELTA MUNICIPIO DE TIBACUY PERIODO 1966 - 1978 COEF DE CORRECCION 1.000

ESTACION Y TIBACUY MUNICIPIO DE TIBACUY PERIODO 1966 - 1978 COEF DE CORRECCION 1.000

N	AÑO	CLX	CUY	RAN	RCAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1977	1089.	791.	1.127	0.051					+	•			
2	1976	2234.	1626.	0.908	0.003				•	+				
3	1974	3735.	3964.	1.026	0.031					+	•			
4	1972	5006.	4230.	0.864	-0.118				•	+I				
5	1971	6465.	5697.	1.120	-0.001					+	•			
6	1969	7663.	6293.	1.095	0.065					+	•			
7	1968	9425.	7715.	0.934	0.0				•	+				

N	AÑO	CLX	CUY	RAN	RCAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
						F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 1240.4 1102.1

RAZONES PROMEDIOS Y/X = 0.819

X/Y = 1.222

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211917	LA VUELTA	TIBACUY	+04 20 00	074 28 00	1500 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1968	192.9	92.0	102.8	313.2	76.2	140.9	48.9	38.0	127.7	265.6	194.3	29.7	1622.2	1968
1969	105.9	22.5	15.5	233.5	170.1	43.1	26.7	18.8	108.0	376.7	175.8	36.8	1333.4	1969
1970	73.0	209.6	13.7	106.3	106.6	27.9	49.8	61.0	118.2	-9.9	-9.9	-9.9	-9.9	1970
1971	225.2	144.8	132.7	101.3	244.2	27.5	46.1	50.7	43.8	154.7	123.1	164.8	1460.9	1971
1972	170.7	50.8	194.2	176.1	52.6	68.5	10.0	24.5	40.5	129.5	232.5	123.0	1272.9	1972
1973	29.8	70.8	57.0	27.6	50.5	20.3	72.5	85.0	118.6	161.0	254.9	-9.9	-9.9	1973
1974	129.9	298.4	234.7	156.0	67.7	53.0	20.5	27.9	107.8	221.7	152.3	31.1	1501.0	1974
1975	60.6	195.2	116.7	169.1	65.1	29.4	153.9	66.8	-9.9	196.1	106.0	186.0	-9.9	1975
1976	30.0	58.1	248.3	84.1	56.9	21.9	18.6	23.9	117.3	323.8	97.9	65.1	1145.9	1976
1977	14.7	6.6	142.0	204.4	22.9	73.2	31.5	27.3	145.2	84.2	237.5	99.1	1088.6	1977
1978	6.0	-9.9	-9.9	-9.9	118.5	39.6	35.0	33.0	149.0	128.2	140.5	158.6	-9.9	1978
NUMERO DE ANOS	11	10	10	10	11	11	11	11	10	10	10	9	7	
VALOR MAXIMO	225.2	298.4	248.3	313.2	244.2	140.9	153.9	85.0	149.0	376.7	254.9	186.0	1622.2	
MEDIANA	73.0	81.3	124.7	162.5	67.7	39.6	35.0	33.0	117.7	178.5	164.0	99.1	1333.4	
VALOR MINIMO	6.0	6.6	13.7	27.6	22.9	20.3	10.0	18.8	40.5	84.2	97.9	29.7	1088.6	
PROMEDIOS	94.4	114.8	125.8	157.2	93.8	49.6	46.9	41.5	107.6	204.1	171.5	99.4	1346.4	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1306.5	
PORCENTAJES	7.2	8.8	9.6	12.0	7.2	3.8	3.6	3.2	8.2	15.6	13.1	7.6		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 32. INDICE DE ARNOLDUS = 130.

DEV. ESTANDAR	76.2	94.3	83.0	82.2	64.0	35.2	39.7	21.4	37.2	93.3	56.7	61.7	193.8
COEF. VARIACION	0.807	0.821	0.660	0.523	0.683	0.710	0.847	0.515	0.345	0.457	0.331	0.621	0.144
COEF. ASIMETRIA	0.523	0.824	0.091	0.373	1.520	1.974	2.223	0.973	-1.154	0.737	0.212	0.144	0.019

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211925	TIBACUY	TIBACUY	+04 21 00	+074 27 00	1550 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1952	90.6	15.6	55.2	180.1	97.8	40.4	45.0	28.5	46.2	45.9	284.6	66.8	1000.7
1953	89.3	44.0	131.4	71.3	164.9	105.7	9.6	1.7	161.9	221.2	199.9	157.7	1358.6
1954	68.3	90.1	43.9	77.4	91.0	73.2	36.5	27.9	18.1	234.1	197.0	104.4	1061.9
1955	47.4	112.2	176.3	201.1	84.9	114.4	65.1	38.5	82.0	215.9	140.6	140.5	1418.9
1956	136.8	192.6	164.9	73.4	107.6	81.9	23.9	49.5	63.1	191.0	108.8	175.0	1368.5
1957	22.2	46.7	209.5	155.6	143.2	16.2	24.2	22.6	56.3	210.4	157.9	40.4	1105.2
1958	54.1	80.2	54.0	92.3	63.8	37.3	12.2	39.1	21.4	176.6	121.5	115.5	868.0
1959	44.9	14.5	18.7	72.6	243.3	127.4	68.5	21.2	19.9	217.7	169.1	58.4	1076.2
1960	95.0	131.2	80.4	99.5	75.1	45.6	29.8	69.3	23.7	210.6	68.5	122.2	1050.9
1961	74.5	54.8	114.5	178.7	55.9	28.9	69.5	17.8	18.6	171.3	179.9	33.4	997.8
1962	55.3	54.3	103.5	66.9	98.2	79.5	39.7	37.9	55.5	97.1	90.8	143.6	922.3
1963	78.0	130.0	52.7	160.8	245.8	36.5	103.5	23.3	25.7	140.2	238.1	57.0	1293.6
1964	17.5	29.2	32.5	80.4	104.9	74.7	81.1	63.7	50.7	150.4	186.4	71.6	983.1
1965	29.3	15.6	69.3	134.6	85.4	7.3	11.0	58.2	18.4	201.9	296.3	86.8	1014.1
1966	12.7	68.3	130.0	83.2	96.9	107.2	53.9	52.4	117.0	91.2	300.9	179.1	1292.8
1967	20.1	31.9	139.1	171.6	94.6	92.9	29.2	12.5	27.0	80.2	194.1	95.2	988.4
1968	95.2	112.6	37.3	281.7	53.1	136.3	21.8	36.3	60.9	206.3	281.6	96.3	1421.4
1969	54.6	40.6	26.3	150.8	108.2	34.3	7.3	16.1	46.4	310.4	173.6	28.0	996.6
1970	65.4	108.0	68.5	97.8	134.3	45.1	41.0	36.5	89.0	173.6	211.6	12.2	1083.0
1971	155.0	59.8	101.2	88.1	134.6	47.5	37.8	55.2	51.4	119.0	140.0	77.7	1067.3
1972	147.6	71.9	109.5	198.4	85.1	91.4	11.4	49.3	49.2	66.6	226.4	79.1	1205.9
1973	21.9	34.7	20.8	65.8	67.9	33.6	37.4	96.7	80.5	133.0	142.5	315.0	1049.8
1974	151.0	168.9	287.8	156.0	59.4	31.7	12.7	29.1	57.2	117.4	72.6	14.3	1158.1
1975	5.8	174.5	159.7	155.8	99.0	46.7	175.3	41.5	48.9	152.3	173.0	162.4	1394.9
1976	18.2	73.6	236.7	69.7	30.5	39.6	4.0	18.1	83.6	251.9	113.2	95.7	1034.8
1977	15.9	10.4	105.2	152.9	54.5	33.5	28.6	10.1	96.9	82.3	159.1	41.4	790.8
1978	18.2	24.4	178.7	99.3	73.6	65.7	23.8	12.6	77.8	151.4	77.4	96.1	899.0
1979	39.5	32.5	118.0	21.7	90.3	108.8	57.9	56.8	40.9	104.4	331.8	90.2	1092.8

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -99.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

ESTACION X TIBACUY MUNICIPIO DE TIBACUY PERIODO 1952 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CO	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1092.8	1092.8	1092.8	-0.065	-0.014				*			
2	1978	895.0	1991.8	995.9	-1.195	-0.203			.	+ I			
3	1977	791.8	2782.6	927.5	-1.815	-0.490		.		+ I			
4	1976	1134.8	3917.4	954.3	-0.422	-0.556				+. I			
5	1975	1354.5	5272.0	1042.5	1.641	-0.297				+ I		.	
6	1974	1198.1	6470.4	1068.4	0.914	-0.217				+ I	.		
7	1973	1049.8	7480.2	1069.7	-0.336	-0.205				.+ I			
8	1972	1205.5	8686.1	1083.3	0.556	-0.181				+I	.		
9	1971	1067.3	9753.4	1081.5	-0.235	-0.215				* I			
10	1970	1056.0	10810.4	1081.6	-0.146	-0.241				+.I			
11	1969	592.6	11613.0	1073.9	-0.640	-0.342			.	+ I			
12	1968	1421.9	13234.4	1102.9	1.793	-0.060				+		.	
13	1967	988.4	14222.8	1094.1	-0.687	-0.106			.	+I			
14	1966	1292.8	15515.6	1108.3	1.056	-0.002				+	.		
15	1965	1014.1	16529.7	1102.0	-0.540	-0.087			.	+			
16	1964	983.1	17512.8	1094.5	-0.716	-0.200			.	+ I			
17	1963	1293.8	18806.4	1106.3	1.061	-0.033				+	.		
18	1962	922.3	19728.7	1096.0	-1.066	-0.201			.	+ I			
19	1961	997.8	20726.5	1090.9	-0.634	-0.301			.	+ I			
20	1960	1050.4	21777.4	1088.9	-0.325	-0.353				* I			
21	1959	1076.2	22853.6	1088.3	-0.184	-0.382				+ .I			
22	1958	868.0	23721.6	1078.3	-1.277	-0.598			.	+ I			
23	1957	1105.2	24826.8	1079.4	-0.018	-0.601				+ .			
24	1956	1268.6	26195.3	1091.5	1.490	-0.367				+ I		.	
25	1955	1418.5	27614.2	1104.6	1.775	-0.087				+		.	
26	1954	1061.5	28676.1	1102.9	-0.266	-0.125				.+I			
27	1953	1358.6	30034.7	1112.4	1.433	0.097				+		.	
28	1952	1001.7	31036.4	1108.4	-0.617	0.0			.	+			

N	AN	T A	CO	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 28 ANOS = 1108.4
DESVIACION ESTANDAR = 174.6
COEFICIENTE DE VARIACION = 0.158

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IDAC-CRSTCM *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211925	TIBACUY	TIBACUY	+04 21 47	+074 26 12	1500 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1952	90.6	15.6	55.2	180.1	97.8	40.4	45.0	28.5	46.2	49.9	284.6	66.8	1000.7	1952
1953	89.3	44.0	131.4	71.3	164.9	105.7	9.6	1.7	161.9	221.2	199.9	157.7	1358.6	1953
1954	68.3	90.1	43.9	77.4	91.0	73.2	36.5	27.9	18.1	234.1	197.0	104.4	1061.9	1954
1955	47.4	112.2	176.3	201.1	84.9	114.4	65.1	36.5	82.0	215.9	140.6	140.5	1418.9	1955
1956	136.8	192.6	164.9	73.4	107.6	81.9	23.9	49.5	63.1	191.0	106.8	175.0	1368.5	1956
1957	22.2	46.7	209.5	155.6	143.2	16.2	24.2	22.6	56.3	210.4	151.9	40.4	1105.2	1957
1958	54.1	80.2	54.0	92.3	63.8	37.3	12.2	39.1	21.4	176.6	121.5	115.5	868.0	1958
1959	44.9	14.5	18.7	72.6	243.3	127.4	68.5	21.2	19.9	217.7	169.1	58.4	1076.2	1959
1960	95.0	131.2	80.4	99.5	75.1	45.6	29.8	69.3	23.7	210.6	68.5	122.2	1050.9	1960
1961	74.5	54.8	114.5	178.7	55.9	28.9	69.8	17.8	18.6	171.3	179.9	33.4	997.8	1961
1962	55.3	54.3	103.5	60.9	98.2	79.5	39.7	37.9	55.5	97.1	90.8	143.6	922.3	1962
1963	78.0	130.0	52.7	160.8	245.8	38.5	103.5	23.3	25.7	140.2	238.1	57.0	1293.6	1963
1964	17.5	29.2	32.5	80.4	104.9	74.7	61.1	63.7	50.7	190.4	166.4	71.6	983.1	1964
1965	29.3	15.0	69.3	134.6	65.4	7.3	11.0	58.2	18.4	201.9	296.3	86.8	1014.1	1965
1966	12.7	68.3	130.0	83.2	56.9	107.2	53.9	52.4	117.0	91.2	300.9	179.1	1292.8	1966
1967	20.1	31.9	135.1	171.6	94.6	92.9	29.2	12.5	27.0	80.2	194.1	95.2	988.4	1967
1968	95.2	112.6	37.3	281.7	53.1	136.3	21.8	36.3	60.9	206.3	281.6	98.3	1421.4	1968
1969	54.6	40.6	26.3	150.8	108.2	34.3	7.3	16.1	46.4	310.4	173.6	28.0	996.6	1969
1970	65.4	108.0	68.5	97.8	134.3	45.1	41.0	36.5	89.0	173.6	211.6	12.2	1083.0	1970
1971	155.0	59.8	101.2	88.1	134.6	47.5	37.8	55.2	51.4	119.0	140.0	77.7	1067.3	1971
1972	147.6	71.9	109.5	198.4	85.1	91.4	11.4	49.3	49.2	86.6	226.4	79.1	1205.9	1972
1973	21.9	34.7	20.8	65.8	67.9	33.6	37.4	96.7	80.5	133.0	142.5	315.0	1049.8	1973
1974	191.0	166.9	287.8	156.0	59.4	31.7	12.7	29.1	57.2	117.4	72.6	14.3	1198.1	1974
1975	5.8	174.5	159.7	155.8	99.0	46.7	175.3	41.5	48.9	152.3	173.0	162.4	1394.9	1975
1976	18.2	73.6	236.7	69.7	30.5	39.6	4.0	18.1	83.6	251.9	113.2	95.7	1034.8	1976
1977	15.9	10.4	105.2	152.9	54.5	33.5	28.6	10.1	96.9	82.3	199.1	41.4	790.8	1977
1978	18.2	24.4	178.7	99.3	73.6	65.7	23.8	12.6	77.8	151.4	77.4	96.1	899.0	1978
1979	39.5	32.5	118.0	21.7	90.3	108.8	57.9	56.8	40.9	104.4	331.8	90.2	1092.8	1979
NUMERO DE ANOS	28	28	28	28	28	28	28	28	28	28	28	28	28	
VALOR MAXIMO	191.0	192.6	287.8	281.7	245.8	136.3	175.3	96.7	161.9	310.4	331.8	315.0	1421.4	
CUARTIL SUPERIOR	89.9	110.1	149.4	158.4	107.9	92.1	55.9	50.9	79.1	210.5	215.0	131.3	1249.3	
MEDIANA	54.3	57.3	104.3	99.4	92.8	47.1	33.1	36.4	51.0	172.4	173.3	92.7	1064.6	
CUARTIL INFERIOR	21.0	32.2	53.3	75.4	70.7	35.6	17.2	19.6	26.3	110.9	130.8	57.7	997.2	
VALOR MINIMO	5.8	10.4	18.7	21.7	30.5	7.3	4.0	1.7	18.1	49.9	66.5	12.2	790.8	
PROMEDIOS	63.0	72.3	108.1	122.8	101.6	63.8	41.5	36.5	56.7	163.9	179.9	98.5	1108.4	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1108.4	
PORCENTAJES	5.7	6.5	9.7	11.1	9.2	5.8	3.7	3.3	5.1	14.8	16.2	8.9		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 29. INDICE DE ARNOLDUS = 113.

DEV. ESTANDAR	48.4	51.5	68.5	57.3	50.0	35.5	35.9	21.3	33.5	62.1	72.3	63.2	174.6
COEF. VARIACION	0.767	0.713	0.634	0.467	0.493	0.557	0.865	0.583	0.591	0.379	0.402	0.642	0.158
COEF. ASIMETRIA	1.065	0.890	0.799	0.710	1.705	0.488	2.157	0.773	1.243	0.139	0.417	1.470	0.454

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211925	TIBACUY	TIBACUY	+04 21 47	+074 26 12	1500 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	95.0	131.2	80.4	99.5	75.1	45.6	29.8	69.3	23.7	210.6	68.5	122.2	1050.9	1960
1961	74.5	54.8	114.5	178.7	55.9	28.9	69.5	17.8	18.6	171.3	179.9	33.4	997.8	1961
1962	55.3	54.3	103.5	66.9	98.2	79.5	39.7	37.9	55.5	97.1	90.8	143.6	922.3	1962
1963	78.0	130.5	52.7	160.8	245.8	38.5	103.6	23.3	25.7	140.2	238.1	57.0	1293.6	1963
1964	17.5	29.2	32.5	80.4	104.9	74.7	81.1	63.7	50.7	190.4	186.4	71.6	983.1	1964
1965	29.3	15.6	69.3	134.6	85.4	7.3	11.0	58.2	18.4	201.9	296.3	86.8	1014.1	1965
1966	12.7	68.3	130.0	83.2	96.9	107.2	53.9	52.4	117.0	91.2	300.9	179.1	1292.8	1966
1967	20.1	31.9	139.1	171.6	94.6	92.9	29.2	12.5	27.0	80.2	194.1	95.2	988.4	1967
1968	95.2	112.6	37.3	281.7	53.1	136.3	21.8	36.3	60.9	206.3	281.6	98.3	1421.4	1968
1969	54.6	40.6	26.3	150.8	108.2	34.3	7.3	16.1	46.4	310.4	173.6	28.0	996.6	1969
1970	65.4	106.0	68.5	97.8	134.3	45.1	41.0	36.5	89.0	173.6	211.6	12.2	1083.0	1970
1971	155.0	59.8	101.2	88.1	134.6	47.5	37.8	55.2	51.4	119.0	140.0	77.7	1067.3	1971
1972	147.6	71.9	109.5	198.4	85.1	91.4	11.4	49.3	49.2	86.6	226.4	79.1	1205.9	1972
1973	21.9	34.7	20.8	65.8	67.9	33.6	37.4	96.7	80.5	133.0	142.5	315.0	1049.8	1973
1974	191.0	168.9	287.8	150.3	59.4	31.7	12.7	29.1	57.2	117.4	72.6	14.3	1198.1	1974
1975	5.8	174.5	159.7	155.8	99.0	46.7	175.3	41.5	48.9	152.3	173.0	162.4	1394.9	1975
1976	18.2	73.6	236.7	69.7	30.5	39.6	4.0	18.1	83.6	251.9	113.2	95.7	1034.8	1976
1977	15.9	10.4	105.2	152.9	54.5	33.5	28.6	10.1	96.9	82.3	159.1	41.4	790.8	1977
1978	18.2	24.4	178.7	99.3	73.6	65.7	23.8	12.6	77.8	151.4	77.4	96.1	899.0	1978
1979	39.5	32.5	118.0	21.7	90.3	108.8	57.9	56.8	40.9	104.4	331.8	90.2	1092.8	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	191.0	174.5	287.8	281.7	245.8	136.3	175.3	96.7	117.0	310.4	331.8	315.0	1421.4	
CUARTIL SUPERIOR	86.5	110.3	134.5	158.4	101.9	85.4	55.9	56.0	79.1	196.1	232.2	110.2	1202.0	
MEDIANA	47.0	57.3	104.3	117.0	87.8	46.1	33.6	37.2	51.0	145.8	176.7	88.5	1050.3	
CUARTIL INFERIOR	18.2	32.2	60.6	81.8	63.6	33.9	17.2	17.9	33.9	100.7	126.6	49.2	992.5	
VALOR MINIMO	5.8	10.4	20.8	21.7	30.5	7.3	4.0	10.1	18.4	80.2	68.5	12.2	790.8	
PROMEDIOS	60.5	71.4	108.6	125.7	92.4	59.4	43.8	39.7	56.0	153.6	182.9	95.0	1088.9	
PORCENTAJES	5.6	6.6	10.0	11.5	8.5	5.5	4.0	3.6	5.1	14.1	16.8	8.7		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 31. INDICE DE ARNOLDUS = 111.

INDICE DE IRREGULARIDAD INTERANUAL =1.48

DEV. ESTANDAR	53.2	49.8	68.9	59.6	44.8	33.5	40.3	23.0	27.6	61.7	79.0	68.9	164.8
COEF. VARIACION	0.879	0.698	0.634	0.474	0.485	0.564	0.919	0.581	0.492	0.402	0.432	0.726	0.151

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1360.	1300.	1228.	1089.	950.	878.	818.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.188	0.840	1.078	0.709	2.146	0.770	2.071	0.661	0.510	0.902	0.279	1.756	0.561

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212545	TIBITOC	TOCANCIPA	+04 59 00	+073 58 00	2698 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1955	-9.9	52.1	120.8	206.2	44.4	55.4	88.7	31.7	90.1	146.7	170.1	106.3	-9.9
1956	38.4	70.1	69.5	49.2	54.8	75.4	38.5	44.2	85.2	204.6	88.1	104.1	922.1
1957	22.1	18.8	73.0	168.7	152.2	57.5	56.0	42.4	56.7	60.6	44.1	33.4	785.5
1958	59.9	104.7	33.5	90.2	80.5	36.1	31.4	49.9	50.1	165.1	112.8	40.1	858.3
1959	6.0	41.6	50.8	58.5	124.2	48.5	82.1	59.0	70.1	-9.9	91.3	22.6	-9.9
1960	58.6	32.5	32.5	112.9	61.8	55.4	48.5	49.0	22.9	135.4	15.5	80.9	709.9
1961	68.4	18.0	77.4	82.8	15.9	55.3	36.2	32.0	35.3	185.5	52.9	3.1	670.8
1962	82.9	23.9	72.2	86.0	77.7	44.5	39.6	71.2	48.2	88.6	42.4	15.1	692.3
1963	24.9	99.3	55.8	122.1	146.5	40.4	38.3	27.4	36.4	135.4	138.2	26.6	891.3
1964	14.0	38.9	6.3	77.6	92.5	206.7	56.8	81.8	23.2	35.7	63.3	22.5	723.3
1965	53.5	17.3	30.9	171.4	120.6	10.5	34.3	29.2	12.9	126.8	141.9	39.3	788.6
1966	1.0	13.5	81.7	78.5	86.3	71.5	36.8	56.2	29.9	55.0	195.8	108.5	818.7
1967	14.9	31.7	112.9	121.2	64.7	50.6	25.3	36.9	26.8	40.5	67.2	60.9	652.6
1968	72.1	67.9	33.4	218.5	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X TIBITO MUNICIPIO DE TUCANCIPA PERIODO 1955 - 1968 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I
1	1967	693.6	693.6	693.6	-0.968	-0.108				+I			
2	1966	818.7	1512.3	756.1	0.472	-0.055				+			
3	1965	788.6	2300.9	767.0	0.126	-0.041				+			
4	1964	723.3	3024.2	756.0	-0.626	-0.111				+I			
5	1963	891.3	3915.5	783.1	1.308	0.035				+			
6	1962	692.3	4607.8	768.0	-0.583	-0.075				+			
7	1961	670.8	5278.6	754.1	-1.230	-0.212				+ I			
8	1960	709.9	5988.5	748.6	-0.780	-0.299				+ I			
9	1958	856.3	6844.8	760.5	0.528	-0.196				+I			
10	1957	785.5	7632.3	763.2	0.090	-0.186				+.			
11	1956	922.1	8554.4	777.7	1.662	0.000				+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I

PROMEDIO DE LOS 11 ANOS = 777.7

DEVIACION ESTANDAR = 80.9

COEFICIENTE DE VARIACION = 0.112

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212545	TIBITO	TOCANCIPA	+04 58 15	+073 56 30	2700 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1955	-9.9	52.1	120.8	206.2	44.4	55.4	88.7	31.7	90.1	148.7	170.1	106.3	-9.9	1955
1956	38.4	70.1	69.5	49.2	54.8	75.4	38.5	44.2	85.2	204.6	88.1	104.1	922.1	1956
1957	22.1	16.6	73.0	168.7	152.2	57.5	56.0	42.4	56.7	60.6	44.1	33.4	785.5	1957
1958														1958
1959	6.0	41.6	50.8	58.5	124.2	48.5	82.1	59.0	70.1	-9.9	91.3	22.6	-9.9	1959
1960	58.6	32.5	32.5	112.9	61.8	55.4	48.5	49.0	22.9	139.4	19.5	80.9	709.9	1960
1961	68.4	18.0	77.4	82.8	19.9	55.3	36.2	32.0	35.3	189.5	52.9	3.1	670.8	1961
1962	82.9	23.9	72.2	86.0	77.7	44.5	39.6	71.2	48.2	88.6	42.4	15.1	692.3	1962
1963	24.9	99.3	55.8	122.1	146.5	40.4	38.3	27.4	36.4	135.4	136.2	26.6	891.3	1963
1964	14.0	38.9	6.3	77.6	92.5	206.7	56.8	81.8	23.2	39.7	63.3	22.5	723.3	1964
1965	53.5	17.3	30.9	171.4	120.6	10.5	34.3	29.2	12.9	126.8	141.9	39.3	788.6	1965
1966	1.0	13.5	81.7	78.5	86.3	71.5	36.8	56.2	29.9	59.0	199.8	108.5	818.7	1966
1967	14.9	31.7	112.9	121.2	64.7	90.6	25.3	36.9	26.8	40.5	67.2	60.9	693.6	1967
1968	72.1	67.9	33.4	218.5	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1968
NUMERO DE ANOS	12	13	13	13	12	12	12	12	12	11	12	12	10	
VALOR MAXIMO	82.9	99.3	120.8	218.5	152.2	206.7	88.7	81.8	90.1	204.6	199.8	108.5	922.1	
CUARTIL SUPERIOR	63.5	60.0	79.5	170.0	122.4	73.4	56.4	57.6	63.4	*****	140.0	92.5	******	
MEDIANA	31.6	32.5	69.5	112.9	82.0	55.4	39.0	43.3	35.8	126.8	77.6	36.3	754.4	
CUARTIL INFERIOR	14.4	18.4	32.9	76.0	58.3	46.6	36.6	31.8	25.0	*****	48.5	22.5	******	
VALOR MINIMO	1.0	13.5	6.3	49.2	19.9	10.5	25.3	27.4	12.9	39.7	19.5	3.1	670.8	
PROMEDIOS	38.1	40.4	62.9	119.5	87.1	67.6	48.4	46.8	44.8	112.1	92.6	51.9	769.6	
									TOTAL DE LOS PROMEDIOS MENSUALES =				812.2	
PORCENTAJES	4.7	5.0	7.7	14.7	10.7	8.3	6.0	5.8	5.5	13.8	11.4	6.4		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARREDONDAS = 79.

DEV. ESTANDAR	28.1	25.6	32.7	55.6	41.5	48.1	19.5	17.4	25.5	58.1	56.5	38.6	87.1
COEF. VARIACION	0.739	0.634	0.521	0.465	0.476	0.710	0.403	0.372	0.569	0.519	0.610	0.744	0.113
COEF. ASIMETRIA	0.261	1.131	0.175	0.618	0.198	2.427	1.225	0.833	0.744	0.185	0.593	0.505	0.691

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212104	TOCANCIPA	TOCANCIPA	+04 58 00	+073 55 00	2580 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1971	81.0	39.0	88.5	209.0	177.0	52.0	62.5	86.5	49.0	56.0	60.5	95.0	1056.0
1972	89.0	35.0	80.0	214.0	138.0	58.5	45.0	15.5	35.0	75.0	99.2	10.7	938.9
1973	32.0	0.5	44.5	61.0	57.5	69.5	37.0	73.5	140.0	62.0	145.5	112.5	856.5
1974	27.5	54.5	133.0	109.5	109.0	35.0	42.0	41.0	80.5	151.5	119.0	94.0	996.5
1975	7.0	31.0	47.5	100.0	86.5	75.0	33.5	57.0	140.0	77.5	126.5	93.9	875.4
1976	18.6	19.1	85.3	59.9	56.7	65.5	30.9	52.0	54.5	185.0	121.5	60.0	809.0
1977	24.5	0.0	77.0	180.5	50.0	33.0	38.5	52.0	79.5	41.0	124.0	50.0	750.0
1978	4.5	31.1	47.5	92.5	58.0	54.5	41.5	76.0	70.0	37.5	72.5	36.0	623.6
1979	0.0	19.5	161.0	174.0	102.3	162.5	45.5	159.0	53.0	310.0	305.5	33.5	1525.8

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR LITOGRAFIA

ESTACION X TOCANCIPA MUNICIPIO DE TOCANCIPA PERIODO 1971 - 1979 COEF DE CORRECCION 1.000

ESTACION Y GUATAVITA MUNICIPIO DE GUATAVITA PERIODO 1971 - 1979 COEF DE CORRECCION 1.000

N	AN	CUX	CUY	RAN	FCAN	P = -4. I R : 0.6	-3. I C.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	1526.	1005.	1.144	0.205					I +				
2	1978	2149.	1549.	0.805	0.101					I+				
3	1977	2899.	2045.	1.138	0.198					I+				
4	1976	3708.	2854.	0.754	-0.083					+				
5	1975	4584.	3562.	0.932	-0.151					+I				
6	1974	5580.	4164.	1.248	0.060					+				
7	1973	6437.	4925.	0.848	-0.104					+I				
8	1972	7370.	5658.	0.965	-0.140					+I				
9	1971	8432.	6455.	1.142	0.0					+				

N	AN	CUX	CUY	RAN	FCAN	P = -4. I R : 0.6	-3. I C.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PRJMEDIOS = 536.9 706.1

RAZONES PROMEDIOS Y/X = 0.754

X/Y = 1.327

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212104	TOCANCIPA	TOCANCIPA	+04 58 06	+073 55 09	2580 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1971	81.0	39.0	88.5	209.0	177.0	52.0	62.5	86.5	49.0	56.0	60.5	95.0	1056.0	1971
1972	89.0	35.0	80.0	214.0	138.0	98.5	45.0	15.5	35.0	79.0	99.2	10.7	938.9	1972
1973	32.0	0.5	44.5	81.0	87.5	69.5	37.0	73.5	140.0	83.0	145.5	112.5	856.5	1973
1974	27.5	54.5	133.0	109.5	109.0	35.0	42.0	41.0	80.5	151.5	115.0	94.0	996.5	1974
1975	7.0	31.0	47.5	100.0	86.5	75.0	33.5	57.0	140.0	77.5	126.5	93.9	875.4	1975
1976	18.0	19.1	85.3	59.9	56.7	65.5	30.9	52.0	54.5	185.0	121.5	60.0	809.0	1976
1977	24.5	0.0	77.0	180.5	80.0	33.0	38.5	52.0	79.5	41.0	124.0	50.0	750.0	1977
1978	4.5	31.1	47.5	92.5	88.0	54.5	41.5	76.0	70.0	37.5	72.5	38.0	623.6	1978
1979	0.0	19.5	161.0	174.0	102.3	162.5	45.5	159.0	53.0	310.0	305.5	33.5	1525.8	1979
NUMERO DE ANOS	9	9	9	9	9	9	9	9	9	9	9	9	9	
VALOR MAXIMO	89.0	54.5	161.0	214.0	177.0	162.5	62.5	159.0	140.0	310.0	305.5	112.5	1525.8	
MEDIANA	24.5	31.0	80.0	109.5	86.5	65.5	41.5	57.0	70.0	79.0	121.5	60.0	875.4	
VALOR MINIMO	0.0	0.0	44.5	59.9	50.0	33.0	30.9	15.5	35.0	37.5	60.5	10.7	623.6	
PROMEDIOS	31.6	25.5	84.9	133.4	92.8	71.7	41.8	68.1	77.9	113.4	130.5	65.3	936.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		936.9	
PORCENTAJES	3.4	2.7	9.1	14.2	9.9	7.7	4.5	7.3	8.3	12.1	13.9	7.0		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 53.

DEV. ESTANDAR	32.2	17.8	39.7	61.3	43.5	39.6	9.2	40.1	38.1	88.7	71.0	34.9	256.0
COEF. VARIACION	1.021	0.696	0.468	0.460	0.469	0.552	0.220	0.589	0.489	0.782	0.544	0.535	0.273
COEF. ASIMETRIA	1.160	-0.137	0.973	0.163	0.946	1.674	1.432	1.462	1.002	1.590	2.150	-0.152	1.591

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350604	SANTA ROSA DE UBALA	UBALA	+04 49 00	+073 24 00	1570 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	360.0	394.0	517.0	103.0	-9.9
1961	23.0	0.0	342.0	447.0	343.0	576.0	406.0	382.0	-9.9	-9.9	77.0	105.0	-9.9
1962	39.0	37.0	368.0	290.0	573.0	536.0	494.0	330.0	227.0	155.0	168.0	75.0	3334.0
1963	52.0	141.0	56.0	477.0	460.0	317.0	409.0	373.0	257.0	46.0	144.0	102.0	2834.0
1964	5.0	116.0	101.0	482.0	834.0	512.0	519.0	461.0	538.0	547.0	596.0	344.0	5055.0
1965	235.0	135.0	382.0	540.0	980.0	660.0	678.0	605.0	396.0	677.0	325.0	299.0	5912.0
1966	148.0	80.0	343.0	330.0	370.0	649.0	749.0	474.0	297.0	257.0	282.0	250.0	4229.0
1967	350.0	60.0	245.0	660.0	529.0	561.0	489.0	557.0	445.0	360.0	200.0	93.0	4529.0
1968	121.0	9.0	238.0	439.0	421.0	363.0	840.0	494.0	349.0	300.0	206.0	55.0	3855.0
1969	331.0	298.0	197.0	314.5	992.0	643.0	882.0	930.0	714.0	556.0	385.0	381.0	6665.5
1970	171.0	124.0	287.0	478.0	740.0	1234.0	1025.0	598.0	445.0	282.0	159.5	314.0	5857.5
1971	38.0	224.0	261.0	542.0	831.0	1078.0	753.0	581.0	404.0	361.0	242.0	130.0	5445.0
1972	199.0	187.0	217.0	261.0	782.0	642.0	515.0	547.0	329.0	276.0	192.0	82.0	4229.0
1973	18.0	3.0	232.0	358.0	472.0	522.0	495.0	475.0	438.0	487.0	298.0	64.0	3862.0
1974	42.0	109.0	89.0	246.0	578.0	405.0	605.0	542.0	312.0	25.0	139.0	22.0	3118.0
1975	75.0	33.0	-9.9	286.0	426.0	749.0	442.0	445.0	214.0	263.0	242.0	143.0	-9.9
1976	55.0	150.0	186.0	333.0	484.0	561.0	556.0	329.0	276.0	262.0	134.0	135.0	3461.0
1977	0.0	107.0	274.0	240.0	418.0	455.0	603.0	324.0	401.0	246.0	135.0	69.0	3332.0
1978	55.0	30.0	204.0	405.0	590.0	655.0	504.0	491.0	368.0	287.0	166.0	126.0	3885.0
1979	61.0	0.0	153.0	512.0	527.0	456.0	369.0	468.0	267.0	295.0	325.0	195.0	3632.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X . SANTA ROSA DE UBALA MUNICIPIO DE UBALA PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	3632.0	3632.0	3632.0	-0.609	-0.157				.+I			
2	1978	3885.0	7517.0	3758.5	-0.381	-0.255				.+I			
3	1977	3332.0	10849.0	3616.3	-0.880	-0.482			.+	I			
4	1976	3461.0	14310.0	3577.5	-0.763	-0.678			.+	I			
5	1974	3118.0	17428.0	3485.6	-1.073	-0.954		.+		I			
6	1973	3862.0	21290.0	3548.3	-0.402	-1.058		+	.	I			
7	1972	4229.0	25519.0	3645.6	-0.071	-1.076		+		.			
8	1971	5445.0	30964.0	3870.5	1.025	-0.812			+	I	.		
9	1970	5857.5	36821.5	4091.3	1.397	-0.453			+	I		.	
10	1969	6665.5	43487.0	4348.7	2.125	0.095				+			.
11	1968	3855.0	47342.0	4303.8	-0.408	-0.011			.	+			
12	1967	4529.0	51871.0	4322.6	0.199	0.041				+.			
13	1966	4229.0	56100.0	4315.4	-0.071	0.022				*			
14	1965	5912.0	62012.0	4429.4	1.446	0.395				I	+		.
15	1964	5055.0	67067.0	4471.1	0.673	0.568				I	+.		
16	1963	2834.0	69901.0	4368.8	-1.329	0.226			.	I	+		
17	1962	3334.0	73235.0	4307.9	-0.878	0.0			.	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 17 ANOS = 4307.9

DEVIACION ESTANDAR = 1109.4

COEFICIENTE DE VARIACION = 0.258

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
3506O7	UBALA	UBALA	+04 45 00	+073 32 00	1920 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1971	38.0	136.0	-9.9	277.5	288.0	295.5	351.5	357.0	217.0	-9.9	-9.9	-9.9	-9.9
1972	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	132.0	113.0	90.0	45.0	-9.9
1973	50.0	12.0	86.0	204.0	355.0	415.0	366.0	287.0	243.0	216.0	104.0	38.0	2376.0
1974	46.0	109.0	73.0	240.0	369.0	257.0	337.0	292.0	131.0	162.0	45.0	15.0	2076.0
1975	47.0	39.0	203.0	144.0	292.0	443.0	189.0	278.0	163.0	216.0	120.0	113.0	2247.0
1976	43.0	76.0	137.0	204.0	358.0	366.0	369.0	195.0	205.0	79.0	125.0	64.0	2221.0
1977	0.0	90.0	106.0	191.0	211.0	324.0	397.0	171.0	198.0	112.0	65.0	51.0	1916.0
1978	71.0	66.0	122.0	245.0	302.0	384.0	233.0	225.0	114.0	203.0	46.0	62.0	2073.0
1979	48.0	3.0	107.0	223.0	221.0	258.0	220.0	294.0	110.0	295.0	195.0	93.0	2067.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAF C.

ESTACION X UBALA MUNICIPIO DE UBALA PERIODO 1971 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	2067.0	2067.0	2067.0	-0.478	-0.034				+			
2	1979	2073.0	4140.0	2070.0	-0.438	-0.065				+			
3	1977	1916.0	6056.0	2018.7	-1.474	-0.169				+I			
4	1975	2221.0	8277.0	2069.3	0.538	-0.131				+I	•		
5	1975	2247.0	10524.0	2104.8	0.710	-0.081				+	•		
6	1974	2076.0	12600.0	2100.0	-0.419	-0.111				+I			
7	1973	2376.0	14976.0	2139.4	1.581	0.0				+		•	

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 7 ANOS = 2139.4
DEVIACION ESTANDAR = 151.5
COEFICIENTE DE VARIACION = 0.071

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
350607	UBALA	UBALA	+04 44 58	+073 32 30	1920 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1971	38.0	136.0	-9.9	277.5	268.0	295.5	351.5	357.0	217.0	-9.9	-9.9	-9.9	-9.9	1971
1972	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	132.0	113.0	90.0	45.0	-9.9	1972
1973	50.0	12.0	86.0	204.0	385.0	415.0	366.0	287.0	243.0	216.0	104.0	38.0	2376.0	1973
1974	46.0	109.0	73.0	240.0	369.0	257.0	337.0	292.0	131.0	162.0	45.0	15.0	2076.0	1974
1975	47.0	39.0	203.0	144.0	252.0	443.0	189.0	278.0	163.0	216.0	120.0	113.0	2247.0	1975
1976	43.0	75.0	137.0	204.0	358.0	366.0	369.0	195.0	205.0	79.0	125.0	64.0	2221.0	1976
1977	0.0	90.0	106.0	191.0	211.0	324.0	397.0	171.0	198.0	112.0	68.0	51.0	1916.0	1977
1978	71.0	66.0	122.0	245.0	302.0	384.0	233.0	225.0	114.0	203.0	46.0	62.0	2073.0	1978
1979	48.0	3.0	107.0	223.0	221.0	258.0	220.0	294.0	110.0	295.0	195.0	93.0	2067.0	1979
NUMERO DE ANOS	8	8	7	8	8	8	8	8	9	8	8	8	7	
VALOR MAXIMO	71.0	136.0	203.0	277.5	369.0	443.0	397.0	357.0	243.0	295.0	195.0	113.0	2376.0	
MEDIANA	46.5	71.0	107.0	213.5	297.0	345.0	344.3	282.5	163.0	182.5	97.0	56.5	2076.0	
VALOR MINIMO	0.0	3.0	73.0	144.0	211.0	257.0	189.0	171.0	110.0	79.0	45.0	15.0	1916.0	
PROMEDIOS	42.9	66.4	119.1	216.1	259.5	342.8	307.8	262.4	168.1	174.5	96.8	60.1	2139.4	
PORCENTAJES	2.0	3.1	5.5	10.0	13.9	15.9	14.3	12.2	7.8	8.1	4.6	2.8	TOTAL DE LOS PROMEDIOS MENSUALES = 2158.4	
DEV. ESTANDAR	19.8	46.3	42.6	40.3	60.4	70.3	80.4	60.9	49.1	71.5	45.7	31.0	151.6	
COEF. VARIACION	0.463	0.698	0.358	0.186	0.232	0.205	0.261	0.232	0.292	0.409	0.504	0.516	0.071	
COEF. ASIMETRIA	-1.367	-0.013	1.375	-0.360	-0.408	0.060	-0.560	-0.166	0.219	0.296	0.695	0.488	0.196	

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 54. INDICE DE ARNOLDUS = 236.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240151	LA BOYERA	UBATE	+05 18 25	+073 51 20	2630 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1960	-9.9	-9.9	-9.9	109.5	37.0	14.0	33.0	32.7	27.0	122.5	61.5	90.0	-9.9
1961	81.0	24.5	63.7	70.2	4.5	32.5	31.5	12.0	11.0	151.0	132.0	28.0	641.9
1962	27.5	58.5	91.8	106.0	89.0	71.0	28.0	42.0	37.5	72.8	168.6	15.0	807.7
1963	5.5	43.0	81.5	92.3	150.9	33.7	27.0	23.5	22.0	73.0	123.9	14.5	690.8
1964	27.5	41.5	4.5	127.5	119.0	96.7	23.5	23.6	10.0	55.6	53.6	51.0	634.0
1965	5.5	11.0	21.0	159.7	60.2	23.5	28.6	56.1	10.1	93.1	149.9	28.2	646.9
1966	14.5	43.0	82.5	29.6	46.0	101.0	29.5	35.0	61.6	103.5	85.6	73.5	705.3
1967	10.0	27.7	70.7	106.1	53.8	86.7	33.3	37.8	25.8	47.9	104.8	70.7	675.3
1968	8.6	66.8	53.7	185.2	60.5	88.6	30.9	25.4	45.6	73.2	123.3	8.4	770.2
1969	32.1	55.9	52.4	146.4	63.5	46.7	11.9	29.6	89.8	178.4	63.5	18.1	790.3
1970	69.6	24.9	11.3	43.5	76.7	35.6	33.5	23.0	66.2	137.0	148.2	9.9	679.4
1971	73.7	63.6	144.2	115.6	110.4	42.9	36.1	26.1	95.5	88.1	106.9	42.1	946.2
1972	87.9	26.8	51.2	151.7	91.7	42.8	72.2	34.4	13.0	60.9	101.8	17.3	791.7
1973	18.9	27.2	27.1	52.5	90.9	52.3	44.6	92.0	113.2	84.5	90.8	74.3	768.3
1974	12.8	69.2	58.0	96.9	61.2	40.9	17.1	17.6	58.0	66.5	109.7	28.7	636.6
1975	4.2	46.3	81.3	57.0	64.9	43.8	76.8	70.1	40.6	142.7	74.0	106.8	808.5
1976	16.0	61.0	83.8	139.2	91.8	53.3	19.3	17.9	108.0	166.0	94.3	47.9	898.5
1977	15.6	10.8	67.6	61.8	16.7	35.3	21.2	54.8	74.1	78.5	118.8	24.0	583.2
1978	4.7	43.5	94.5	177.4	55.0	35.1	18.4	15.1	90.7	114.3	55.0	26.7	730.4
1979	30.0	19.8	121.4	134.8	102.8	70.2	48.8	96.9	62.0	227.8	144.4	63.4	1122.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DAVARANJO

ESTACION X LA BOYERA MUNICIPIO DE UBATE PERIODO COEF DE CORRECCION

1960 - 1979 1.000

ESTACION Y CARRIZAL MUNICIPIO DE CUCUNUBA PERIODO COEF DE CORRECCION

1960 - 1979 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. R : 0.6	-3. 0.7	-2. 0.8	-1. 0.9	0.0 1.0	+1. 1.1	+2. 1.2	+3. 1.3	+4. 1.4
1	1979	1122.	943.	1.105	0.138					I+	•			
2	1978	1853.	1520.	1.175	0.280					I +		•		
3	1976	2751.	2358.	0.996	0.276					• +				
4	1975	3560.	3064.	1.063	0.338					I + •				
5	1974	4196.	3785.	0.820	0.156			•		I+				
6	1973	4965.	4432.	1.102	0.249					I +	•			
7	1972	5756.	5228.	0.923	0.193				•	I+				
8	1971	6702.	5972.	1.181	0.352					I +		•		
9	1970	7382.	6606.	0.995	0.348					• +				
10	1969	8172.	7423.	0.898	0.231				•	I +				
11	1968	8942.	8155.	0.977	0.207					• I +				
12	1967	9618.	8920.	0.819	0.013			•		+				
13	1966	10323.	9585.	0.984	-0.001					•+				
14	1965	10970.	10350.	0.785	-0.232			•		+ I				
15	1964	11604.	10908.	1.056	-0.188					+I •				
16	1962	12412.	11556.	1.157	-0.046					+		•		
17	1961	13053.	12119.	1.058	0.0					+ •				

N	AN	CUX	CUY	RAN	PCAN	P = -4. R : 0.6	-3. 0.7	-2. 0.8	-1. 0.9	0.0 1.0	+1. 1.1	+2. 1.2	+3. 1.3	+4. 1.4

PROMEDIOS = 767.9 712.9

RAZONES PROMEDIOS Y/X = 0.928

X/Y = 1.077

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240151	LA BOYERA	UBATE	+05 18 24	+073 51 20	2610 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	-9.9	-9.9	109.3	37.0	14.0	33.0	32.7	27.0	122.5	61.5	50.0	-9.9	1960
1961	81.0	24.5	63.7	70.2	4.5	32.5	31.5	12.0	11.0	151.0	132.0	28.0	641.9	1961
1962	27.5	58.5	91.8	130.0	89.0	71.0	28.0	42.0	37.5	72.8	166.6	15.0	807.7	1962
1963	5.5	43.0	81.5	92.3	150.9	33.7	27.0	23.5	22.0	73.0	123.9	14.5	690.8	1963
1964	27.5	41.5	4.5	127.5	119.0	96.7	23.5	23.6	10.0	55.6	52.6	51.0	634.0	1964
1965	5.5	11.0	21.0	159.7	60.2	23.5	28.6	56.1	10.1	93.1	149.9	28.2	646.9	1965
1966	14.5	43.0	82.5	29.0	46.0	101.0	29.5	35.0	61.6	103.5	85.6	73.5	705.3	1966
1967	10.0	27.7	70.7	106.1	53.8	86.7	33.3	37.8	25.8	47.9	104.8	70.7	675.3	1967
1968	8.0	66.8	53.7	185.2	60.5	88.6	30.9	25.4	45.6	73.2	123.3	8.4	770.2	1968
1969	32.1	55.9	52.4	140.4	63.5	48.7	11.9	29.6	69.8	178.4	63.5	18.1	790.3	1969
1970	69.6	24.9	11.3	43.5	76.7	35.6	33.5	23.0	66.2	137.0	148.2	9.9	679.4	1970
1971	73.7	63.6	144.2	115.6	110.4	43.9	36.1	26.1	55.5	88.1	106.9	42.1	946.2	1971
1972	87.9	26.8	51.2	191.7	91.7	42.8	72.2	34.4	13.0	60.9	101.8	17.3	791.7	1972
1973	18.9	27.2	27.1	52.5	90.9	52.3	44.6	92.0	113.2	84.5	90.8	74.3	768.3	1973
1974	12.8	69.2	58.0	96.9	61.2	40.9	17.1	17.6	58.0	66.5	109.7	28.7	636.6	1974
1975	4.2	46.3	81.3	57.0	64.9	43.8	76.8	70.1	40.6	142.7	74.0	106.8	808.5	1975
1976	16.0	61.0	83.8	139.2	91.8	53.3	19.3	17.9	108.0	166.0	94.3	47.9	898.5	1976
1977	15.6	10.2	67.6	61.8	16.7	39.3	21.2	54.8	74.1	78.5	118.8	24.0	583.2	1977
1978	4.7	43.5	94.5	177.4	55.0	35.1	18.4	15.1	90.7	114.3	55.0	26.7	730.4	1978
1979	30.0	19.8	121.4	134.8	102.8	70.2	48.8	96.5	62.0	227.8	144.4	63.4	1122.3	1979
NUMERO DE ANOS	19	19	19	20	20	20	20	20	20	20	20	20	19	
VALOR MAXIMO	87.9	69.2	144.2	191.7	150.9	101.0	76.8	96.9	113.2	227.8	166.6	106.8	1122.3	
CUARTIL SUPERIOR	32.1	58.5	83.8	142.8	91.7	70.6	34.8	48.4	61.9	139.6	127.9	67.0	807.7	
MEDIANA	16.0	43.0	67.6	107.8	64.2	43.8	30.2	31.1	51.8	90.6	105.8	28.4	730.4	
CUARTIL INFERIOR	8.6	24.9	51.2	66.0	54.4	35.3	22.3	23.3	23.9	72.9	75.8	17.7	646.9	
VALOR MINIMO	4.2	10.8	4.5	29.6	4.5	14.0	11.9	12.0	10.0	47.9	53.6	8.4	583.2	
PROMEDIOS	28.7	40.3	66.4	110.1	72.3	52.7	33.3	38.3	53.1	106.9	105.5	41.9	754.1	
											TOTAL DE LOS PROMEDIOS MENSUALES =		749.5	
PORCENTAJES	3.8	5.4	8.9	14.7	9.6	7.0	4.4	5.1	7.1	14.3	14.1	5.6		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 76.

DEV. ESTANDAR	27.7	18.7	35.5	48.1	34.8	24.8	16.7	24.2	34.0	47.5	33.7	28.9	129.7
COEF. VARIACION	0.966	0.464	0.534	0.436	0.481	0.470	0.501	0.632	0.640	0.444	0.319	0.690	0.172
COEF. ASIMETRIA	1.249	0.013	0.170	0.673	0.184	0.695	1.662	1.388	0.302	1.007	0.053	0.794	1.371

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2401S1	LA BOYERA	UBATE	+05 18 24	+073 51 20	2610 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	27.7	71.6	81.9	109.5	37.0	14.0	33.0	32.7	27.0	122.5	61.5	90.0	708.4	1960
1961	81.0	24.5	63.7	70.2	4.5	32.5	31.5	12.0	11.0	151.0	132.0	28.0	641.9	1961
1962	27.5	58.5	91.8	106.0	89.0	71.0	28.0	42.0	37.5	72.8	168.6	15.0	807.7	1962
1963	5.5	43.0	81.5	92.3	150.9	33.7	27.0	23.5	22.0	73.0	123.9	14.5	690.8	1963
1964	27.5	41.5	4.5	127.5	119.0	96.7	23.5	23.6	10.0	55.6	53.6	51.0	634.0	1964
1965	5.5	11.0	21.0	159.7	60.2	23.5	28.6	56.1	10.1	93.1	149.9	28.2	646.9	1965
1966	14.5	43.0	82.5	29.6	46.0	101.0	29.5	35.0	61.6	103.5	85.6	73.5	705.3	1966
1967	10.0	27.7	70.7	106.1	53.8	86.7	33.3	37.8	25.8	47.9	104.8	70.7	675.3	1967
1968	8.6	66.8	53.7	185.2	60.5	88.6	30.9	25.4	45.6	73.2	123.3	8.4	770.2	1968
1969	32.1	55.9	52.4	146.4	63.5	48.7	11.9	29.6	89.8	178.4	63.5	18.1	790.3	1969
1970	69.6	24.9	11.3	43.5	76.7	35.6	33.5	23.0	66.2	137.0	148.2	9.9	679.4	1970
1971	73.7	63.6	144.2	115.6	110.4	43.9	36.1	26.1	95.5	88.1	106.9	42.1	946.2	1971
1972	87.9	20.8	51.2	191.7	91.7	42.8	72.2	34.4	13.0	60.9	101.8	17.3	791.7	1972
1973	18.9	27.2	27.1	52.5	90.9	52.3	44.6	92.0	113.2	84.5	90.8	74.3	768.3	1973
1974	12.8	69.2	58.0	96.9	61.2	40.9	17.1	17.6	58.0	66.5	109.7	28.7	636.6	1974
1975	4.2	46.3	81.3	57.0	64.9	43.8	76.8	70.1	40.6	142.7	74.0	106.8	808.5	1975
1976	16.0	61.0	83.8	139.2	91.8	53.3	19.3	17.9	108.0	166.0	94.3	47.9	898.5	1976
1977	13.6	10.8	67.6	61.8	16.7	39.3	21.2	54.8	74.1	78.5	118.8	24.0	583.2	1977
1978	4.7	43.5	94.5	177.4	55.0	35.1	16.4	15.1	90.7	114.3	55.0	26.7	730.4	1978
1979	30.0	19.8	121.4	134.8	102.8	70.2	48.8	96.9	62.0	227.8	144.4	63.4	1122.3	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	87.9	71.6	144.2	191.7	150.9	101.0	76.8	96.9	113.2	227.8	168.6	106.8	1122.3	
CUARTIL SUPERIOR	31.0	59.8	83.1	142.8	91.7	70.6	34.8	48.4	81.9	139.8	127.9	67.0	799.7	
MEDIANA	17.4	43.0	69.1	107.8	64.2	43.8	30.2	31.1	51.8	90.6	105.8	28.4	719.4	
CUARTIL INFERIOR	9.3	25.8	51.8	66.0	54.4	35.3	22.3	23.3	23.9	72.9	79.8	17.7	661.1	
VALOR MINIMO	4.2	10.8	4.5	29.6	4.5	14.0	11.9	12.0	10.0	47.9	53.6	8.4	583.2	
PROMEDIOS	28.7	41.8	67.2	110.1	72.3	52.7	33.3	38.3	53.1	106.9	105.5	41.9	751.8	
PORCENTAJES	3.8	5.6	8.9	14.7	9.6	7.0	4.4	5.1	7.1	14.2	14.0	5.6		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 76.

INDICE DE IRREGULARIDAD INTERANUAL =1.55

DEV. ESTANDAR	27.0	19.5	34.7	48.1	34.8	24.8	16.7	24.2	34.0	47.5	33.7	28.9	126.6
COEF. VARIACION	0.942	0.466	0.517	0.436	0.481	0.470	0.501	0.632	0.640	0.444	0.319	0.690	0.168

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	960.	914.	858.	752.	645.	589.	543.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.282	-0.015	0.102	0.073	0.184	0.695	1.562	1.388	0.302	1.007	0.053	0.794	1.444

IMPRESO EN COLOMBIA POR DANAPAPA

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240152	LOS NOVILLEROS	UBATE	+05 20 26	+073 47 20	2550 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	2.7	18.6	38.1	36.1	38.2	82.6	44.3	56.6	95.4	118.4	92.1	51.7	674.8
1967	42.3	35.1	59.3	110.4	73.7	88.1	32.8	19.6	32.9	54.8	106.7	53.6	709.3
1968	14.1	35.7	56.5	142.4	82.3	63.7	33.3	21.7	49.9	101.8	100.1	18.9	740.4
1969	57.4	82.1	55.3	151.6	117.6	57.4	14.2	12.6	84.1	98.4	46.4	29.6	806.7
1970	15.8	27.5	13.1	71.6	99.7	40.4	53.9	27.1	59.2	142.3	115.7	20.6	686.9
1971	64.2	37.1	118.1	126.9	115.0	45.1	42.3	27.0	41.8	114.2	87.3	70.0	889.0
1972	146.0	54.3	63.8	184.8	75.0	31.3	53.7	42.3	17.3	44.0	61.8	24.2	798.5
1973	3.7	17.8	40.4	59.3	73.3	85.3	57.2	91.3	121.2	71.9	134.3	45.6	805.3
1974	18.5	59.2	84.8	91.4	73.7	61.3	15.8	25.8	57.9	104.6	100.0	15.2	708.2
1975	1.3	74.7	83.2	51.2	50.3	51.0	92.7	50.9	63.3	85.8	47.6	73.6	729.6
1976	14.6	43.3	118.4	136.8	91.8	70.3	23.9	11.9	43.3	136.5	60.2	35.0	786.0
1977	12.2	2.0	64.4	83.1	36.6	38.2	28.8	37.0	71.2	124.2	118.2	22.3	638.2
1978	1.1	70.2	72.5	131.5	91.3	45.3	27.2	24.2	42.7	81.6	26.5	44.0	662.1
1979	20.5	27.9	67.8	132.0	83.4	84.4	25.7	84.5	44.4	179.7	107.6	50.5	908.4

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X LOS NOVILLEROS MUNICIPIO DE UBATE PERIODO 1966 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I
1	1979	908.4	908.4	908.4	1.888	0.206				I +		•	
2	1978	662.1	1570.5	785.2	-1.106	0.085			•	+			
3	1977	638.2	2208.7	736.2	-1.397	-0.067			•	+			
4	1976	786.0	2994.7	748.7	0.400	-0.023				+ •			
5	1975	729.6	3724.3	744.9	-0.286	-0.055			•	+			
6	1974	708.2	4432.5	738.7	-0.546	-0.114			•	+I			
7	1973	805.3	5237.8	748.3	0.634	-0.045				+	•		
8	1972	798.5	6036.3	754.5	0.552	0.015				+	•		
9	1971	889.0	6925.3	769.5	1.652	0.196				I+		•	
10	1970	686.9	7612.2	761.2	-0.805	0.108			•	I+			
11	1969	806.7	8418.9	765.4	0.652	0.179				I+	•		
12	1968	740.4	9159.3	763.3	-0.154	0.162			•	I+			
13	1967	709.3	9868.6	759.1	-0.532	0.104			•	I+			
14	1966	674.8	10543.4	753.1	-0.952	0.000			•	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
							I	I	I	I	I	I	I

PROMEDIO DE LOS 14 ANOS = 753.1

DEVIACION ESTANDAR = 82.3

COEFICIENTE DE VARIACION = 0.109

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240152	LOS NOVILLEROS	UBATE	+05 20 26	+073 47 20	2550 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1966	2.7	18.6	38.1	30.1	38.2	82.6	44.3	56.6	95.4	118.4	92.1	51.7	674.8	1966
1967	42.3	35.1	59.3	110.4	73.7	88.1	32.8	19.6	32.9	54.8	106.7	53.6	709.3	1967
1968	14.1	35.7	56.5	142.4	62.3	83.7	33.3	21.7	49.9	101.8	100.1	18.9	740.4	1968
1969	57.4	82.1	55.3	151.6	117.6	57.4	14.2	12.6	84.1	98.4	46.4	29.6	806.7	1969
1970	15.8	27.5	13.1	71.0	99.7	40.4	53.9	27.1	59.2	142.3	115.7	20.6	686.9	1970
1971	64.2	37.1	118.1	126.9	115.0	45.1	42.3	27.0	41.8	114.2	87.3	70.0	889.0	1971
1972	146.0	54.3	63.8	184.8	75.0	31.3	53.7	42.3	17.3	44.0	61.8	24.2	798.5	1972
1973	3.7	17.8	40.4	59.3	73.3	85.3	57.2	91.3	121.2	71.9	134.3	49.6	805.3	1973
1974	18.5	59.2	84.8	91.4	73.7	61.3	15.8	25.8	57.9	104.6	100.0	15.2	708.2	1974
1975	1.3	74.7	83.2	51.2	50.3	51.0	52.7	50.9	63.3	89.8	47.6	73.6	729.6	1975
1976	14.6	43.3	118.4	130.6	91.8	70.3	23.9	11.9	43.3	136.5	60.2	35.0	786.0	1976
1977	12.2	2.0	64.4	83.1	36.6	38.2	28.8	37.0	71.2	124.2	116.2	22.3	638.2	1977
1978	1.1	70.2	72.5	131.5	91.3	49.3	27.2	24.2	42.7	81.6	26.5	44.0	662.1	1978
1979	20.5	27.9	67.8	132.0	83.4	84.4	25.7	84.5	44.4	179.7	107.6	50.5	908.4	1979
NUMERO DE ANOS	14	14	14	14	14	14	14	14	14	14	14	14	14	
VALOR MAXIMO	146.0	82.1	118.4	184.8	117.6	88.1	92.7	91.3	121.2	179.7	134.3	73.6	908.4	
CUARTIL SUPERIOR	42.3	59.2	83.2	136.8	91.8	83.7	53.7	50.9	71.2	124.2	107.6	51.7	805.3	
MEDIANA	15.2	36.4	64.1	118.6	78.6	59.3	33.0	27.0	53.9	103.2	96.0	39.5	735.0	
CUARTIL INFERIOR	3.7	27.5	55.3	71.6	73.3	45.1	25.7	21.7	42.7	81.6	60.2	22.3	686.9	
VALOR MINIMO	1.1	2.0	13.1	30.1	36.6	31.3	14.2	11.9	17.3	44.0	26.5	15.2	638.2	
PROMEDIOS	29.6	41.8	66.8	107.8	78.7	62.0	39.0	38.0	58.9	104.4	86.0	39.9	753.1	
											TOTAL DE LOS PROMEDIOS MENSUALES =		753.1	
PORCENTAJES	3.9	5.6	8.9	14.3	10.5	8.2	5.2	5.1	7.8	13.9	11.4	5.3		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 15. INDICE DE ARNOLDUS = 73.

DEV. ESTANDAR	39.1	23.5	28.6	43.2	24.7	20.1	20.7	24.9	27.1	35.9	32.1	19.0	82.3
COEF. VARIACION	1.320	0.562	0.428	0.401	0.314	0.324	0.531	0.654	0.459	0.344	0.373	0.476	0.109
COEF. ASIMETRIA	2.319	0.243	0.313	-0.100	-0.262	-0.001	1.329	1.212	0.915	0.256	-0.447	0.387	0.552

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240152	LOS NUVILLEROS	UBATE	+05 20 26	+073 47 20	2550 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	16.2	46.9	34.4	114.3	58.5	63.1	42.3	32.1	63.2	109.9	102.1	25.5	710.5	1960
1961	25.4	0.9	84.8	76.3	23.6	68.7	41.1	12.3	43.2	154.1	115.5	17.0	668.9	1961
1962	20.7	38.6	38.6	92.2	81.3	52.6	29.4	34.4	43.7	139.6	86.6	55.7	713.4	1962
1963	6.3	43.8	79.3	81.4	109.4	55.7	34.3	19.5	43.3	130.2	119.4	24.4	747.0	1963
1964	3.5	43.8	31.0	144.3	61.7	68.4	67.0	25.2	65.9	72.1	93.9	58.4	735.2	1964
1965	32.7	51.3	15.4	144.8	96.8	57.3	9.7	48.0	33.6	107.0	108.2	38.0	742.8	1965
1966	2.7	18.6	38.1	36.1	38.2	82.6	44.3	56.6	95.4	118.4	92.1	51.7	674.8	1966
1967	42.3	35.1	59.3	110.4	73.7	88.1	32.8	19.6	32.9	54.8	106.7	53.6	709.3	1967
1968	14.1	35.7	56.5	142.4	82.3	83.7	33.3	21.7	49.9	101.8	100.1	18.9	740.4	1968
1969	57.4	82.1	55.3	151.0	117.6	57.4	14.2	12.6	84.1	98.4	46.4	29.6	806.7	1969
1970	15.8	27.5	13.1	71.6	99.7	40.4	53.9	27.1	59.2	142.3	115.7	20.6	686.9	1970
1971	64.2	37.1	118.1	126.9	115.0	45.1	42.3	27.0	41.8	114.2	87.3	70.0	889.0	1971
1972	146.0	54.3	63.8	184.8	75.0	31.3	53.7	42.3	17.3	44.0	61.8	24.2	798.5	1972
1973	3.7	17.8	40.4	59.3	73.3	85.3	57.2	91.3	121.2	71.9	134.3	49.6	805.3	1973
1974	18.5	59.2	84.8	91.4	73.7	61.3	15.8	25.8	57.9	104.6	100.0	15.2	708.2	1974
1975	1.3	74.7	83.2	51.2	50.3	51.0	92.7	50.9	63.3	89.8	47.6	73.6	729.6	1975
1976	14.6	43.3	118.4	136.8	91.8	70.3	23.9	11.9	43.3	136.5	60.2	35.0	786.0	1976
1977	12.2	2.0	64.4	83.1	36.6	38.2	28.8	37.0	71.2	124.2	118.2	22.3	638.2	1977
1978	1.1	70.2	72.5	131.5	91.3	49.3	27.2	24.2	42.7	81.6	26.5	44.0	662.1	1978
1979	20.5	27.9	67.8	132.0	83.4	84.4	25.7	84.5	44.4	179.7	107.6	50.5	908.4	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	146.0	82.1	118.4	184.8	117.6	88.1	92.7	91.3	121.2	179.7	134.3	73.6	908.4	
CUARTIL SUPERIOR	29.0	52.8	81.2	139.6	94.3	76.4	49.0	45.1	64.6	133.3	111.8	52.6	792.3	
MEDIANA	16.0	40.9	61.5	112.3	78.1	59.3	33.8	27.0	47.1	108.4	100.0	36.5	732.4	
CUARTIL INFERIOR	5.0	27.7	38.3	78.8	60.1	50.1	26.4	20.6	42.9	85.7	74.2	23.2	697.5	
VALOR MINIMO	1.1	2.0	13.1	36.1	23.6	31.3	9.7	11.9	17.3	44.0	26.5	15.2	638.2	
PROMEDIOS	26.0	40.9	61.0	108.1	76.7	61.7	38.5	35.2	55.9	108.8	91.5	38.9	743.1	
PORCENTAJES	3.5	5.5	8.2	14.6	10.3	8.3	5.2	4.7	7.5	14.6	12.3	5.2		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 74.

INDICE DE IRREGULARIDAD INTERANUAL =1.28

DEV. ESTANDAR	33.3	21.2	29.2	39.0	26.0	17.0	19.6	22.0	23.8	33.9	28.7	18.1	71.4
COEF. VARIACION	1.284	0.518	0.479	0.361	0.340	0.275	0.510	0.625	0.426	0.312	0.313	0.466	0.096

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	861.	835.	803.	743.	683.	651.	625.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.750	0.100	0.330	-0.071	-0.367	0.054	1.066	1.437	1.185	-0.004	-0.861	0.396	0.899

IMPRESO EN COLOMBIA POR BANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600100	UNE	UNE	+04 24 00	+074 02 00	2376 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1957	0.0	0.0	68.2	110.0	176.0	77.0	206.0	94.9	145.0	165.2	0.0	18.0	1060.3
1958	9.0	45.0	115.0	161.0	84.0	148.0	-9.9	138.5	65.0	100.0	95.2	41.0	-9.9
1959	20.0	0.0	48.0	87.0	125.0	161.0	221.0	139.0	106.0	99.0	69.0	37.0	1112.0
1960	17.0	45.0	12.0	63.7	7.3	114.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1961													
1962													
1963													
1964													
1965													
1966													
1967	-9.9	14.6	68.2	163.4	246.4	306.5	263.1	170.6	96.9	105.2	113.2	29.2	-9.9
1968	14.2	92.0	67.4	258.7	176.5	349.4	202.9	165.0	130.1	210.7	88.5	30.4	1785.8
1969	52.0	34.2	62.6	296.0	206.0	173.7	168.9	213.8	157.5	174.9	131.0	87.5	1758.1
1970	52.5	58.7	81.6	186.6	309.4	230.8	159.4	214.0	186.0	222.9	82.7	26.5	1811.1
1971	61.0	77.0	182.8	177.9	160.8	187.0	269.3	187.4	173.2	118.9	74.1	75.1	1744.5
1972	106.5	46.0	214.6	153.8	276.9	181.5	130.4	198.9	66.0	160.1	182.6	35.0	1752.3
1973	5.1	2.0	32.2	135.5	187.0	228.6	180.5	287.6	207.7	95.2	156.7	55.0	1573.1
1974	37.0	62.0	60.1	149.5	265.1	164.0	224.5	168.0	68.5	168.5	157.0	0.0	1524.2
1975	15.1	27.7	34.0	158.5	221.0	167.0	125.0	139.0	108.0	71.0	89.0	213.0	1368.3
1976	1.0	16.0	40.0	113.0	151.0	160.0	124.0	103.0	58.0	159.0	37.5	14.0	976.5
1977	-9.9	23.0	14.0	80.0	115.0	65.0	158.0	101.0	110.0	79.0	130.0	0.3	-9.9
1978	8.0	17.0	50.0	120.0	179.0	156.0	103.0	124.0	215.0	78.0	21.0	35.0	1110.0
1979	19.0	2.0	62.0	158.0	106.0	164.0	104.0	102.0	63.0	184.0	105.0	33.0	1102.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARA

ESTACION X UNE MUNICIPIO DE UNE PERIODO 1957 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1978	1102.0	1102.0	1102.0	-1.030	-0.233							
2	1978	1110.0	2212.0	1106.0	-1.005	-0.460							
3	1976	976.5	3189.5	1062.3	-1.416	-0.781							
4	1975	1366.3	4555.8	1139.2	-0.211	-0.828							
5	1974	1524.2	6081.0	1216.2	0.269	-0.768							
6	1973	1573.1	7654.1	1275.7	0.419	-0.673							
7	1972	1752.3	9406.4	1343.6	0.971	-0.453							
8	1971	1744.5	11150.9	1393.9	0.547	-0.239							
9	1970	1811.1	12962.0	1440.2	1.151	0.022							
10	1969	1758.1	14720.1	1472.0	0.988	0.245							
11	1968	1785.8	16505.9	1500.5	1.074	0.486							
12	1959	1112.0	17617.9	1468.2	-0.595	0.262							
13	1957	1000.3	18618.2	1436.8	-1.158	0.0							

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 13 ANOS = 1436.8
DESVIACION ESTANDAR = 325.1
COEFICIENTE DE VARIACION = 0.226

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
600100	UNE	UNE	+04 24 20	+074 01 44	2400 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9 ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	0.0	0.0	68.2	110.0	176.0	77.0	206.0	94.9	145.0	165.2	0.0	18.0	1060.3	1957
1958	9.0	45.0	115.0	161.0	84.0	148.0	-9.9	138.5	65.0	100.0	95.2	41.0	-9.9	1958
1959	20.0	0.0	48.0	87.0	125.0	161.0	221.0	139.0	106.0	99.0	69.0	37.0	1112.0	1959
1960	17.0	45.0	12.0	83.7	7.3	114.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1960
1961														1961
1962														1962
1963														1963
1964														1964
1965														1965
1966														1966
1967	-9.9	9.0	42.1	100.8	152.0	190.6	162.3	105.3	59.6	67.4	69.8	18.0	-9.9	1967
1968	8.8	56.8	41.5	159.6	108.9	215.6	125.2	101.8	80.2	130.0	54.6	18.8	1101.8	1968
1969	32.1	21.1	38.6	182.6	127.1	107.2	104.2	131.9	97.2	107.9	80.8	54.0	1084.7	1969
1970	32.4	36.2	50.3	115.1	150.9	142.4	98.3	132.0	114.8	137.5	51.1	16.4	1117.4	1970
1971	37.6	47.5	112.8	109.8	99.2	115.4	166.2	115.6	106.9	73.4	45.7	46.3	1076.4	1971
1972	65.7	28.4	132.4	94.9	170.8	112.0	80.5	122.7	40.7	98.8	112.7	21.6	1081.2	1972
1973	3.1	1.2	15.9	83.6	115.4	141.0	111.4	177.4	128.2	58.7	96.8	33.9	970.6	1973
1974	22.8	38.3	37.0	92.2	163.6	101.2	138.5	103.7	42.3	104.0	96.8	0.0	940.4	1974
1975	15.1	27.7	34.0	158.5	221.0	167.0	125.0	139.0	108.0	71.0	69.0	213.0	1368.3	1975
1976	1.0	16.0	40.0	113.0	151.0	160.0	124.0	103.0	58.0	159.0	37.5	14.0	976.5	1976
1977	-9.9	23.0	14.0	80.0	115.0	85.0	158.0	101.0	110.0	79.0	130.0	0.3	-9.9	1977
1978	8.0	17.0	50.0	120.0	179.0	156.0	103.0	124.0	215.0	78.0	21.0	39.0	1110.0	1978
1979	19.0	2.0	62.0	158.0	106.0	164.0	104.0	102.0	63.0	184.0	105.0	33.0	1102.0	1979
NUMERO DE ANOS	15	17	17	17	17	17	15	16	16	16	16	16	13	
VALOR MAXIMO	65.7	56.8	132.4	182.6	221.0	215.6	221.0	177.4	215.0	184.0	130.0	213.0	1368.3	
CUARTIL SUPERIOR	32.1	41.6	65.1	158.3	173.4	162.5	162.3	135.3	112.4	133.6	96.8	40.0	1111.0	
MEDIANA	17.0	23.0	42.1	110.0	127.1	142.4	125.0	119.1	101.6	99.5	78.3	27.3	1084.7	
CUARTIL INFERIOR	8.0	5.5	35.5	89.6	107.4	109.6	104.0	102.5	61.4	75.7	48.4	17.2	1018.4	
VALOR MINIMO	0.0	0.0	12.0	83.7	7.3	77.0	80.5	94.9	40.7	58.7	0.0	0.0	940.4	
PROMEDIOS	19.4	24.4	54.0	117.0	134.8	138.7	135.2	120.7	96.3	107.1	72.2	37.8	1084.7	
PORCENTAJES	1.8	2.3	5.1	11.1	12.8	13.1	12.8	11.4	9.1	10.1	6.8	3.6		

TOTAL DE LOS PROMEDIOS MENSUALES = 1057.5

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 18. INDICE DE APOLOBUS = 109.

DEV. ESTANDAR	17.3	18.4	35.0	34.6	49.6	37.4	40.4	21.7	44.4	38.0	35.3	49.2	104.0
COEF. VARIACION	0.888	0.754	0.648	0.296	0.368	0.270	0.299	0.180	0.461	0.355	0.489	1.303	0.096
COEF. ASIMETRIA	1.399	0.130	1.181	0.487	-0.728	0.192	0.909	1.110	1.162	0.730	-0.422	3.340	1.492

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212065	CONTADOR	USAQUEN	+04 42 00	+074 02 00	2597 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1958	-9.9	37.1	43.7	32.7	35.1	43.5	14.8	56.7	45.5	128.6	178.1	65.6	-9.9
1959	75.9	59.2	68.4	55.4	105.2	48.6	92.8	41.6	50.1	123.6	137.8	26.5	885.1
1960	16.1	108.8	31.8	145.9	26.8	14.9	40.2	33.0	43.5	122.3	112.3	73.2	768.8
1961	69.8	5.2	133.4	100.6	18.4	83.2	41.8	18.5	26.5	212.0	125.0	20.4	854.8
1962	84.8	62.4	77.3	114.8	118.7	96.3	34.6	59.8	29.4	133.2	133.3	110.9	1055.5
1963	59.1	138.9	115.6	158.6	106.4	41.5	23.2	20.2	47.7	104.1	167.7	13.6	996.6
1964	21.4	55.3	3.0	173.2	120.3	117.6	49.1	17.4	20.5	68.1	108.7	48.4	803.0
1965	14.0	58.3	29.6	213.3	101.1	16.6	33.1	27.8	8.9	178.5	205.8	56.7	943.9
1966	1.9	51.4	106.5	44.8	58.0	131.0	28.8	65.2	72.8	108.9	238.4	244.6	1152.3
1967	28.9	28.3	59.2	109.8	78.4	129.7	56.0	18.3	32.7	84.3	191.9	51.3	868.8
1968	8.0	65.1	47.8	113.5	58.0	116.3	23.4	17.9	52.6	164.8	173.1	49.4	889.9
1969	83.0	68.6	13.4	216.9	121.1	48.1	6.1	46.4	23.8	250.1	107.6	42.7	1027.8
1970	49.1	12.2	34.9	47.5	87.0	46.2	58.6	29.6	110.6	239.9	165.0	26.3	906.9
1971	56.9	107.2	112.3	185.3	140.4	45.5	38.3	52.8	83.3	111.5	74.1	71.6	1079.2
1972	124.3	51.2	60.5	175.0	82.7	75.6	36.0	26.2	27.8	112.1	185.8	38.8	996.0
1973	9.7	24.3	74.8	68.2	90.2	43.9	57.9	47.3	100.1	156.0	103.2	225.3	1000.9
1974	31.7	162.4	110.7	100.3	99.9	20.2	17.2	15.0	-9.9	103.4	129.5	58.7	-9.9
1975	10.4	134.4	106.7	120.4	119.0	44.5	64.6	62.6	48.3	102.4	96.0	154.9	1064.2
1976	48.3	83.6	210.8	190.2	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	86.6	60.7	-9.9
1977	0.0	44.5	151.5	92.5	97.1	25.1	48.2	25.4	69.7	-9.9	143.1	145.6	-9.9
1978	30.8	43.8	14.0	174.9	75.7	62.3	33.8	3.6	74.1	124.4	74.0	52.4	763.8
1979	63.8	94.4	101.1	89.0	129.2	80.6	34.6	59.5	20.6	85.0	166.6	55.9	1020.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X CENTACEF MUNICIPIO DE USACLIA PERIODO 1958 - 1979 COEF DE CORRECCION 1.000

N	AN	T /	CC	MCY	ECF	FCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1975	1026.3	1020.3	1026.3	0.037	0.075				+	.		
2	1976	763.8	1784.1	852.0	-1.448	-0.120		.		+I			
3	1975	1064.2	2848.3	949.4	1.128	0.008				+		.	
4	1973	1008.5	3849.2	962.3	0.464	0.057				+	.		
5	1972	994.0	4845.2	965.0	0.421	0.107				I+	.		
6	1971	1079.2	5924.4	987.4	1.382	0.244				I	+	.	
7	1970	906.5	6831.0	975.5	-0.372	0.200			.	I	+		
8	1969	1021.8	7855.1	982.4	0.704	0.283				I	+	.	
9	1968	889.5	8745.0	972.1	-0.924	0.221			.	I	+		
10	1967	871.8	9617.0	961.8	-0.712	0.137			.	I+			
11	1966	1152.3	10771.1	979.1	1.713	0.356				I	+		.
12	1965	943.5	11714.6	976.2	-0.042	0.247				.	+		
13	1964	803.0	12517.6	962.8	-1.255	0.193			.	I+			
14	1963	995.8	13513.4	965.3	0.428	0.242				I	+	.	
15	1962	1052.8	14566.1	971.3	0.951	0.286				I	+	.	
16	1961	854.8	15423.9	964.0	-0.837	0.257			.	I	+		
17	1960	768.8	16192.7	952.5	-1.803	0.067			.	+			
18	1959	885.1	17077.8	948.8	-0.987	0.0			.	+			

N	AN	T /	CC	MCY	ECF	FCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 18 ANOS = 948.8

DESVIACION ESTANDAR = 112.2

COEFICIENTE DE VARIACION = 0.118

****
* FRECUENCIAS DE SIMPLE MASA *
****

PROYECTO ICAC-CESTCA *** CALCULO DE PRECIPITACIONES *** PROGRAMA CESTCA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212065	CONTADOR	USAQUEN	+04 42 50	+074 01 50	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	-9.9	37.1	43.7	32.7	35.1	43.5	14.8	56.7	45.5	128.6	176.1	85.6	-9.9	1958
1959	75.9	59.2	68.4	55.4	105.2	48.6	52.8	41.6	50.1	123.6	137.8	26.5	885.1	1959
1960	10.1	108.8	31.8	145.9	26.8	14.9	40.2	33.0	43.5	122.3	112.3	73.2	768.8	1960
1961	69.8	5.2	133.4	100.6	18.4	83.2	41.8	18.5	26.5	212.0	125.0	20.4	854.8	1961
1962	84.8	62.4	77.3	114.8	118.7	96.3	34.6	59.8	29.4	133.2	133.3	110.9	1055.5	1962
1963	59.1	138.9	115.0	158.6	106.4	41.5	23.2	20.2	47.7	104.1	167.7	13.6	996.6	1963
1964	21.4	55.3	3.0	173.2	120.3	117.6	49.1	17.4	20.5	68.1	108.7	48.4	803.0	1964
1965	14.0	58.3	29.6	213.3	101.1	16.8	33.1	27.8	8.9	178.5	205.8	56.7	943.9	1965
1966	1.9	51.4	106.5	44.8	58.0	131.0	28.8	65.2	72.8	108.9	236.4	244.6	1152.3	1966
1967	28.9	28.3	59.2	109.8	78.4	129.7	56.0	18.3	32.7	84.3	191.9	51.3	868.8	1967
1968	8.0	65.1	47.8	113.5	58.0	116.3	23.4	17.9	52.6	164.8	173.1	49.4	889.9	1968
1969	83.0	68.6	13.4	216.9	121.1	48.1	6.1	46.4	23.8	250.1	107.6	42.7	1027.8	1969
1970	49.1	12.2	34.9	47.5	87.0	46.2	58.6	29.6	110.6	239.9	165.0	26.3	906.9	1970
1971	56.9	107.2	112.3	185.3	140.4	45.5	38.3	52.8	83.3	111.5	74.1	71.6	1079.2	1971
1972	124.3	51.2	60.5	175.0	82.7	75.6	36.0	26.2	27.8	112.1	185.8	38.8	996.0	1972
1973	9.7	24.3	74.8	68.2	90.2	43.9	57.9	47.3	100.1	156.0	103.2	225.3	1000.9	1973
1974	31.7	162.4	110.7	100.3	99.9	20.2	17.2	15.0	-9.9	103.4	129.5	58.7	-9.9	1974
1975	10.4	134.4	106.7	120.4	119.0	44.5	64.6	62.6	48.3	102.4	96.0	154.9	1064.2	1975
1976	48.3	83.6	210.8	190.2	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	86.6	60.7	-9.9	1976
1977	0.0	44.5	151.5	92.5	97.1	25.1	48.2	25.4	69.7	-9.9	143.1	149.6	-9.9	1977
1978	30.8	43.8	14.0	174.9	75.7	62.3	33.8	3.6	74.1	124.4	74.0	52.4	763.8	1978
1979	63.8	94.4	101.1	89.0	129.2	80.6	34.6	59.5	20.6	85.0	166.6	95.9	1020.3	1979
NUMERO DE ANOS	21	22	22	22	21	21	21	21	20	20	22	22	18	
VALOR MAXIMO	124.3	162.4	210.8	216.9	140.4	131.0	52.8	65.2	110.6	250.1	236.4	244.6	1152.3	
CUARTIL SUPERIOR	66.8	94.4	110.7	174.9	118.8	89.7	52.5	54.7	71.2	160.4	173.1	95.9	1027.8	
MEDIANA	31.7	58.7	71.6	114.1	97.1	48.1	36.0	29.6	46.6	122.9	138.5	57.7	969.9	
CUARTIL INFERIOR	12.2	45.8	34.9	89.0	66.8	42.5	26.1	18.4	27.1	103.7	107.6	42.7	868.8	
VALOR MINIMO	0.0	5.2	3.0	32.7	18.4	14.9	6.1	3.6	8.9	68.1	74.0	13.6	763.8	
PROMEDIOS	42.3	68.0	77.6	123.8	89.0	63.4	39.7	35.5	49.4	135.7	141.1	79.9	948.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		945.2	
PORCENTAJES	4.5	7.2	8.2	13.1	9.4	6.7	4.2	3.8	5.2	14.4	14.9	8.5		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 21. INDICE DE ARNOLDUS = 55.

DEV. ESTANDAR	33.3	41.4	51.2	56.1	33.9	36.5	19.5	18.7	27.8	50.3	44.4	62.4	112.2
COEF. VARIACION	0.787	0.609	0.660	0.453	0.381	0.581	0.492	0.528	0.562	0.371	0.315	0.781	0.118
COEF. ASIMETRIA	0.705	0.737	0.718	0.062	-0.683	0.614	0.808	0.205	0.724	1.127	0.320	1.571	-0.121

PROYECTO IGAC-CRSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212065	CONTADOR	USAQUEN	+04 42 50	+074 01 50	2600 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	16.1	108.8	31.8	145.9	26.8	14.9	40.2	33.0	43.5	122.3	112.3	73.2	768.8	1960
1961	69.6	5.2	133.4	100.6	18.4	83.2	41.8	18.5	26.5	212.0	125.0	20.4	854.8	1961
1962	84.8	62.4	77.3	114.8	118.7	96.3	34.6	59.8	29.4	133.2	133.3	110.9	1055.5	1962
1963	59.1	138.9	115.6	158.6	106.4	41.5	23.2	20.2	47.7	104.1	167.7	13.6	996.6	1963
1964	21.4	55.3	3.0	173.2	120.3	117.6	49.1	17.4	20.5	68.1	108.7	48.4	803.0	1964
1965	14.0	58.3	29.6	213.3	101.1	16.8	33.1	27.8	8.9	178.5	205.8	56.7	943.9	1965
1966	1.9	51.4	106.5	44.8	58.0	131.0	28.8	65.2	72.8	108.9	238.4	244.6	1152.3	1966
1967	28.9	26.3	59.2	109.8	78.4	129.7	56.0	18.3	32.7	84.3	191.9	51.3	868.8	1967
1968	8.0	65.1	47.8	113.5	58.0	116.3	23.4	17.9	52.6	164.8	173.1	49.4	889.9	1968
1969	83.0	68.6	13.4	216.9	121.1	48.1	6.1	46.4	23.8	250.1	107.6	42.7	1027.8	1969
1970	49.1	12.2	34.9	47.5	87.0	46.2	58.6	29.6	110.6	239.9	165.0	26.3	906.9	1970
1971	56.9	107.2	112.3	185.3	140.4	45.5	38.3	52.8	83.3	111.5	74.1	71.6	1079.2	1971
1972	124.3	51.2	60.5	175.0	82.7	75.6	36.0	26.2	27.8	112.1	185.8	38.8	996.0	1972
1973	9.7	24.3	74.8	68.2	90.2	43.9	57.9	47.3	100.1	156.0	103.2	225.3	1000.9	1973
1974	31.7	162.4	110.7	100.3	99.9	20.2	17.2	15.0	79.8	103.4	129.5	58.7	928.8	1974
1975	10.4	134.4	106.7	120.4	119.0	44.5	64.6	62.6	48.3	102.4	96.0	154.9	1064.2	1975
1976	48.3	83.6	210.8	190.2	60.4	38.4	32.5	16.3	40.1	123.8	86.6	60.7	991.7	1976
1977	0.0	44.5	151.5	92.5	97.1	25.1	48.2	25.4	69.7	54.3	143.1	149.6	901.0	1977
1978	30.8	43.8	14.0	174.9	75.7	62.3	33.8	3.6	74.1	124.4	74.0	52.4	763.8	1978
1979	63.8	94.4	101.1	89.0	129.2	80.6	34.6	59.5	20.6	85.0	166.6	95.9	1020.3	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	124.3	162.4	210.8	216.9	140.4	131.0	64.6	65.2	110.6	250.1	238.4	244.6	1152.3	
CUARTIL SUPERIOR	61.4	100.8	111.5	174.9	118.8	89.7	48.6	50.0	73.4	160.4	170.4	103.4	1024.0	
MEDIANA	31.2	60.3	76.0	117.6	93.6	47.1	35.3	27.0	45.6	117.2	131.4	57.7	967.8	
CUARTIL INFERIOR	12.2	44.1	33.3	96.4	68.0	39.9	30.6	18.1	27.1	102.9	105.4	45.5	879.3	
VALOR MINIMO	0.0	5.2	3.0	44.8	18.4	14.9	6.1	3.6	8.9	54.3	74.0	13.6	763.8	
PROMEDIOS	40.6	70.0	79.7	131.7	89.4	63.9	37.9	33.1	50.6	132.0	139.4	82.3	950.7	
PORCENTAJES	4.3	7.4	8.4	13.9	9.4	6.7	4.0	3.5	5.3	13.9	14.7	8.7		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 96.

INDICE DE IRREGULARIDAD INTERANUAL =1.33

DEV. ESTANDAR	33.2	42.9	53.2	52.2	32.9	37.8	14.8	18.9	28.7	53.5	45.9	64.4	106.3
COEF. VARIACION	0.818	0.613	0.667	0.396	0.368	0.592	0.391	0.570	0.568	0.406	0.329	0.782	0.112

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1126.	1087.	1040.	951.	861.	814.	776.

COEF. ASIMETRIA	0.859	0.610	0.596	0.014	-0.622	0.553	-0.073	0.477	0.585	0.964	0.416	1.506	-0.175

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212077	TORCA	USAQUEN	+04 48 00	+074 02 00	2579 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	-9.9	19.7	119.5	77.5	33.1	44.3	41.1	42.0	161.4	45.5	75.7	-9.9
1961	92.6	21.1	146.0	109.3	24.3	94.2	53.3	37.8	34.4	170.4	119.6	26.6	929.6
1962	133.6	15.0	109.2	63.8	118.8	54.5	50.7	99.1	52.9	107.8	215.1	66.6	1107.1
1963	70.9	41.0	112.8	188.4	176.8	51.4	32.8	29.3	10.6	15.3	31.6	12.1	773.0
1964	6.5	20.3	8.6	230.5	128.5	123.0	70.0	35.5	42.0	114.0	131.0	84.5	994.4
1965	32.5	68.0	34.5	256.0	164.5	63.0	84.0	50.5	14.5	166.5	135.0	67.5	1190.5
1966	7.5	53.0	130.0	31.0	102.5	114.0	59.5	104.5	61.0	185.0	335.0	176.0	1359.0
1967	45.6	40.5	100.5	176.0	147.5	158.8	142.0	63.5	53.0	121.5	237.5	70.5	1356.9
1968	18.5	37.0	91.5	246.0	47.6	143.0	93.0	12.0	151.5	76.3	200.5	52.0	1170.9
1969	98.5	29.0	14.0	362.0	155.5	92.0	40.5	91.0	207.5	246.1	176.5	68.0	1600.6
1970	34.0	177.0	37.0	68.0	150.0	67.0	83.0	57.5	182.0	296.0	241.0	70.0	1482.5
1971	83.5	103.5	189.5	265.0	199.5	93.0	91.5	104.5	107.5	236.0	181.5	141.5	1798.5
1972	174.5	114.5	191.5	330.5	168.0	154.0	114.0	61.0	43.5	146.0	213.0	43.0	1753.5
1973	90.5	0.5	134.5	128.0	139.5	67.0	103.0	101.5	210.5	135.5	176.0	260.5	1587.0
1974	91.2	148.0	155.0	147.5	220.0	51.0	69.0	65.5	148.5	167.5	229.5	50.0	1542.7
1975	7.5	195.0	115.5	190.0	166.5	128.0	102.5	110.5	196.5	165.0	185.0	197.0	1763.0
1976	52.5	130.5	199.0	321.2	206.5	106.5	88.5	33.5	131.0	349.0	218.5	54.5	1893.2
1977	23.5	56.0	145.5	185.5	151.5	113.5	103.5	91.5	162.0	57.0	362.0	93.5	1585.0
1978	11.0	41.0	199.0	210.0	221.0	170.0	51.5	67.5	178.0	174.0	90.0	59.5	1472.5
1979	152.0	257.5	184.5	263.5	197.5	309.5	85.0	199.5	143.0	442.0	339.0	178.5	2751.5

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X TORCA MUNICIPIO DE USAQUEN PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	2751.5	2751.5	2751.5	0.697	0.859				I	+		
2	1978	1472.5	4224.0	2112.0	-0.017	0.854				.	+		
3	1977	1585.0	5809.0	1936.3	0.235	0.925				I.	+		
4	1976	1893.2	7702.2	1925.5	0.542	1.204				I	. +		
5	1975	1763.0	9465.2	1893.0	0.645	1.396				I	. +		
6	1974	1542.7	11007.9	1834.6	0.143	1.436				I.	+		
7	1973	1587.0	12594.9	1799.3	0.244	1.510				I .	+		
8	1972	1752.5	14348.4	1793.5	0.623	1.695				I .	+		
9	1971	1798.5	16146.9	1794.1	0.726	1.910				I .	+		
10	1970	1482.5	17629.4	1762.9	0.006	1.912				.	+		
11	1969	1600.6	19230.0	1748.2	0.275	1.994				I .	+		
12	1968	1170.9	20400.9	1700.1	-0.704	1.785				I	+		
13	1967	1356.9	21757.8	1673.7	-0.280	1.702				. I	+		
14	1966	1359.0	23116.8	1651.2	-0.276	1.620				. I	+		
15	1965	1198.5	24315.3	1621.0	-0.641	1.430				I	+		
16	1964	994.4	25309.7	1581.9	-1.106	1.102				I	+		
17	1963	773.0	26082.7	1534.3	-1.611	0.624				I	+		
18	1962	1107.1	27189.8	1510.5	-0.850	0.372				I	+		
19	1961	929.6	28119.4	1480.0	-1.254	0.0				+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 19 ANOS = 1480.0
DESVIACION ESTANDAR = 438.9
COEFICIENTE DE VARIACION = 0.297

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212077	TORCA	LSAQUEN	+04 47 16	+074 01 59	2580 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1964	6.5	20.3	8.6	230.5	128.5	123.0	70.0	35.5	42.0	114.0	131.0	84.5	994.4	1964
1965	32.5	68.0	34.5	296.0	164.5	63.0	84.0	50.5	14.5	168.5	135.0	87.5	1198.5	1965
1966	7.5	53.0	130.0	31.0	102.5	114.0	59.5	104.5	61.0	185.0	335.0	176.0	1359.0	1966
1967	45.0	40.5	100.5	176.0	147.5	158.8	142.0	63.5	53.0	121.5	237.5	70.5	1356.9	1967
1968	18.5	37.0	91.5	246.0	47.6	143.0	93.0	12.0	151.5	78.3	200.5	52.0	1170.9	1968
1969	98.5	29.0	14.0	362.0	155.5	92.0	40.5	91.0	207.5	246.1	176.5	88.0	1600.6	1969
1970	23.1	120.0	25.1	46.1	101.5	59.0	56.3	39.0	123.4	200.7	163.4	47.5	1005.1	1970
1971	56.6	70.1	128.5	179.7	135.3	63.1	62.0	70.8	72.9	161.4	123.1	95.9	1219.4	1971
1972	118.3	77.6	129.6	224.3	113.9	104.4	77.3	41.4	29.5	98.9	144.4	29.1	1188.9	1972
1973	61.4	0.3	91.2	86.8	94.6	59.0	69.8	68.8	142.7	91.9	119.3	190.2	1076.0	1973
1974	61.8	100.3	105.1	100.0	149.2	34.6	46.8	44.4	100.7	113.6	155.6	33.9	1046.0	1974
1975	5.1	132.2	78.3	126.8	112.9	86.8	69.5	74.9	133.2	114.6	125.4	133.6	1195.3	1975
1976	35.6	88.5	134.9	217.8	140.1	73.6	60.0	22.7	88.8	236.6	148.1	36.9	1283.6	1976
1977	15.9	37.9	98.8	125.8	102.8	76.9	70.2	62.0	105.8	65.7	245.4	63.4	1074.6	1977
1978	7.4	27.8	134.9	142.4	149.8	115.4	34.9	45.8	120.7	117.9	61.0	40.4	998.4	1978
1979	103.1	174.6	125.1	176.7	133.9	209.8	57.6	135.3	96.9	299.7	229.8	121.0	1865.5	1979
NUMERO DE ANOS	16	16	16	16	16	16	16	16	16	16	16	16	16	
VALOR MAXIMO	118.3	174.6	134.9	362.0	164.5	209.8	142.0	135.3	207.5	299.7	335.0	190.2	1865.5	
CUARTIL SUPERIOR	61.6	94.4	129.1	227.4	148.3	119.2	73.7	72.8	128.3	192.6	215.1	108.4	1320.2	
MEDIANA	34.0	60.5	99.6	177.3	121.2	89.4	65.8	56.3	98.8	119.7	151.8	77.5	1192.1	
CUARTIL INFERIOR	11.7	33.0	56.4	112.9	102.6	63.0	56.9	40.2	57.0	106.2	128.2	43.9	1060.3	
VALOR MINIMO	5.1	0.3	8.6	31.0	47.6	34.6	34.9	12.0	14.5	65.7	61.0	29.1	994.4	
PROMEDIOS	43.6	67.3	89.4	173.2	123.8	98.5	68.3	60.1	96.8	150.9	170.7	84.4	1227.1	
										TOTAL DE LOS PROMEDIOS MENSUALES =			1227.1	
PORCENTAJES	3.6	5.5	7.3	14.1	10.1	8.0	5.6	4.9	7.9	12.3	13.9	6.9		
DEV. ESTANDAR	36.9	46.6	44.9	88.8	29.8	44.8	24.7	31.3	50.5	67.0	65.7	49.2	234.6	
COEF. VARIACION	0.847	0.692	0.502	0.513	0.241	0.455	0.362	0.520	0.522	0.444	0.385	0.583	0.191	
COEF. ASIMETRIA	0.845	0.829	-0.809	0.345	-0.990	1.020	1.742	0.858	0.316	0.861	0.563	0.981	1.583	

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 24. INDICE DE ARNOLDUS = 115.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
21 2077	TORCA	USAQUEN	+04 47 16	+074 01 59	2580 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	17.7	49.8	29.7	180.3	116.9	49.9	66.8	62.0	63.4	243.5	68.7	114.2	1062.9	1960
1961	116.5	26.6	183.7	137.6	30.6	118.6	67.1	47.6	43.3	214.4	150.5	33.5	1170.0	1961
1962	154.1	17.3	125.9	73.6	137.0	62.8	58.5	114.3	61.0	124.3	248.0	99.9	1276.7	1962
1963	114.3	80.1	181.8	303.7	123.8	82.9	52.9	47.2	17.1	185.9	50.9	19.5	1246.1	1963
1964	6.5	20.3	8.6	230.5	128.5	123.0	70.0	35.5	42.0	114.0	131.0	84.5	994.4	1964
1965	32.5	68.0	34.5	296.0	164.5	63.0	84.0	50.5	14.5	168.5	135.0	87.5	1198.5	1965
1966	7.5	53.0	130.0	31.0	102.5	114.0	59.5	104.5	61.0	185.0	335.0	176.0	1359.0	1966
1967	45.0	40.5	100.5	176.0	147.5	158.8	142.0	63.5	53.0	121.5	237.5	70.5	1356.9	1967
1968	18.5	37.0	91.5	246.0	47.6	143.0	93.0	12.0	151.5	78.3	200.5	52.0	1170.9	1968
1969	98.5	29.0	14.0	362.0	155.5	92.0	40.5	91.0	207.5	246.1	176.5	88.0	1600.6	1969
1970	23.1	120.0	25.1	46.1	101.5	59.0	56.3	39.0	123.4	200.7	162.4	47.5	1005.1	1970
1971	56.6	70.1	128.5	179.7	135.3	63.1	62.0	70.8	72.9	161.4	123.1	95.9	1219.4	1971
1972	118.3	77.0	129.6	224.3	113.9	104.4	77.3	41.4	29.5	98.9	144.4	29.1	1188.9	1972
1973	61.4	0.3	91.2	80.8	94.6	59.0	69.8	68.8	142.7	91.9	119.3	190.2	1076.0	1973
1974	61.8	100.3	105.1	100.0	149.2	34.6	46.8	44.4	100.7	113.6	155.6	33.9	1046.0	1974
1975	5.1	132.2	78.3	128.8	112.9	86.8	69.5	74.9	133.2	114.6	125.4	133.6	1195.3	1975
1976	35.6	88.5	134.9	217.8	140.1	73.6	60.0	22.7	88.8	236.6	148.1	36.9	1283.6	1976
1977	15.9	37.9	98.8	125.8	102.8	76.9	70.2	62.0	109.8	65.7	245.4	63.4	1074.6	1977
1978	7.4	27.8	134.9	142.4	149.8	115.4	34.9	45.8	120.7	117.9	61.0	40.4	998.4	1978
1979	103.1	174.6	125.1	178.7	133.9	209.8	57.6	135.3	96.9	299.7	229.8	121.0	1865.5	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	154.1	174.6	183.7	362.0	164.5	209.8	142.0	135.3	207.5	299.7	335.0	190.2	1865.5	
CUARTIL SUPERIOR	100.8	83.0	129.9	227.4	143.8	117.0	70.1	72.8	122.0	207.5	215.1	107.0	1280.1	
MEDIANA	40.6	51.4	102.8	177.3	126.1	84.8	64.4	56.3	80.8	142.8	149.3	77.5	1192.1	
CUARTIL INFERIOR	16.8	28.4	56.4	112.9	102.6	62.9	56.9	42.9	48.1	113.8	124.2	38.6	1068.7	
VALOR MINIMO	5.1	0.3	8.6	31.0	30.6	34.6	34.9	12.0	14.5	65.7	50.9	19.5	994.4	
PROMEDIOS	55.0	61.8	97.6	173.4	119.4	94.5	66.9	61.7	86.6	159.1	162.5	80.9	1219.4	
PORCENTAJES	4.5	5.1	8.0	14.2	9.8	7.8	5.5	5.1	7.1	13.0	13.3	6.6		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 25. INDICE DE APNCLOUS = 118.

INDICE DE IRREGULARIDAD INTERANUAL =1.58

DEV. ESTANDAR	46.5	43.8	51.9	87.8	33.9	42.4	22.3	30.7	50.2	65.1	70.5	48.1	212.4
COEF. VARIACION	0.845	0.708	0.532	0.507	0.284	0.448	0.334	0.497	0.579	0.409	0.434	0.595	0.174

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1569.	1492.	1398.	1219.	1041.	947.	870.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.697	1.048	-0.319	0.372	-1.296	1.123	2.002	0.844	0.585	0.524	0.601	0.853	1.729

IMPRESO EN COLOMBIA POR DANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212111	USAQUEN	USAQUEN	+04 42 00	+074 02 00	2647 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1955	-9.9	18.0	94.0	75.0	43.6	50.0	94.0	11.0	72.9	227.5	175.0	180.9	-9.9
1956	73.6	104.1	79.1	60.2	46.1	66.9	37.3	44.8	58.6	147.0	83.5	160.3	1001.5
1957	48.7	51.1	134.1	92.1	169.6	52.8	57.0	40.9	39.2	231.6	69.2	38.2	1024.5
1958	75.8	65.5	41.9	54.5	53.8	32.6	29.4	68.3	41.2	146.8	233.8	117.9	961.5
1959	26.4	45.0	32.8	57.8	131.7	61.4	103.7	59.0	52.5	162.4	155.4	33.0	921.1
1960	10.6	77.1	57.8	114.4	38.0	28.4	53.5	50.7	47.5	105.7	75.5	93.2	752.5
1961	65.6	6.8	110.7	91.8	10.8	32.2	16.0	26.9	39.4	167.3	141.2	3.9	712.6
1962	102.9	70.4	93.2	90.2	116.6	106.7	41.5	58.9	37.0	116.5	78.3	65.0	1001.2
1963	43.7	108.8	86.4	154.1	126.3	46.2	30.0	31.3	35.2	91.2	177.4	10.5	943.1
1964	10.4	40.3	0.7	154.9	112.6	100.8	65.9	20.9	34.8	98.1	93.5	61.4	794.3
1965	8.1	22.3	28.3	207.8	121.0	26.7	57.0	36.9	16.1	155.3	157.9	32.1	909.5
1966	2.7	43.0	104.8	38.1	52.7	132.5	39.9	76.5	26.6	105.4	344.3	199.1	1165.6
1967	33.0	36.7	99.5	116.4	86.2	110.5	85.0	34.0	55.5	54.0	234.2	59.7	1004.7
1968	9.6	71.7	35.1	142.9	74.5	56.6	62.0	32.6	55.0	157.0	171.4	54.0	962.6
1969	128.2	57.5	15.0	166.8	119.9	50.0	22.5	71.9	45.1	253.2	124.7	56.5	1151.3
1970	83.5	125.7	54.8	38.0	76.7	71.7	67.0	38.0	79.1	224.5	196.2	3.5	1059.3
1971	60.5	101.5	123.5	169.0	171.5	56.7	46.4	71.2	76.0	111.0	78.7	73.0	1141.0
1972	127.7	83.0	64.4	202.4	14.8	75.1	42.5	35.6	27.2	55.5	191.4	18.5	978.1
1973	7.1	18.9	45.3	58.6	45.0	50.8	49.4	66.6	116.6	150.1	100.4	204.1	912.9
1974	36.8	129.3	119.3	45.7	129.0	20.9	27.3	24.8	56.8	83.9	146.3	35.7	855.8
1975	2.0	124.4	71.0	80.2	78.7	46.3	47.1	67.8	55.3	88.8	93.8	131.4	886.8
1976	31.7	69.0	144.2	141.0	80.3	52.0	39.1	12.7	79.6	254.0	94.0	72.2	1069.8
1977	0.0	15.2	70.8	113.1	93.1	30.4	3.9	24.9	26.9	13.3	124.0	184.0	699.6
1978	17.0	65.0	91.0	141.0	101.0	69.0	57.0	49.0	65.0	97.0	87.0	62.0	901.0
1979	3.0	4.0	99.0	247.0	162.0	144.0	86.0	174.0	163.0	378.0	437.0	75.0	1972.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARA

ESTACION X USACUEN MUNICIPIO DE USACUEN PERIODO 1955 - 1979 COEF DE CORRECCION 1.000

ESTACION Y SAN LUIS MUNICIPIO DE BOGOTA PERIODO 1955 - 1979 COEF DE CORRECCION 1.000

	N	AN	CLX	CUY	RAN	ECAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
							F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
	1	1979	1572.	1360.	1.687	0.733					I	+			
	2	1978	2673.	2349.	1.008	0.741					.	+			
	3	1977	3573.	4202.	0.901	0.664				.	I	+			
	4	1976	4642.	4279.	1.092	0.754					I	+ .			
	5	1975	5529.	5413.	0.855	0.606				.	I	+			
	6	1974	6385.	6311.	1.048	0.648					I	. +			
	7	1973	7256.	7315.	0.995	0.647					.	+			
	8	1972	8276.	8055.	0.802	0.405				.	I	+			
	9	1971	9417.	9005.	1.091	0.500					I	+ .			
	10	1970	10476.	11012.	0.964	0.461					. I	+			
	11	1969	11628.	12041.	1.230	0.677					I	+	.		
	12	1968	12550.	13242.	0.881	0.547				.	I	+			
	13	1967	13595.	14422.	0.936	0.478				.	I	+			
	14	1966	14760.	15568.	1.118	0.601					I	+ .			
	15	1964	15555.	16448.	0.993	0.555					.	+			
	16	1963	16456.	17047.	0.865	0.447				.	I	+			
	17	1962	17455.	18786.	0.966	0.411				.	I	+			
	18	1961	18212.	19819.	0.755	0.183			.		I+				
	19	1960	18564.	20890.	0.772	-0.041			.		+				
	20	1959	19555.	21804.	1.108	0.550					+	.			
	21	1958	20647.	22742.	1.126	0.156					I+	.			
	22	1957	21671.	24042.	0.667	0.0				.	+				

	N	AN	CLX	CUY	RAN	ECAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
							F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 554.1 1092.8

RAZONES PROMEDIOS Y/X = 1.099

X/Y = 0.910

****
* PRUEBAS DE ECELE MASA *
****

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212111	USAQUEN	USAQUEN	+04 41 42	+074 01 44	2650 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1955	-9.9	18.0	94.0	75.0	43.6	50.0	94.0	11.0	72.9	227.5	175.0	160.9	-9.9	1955
1956	73.6	104.1	79.1	60.2	46.1	86.9	37.3	44.8	58.6	147.0	83.5	180.3	1001.5	1956
1957	48.7	51.1	134.1	92.1	169.6	52.8	57.0	40.9	39.2	231.6	69.2	38.2	1024.5	1957
1958	75.8	65.5	41.9	54.5	53.8	32.6	29.4	66.3	41.2	146.8	233.8	117.9	961.5	1958
1959	26.4	45.0	32.8	57.8	131.7	61.4	103.7	59.0	52.5	162.4	155.4	33.0	921.1	1959
1960	10.6	77.1	57.8	114.4	38.0	28.4	53.5	50.7	47.5	105.7	75.5	93.3	752.5	1960
1961	65.6	6.8	110.7	91.8	10.8	32.2	16.0	26.9	39.4	167.3	141.2	3.9	712.6	1961
1962	102.9	70.4	93.2	90.2	116.6	108.7	41.5	58.9	37.0	118.5	76.3	85.0	1001.2	1962
1963	43.7	103.8	86.4	154.1	126.3	48.2	30.0	31.3	35.2	91.2	177.4	10.5	943.1	1963
1964	10.4	40.3	0.7	154.9	112.6	100.8	65.9	20.9	34.8	98.1	93.5	61.4	794.3	1964
1965	8.1	22.3	28.3	207.8	121.0	26.7	57.0	36.9	16.1	195.3	187.9	32.1	909.5	1965
1966	2.7	43.0	104.8	58.1	52.7	132.5	39.9	76.5	26.6	105.4	344.3	199.1	1165.6	1966
1967	33.0	36.7	99.5	116.4	66.2	110.5	65.0	34.0	55.5	54.0	234.2	59.7	1004.7	1967
1968	9.6	71.7	35.1	142.9	74.5	96.8	62.0	32.6	55.0	157.0	171.4	54.0	962.6	1968
1969	128.2	57.5	15.0	166.8	119.9	50.0	22.5	71.9	45.1	293.2	124.7	56.5	1151.3	1969
1970	83.5	125.7	54.8	38.0	76.7	71.7	67.0	38.6	79.1	224.5	196.2	3.5	1059.3	1970
1971	60.5	101.5	123.5	169.0	171.5	58.7	46.4	71.2	76.0	111.0	76.7	73.0	1141.0	1971
1972	127.7	83.0	64.4	202.4	14.8	75.1	42.5	35.6	27.2	95.5	191.4	18.5	978.1	1972
1973	7.1	18.9	45.3	58.6	45.0	50.8	49.4	66.6	116.6	150.1	100.4	204.1	912.9	1973
1974	56.8	129.3	119.3	45.7	129.0	20.9	27.3	24.8	56.8	83.9	146.3	35.7	855.8	1974
1975	2.0	124.4	71.0	80.2	78.7	46.3	47.1	67.8	55.3	88.8	93.6	131.4	886.8	1975
1976	31.7	69.0	144.2	141.0	80.3	52.0	39.1	12.7	79.6	254.0	94.0	72.2	1069.8	1976
1977	0.0	154.2	70.8	113.1	93.1	30.4	3.9	24.9	26.9	13.3	124.0	184.0	699.6	1977
1978	17.0	65.0	91.0	141.0	101.0	69.0	57.0	49.0	65.0	97.0	87.0	82.0	901.0	1978
NUMERO DE ANOS	23	24	24	24	24	24	24	24	24	24	24	24	23	
VALOR MAXIMO	128.2	129.3	144.2	207.8	171.5	132.5	103.7	76.5	116.6	293.2	344.3	204.1	1165.6	
CUARTIL SUPERIOR	73.6	92.3	102.1	148.5	120.4	81.0	59.5	62.8	61.8	181.3	176.2	124.6	1024.5	
MEDIANA	33.0	65.3	75.0	102.6	83.2	52.4	46.7	39.7	50.0	132.6	132.9	61.7	961.5	
CUARTIL INFERIOR	9.6	38.5	43.6	59.4	49.4	39.4	33.6	29.1	36.1	96.3	90.3	34.3	886.8	
VALOR MINIMO	0.0	6.8	0.7	38.0	10.8	20.9	3.9	11.0	16.1	13.3	69.2	3.5	699.6	
PROMEDIOS	43.7	64.6	74.9	108.6	87.2	62.2	48.9	44.0	51.6	142.5	142.8	82.9	948.3	
											TOTAL DE LOS PROMEDIOS MENSUALES =		954.0	
PORCENTAJES	4.6	6.8	7.9	11.4	9.1	6.5	5.1	4.6	5.4	14.9	15.0	8.7		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 21. INDICE DE ARNOLDUS = 54.

DEV. ESTANDAR	39.7	36.9	38.4	51.2	44.1	30.2	23.6	19.7	22.3	67.6	66.1	64.5	129.0
COEF. VARIACION	0.907	0.571	0.513	0.472	0.505	0.486	0.482	0.448	0.432	0.475	0.463	0.777	0.136
COEF. ASIMETRIA	0.861	0.263	-0.075	0.342	0.133	0.726	0.520	0.119	1.010	0.476	1.217	0.749	-0.254

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212536	BOCA GRANDE	USME	+04 21 00	+074 08 00	3455 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1941	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	94.1	141.4	69.4	24.9	-9.9
1942	3.0	38.3	75.6	104.8	133.4	150.0	105.9	174.9	43.8	124.7	-9.9	52.4	-9.9
1943	40.2	29.2	121.1	101.7	240.2	182.3	258.5	225.1	131.3	58.0	53.0	76.0	1516.6
1944	70.5	57.5	58.0	188.5	316.0	201.0	142.5	90.0	104.0	104.0	50.0	16.0	1398.0
1945	9.3	2.8	38.5	142.1	205.5	110.0	187.5	97.0	46.5	53.0	109.5	32.0	1033.7
1946	24.8	15.0	42.5	62.0	138.4	149.1	181.1	204.8	32.0	71.3	96.9	58.1	1076.0
1947	39.7	30.0	23.6	90.5	43.0	172.0	211.5	132.0	140.8	134.3	52.4	21.0	1090.8
1948	44.3	42.9	47.0	137.3	92.8	171.9	149.0	144.6	44.2	90.7	28.1	22.1	1014.9
1949	6.6	19.8	82.4	87.7	151.4	187.2	137.5	126.3	114.3	117.5	117.4	28.5	1176.6
1950	82.7	71.1	44.5	98.3	143.4	158.7	144.8	139.2	192.2	140.4	101.9	48.2	1365.4
1951	20.4	74.7	81.3	113.7	128.9	144.0	181.4	106.8	69.2	168.5	87.7	36.3	1212.9
1952	14.3	30.3	58.3	191.3	156.1	136.8	157.4	91.5	56.9	33.6	95.5	51.6	1073.6
1953	20.8	39.4	95.5	105.7	124.2	221.0	188.5	78.5	79.0	155.0	70.0	21.0	1198.6
1954	40.0	66.0	24.5	153.5	213.5	220.5	179.0	161.5	154.0	-9.9	-9.9	-9.9	-9.9
1955	51.0	30.0	92.0	120.0	100.0	145.0	220.5	98.0	167.0	166.0	157.0	120.0	1466.5
1956	63.5	91.0	69.0	57.6	163.6	332.0	178.5	138.5	160.8	165.3	61.0	69.5	1554.3
1957	10.1	18.7	64.3	70.3	250.0	126.7	202.8	128.8	116.7	104.0	60.4	16.6	1169.4
1958	13.4	44.8	142.6	83.9	89.6	110.6	100.0	167.3	61.4	56.0	68.0	17.0	954.8
1959	3.0	9.0	41.0	95.0	99.5	238.0	292.0	144.0	143.0	111.0	96.0	41.0	1312.5
1960	18.0	53.0	40.0	92.0	140.2	135.1	153.7	163.7	120.2	81.8	69.0	54.1	1120.8
1961	24.5	41.4	67.0	142.5	108.4	247.6	204.5	134.4	91.0	208.5	161.8	28.4	1460.2
1962	3.1	15.1	117.3	110.3	184.6	238.5	202.5	171.0	140.2	91.7	113.5	23.1	1464.5
1963	9.2	97.8	30.3	166.6	224.0	206.4	106.6	181.0	105.9	69.3	133.7	38.9	1391.7
1964	0.0	23.8	24.5	120.8	154.7	216.8	195.3	174.1	139.4	54.4	91.8	50.1	1267.7
1965	37.1	20.8	62.5	169.6	230.2	173.6	248.6	163.0	69.9	148.0	141.1	42.6	1508.0
1966	28.9	14.0	42.3	37.6	72.5	167.2	196.0	175.5	122.7	91.2	159.3	133.1	1220.3
1967	40.5	15.0	67.9	122.4	137.0	316.5	309.0	211.0	109.0	62.2	109.0	29.1	1549.0
1968	8.5	64.4	38.0	209.6	80.4	239.2	340.4	161.9	92.0	161.5	131.7	27.7	1555.7
1969	58.9	62.3	38.9	250.8	148.3	209.9	195.6	157.7	154.8	166.3	88.1	67.0	1618.6
1970	61.6	68.8	99.1	116.1	174.2	270.9	129.4	159.1	131.1	210.8	106.1	33.6	1560.8
1971	44.7	67.9	103.1	158.0	163.9	244.9	266.2	201.1	148.0	94.2	111.5	67.1	1670.6
1972	97.8	40.8	97.5	161.9	227.5	153.5	219.5	198.9	93.6	94.7	93.7	35.1	1554.5
1973	24.9	5.1	37.5	83.2	184.7	157.8	200.5	212.7	221.7	105.3	147.8	58.7	1483.9
1974	35.0	60.2	59.8	139.7	241.0	155.0	268.7	158.5	116.9	105.6	157.2	14.2	1511.8
1975	17.6	51.5	72.0	77.1	275.2	262.2	98.4	259.0	185.5	154.5	79.0	127.5	1659.5
1976	33.5	28.5	98.5	180.0	228.0	250.8	309.5	168.1	114.5	177.0	162.5	18.5	1809.4
1977	0.0	52.0	49.7	130.0	86.2	170.5	244.5	142.0	174.3	56.5	137.1	41.4	1324.8
1978	39.1	40.1	87.7	142.3	175.9	263.0	175.6	184.8	157.4	116.9	47.0	64.3	1514.1
1979	15.0	10.5	93.0	232.0	154.0	253.0	124.1	193.5	116.3	203.3	152.9	65.8	1613.4

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X BOCA GRANDE MUNICIPIO DE USME PERIODO 1941 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1613.4	1613.4	1613.4	1.091	0.174				I+	.		
2	1978	1514.1	3127.5	1563.7	0.637	0.275				I +	.		
3	1977	1324.8	4452.3	1484.1	-0.229	0.238				. I +			
4	1976	1809.4	6261.7	1565.4	1.588	0.554				I +	.		
5	1975	1659.5	7921.2	1584.2	1.302	0.762				I +	.		
6	1974	1511.8	9433.0	1572.2	0.627	0.861				I . +			
7	1973	1483.9	10916.9	1559.5	0.499	0.940				I . +			
8	1972	1554.5	12471.4	1558.9	0.822	1.071				I . +			
9	1971	1670.6	14142.0	1571.3	1.353	1.286				I + .			
10	1970	1560.8	15702.8	1570.3	0.851	1.422				I . +			
11	1969	1618.6	17321.4	1574.7	1.115	1.599				I . +			
12	1968	1555.7	18877.1	1573.1	0.827	1.730				I . +			
13	1967	1549.0	20426.1	1571.2	0.797	1.857				I . +			
14	1966	1220.3	21646.4	1546.2	-0.707	1.745				I . +			
15	1965	1508.0	23154.4	1543.6	0.609	1.841				I . +			
16	1964	1287.7	24442.1	1527.6	-0.399	1.778				I . +			
17	1963	1391.7	25833.8	1519.6	0.077	1.790				. I +			
18	1962	1464.9	27298.7	1516.6	0.412	1.856				I . +			
19	1961	1460.2	28758.9	1513.6	0.390	1.918				I . +			
20	1960	1120.8	29879.7	1494.0	-1.162	1.733				I . +			
21	1959	1312.5	31192.2	1485.3	-0.285	1.688				I . +			
22	1958	954.8	32147.0	1461.2	-1.921	1.382				I +			
23	1957	1169.4	33316.4	1449.5	-0.940	1.233				I +			
24	1956	1554.3	34870.7	1452.9	0.821	1.363				I . +			
25	1955	1466.5	36337.2	1453.5	0.419	1.430				I . +			
26	1953	1198.6	37535.8	1443.7	-0.806	1.302				I +			
27	1952	1073.6	38609.4	1430.0	-1.378	1.083				I +			
28	1951	1212.9	39822.3	1422.2	-0.741	0.965				I +			
29	1950	1365.4	41187.7	1420.3	-0.043	0.958				. +			
30	1949	1176.6	42364.3	1412.1	-0.907	0.814				I +			
31	1948	1014.9	43379.2	1399.3	-1.647	0.552				I +			
32	1947	1090.8	44469.9	1389.7	-1.299	0.346				I +			
33	1946	1076.0	45545.9	1380.2	-1.367	0.128				I+			
34	1945	1033.7	46579.6	1370.0	-1.561	-0.120				+I			
35	1944	1398.0	47977.6	1370.8	0.106	-0.103				+I.			
36	1943	1516.6	49494.2	1374.8	0.648	0.0				+ .			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 36 ANOS = 1374.8
DESVIACION ESTANDAR = 218.6
COEFICIENTE DE VARIACION = 0.159

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
21253o	BOCA GRANDE	USME	+04 21 11	+074 07 33	3455 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1961	24.5	41.4	67.0	142.5	108.4	247.8	204.5	134.4	91.0	208.5	161.8	28.4	1460.2	1961
1962	3.1	15.1	117.3	110.3	184.6	232.5	262.5	171.0	140.2	91.7	113.5	23.1	1464.9	1962
1963	9.2	97.8	30.3	106.6	224.0	208.4	106.6	181.0	105.9	89.3	133.7	38.9	1391.7	1963
1964	3.0	23.8	24.5	120.8	154.7	218.8	195.3	174.1	139.4	94.4	91.8	50.1	1287.7	1964
1965	37.1	20.8	62.5	169.8	230.2	173.6	248.6	163.0	69.9	148.0	141.1	43.6	1508.0	1965
1966	28.9	14.0	42.3	37.8	72.5	187.2	156.0	175.5	122.7	91.2	155.3	133.1	1220.3	1966
1967	40.5	15.0	67.9	122.4	137.0	316.9	309.0	211.0	109.0	82.2	109.0	29.1	1549.0	1967
1968	8.5	64.4	38.0	209.8	80.4	239.2	340.4	161.9	92.0	161.9	131.7	27.7	1555.7	1968
1969	58.9	62.3	38.9	250.8	148.3	209.9	155.6	157.7	154.8	166.3	88.1	67.0	1618.6	1969
1970	61.6	68.8	99.1	116.1	174.2	270.9	129.4	159.1	131.1	210.8	106.1	33.6	1560.8	1970
1971	44.7	67.9	103.1	158.0	163.9	244.9	266.2	201.1	148.0	94.2	111.5	67.1	1670.6	1971
1972	97.8	40.8	97.5	161.9	227.5	193.5	219.5	198.9	93.6	94.7	93.7	35.1	1554.5	1972
1973	24.9	5.1	37.5	83.2	184.7	197.8	200.5	212.7	221.7	109.3	147.8	58.7	1483.9	1973
1974	35.0	60.2	59.8	139.7	241.0	155.0	268.7	158.5	116.9	105.6	157.2	14.2	1511.8	1974
1975	17.6	51.5	72.0	77.1	275.2	262.2	98.4	259.0	185.5	154.5	79.0	127.5	1659.5	1975
1976	33.5	28.5	98.5	180.0	228.0	290.8	309.5	168.1	114.5	177.0	162.5	18.5	1809.4	1976
1977	0.0	52.0	49.7	130.0	86.2	170.5	244.5	142.6	174.3	96.5	137.1	41.4	1324.8	1977
1978	39.1	40.1	87.7	142.3	175.9	283.0	175.6	184.8	157.4	116.9	47.0	64.3	1514.1	1978
1979	15.0	10.5	93.0	232.0	154.0	253.0	124.1	193.5	116.3	203.3	152.9	65.8	1613.4	1979
NUMERO DE ANOS	19	19	19	19	19	19	19	19	19	19	19	19	19	
VALOR MAXIMO	97.8	97.8	117.3	250.8	275.2	316.9	340.4	259.0	221.7	210.8	162.5	133.1	1809.4	
CUARTIL SUPERIOR	40.5	62.3	97.5	169.8	227.5	262.2	266.2	198.9	154.8	166.3	152.9	65.8	1613.4	
MEDIANA	28.9	40.8	67.0	142.3	174.2	232.5	204.5	174.1	122.7	109.3	131.7	41.4	1514.1	
CUARTIL INFERIOR	9.2	15.1	38.9	116.1	137.0	193.5	156.0	159.1	105.9	94.2	93.7	28.4	1460.2	
VALOR MINIMO	0.0	5.1	24.5	37.8	72.5	155.0	98.4	134.4	69.9	82.2	47.0	14.2	1220.3	
PROMEDIOS	30.5	41.1	67.7	144.8	171.1	229.3	213.4	179.4	130.7	131.4	122.4	52.0	1513.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1513.6	
PORCENTAJES	2.0	2.7	4.5	9.6	11.3	15.1	14.1	11.8	8.6	8.7	8.1	3.4		

TRIMESTRE MAS LLUVIOSO JUN JUL AGO **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 35. INDICE DE ARNOLDUS = 156.

DEV. ESTANDAR	24.5	25.3	28.4	52.2	57.8	44.4	70.8	28.9	37.2	45.0	32.7	33.5	140.5
COEF. VARIACION	0.802	0.615	0.420	0.361	0.338	0.194	0.332	0.161	0.284	0.343	0.267	0.644	0.093
COEF. ASIMETRIA	1.094	0.424	0.117	0.148	-0.138	0.170	0.002	1.066	0.730	0.658	-0.595	1.403	-0.233

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
21253o	BOCA GRANDE	USME	+04 21 11	+074 07 33	3455 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	21.0	62.0	46.8	107.6	163.9	158.0	179.7	191.4	140.5	95.6	80.7	63.3	1310.5	1960
1961	24.5	41.4	67.0	142.5	108.4	247.8	204.5	134.4	91.0	208.5	161.8	28.4	1460.2	1961
1962	3.1	15.1	117.3	110.3	184.6	232.5	262.5	171.0	140.2	91.7	113.5	23.1	1464.9	1962
1963	9.2	97.8	30.3	166.0	224.0	208.4	106.6	181.0	105.9	89.3	133.7	38.9	1391.7	1963
1964	0.0	23.8	24.5	120.8	154.7	218.8	195.3	174.1	139.4	94.4	91.8	50.1	1287.7	1964
1965	37.1	20.8	62.5	169.6	230.2	173.6	248.6	163.0	69.9	148.0	141.1	43.6	1508.0	1965
1966	28.9	14.0	42.3	37.6	72.5	187.2	156.0	175.5	122.7	91.2	159.3	133.1	1220.3	1966
1967	40.6	15.0	67.9	122.4	137.0	316.9	309.0	211.0	109.0	82.2	109.0	29.1	1549.0	1967
1968	8.5	64.4	38.0	209.6	80.4	239.2	340.4	161.9	92.0	161.9	131.7	27.7	1555.7	1968
1969	58.9	62.3	38.9	250.8	148.3	209.9	195.6	157.7	154.8	166.3	88.1	87.0	1618.6	1969
1970	61.6	68.8	99.1	116.1	174.2	270.9	129.4	159.1	131.1	210.8	106.1	33.6	1560.8	1970
1971	44.7	67.9	103.1	158.0	163.9	244.9	266.2	201.1	148.0	94.2	111.5	67.1	1670.6	1971
1972	97.8	40.8	97.5	161.9	227.5	193.5	219.5	198.9	93.6	94.7	93.7	35.1	1554.5	1972
1973	24.9	5.1	37.5	83.2	184.7	197.8	200.5	212.7	221.7	109.3	147.8	58.7	1483.9	1973
1974	35.0	60.2	59.8	139.7	241.0	155.0	268.7	158.5	116.9	105.6	157.2	14.2	1511.8	1974
1975	17.6	51.5	72.0	77.1	275.2	262.2	98.4	259.0	185.5	154.5	79.0	127.5	1659.5	1975
1976	33.5	28.5	98.5	180.0	228.0	290.8	309.5	168.1	114.5	177.0	162.5	18.5	1809.4	1976
1977	0.0	52.0	49.7	130.0	86.2	170.5	244.5	142.6	174.3	96.5	137.1	41.4	1324.8	1977
1978	39.1	40.1	87.7	142.3	175.9	283.0	175.6	184.8	157.4	116.9	47.0	64.3	1514.1	1978
1979	15.0	10.5	93.0	232.0	154.0	253.0	124.1	193.5	116.3	203.3	152.9	65.8	1613.4	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	97.8	97.8	117.3	250.8	275.2	316.9	340.4	259.0	221.7	210.8	162.5	133.1	1809.4	
CUARTIL SUPERIOR	39.8	62.1	95.3	168.1	225.8	257.6	264.3	196.2	151.4	164.1	150.3	65.0	1587.1	
MEDIANA	26.9	41.1	64.8	141.0	169.0	225.6	202.5	174.8	126.9	107.4	122.6	42.5	1512.9	
CUARTIL INFERIOR	12.1	17.9	40.6	113.2	142.6	190.3	165.8	160.5	107.4	94.3	92.7	28.7	1425.9	
VALOR MINIMO	0.0	5.1	24.5	37.6	72.5	155.0	98.4	134.4	69.9	82.2	47.0	14.2	1220.3	
PROMEDIOS	30.0	42.1	66.7	142.9	170.7	225.7	211.7	180.0	131.2	129.6	120.3	52.5	1503.5	
PORCENTAJES	2.0	2.8	4.4	9.5	11.4	15.0	14.1	12.0	8.7	8.6	8.0	3.5		

TRIMESTRE MAS LLUVIOSO JUN JUL AGO **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 34. INDICE DE ARNOLDUS = 157.

INDICE DE IRREGULARIDAD INTERANUAL =1.28

DEV. ESTANDAR	23.9	25.0	28.1	51.5	56.3	46.0	69.3	28.3	36.3	44.6	33.2	32.7	144.1
COEF. VARIACION	0.79o	0.594	0.421	0.360	0.330	0.204	0.328	0.157	0.276	0.344	0.276	0.622	0.096

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1741.	1688.	1625.	1503.	1382.	1319.	1266.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.167	0.305	0.214	0.244	-0.120	0.186	0.076	1.007	0.698	0.744	-0.443	1.365	-0.132

IMPRESO EN COLOMBIA POR DANAGRAFICOS

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212085	EL BOSQUE	USME	+04 29 00	+074 05 00	2120 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1963	30.5	85.0	38.0	167.6	264.0	184.0	149.0	200.0	96.0	94.5	126.5	41.0	1476.1
1964	0.0	32.5	7.5	136.0	197.0	154.5	210.5	171.5	145.5	80.5	144.5	90.0	1370.0
1965	34.0	55.0	82.0	321.0	229.5	212.0	206.0	155.0	119.0	281.5	180.5	133.0	2008.5
1966	33.0	47.0	167.5	91.5	66.0	200.0	313.5	267.5	196.5	65.5	282.1	212.5	1946.6
1967	54.0	25.5	128.0	156.1	207.1	314.5	217.5	240.1	109.1	77.5	280.2	51.1	1860.7
1968	9.6	88.9	36.0	204.9	97.3	188.6	318.2	117.6	123.8	175.8	133.6	25.6	1519.9
1969	86.1	56.0	33.2	169.9	184.6	151.3	213.7	155.0	110.0	129.9	73.6	40.1	1443.4
1970	48.5	75.8	64.3	95.5	156.1	151.8	156.0	106.5	130.6	190.9	90.6	25.8	1292.4
1971	48.1	51.4	97.7	155.0	178.3	146.7	226.6	148.2	117.0	105.3	122.0	72.7	1469.0
1972	126.9	57.9	79.0	125.9	189.1	170.1	100.0	134.1	82.2	120.8	128.7	26.2	1400.9
1973	24.9	2.4	24.6	84.2	145.9	160.5	127.5	183.8	165.8	113.7	108.5	106.6	1268.4
1974	36.9	87.3	80.3	131.2	154.1	115.3	192.7	120.9	81.0	121.5	195.2	7.2	1323.6
1975	20.8	59.8	86.0	68.9	117.4	159.0	122.1	185.1	73.7	161.7	134.9	119.7	1349.1
1976	31.5	21.0	131.8	179.1	229.0	265.5	357.9	294.4	207.2	287.0	253.5	124.8	2382.7
1977	0.0	35.0	85.0	107.0	82.1	224.0	430.5	144.0	339.5	152.0	401.5	88.0	2128.6
1978	13.5	59.0	76.5	178.5	378.0	417.5	151.8	147.6	103.2	107.8	77.6	42.2	1753.3
1979	15.1	4.0	73.8	300.0	111.5	215.3	113.5	161.5	104.0	184.8	221.2	52.1	1556.8

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANSOCOL

ESTACION X EL BOSQUE MUNICIPIO DE USME PERIODO 1963 - 1979 COEF DE CORRECCION 1.000

ESTACION Y LA REGADERA MUNICIPIO DE USME PERIODO 1963 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	CUY	RAN	ECAN	P = -4. I R : 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1979	1557.	1003.	0.984	-0.016					+				
2	1978	3310.	1840.	1.328	0.251					I +				
3	1977	5439.	2892.	1.585	0.736					I	+			
4	1976	7821.	3864.	1.288	1.065					I		+		
5	1975	9170.	5004.	0.750	0.788					I	+			
6	1974	10494.	5953.	0.884	0.681					I	+			
7	1973	11762.	6975.	0.787	0.469					I	+			
8	1972	13163.	8059.	0.820	0.279					I +				
9	1971	14632.	9243.	0.787	0.032					+				
10	1970	15925.	10409.	0.703	-0.305				+	I				
11	1969	17368.	11417.	0.904	-0.395				+	I				
12	1968	18868.	12340.	0.942	-0.453				+	I				
13	1967	20749.	13548.	1.076	-0.371				+	I				
14	1966	22695.	14574.	1.168	-0.181					+I				
15	1965	24704.	15547.	1.309	0.112					I+				
16	1964	26074.	16471.	0.939	0.057					+				
17	1963	27550.	17486.	0.944	0.0					+				
						P = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CLX	CUY	RAN	ECAN	I R : 0.6	I 0.7	I 0.8	I 0.9	I 1.0	I 1.1	I 1.2	I 1.3	I 1.4

PROMEDIOS = 1620.6 1027.4

RAZONES PROMEDIOS Y/X = 0.634

X/Y = 1.577

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2120d3	EL BOSQUE	USME	+04 28 32	+074 05 06	3120 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1968	9.6	88.9	36.0	204.9	97.3	188.6	316.2	117.6	123.8	175.8	133.6	25.6	1519.9	1968
1969	86.1	56.0	33.2	169.9	184.6	191.3	213.7	155.0	110.0	129.9	73.6	40.1	1443.4	1969
1970	48.6	75.8	64.3	95.3	156.1	151.8	156.0	106.5	130.6	190.9	90.6	25.8	1292.4	1970
1971	48.1	51.4	97.7	155.0	178.3	146.7	226.6	148.2	117.0	105.3	122.0	72.7	1469.0	1971
1972	126.9	57.9	79.0	125.9	169.1	170.1	160.0	134.1	82.2	120.8	128.7	26.2	1400.9	1972
1973	24.9	2.4	24.6	84.2	145.9	180.5	127.5	183.8	165.8	113.7	106.5	106.6	1268.4	1973
1974	36.9	87.3	80.3	131.2	154.1	115.3	192.7	120.9	81.0	121.5	195.2	7.2	1323.6	1974
1975	20.8	59.8	86.0	68.9	117.4	199.0	122.1	185.1	73.7	161.7	134.9	119.7	1349.1	1975
1976														1976
1977														1977
1978														1978
1979	15.1	4.0	73.8	300.0	111.5	215.3	113.5	161.5	104.0	184.8	221.2	52.1	1556.8	1979

NUMERO DE ANOS	9	9	9	9	9	9	9	9	9	9	9	9	9
VALOR MAXIMO	126.9	88.9	97.7	300.0	189.1	215.3	318.2	185.1	165.8	190.9	221.2	119.7	1556.8
MEDIANA	36.9	57.9	73.8	131.2	154.1	180.5	160.0	148.2	110.0	129.9	128.7	40.1	1400.9
VALOR MINIMO	9.6	2.4	24.6	68.9	97.3	115.3	113.5	106.5	73.7	105.3	73.6	7.2	1268.4
PROMEDIOS	48.3	53.7	63.9	148.4	148.3	173.2	181.1	145.9	109.8	144.9	134.3	52.9	1402.6

TOTAL DE LOS PROMEDIOS MENSUALES = 1402.6

PORCENTAJES	3.3	3.8	4.6	10.6	10.6	12.3	12.9	10.4	7.8	10.3	9.6	3.8	

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 23. INDICE DE ARNOLDUS = 136.

DEV. ESTANDAR	38.1	31.7	26.2	71.3	33.3	30.8	65.3	28.3	29.0	33.2	47.0	39.0	101.8
COEF. VARIACION	0.822	0.590	0.410	0.481	0.225	0.178	0.360	0.194	0.264	0.229	0.350	0.738	0.073
COEF. ASIMETRIA	1.393	-0.838	-0.471	1.215	-0.292	-0.663	1.162	0.135	0.629	0.313	0.662	0.823	0.181

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212509	LA REGADERA	USME	+04 24 00	+074 09 00	3050 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1930	-9.9	-9.9	-9.9	56.3	41.7	135.6	120.8	62.8	58.3	96.2	33.2	36.1	-9.9
1931	3.6	81.4	31.2	93.8	87.1	141.5	100.1	118.0	113.2	27.2	137.7	60.3	1015.5
1932	72.7	22.6	58.1	112.4	197.9	112.2	136.3	115.8	69.2	55.6	64.5	12.7	1074.0
1933	5.7	22.6	35.9	114.8	174.6	149.1	109.1	103.4	60.8	150.8	160.3	73.2	1200.3
1934	33.0	8.7	41.2	88.5	146.9	133.8	189.9	109.9	102.7	103.1	90.3	26.4	1074.4
1935	31.7	44.4	25.4	98.7	135.5	165.2	233.1	108.3	98.5	69.4	128.5	27.0	1165.7
1936	7.7	9.1	45.2	97.5	122.3	96.0	85.9	118.8	56.2	91.1	53.3	13.0	796.1
1937	67.3	22.8	31.7	41.8	150.7	144.9	136.1	100.1	66.6	-9.9	-9.9	-9.9	-9.9
1938	13.2	17.1	43.4	370.8	157.0	120.6	129.9	72.1	54.8	141.1	106.0	112.8	1338.8
1939	34.7	8.0	40.0	71.6	132.8	136.2	143.2	89.5	83.8	120.6	80.9	31.9	973.2
1940	11.4	17.6	21.7	116.7	119.9	112.9	93.4	151.4	43.9	134.8	100.1	41.1	966.9
1941	24.0	8.8	57.3	72.9	88.6	92.5	81.9	91.6	75.2	113.9	53.5	8.9	728.7
1942	4.1	39.9	53.9	91.8	161.0	130.4	91.6	106.1	36.1	122.9	71.3	50.7	959.8
1943	29.0	32.8	100.7	108.5	154.2	153.3	104.8	147.0	91.8	81.4	62.2	124.7	1190.4
1944	40.8	25.0	41.4	119.7	236.2	170.9	100.4	60.0	62.4	132.5	60.8	14.9	1065.0
1945	8.6	10.4	11.8	56.6	203.4	167.9	127.5	86.8	31.5	43.5	73.9	18.9	860.8
1946	16.6	16.3	44.3	71.7	118.2	97.3	121.5	132.5	16.8	40.5	91.6	46.2	813.6
1947	28.1	32.2	28.1	49.4	61.1	141.4	169.3	83.4	125.0	176.8	35.8	14.6	945.4
1948	22.1	28.3	33.0	106.0	94.7	115.0	84.2	97.5	60.3	76.6	56.9	13.2	787.8
1949	6.7	6.0	42.7	113.7	138.5	141.7	85.1	86.4	100.1	94.0	34.7	30.4	880.0
1950	79.8	68.1	61.8	92.8	150.2	153.7	128.0	102.5	122.6	86.9	82.8	42.3	1171.5
1951	13.4	83.2	76.3	110.8	124.6	95.6	153.2	64.6	62.4	63.3	77.2	17.7	962.3
1952	26.9	17.6	55.7	134.8	159.6	108.3	154.6	88.5	64.5	61.1	123.9	39.1	1028.6
1953	6.7	39.2	51.4	102.7	123.9	168.7	122.3	58.0	103.0	152.6	69.0	25.3	1022.8
1954	26.2	37.9	10.4	104.2	149.6	186.8	140.2	128.7	108.4	216.0	91.1	56.7	1256.2
1955	36.8	19.5	71.2	97.1	78.9	121.4	162.7	73.3	100.3	123.9	139.8	38.4	1063.3
1956	44.0	72.9	50.1	80.3	126.9	151.8	127.7	111.4	164.2	164.3	34.1	43.1	1210.8
1957	3.5	18.7	47.1	89.6	159.8	108.6	166.6	89.1	86.3	85.5	42.4	15.2	916.4
1958	5.6	24.4	95.2	87.4	74.3	77.3	80.3	134.6	42.8	66.9	49.4	36.2	774.4
1959	0.0	5.9	26.9	66.9	115.6	190.5	198.9	103.7	105.0	91.3	95.8	25.7	1026.2
1960	18.8	46.1	38.8	84.2	130.9	86.3	110.0	86.0	90.9	83.5	49.8	56.3	883.6
1961	5.5	34.1	41.3	123.0	79.0	215.7	156.9	100.7	59.7	153.7	123.7	6.4	1099.7
1962	7.1	7.6	94.5	67.3	135.0	165.6	164.6	147.8	75.5	83.4	101.4	17.6	1071.4
1963	11.4	17.7	17.1	126.9	193.8	147.5	94.8	131.8	73.8	62.8	92.2	24.5	994.3
1964	0.0	15.9	6.4	113.4	124.7	142.3	144.6	103.0	87.4	61.0	76.5	49.5	924.7
1965	22.6	5.3	30.5	92.4	159.9	100.5	136.2	98.0	55.7	125.3	121.4	24.3	972.5
1966	16.3	16.7	112.5	58.1	53.5	105.0	121.5	130.0	105.2	62.4	159.9	93.5	1038.6
1967	17.7	1.9	57.2	106.9	164.0	171.0	180.4	126.4	54.3	76.1	105.1	34.8	1095.8
1968	6.9	71.5	26.0	101.7	87.7	148.2	178.8	74.6	80.1	126.5	96.9	17.9	1022.8
1969	39.5	91.5	107.9	66.0	62.1	142.0	96.2	104.7	81.3	131.0	43.8	42.3	1008.3
1970	40.8	56.5	54.2	98.2	170.5	161.0	106.3	106.4	108.6	191.2	55.5	16.5	1165.7
1971	48.9	32.6	88.1	118.8	162.0	162.5	156.4	129.5	95.6	63.3	77.6	48.8	1184.1
1972	66.9	27.9	68.0	125.4	156.0	136.4	128.2	106.7	62.1	52.3	86.7	26.9	1063.5
1973	11.4	3.1	22.1	60.2	81.5	136.0	118.4	180.1	163.3	75.3	104.5	64.3	1022.2
1974	34.5	35.9	39.0	103.4	139.9	96.5	140.8	103.7	69.3	75.8	101.7	8.3	949.2
1975	10.0	42.4	68.9	57.6	183.7	174.2	121.6	152.1	109.4	31.8	81.6	106.6	1139.9
1976	18.1	18.5	62.8	175.1	150.7	171.7	180.5	88.0	73.5	147.3	63.8	22.6	1172.6
1977	0.0	31.3	23.6	68.9	67.0	110.1	125.1	92.3	99.4	96.8	105.4	31.3	851.2
1978	9.9	29.5	43.3	105.5	130.5	162.5	90.5	92.0	69.5	72.2	14.0	17.7	837.1
1979	9.0	9.0	43.6	129.1	109.6	152.1	60.7	103.2	84.5	142.2	118.6	41.7	1003.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de la Hacienda
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X LA REGADERA MUNICIPIO DE USME PERIODO 1930 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1003.3	1003.3	1003.3	-0.096	-0.013				*			
2	1978	837.1	1840.4	920.2	-1.213	-0.189				+I			
3	1977	851.2	2691.6	897.2	-1.210	-0.352			+	I			
4	1976	1172.6	3864.2	966.0	1.143	-0.198				+I			
5	1975	1139.9	5004.1	1000.8	0.504	-0.077				+			
6	1974	949.2	5953.3	992.2	-0.492	-0.143				+I			
7	1973	1022.2	5975.5	996.5	0.042	-0.137				+			
8	1972	1083.5	8059.0	1007.4	0.491	-0.071				+			
9	1971	1184.1	9243.1	1027.0	1.228	0.094				+			
10	1970	1165.7	10408.8	1040.9	1.093	0.240				I +			
11	1969	1008.3	11417.1	1037.9	-0.060	0.232				+			
12	1968	1022.8	12439.9	1036.7	0.047	0.239				+			
13	1967	1095.8	13535.7	1041.2	0.581	0.317				I +			
14	1966	1038.6	14574.3	1041.0	0.162	0.339				I +			
15	1965	972.5	15546.8	1036.5	-0.322	0.295				I +			
16	1964	924.7	16471.5	1029.5	-0.672	0.295				I +			
17	1963	994.3	17465.8	1027.4	-0.162	0.183				+I			
18	1962	1071.4	18537.2	1029.8	0.402	0.237				I +			
19	1961	1099.7	19636.9	1033.5	0.610	0.319				I +			
20	1960	883.6	20520.5	1026.0	-0.973	0.189				I+			
21	1959	1026.2	21546.7	1026.0	0.071	0.198				+I			
22	1958	774.4	22321.1	1014.6	-1.772	-0.040				+			
23	1957	916.4	23237.5	1010.3	-0.732	-0.138				+I			
24	1956	1210.8	24448.3	1018.7	1.423	0.053				+			
25	1955	1063.3	25511.6	1020.5	0.343	0.099				+			
26	1954	1256.2	26767.8	1029.5	1.755	0.335				I +			
27	1953	1022.8	27790.6	1029.3	0.047	0.341				+			
28	1952	1028.6	28819.2	1029.3	0.089	0.353				+			
29	1951	962.3	29781.5	1026.9	-0.396	0.300				I +			
30	1950	1171.5	30953.0	1031.8	1.135	0.452				I +			
31	1949	880.0	31833.0	1026.9	-0.999	0.318				I +			
32	1948	787.8	32620.8	1019.4	-1.674	0.093				+			
33	1947	945.4	33566.1	1017.2	-0.520	0.023				+			
34	1946	813.5	34379.6	1011.2	-1.486	-0.176				+I			
35	1945	860.9	35240.4	1006.9	-1.140	-0.330			+	I			
36	1944	1065.0	36305.4	1008.5	0.356	-0.282			+	I			
37	1943	1190.4	37495.8	1013.4	1.274	-0.111				+I			
38	1942	959.8	38455.6	1012.0	-0.415	-0.166				+I			
39	1941	728.7	39184.3	1004.7	-2.107	-0.450			+	I			
40	1940	966.9	40151.2	1003.8	-0.363	-0.498			+	I			
41	1939	973.2	41124.4	1003.0	-0.317	-0.541			+	I			
42	1938	1338.8	42463.2	1011.0	2.360	-0.224				+ I			
43	1936	796.1	43259.3	1006.0	-1.613	-0.440			+	I			
44	1935	1165.7	44425.0	1009.7	1.093	-0.294				+ I			
45	1934	1074.4	45499.4	1011.1	0.424	-0.237				+ I			
46	1933	1200.3	46699.7	1015.2	1.346	-0.056				+			
47	1932	1074.0	47773.7	1016.5	0.421	0.001				+			
48	1931	1015.5	48789.2	1016.4	-0.007	0.0				*			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

782 PROMEDIO DE LOS 48 ANOS = 1016.4
DESVIACION ESTANDAR = 136.6
COEFICIENTE DE VARIACION = 0.134

********** PRUEBAS DE SIMPLE MASA **********

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212509	LA REGADERA	USME	+04 24 26	+074 08 42	3000 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1930	-9.9	-9.9	-9.9	96.3	41.7	139.6	120.8	62.8	58.3	96.2	33.2	36.1	-9.9	1930
1931	3.6	81.4	31.2	93.8	87.1	141.9	100.1	118.0	113.2	27.2	197.7	80.3	1015.5	1931
1932	72.7	22.6	58.1	112.4	197.9	112.2	136.3	115.8	69.2	99.6	64.5	12.7	1074.0	1932
1933	5.7	22.6	35.9	114.8	174.6	149.1	109.1	103.4	60.8	190.8	160.3	73.2	1200.3	1933
1934	33.0	6.7	41.2	88.5	140.9	133.8	189.9	109.9	102.7	103.1	90.3	26.4	1074.4	1934
1935	31.7	44.4	25.4	98.7	135.5	165.2	233.1	108.3	98.5	69.4	126.5	27.0	1165.7	1935
1936	7.7	9.1	45.2	97.6	122.3	96.0	85.9	118.8	56.2	91.1	53.3	13.0	796.1	1936
1937	67.3	22.8	31.7	41.8	150.7	144.9	136.1	100.1	66.6	-9.9	-9.9	-9.9	-9.9	1937
1938	13.2	17.1	43.4	370.8	157.0	120.6	129.9	72.1	54.8	141.1	106.0	112.8	1338.8	1938
1939	34.7	8.0	40.0	71.6	132.8	136.2	143.2	89.5	83.8	120.6	80.9	31.9	973.2	1939
1940	11.4	17.6	21.7	116.7	119.9	112.9	93.4	151.4	43.9	134.6	100.1	41.1	966.9	1940
1941	24.0	8.8	57.3	72.9	88.6	52.5	81.9	91.6	75.2	113.9	53.5	8.5	728.7	1941
1942	4.1	39.9	53.9	91.8	161.0	130.4	91.6	106.1	36.1	122.9	71.3	50.7	959.8	1942
1943	29.0	32.8	100.7	108.5	154.2	153.3	104.8	147.0	91.8	81.4	62.2	124.7	1190.4	1943
1944	40.8	25.0	41.4	119.7	236.2	170.9	100.4	60.0	62.4	132.5	80.8	14.9	1065.0	1944
1945	8.6	10.4	11.8	56.6	203.4	187.9	127.5	86.8	31.5	43.5	73.9	18.9	860.8	1945
1946	16.6	16.3	44.3	71.7	118.2	97.3	121.5	132.5	16.8	40.5	91.6	46.2	813.5	1946
1947	28.1	32.2	28.1	49.4	61.1	141.4	169.3	83.4	125.0	176.8	35.8	14.8	945.4	1947
1948	22.1	28.3	33.0	106.0	94.7	115.0	84.2	97.5	60.3	76.6	56.9	13.2	787.6	1948
1949	6.7	6.0	42.7	113.7	138.5	141.7	85.1	86.4	100.1	94.0	34.7	30.4	880.0	1949
1950	79.8	68.1	61.8	92.8	150.2	153.7	128.0	102.5	122.6	86.5	82.8	42.3	1171.5	1950
1951	13.4	63.2	76.3	110.8	124.6	95.6	153.2	64.6	62.4	83.3	77.2	17.7	962.3	1951
1952	26.9	17.6	55.7	134.8	159.6	102.3	154.6	88.5	64.5	61.1	123.9	39.1	1028.6	1952
1953	6.7	39.2	51.4	102.7	123.9	168.7	122.3	58.0	103.0	152.6	69.0	25.3	1022.8	1953
1954	26.2	37.9	10.4	104.2	149.6	186.8	140.2	126.7	108.4	216.0	91.1	56.7	1256.2	1954
1955	36.8	19.5	71.2	97.1	78.9	121.4	162.7	73.3	100.3	123.9	139.8	38.4	1063.3	1955
1956	44.0	72.9	50.1	80.3	126.9	191.8	127.7	111.4	164.2	164.3	34.1	43.1	1210.8	1956
1957	3.5	18.7	47.1	89.6	159.8	108.6	166.6	89.1	86.3	89.5	42.4	15.2	916.4	1957
1958	5.6	24.4	95.2	87.4	74.3	77.3	80.3	134.6	42.8	66.9	49.4	36.2	774.4	1958
1959	0.0	5.9	26.9	66.9	118.6	190.5	198.9	103.7	105.0	91.3	95.8	25.7	1026.2	1959
1960	18.8	46.1	38.8	84.2	130.9	86.3	110.0	86.0	90.9	83.5	49.8	58.3	883.6	1960
1961	5.5	34.1	41.3	123.0	79.0	215.7	156.9	100.7	59.7	153.7	123.7	6.4	1099.7	1961
1962	7.1	7.6	94.5	67.3	135.0	169.6	164.6	147.8	75.5	83.4	101.4	17.6	1071.4	1962
1963	11.4	17.7	17.1	126.9	193.8	147.5	94.8	131.8	73.8	62.8	92.2	24.5	994.3	1963
1964	0.0	15.9	6.4	113.4	124.7	142.3	144.6	103.0	87.4	61.0	76.5	49.5	924.7	1964
1965	22.6	5.3	30.5	92.4	159.9	100.9	136.2	98.0	55.7	125.3	121.4	24.3	972.5	1965
1966	16.3	16.7	112.5	58.1	83.5	109.0	121.5	130.0	105.2	62.4	159.9	93.5	1038.6	1966
1967	17.7	1.9	57.2	106.9	164.0	171.0	160.4	126.4	84.3	76.1	105.1	34.8	1095.8	1967
1968	6.9	71.5	26.0	101.7	87.7	148.2	178.8	74.6	86.1	126.5	96.9	17.9	1022.8	1968
1969	39.5	91.5	107.9	66.0	62.1	142.0	96.2	104.7	81.3	131.0	43.8	42.3	1008.3	1969
1970	40.8	56.5	54.2	98.2	170.5	161.0	106.3	106.4	108.6	191.2	55.5	16.5	1165.7	1970
1971	48.9	32.6	88.1	118.8	162.0	162.5	156.4	129.5	95.6	63.3	77.6	48.8	1184.1	1971
1972	66.9	27.9	68.0	125.4	156.0	136.4	128.2	106.7	62.1	92.3	86.7	26.9	1083.5	1972
1973	11.4	3.1	22.1	60.2	81.5	138.0	118.4	180.1	163.3	75.3	104.5	64.3	1022.2	1973
1974	34.5	35.9	39.0	103.4	139.9	96.9	140.8	103.7	69.3	75.8	101.7	8.3	949.2	1974
1975	10.0	42.4	68.9	57.6	183.7	174.2	121.6	152.1	109.4	31.8	81.6	106.6	1139.9	1975
1976	18.1	18.5	62.8	175.1	150.7	171.7	160.5	88.0	73.5	147.3	63.8	22.6	1172.6	1976
1977	0.0	31.2	23.6	68.9	67.0	110.1	125.1	92.3	99.4	96.8	105.4	31.3	851.2	1977
1978	9.9	29.5	43.3	105.5	130.5	162.5	90.5	92.0	69.5	72.2	14.0	17.7	837.1	1978
1979	9.0	9.0	43.6	129.1	109.6	152.1	60.7	103.2	84.5	142.2	116.6	41.7	1003.3	1979

Ministerio de Hacienda y Crédito Público

*** CARACTERISTICAS PLUVIOMETRICAS MENSUALES Y ANUALES DE LA PAGINA ANTERIOR ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
NUMERO DE ANOS	49	49	49	50	50	50	50	50	50	49	49	49	48	
VALOR MAXIMO	79.8	91.5	112.5	370.8	236.2	215.7	233.1	180.1	164.2	216.0	160.3	124.7	1338.8	
CUARTIL SUPERIOR	33.8	36.5	59.9	113.4	159.6	162.5	154.6	118.8	100.3	131.6	104.8	47.5	1097.7	
MEDIANA	16.6	22.8	43.4	97.8	133.9	141.8	127.6	103.3	78.4	92.3	81.6	31.3	1022.5	
CUARTIL INFERIOR	7.0	13.1	30.8	71.7	94.7	112.2	100.4	88.5	60.8	73.7	56.2	17.7	935.0	
VALOR MINIMO	0.0	1.5	6.4	41.8	41.7	52.5	60.7	58.0	16.8	27.2	14.0	6.4	728.7	
PROMEDIOS	22.4	29.3	48.5	100.1	130.6	138.7	129.8	105.1	81.4	103.0	83.3	38.2	1016.4	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1010.4	
PORCENTAJES	2.2	2.9	4.8	9.9	12.9	13.7	12.8	10.4	8.1	10.2	8.2	3.8		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 19. INDICE DE ARNOLDUS = 102.

DEV. ESTANDAR	19.7	22.4	25.2	46.9	42.2	33.5	35.5	25.8	29.5	42.8	33.8	27.4	136.6	
COEF. VARIACION	0.880	0.764	0.519	0.469	0.323	0.241	0.273	0.246	0.363	0.416	0.406	0.718	0.134	
COEF. ASIMETRIA	1.266	1.220	0.812	4.008	-0.075	-0.181	0.525	0.512	0.569	0.607	0.281	1.547	-0.012	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212509	LA REGADERA	USME	+04 24 26	+074 08 42	3000 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	18.8	46.1	38.8	84.2	130.9	86.3	110.0	86.0	90.9	83.5	49.8	58.3	883.6	1960
1961	5.5	34.1	41.3	123.0	79.0	215.7	156.9	100.7	59.7	153.7	123.7	6.4	1099.7	1961
1962	7.1	7.6	94.5	67.3	135.0	169.6	164.6	147.8	75.5	83.4	101.4	17.6	1071.4	1962
1963	11.4	17.7	17.1	126.9	193.8	147.5	94.8	131.8	73.8	62.8	92.2	24.5	994.3	1963
1964	0.0	15.9	6.4	113.4	124.7	142.3	144.6	103.0	87.4	61.0	76.5	49.5	924.7	1964
1965	22.6	5.3	30.5	92.4	159.9	100.9	136.2	98.0	55.7	125.3	121.4	24.3	972.5	1965
1966	16.3	16.7	112.5	58.1	53.5	109.0	121.5	130.0	105.2	62.4	159.9	93.5	1038.6	1966
1967	17.7	1.9	57.2	100.9	164.0	171.0	180.4	126.4	54.3	76.1	105.1	34.8	1095.8	1967
1968	6.9	71.5	26.0	101.7	87.7	148.2	178.8	74.6	86.1	126.5	96.9	17.9	1022.8	1968
1969	39.5	91.5	107.9	66.0	62.1	142.0	96.2	104.7	81.3	131.0	43.8	42.3	1008.3	1969
1970	40.8	50.5	54.2	98.2	170.5	161.0	106.3	106.4	108.6	191.2	55.5	16.5	1165.7	1970
1971	48.9	32.6	88.1	118.8	162.0	162.5	156.4	129.5	95.6	63.3	77.6	48.8	1184.1	1971
1972	66.9	27.9	68.0	125.4	156.0	136.4	128.2	106.7	62.1	92.3	86.7	26.9	1083.5	1972
1973	11.4	3.1	22.1	60.2	81.5	138.0	118.4	180.1	163.3	75.3	104.5	64.3	1022.2	1973
1974	34.5	35.9	39.0	103.4	139.9	96.9	140.8	103.7	69.3	75.8	101.7	8.3	949.2	1974
1975	10.0	42.4	68.9	57.6	183.7	174.2	121.6	152.1	109.4	31.8	81.6	106.6	1139.9	1975
1976	18.1	18.5	62.8	175.1	150.7	171.7	180.5	88.0	73.5	147.3	63.8	22.6	1172.6	1976
1977	0.0	31.3	23.6	68.9	67.0	110.1	125.1	92.3	99.4	96.8	105.4	31.3	851.2	1977
1978	9.9	29.5	43.3	105.5	130.5	162.5	90.5	92.0	69.5	72.2	14.0	17.7	837.1	1978
1979	9.0	9.0	43.6	129.1	109.6	152.1	60.7	103.2	84.5	142.2	118.6	41.7	1003.3	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	66.9	91.5	112.5	175.1	193.8	215.7	180.5	180.1	163.3	191.2	159.9	106.6	1184.1	
CUARTIL SUPERIOR	28.5	39.1	68.4	120.9	160.9	166.0	156.6	129.8	97.5	128.8	105.2	49.1	1097.7	
MEDIANA	13.8	28.7	43.4	102.5	132.9	147.8	126.6	104.2	82.9	83.4	94.5	29.1	1022.5	
CUARTIL INFERIOR	8.0	12.4	28.3	68.1	84.6	123.2	108.1	95.1	69.4	67.7	70.1	17.8	960.8	
VALOR MINIMO	0.0	1.9	6.4	57.6	53.5	86.3	60.7	74.6	54.3	31.8	14.0	6.4	837.1	
PROMEDIOS	19.8	29.8	52.3	99.1	127.1	144.5	130.6	112.8	85.3	97.7	89.0	37.7	1026.0	
PORCENTAJES	1.9	2.9	5.1	9.7	12.4	14.1	12.7	11.0	8.3	9.5	8.7	3.7		

TRIMESTRE MAS LLUVIOSO MAY JUN JUL **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 20. INDICE DE ARNOLDUS = 104.

INDICE DE IRREGULARIDAD INTERANUAL =1.30

DEV. ESTANDAR	17.6	23.4	30.2	30.5	42.5	31.7	32.8	26.0	25.0	40.3	32.9	26.7	103.2
COEF. VARIACION	0.892	0.787	0.577	0.307	0.335	0.219	0.251	0.230	0.293	0.413	0.370	0.708	0.101

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1196.	1158.	1113.	1026.	939.	894.	856.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.310	1.145	0.624	0.479	-0.331	-0.070	-0.136	1.028	1.565	0.685	-0.257	1.332	-0.227

IMPRESO EN COLOMBIA POR DANEMARCO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211924	OSPINA PEREZ	VENECIA	+04 05 00	+074 25 00	1450 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1972	-9.9	-9.9	243.0	230.0	140.0	69.0	57.0	116.0	33.0	125.0	130.0	41.0	-9.9
1973	11.0	11.0	84.0	153.0	111.0	76.0	52.0	124.0	115.0	125.0	163.0	138.0	1163.0
1974	85.0	143.0	215.0	106.0	74.0	46.0	62.0	51.0	174.0	175.0	171.0	8.0	1308.0
1975	24.0	132.0	197.0	147.0	192.0	128.0	192.0	35.0	104.0	177.0	158.0	145.0	1631.0
1976	47.0	91.0	153.0	96.0	105.0	56.0	55.0	15.0	71.0	259.0	264.0	187.0	1399.0
1977	39.0	42.0	124.0	190.0	87.0	149.0	83.0	66.0	196.0	207.0	302.0	151.0	1636.0
1978	77.0	91.0	287.0	439.0	204.0	241.0	120.0	115.0	142.0	259.0	229.0	92.0	2296.0
1979	32.0	91.0	344.0	360.0	205.0	254.0	180.0	286.0	154.0	338.0	-9.9	77.0	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

ESTACION X OSPINA PEREZ MUNICIPIO DE VENECIA PERIODO 1972 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1978	2296.0	2296.0	2296.0	1.811	0.460				I +		.	
2	1977	1636.0	3932.0	1966.0	0.160	0.501				I. +			
3	1976	1399.0	5331.0	1777.0	-0.433	0.391			.	I +			
4	1975	1631.0	6962.0	1740.5	0.147	0.428				I. +			
5	1974	1308.0	8270.0	1654.0	-0.661	0.260			.	I +			
6	1973	1163.0	9433.0	1572.2	-1.024	0.0			.	+			
N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 6 ANOS = 1572.2
DEVIACION ESTANDAR = 399.7
COEFICIENTE DE VARIACION = 0.254

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212086	LA FORTUNA	VILLAPINZON	+05 17 00	+073 35 00	2880 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1963	14.5	48.0	16.0	102.0	182.5	54.5	86.5	59.0	17.0	90.5	95.0	6.0	771.5
1964	0.0	2.0	0.0	104.0	149.5	102.0	81.0	41.0	65.0	65.0	49.5	29.0	688.0
1965	12.0	11.5	11.5	195.0	145.0	54.0	93.0	70.0	30.0	134.0	98.0	17.0	871.0
1966	5.5	29.0	121.5	37.5	39.5	73.5	57.0	53.5	48.5	62.0	134.5	93.5	755.5
1967	12.0	1.5	89.1	155.4	129.3	117.5	56.2	85.9	59.8	45.7	128.2	53.2	933.8
1968	23.9	24.9	38.5	166.2	43.9	79.3	73.6	70.3	76.3	81.0	89.5	35.6	803.0
1969	62.0	14.0	6.1	140.5	91.4	88.9	63.8	56.6	24.5	196.2	74.0	10.2	798.2
1970	54.1	53.7	18.7	30.4	127.7	60.0	78.5	64.1	74.6	86.2	84.8	14.4	747.2
1971	39.8	16.7	66.7	76.9	114.0	71.9	93.2	72.1	58.4	56.5	45.1	47.8	759.1
1972	69.8	33.3	65.2	213.3	83.2	82.1	62.6	70.2	42.8	36.1	62.9	10.6	832.1
1973	2.0	7.3	20.0	69.1	83.2	76.0	73.0	103.1	125.6	54.3	89.0	44.1	746.7
1974	23.0	65.1	64.9	72.8	69.1	64.2	63.3	34.5	85.0	71.7	107.7	3.7	725.0
1975	9.1	70.2	56.0	62.9	84.8	86.4	70.7	78.5	61.9	113.2	56.3	87.4	837.4
1976	10.8	26.8	119.8	71.7	106.6	94.6	59.0	48.2	84.8	111.2	61.4	34.8	829.7
1977	0.0	2.6	24.4	111.6	52.6	61.5	65.9	61.7	75.1	64.1	140.0	16.5	676.0
1978	0.6	29.5	31.5	154.0	81.9	67.0	60.5	53.6	53.2	68.0	31.8	38.2	669.8
1979	2.1	28.2	19.2	68.0	64.8	38.5	44.9	41.9	39.0	71.7	55.5	33.8	507.6

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-OBSTCN *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DAVARANJO

ESTACION X LA FORTUNA MUNICIPIO DE VILLAPINZON PERIODO 1963 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. -2. -1. 0.0 +1. +2. +3.
1	1979	507.6	507.6	507.6	-2.647	-0.334	
2	1978	669.8	1177.4	588.7	-0.558	-0.455	
3	1977	676.0	1853.4	617.8	-0.654	-0.567	
4	1976	829.7	2683.1	670.8	0.706	-0.478	
5	1975	837.4	3520.5	704.1	0.786	-0.379	
6	1974	725.0	4245.5	707.6	-0.384	-0.427	
7	1973	746.7	4992.2	713.2	-0.158	-0.447	
8	1972	832.1	5824.3	728.0	0.731	-0.355	
9	1971	759.1	6583.4	731.5	-0.025	-0.359	
10	1970	747.2	7330.6	733.1	-0.153	-0.378	
11	1969	798.2	8128.8	739.0	0.376	-0.330	
12	1968	803.0	8931.8	744.3	0.428	-0.276	
13	1967	933.8	9865.6	758.9	1.790	-0.051	
14	1966	755.5	10621.1	758.6	-0.066	-0.059	
15	1965	871.0	11492.1	766.1	1.136	0.084	
16	1964	688.0	12180.1	761.3	-0.769	-0.013	
17	1963	771.5	12951.6	761.9	0.100	0.0	

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. -2. -1. 0.0 +1. +2. +3.

PROMEDIO DE LOS 17 ANOS = 761.9
DEVIACION ESTANDAR = 96.1
COEFICIENTE DE VARIACION = 0.126

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2120d6	LA FORTUNA	VILLAPINZON	+05 16 57	+073 35 06	2880 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1963	14.5	48.0	16.0	102.0	182.5	54.5	86.5	59.0	17.0	90.5	95.0	6.0	771.5	1963
1964	3.0	2.0	3.0	104.0	149.5	102.0	81.0	41.0	65.0	65.0	49.5	29.0	688.0	1964
1965	12.0	11.5	11.5	195.0	145.0	54.0	93.0	70.0	30.0	134.0	96.0	17.0	871.0	1965
1966	5.5	29.0	121.5	37.5	39.5	73.5	57.0	53.5	48.5	62.0	134.5	93.5	755.5	1966
1967	12.0	1.5	89.1	155.4	129.3	117.5	56.2	85.9	59.8	45.7	128.2	53.2	933.8	1967
1968	23.9	24.9	38.5	166.2	43.9	79.3	73.6	70.3	76.3	81.0	89.5	35.6	803.0	1968
1969	62.0	14.0	6.1	140.5	91.4	58.9	63.8	56.6	24.5	196.2	74.0	10.2	798.2	1969
1970	54.1	53.7	18.7	30.4	127.7	60.0	78.5	64.1	74.6	86.2	84.8	14.4	747.2	1970
1971	39.8	16.7	66.7	76.9	114.0	71.9	93.2	72.1	58.4	56.5	49.1	47.8	759.1	1971
1972	69.8	33.3	65.2	213.3	83.2	82.1	62.6	70.2	42.8	36.1	62.9	10.6	832.1	1972
1973	2.0	7.3	20.0	69.1	83.2	76.0	73.0	103.1	125.6	54.3	89.0	44.1	746.7	1973
1974	23.0	65.1	64.9	72.8	69.1	64.2	63.3	34.5	85.0	71.7	107.7	3.7	725.0	1974
1975	9.1	70.2	56.0	62.9	84.8	86.4	70.7	78.5	61.9	113.2	56.3	87.4	837.4	1975
1976	10.8	20.8	119.8	71.7	106.6	94.6	59.0	48.2	84.8	111.2	61.4	34.8	829.7	1976
1977	0.0	2.6	24.4	111.6	52.6	61.5	65.9	61.7	75.1	64.1	140.0	16.5	676.0	1977
1978	0.6	29.5	31.5	154.0	81.9	67.0	60.5	53.6	53.2	68.0	31.8	38.2	669.8	1978
NUMERO DE ANOS	16	16	16	16	16	16	16	16	16	16	16	16	16	
VALOR MAXIMO	69.8	70.2	121.5	213.3	182.5	117.5	93.2	103.1	125.6	196.2	140.0	93.5	933.8	
CUARTIL SUPERIOR	31.8	40.6	65.9	154.7	128.5	84.2	79.8	71.2	75.7	100.8	102.8	45.9	830.9	
MEDIANA	12.0	25.6	35.0	103.0	82.1	72.7	68.3	62.9	60.8	69.8	86.9	31.9	765.3	
CUARTIL INFERIOR	3.8	9.4	17.3	70.4	75.5	60.8	61.5	53.5	45.6	59.3	58.8	12.5	735.8	
VALOR MINIMO	0.0	1.5	0.0	30.4	39.5	54.0	56.2	34.5	17.0	36.1	31.8	3.7	669.8	
PROMEDIOS	21.2	27.3	46.9	110.2	99.0	75.2	71.1	63.9	61.4	83.5	84.2	33.9	777.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		777.7	
PORCENTAJES	2.7	3.5	6.0	14.2	12.7	9.7	9.1	8.2	7.9	10.7	10.8	4.4		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 76.

DEV. ESTANDAR	22.9	22.1	38.5	55.1	40.3	18.0	12.3	17.0	26.8	39.8	32.5	26.9	72.6
COEF. VARIACION	1.081	0.809	0.821	0.500	0.407	0.239	0.173	0.267	0.436	0.477	0.386	0.796	0.093
COEF. ASIMETRIA	1.150	0.692	0.800	0.367	0.369	0.962	0.642	0.483	0.480	1.660	0.249	1.105	0.371

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212043	VILLAPINZON	VILLAPINZON	+05 13 00	+073 36 00	2700 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1951	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	98.0	42.7	37.5	-9.9	69.5	10.7	-9.9
1952	29.1	18.3	35.8	140.7	83.3	52.3	85.0	87.3	34.6	81.7	115.3	67.6	871.0
1953	20.9	18.7	71.1	48.1	96.2	73.4	97.6	62.9	65.2	125.8	67.5	65.1	812.5
1954	24.8	12.1	10.9	48.0	18.1	43.8	108.7	60.5	26.6	176.1	98.4	41.7	669.7
1955	32.5	48.0	91.9	77.7	79.9	66.5	82.8	30.7	48.5	114.8	99.4	80.6	855.3
1956	39.9	56.5	92.1	25.5	56.0	119.6	59.6	80.4	71.1	134.9	33.2	83.9	852.7
1957	0.0	57.1	68.4	34.3	157.6	63.6	90.1	70.6	35.3	126.3	78.0	39.2	820.5
1958	15.2	7.3	50.4	53.3	51.4	60.0	71.5	75.0	19.0	59.4	56.2	67.4	586.1
1959	10.4	4.3	36.7	27.9	101.3	59.3	71.1	78.6	37.9	156.8	74.6	27.0	685.9
1960	8.4	23.0	42.2	52.1	50.6	42.9	82.8	106.6	82.2	93.4	22.2	69.2	675.6
1961	15.1	0.0	44.1	61.1	24.7	62.3	55.0	52.2	31.2	108.2	104.5	7.7	586.1
1962	30.8	6.0	49.4	30.1	94.9	79.4	61.8	45.8	26.4	78.6	53.0	26.4	582.6
1963	12.5	27.5	6.3	77.5	185.6	67.6	93.2	72.8	21.6	51.2	93.8	24.6	734.2
1964	0.0	0.0	1.0	64.4	97.2	61.2	57.6	34.8	48.8	42.6	46.8	46.0	500.4
1965	10.1	4.5	16.3	138.4	83.5	58.2	103.0	71.8	27.0	112.6	113.8	12.3	751.5
1966	2.5	29.2	91.4	22.5	19.2	58.5	50.9	42.6	24.9	47.0	119.6	60.6	568.9
1967	15.5	6.6	101.2	118.9	72.6	117.7	46.0	86.3	62.9	49.3	125.4	28.2	830.6
1968	14.8	46.0	14.7	147.7	29.8	114.6	95.9	67.8	63.3	67.5	56.3	10.2	728.6
1969	87.5	6.6	7.3	110.0	60.0	61.2	70.7	64.7	16.7	216.4	55.1	9.0	771.2
1970	44.0	72.8	17.3	27.0	103.2	58.4	68.0	51.4	66.2	158.4	62.7	14.2	743.6
1971	44.8	6.9	47.1	60.4	125.9	52.7	94.5	59.0	56.8	46.1	36.4	62.0	692.6
1972	43.5	22.2	80.8	43.2	16.6	13.6	95.8	59.5	52.9	82.2	67.7	22.9	600.9
1973	3.0	16.0	6.7	80.9	81.3	59.5	60.9	89.3	102.6	59.5	92.6	44.1	696.8
1974	23.1	21.2	72.3	80.8	58.0	66.7	51.2	40.2	38.1	84.9	66.4	1.8	604.7
1975	5.4	48.4	30.0	52.0	54.8	67.0	78.4	51.2	62.8	89.4	52.1	107.0	698.5
1976	7.6	27.7	84.3	83.2	88.8	110.6	88.7	45.5	82.2	81.1	102.2	58.1	860.0
1977	0.8	3.7	26.7	106.5	43.5	71.6	60.8	81.8	71.6	18.0	103.8	15.6	604.4
1978	0.9	31.8	41.3	150.0	77.2	67.4	-9.9	96.8	-9.9	-9.9	41.9	18.9	-9.9
1979	3.6	18.8	66.2	139.7	85.2	104.3	62.0	39.1	30.0	204.1	123.8	72.2	949.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAN/O

ESTACION X VILLAPINZON MUNICIPIO DE VILLAPINZON PERIODO 1951 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	949.0	949.0	949.0	2.038	0.325				I +		•	
2	1977	604.4	1553.4	776.7	-0.577	0.169			•	I+			
3	1976	860.0	2413.4	804.5	1.255	0.370				I +	•		
4	1975	698.5	3111.9	778.0	-0.154	0.346				•I +			
5	1974	604.7	3716.6	743.3	-0.574	0.190			•	I+			
6	1973	696.8	4413.4	735.6	-0.165	0.163				•I+			
7	1972	600.9	5014.3	716.3	-1.007	0.003			•	+			
8	1971	692.6	5706.9	713.4	-0.205	-0.030				•+			
9	1970	743.6	6450.5	716.7	0.241	0.008				+ •			
10	1969	771.2	7221.7	722.2	0.482	0.085				+ •			
11	1968	728.6	7950.3	722.8	0.110	0.103				I+			
12	1967	830.6	8780.9	731.7	1.002	0.263				I +	•		
13	1966	568.9	9349.8	719.2	-1.287	0.057			•	+			
14	1965	751.5	10101.3	721.5	0.310	0.107				I+ •			
15	1964	500.4	10601.7	706.8	-1.887	-0.195			•	+I			
16	1963	734.2	11335.9	708.5	0.155	-0.169				+I •			
17	1962	582.6	11918.5	701.1	-1.168	-0.356			•	+ I			
18	1961	586.1	12504.6	694.7	-1.137	-0.537			•	+ I			
19	1960	675.8	13180.2	693.7	-0.354	-0.594				+ • I			
20	1959	685.9	13866.1	693.3	-0.264	-0.636				+ • I			
21	1958	586.1	14452.2	688.2	-1.137	-0.817			•	+ I			
22	1957	820.5	15272.7	694.2	0.514	-0.672				+ I	•		
23	1956	852.7	16125.4	701.1	1.195	-0.481				+ I	•		
24	1955	855.3	16980.7	707.5	1.218	-0.286				+ I	•		
25	1954	669.7	17650.4	706.0	-0.406	-0.351				•+ I			
26	1953	812.5	18462.9	710.1	0.644	-0.216				+ I	•		
27	1952	871.0	19333.9	716.1	1.355	0.0				+	•		

N	AN	T A	CU	MOY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 27 ANOS = 716.1

DEVIACION ESTANDAR = 114.3

COEFICIENTE DE VARIACION = 0.160

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212043	VILLAPINZON	VILLAPINZON	+05 12 51	+073 36 12	2700 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	15.2	7.3	50.4	53.3	51.4	60.0	71.5	75.0	19.0	59.4	56.2	67.4	586.1	1958
1959	10.4	4.3	36.7	27.9	101.3	59.3	71.1	78.6	37.9	156.8	74.6	27.0	685.9	1959
1960	8.4	23.0	42.2	52.1	50.6	42.9	82.8	106.6	82.2	93.4	22.2	69.2	675.6	1960
1961	15.1	0.0	44.1	61.1	24.7	82.3	55.0	52.2	31.2	108.2	104.5	7.7	586.1	1961
1962	30.8	6.0	49.4	30.1	54.9	79.4	61.8	45.8	26.4	78.6	53.0	26.4	582.6	1962
1963	12.5	27.5	6.3	77.5	185.6	67.6	93.2	72.8	21.6	51.2	93.8	24.6	734.2	1963
1964	0.0	0.0	1.0	64.4	57.2	61.2	57.6	34.8	48.8	42.6	46.8	46.0	500.4	1964
1965	10.1	4.5	16.3	138.4	83.5	58.2	103.0	71.8	27.0	112.6	113.8	12.3	751.5	1965
1966	2.5	29.2	91.4	22.5	15.2	58.5	50.9	42.6	24.9	47.0	119.6	60.6	568.9	1966
1967	15.5	6.6	101.2	118.9	72.6	117.7	46.0	86.3	62.9	49.3	125.4	28.2	830.6	1967
1968	14.8	46.0	14.7	147.7	29.8	114.6	95.9	67.8	63.3	67.5	56.3	10.2	728.6	1968
1969	87.5	6.6	7.3	110.0	60.0	61.2	76.7	64.7	16.7	216.4	55.1	9.0	771.2	1969
1970	44.0	72.8	17.3	27.0	103.2	58.4	68.0	51.4	66.2	158.4	62.7	14.2	743.6	1970
1971	44.8	6.9	47.1	60.4	125.9	52.7	54.5	59.0	56.8	46.1	36.4	62.0	692.6	1971
1972	43.5	22.2	80.8	43.2	16.6	13.6	55.8	59.5	52.9	82.2	67.7	22.9	600.9	1972
1973	3.0	16.0	6.7	80.9	81.3	59.9	60.9	89.3	102.6	59.5	92.6	44.1	696.8	1973
1974	23.1	21.2	72.3	80.8	58.0	66.7	51.2	40.2	38.1	84.9	66.4	1.8	604.7	1974
1975	5.4	48.4	30.0	52.0	54.8	67.0	78.4	51.2	62.8	89.4	52.1	107.0	698.5	1975
1976	7.6	27.7	84.3	83.2	68.8	110.6	68.7	45.5	82.2	81.1	102.2	58.1	860.0	1976
1977	0.8	3.7	26.7	100.5	43.5	71.6	60.8	81.8	71.6	18.0	103.8	15.6	604.4	1977
1978	0.9	31.8	41.3	150.0	77.2	67.4	-9.9	56.8	-9.9	-9.9	41.9	18.9	-9.9	1978
1979	3.6	18.8	66.2	139.7	65.2	104.3	62.0	35.1	30.0	204.1	123.8	72.2	949.0	1979
NUMERO DE ANOS	22	22	22	22	22	22	21	22	21	21	22	22	21	
VALOR MAXIMO	87.5	72.8	101.2	150.0	185.6	117.7	103.0	106.6	102.6	216.4	125.4	107.0	949.0	
CUARTIL SUPERIOR	23.1	27.7	66.2	110.0	94.9	79.4	90.9	78.6	64.7	110.4	103.8	60.6	747.5	
MEDIANA	11.4	17.4	41.7	70.9	74.9	63.9	71.1	62.1	48.8	81.1	67.0	26.7	692.6	
CUARTIL INFERIOR	3.6	6.0	16.3	52.0	50.6	58.5	59.2	45.8	26.7	50.2	53.0	14.2	593.5	
VALOR MINIMO	0.0	0.0	1.0	22.5	16.6	13.6	46.0	34.8	16.7	18.0	22.2	1.8	500.4	
PROMEDIOS	18.2	19.6	42.4	78.5	73.0	69.8	72.7	64.2	48.8	90.8	75.9	36.6	688.2	
												TOTAL DE LOS PROMEDIOS MENSUALES =	690.5	
PORCENTAJES	2.6	2.8	6.1	11.4	10.6	10.1	10.5	9.3	7.1	13.1	11.0	5.3		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 12. INDICE DE ARREGUIS = 67.

DEV. ESTANDAR	20.9	16.4	29.9	41.1	38.8	24.4	17.4	20.1	24.2	52.9	30.9	27.6	109.3
COEF. VARIACION	1.152	0.938	0.704	0.523	0.532	0.349	0.239	0.313	0.496	0.583	0.407	0.754	0.159
COEF. ASIMETRIA	2.035	1.357	0.438	0.446	0.960	0.369	0.249	0.405	0.492	1.180	0.188	0.861	0.564

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212043	VILLAPINZON	VILLAPINZUN	+05 12 51	+073 36 12	2700 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	8.4	23.0	42.2	52.1	50.6	42.9	82.8	106.6	82.2	93.4	22.2	69.2	675.6	1960
1961	15.1	0.0	44.1	61.1	24.7	82.3	55.0	52.2	31.2	108.2	104.5	7.7	586.1	1961
1962	30.8	6.0	49.4	30.1	94.9	79.4	61.8	45.8	26.4	78.6	53.0	26.4	582.6	1962
1963	12.5	27.5	6.3	77.5	185.6	67.6	93.2	72.8	21.6	51.2	93.8	24.6	734.2	1963
1964	0.0	0.0	1.0	64.4	97.2	61.2	57.6	34.8	48.8	42.6	46.8	46.0	500.4	1964
1965	10.1	4.5	16.3	138.4	83.5	58.2	103.0	71.8	27.0	112.6	113.8	12.3	751.5	1965
1966	2.5	29.2	91.4	22.5	19.2	58.5	50.9	42.6	24.9	47.0	119.6	60.6	568.9	1966
1967	15.5	6.6	101.2	118.9	72.6	117.7	46.0	86.3	62.9	49.3	125.4	28.2	830.6	1967
1968	14.8	46.0	14.7	147.7	29.8	114.6	95.9	67.8	63.3	67.5	56.3	10.2	728.6	1968
1969	87.5	6.6	7.3	110.0	60.0	61.2	76.7	64.7	16.7	216.4	55.1	9.0	771.2	1969
1970	44.0	72.8	17.3	27.0	103.2	58.4	68.0	51.4	66.2	158.4	62.7	14.2	743.6	1970
1971	44.8	6.9	47.1	60.4	125.9	52.7	94.5	59.0	56.8	46.1	36.4	62.0	692.6	1971
1972	43.5	22.2	80.8	43.2	16.6	13.6	95.8	59.5	52.9	82.2	67.7	22.9	600.9	1972
1973	3.0	16.0	6.7	80.9	81.3	59.9	60.9	89.3	102.6	59.5	92.6	44.1	696.8	1973
1974	23.1	21.2	72.3	80.8	58.0	66.7	51.2	40.2	38.1	84.9	66.4	1.8	604.7	1974
1975	5.4	48.4	30.0	52.0	54.8	67.0	78.4	51.2	62.8	89.4	52.1	107.0	698.5	1975
1976	7.6	27.7	84.3	83.2	88.8	110.6	88.7	45.5	82.2	81.1	102.2	58.1	860.0	1976
1977	0.8	3.7	26.7	106.5	43.5	71.6	60.8	81.8	71.6	18.0	103.8	15.6	604.4	1977
1978	0.9	31.8	41.3	150.0	77.2	67.4	39.0	96.8	34.2	62.7	41.9	18.9	662.1	1978
1979	3.6	18.8	66.2	139.7	85.2	104.3	62.0	39.1	30.0	204.1	123.8	72.2	949.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	87.5	72.8	101.2	150.0	185.6	117.7	103.0	106.6	102.6	216.4	125.4	107.0	949.0	
CUARTIL SUPERIOR	26.9	28.4	69.2	114.4	91.8	80.8	90.9	77.3	64.7	100.8	104.1	59.3	747.5	
MEDIANA	11.3	20.0	41.7	79.1	74.9	66.8	65.0	59.3	50.8	79.8	67.0	25.5	694.7	
CUARTIL INFERIOR	3.3	6.3	15.5	52.0	47.0	58.4	56.3	45.6	28.5	50.2	52.5	13.2	602.6	
VALOR MINIMO	0.0	0.0	1.0	22.5	16.6	13.6	39.0	34.8	16.7	18.0	22.2	1.8	500.4	
PROMEDIOS	18.7	20.9	42.3	82.3	72.6	70.8	71.1	63.0	50.1	87.7	77.0	35.5	692.1	
PORCENTAJES	2.7	3.0	6.1	11.9	10.5	10.2	10.3	9.1	7.2	12.7	11.1	5.1		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 11. INDICE DE ARNOLDUS = 67.

INDICE DE IRREGULARIDAD INTERANUAL =1.51

DEV. ESTANDAR	21.9	18.7	31.3	41.0	40.0	25.4	19.3	20.7	24.0	51.9	32.2	28.1	109.8
COEF. VARIACION	1.172	0.894	0.740	0.498	0.551	0.358	0.272	0.329	0.478	0.593	0.418	0.789	0.159

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	873.	833.	785.	692.	600.	551.	511.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.901	1.232	0.435	0.315	0.997	0.238	0.149	0.594	0.461	1.406	0.091	0.967	0.518

IMPRESO EN COLOMBIA POR DANAGRAFO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212070	ATALA	VIOTA	+04 27 00	+074 32 00	1160 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1959	-9.9	-9.9	29.5	141.5	297.0	146.0	75.5	26.5	47.0	407.0	283.0	68.0	-9.9
1960	211.0	157.5	76.0	247.5	250.0	106.0	129.0	119.5	120.0	354.5	223.5	236.0	2230.5
1961	111.5	110.0	315.5	273.5	74.5	56.0	236.0	-9.9	96.0	351.5	-9.9	95.0	-9.9
1962	208.0	259.0	302.5	261.0	306.0	150.0	40.0	95.4	108.0	293.5	395.6	146.5	2565.5
1963	48.0	215.2	211.5	409.5	267.5	70.0	43.5	32.5	41.0	157.5	530.1	100.0	2126.3
1964	6.0	0.0	72.5	200.0	43.5	240.0	70.0	51.0	67.5	146.5	108.5	77.0	1084.5
1965	54.5	22.5	92.0	238.5	113.0	3.0	6.0	66.0	79.5	405.0	374.0	225.5	1679.5
1966	10.0	13.0	165.5	119.0	217.0	126.0	18.5	40.0	68.0	202.0	348.9	82.0	1409.9
1967	50.5	125.0	217.0	306.0	353.0	141.5	36.0	21.0	58.5	200.0	191.0	121.0	1820.5
1968	221.5	104.0	93.0	345.5	129.5	113.0	41.0	23.0	98.0	484.5	149.0	42.0	1844.0
1969	94.0	36.0	55.5	333.0	-9.9	-9.9	-9.9	60.0	126.5	451.5	159.0	34.5	-9.9
1970	82.0	124.0	16.5	268.0	228.6	56.5	-9.9	49.5	263.0	-9.9	-9.9	-9.9	-9.9
1971	402.0	247.0	176.5	141.5	180.0	134.0	50.0	106.0	90.5	317.5	286.0	180.0	2311.0
1972	356.0	91.0	126.0	338.0	126.0	129.0	0.0	29.5	81.5	201.0	280.0	78.0	1836.0
1973	30.0	24.0	108.0	155.0	114.0	73.0	131.0	114.5	110.0	232.0	426.0	277.0	1794.5
1974	111.0	288.0	146.0	220.0	113.0	63.0	49.0	-9.9	125.0	321.0	186.0	46.0	-9.9
1975	11.0	84.0	248.0	215.8	135.9	39.5	104.6	41.9	204.1	283.5	227.4	169.1	1764.8
1976	-9.9	89.5	427.5	240.5	114.8	30.0	-9.9	17.0	66.0	270.5	80.0	90.5	-9.9
1977	22.0	14.5	124.5	224.0	98.0	52.0	76.0	10.0	84.8	208.0	328.0	90.0	1371.8
1978	8.0	134.0	265.0	241.0	219.0	64.0	40.0	24.0	106.0	206.0	83.0	160.0	1550.0
1979	60.0	101.0	192.0	228.0	190.0	-9.9	64.0	124.0	138.0	266.0	360.0	34.0	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR LITOGRAFIA

ESTACION X GUARANI - EL PENON MUNICIPIO DE SIBATE PERIODO 1960 - 1979 COEF DE COPRECCION 1.000

ESTACION Y ATALA MUNICIPIO DE VIOTA PERIODO 1960 - 1979 COEF DE COPRECCION 1.000

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R = 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4
1	1978	885.	1550.	1.103	0.086					+	.			
2	1977	1529.	2520.	0.917	0.018				.	+				
3	1976	2609.	4587.	1.183	0.190					I+		.		
4	1975	3456.	5481.	0.912	0.106				.	I+				
5	1974	4406.	6317.	1.000	0.105					.+				
6	1971	5435.	10628.	0.861	-0.067				.	+				
7	1968	5500.	12472.	1.123	0.054					+	.			
8	1967	7553.	14233.	1.111	0.162					I+	.			
9	1966	8709.	15732.	1.585	0.604					I	+			.
10	1965	9643.	17332.	1.075	0.671					I	+.			
11	1963	10584.	19508.	0.855	0.506				.	I	+			
12	1962	11597.	22074.	0.763	0.182				.	I+				
13	1960	12576.	24304.	0.848	-0.000					+				

N	AN	CUX	CUY	RAN	PCAN	P = -4. I R = 0.6	-3. I 0.7	-2. I 0.8	-1. I 0.9	0.0 I 1.0	+1. I 1.1	+2. I 1.2	+3. I 1.3	+4. I 1.4

PROMEDIOS = 967.4 1869.6

RAZONES PROMEDIOS Y/X = 1.933

X/Y = 0.517

****
* PRUEBAS DE DOBLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212070	ATALA	VIOTA	+04 22 52	+074 31 24	1040 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1967	50.5	125.0	217.0	306.0	383.0	141.5	36.0	21.0	58.5	200.0	191.0	121.0	1820.5	1967
1968	221.5	104.0	93.0	345.5	129.5	113.0	41.0	23.0	98.0	484.5	149.0	42.0	1844.0	1968
1969	94.0	36.0	55.5	333.0	-9.9	-9.9	-9.9	60.0	126.5	451.5	166.0	34.5	-9.9	1969
1970	82.0	124.0	16.5	268.0	228.6	56.5	-9.9	49.5	263.0	-9.9	-9.9	-9.9	-9.9	1970
1971	402.0	247.0	176.5	141.5	180.0	134.0	50.0	106.0	90.5	317.5	266.0	180.0	2311.0	1971
1972	356.0	91.0	126.0	338.0	126.0	129.0	0.0	29.5	81.5	201.0	260.0	78.0	1836.0	1972
1973	30.0	24.0	108.0	155.0	114.0	73.0	131.0	114.5	110.0	232.0	426.0	277.0	1794.5	1973
1974	111.0	288.0	146.0	220.0	113.0	83.0	49.0	-9.9	125.0	321.0	186.0	46.0	-9.9	1974
1975	11.0	84.0	248.0	215.8	135.9	39.5	104.6	41.9	204.1	283.5	227.4	169.1	1764.8	1975
1976	-9.9	89.5	427.5	240.5	114.8	30.0	-9.9	17.0	66.0	270.5	80.0	90.5	-9.9	1976
1977	22.0	14.5	124.5	224.0	58.0	92.0	76.0	10.0	84.8	208.0	326.0	90.0	1371.8	1977
1978	8.0	134.0	265.0	241.0	219.0	64.0	40.0	24.0	106.0	206.0	83.0	160.0	1550.0	1978
1979	60.0	101.0	192.0	228.0	190.0	-9.9	64.0	124.0	138.0	266.0	360.0	34.0	-9.9	1979
NUMERO DE ANOS	12	13	13	13	12	11	10	12	13	12	12	12	8	
VALOR MAXIMO	402.0	288.0	427.5	345.5	383.0	141.5	131.0	124.0	263.0	484.5	426.0	277.0	2311.0	
CUARTIL SUPERIOR	166.3	129.5	232.5	319.5	204.5	*****	*****	83.0	132.3	319.3	307.0	164.5	******	
MEDIANA	71.0	101.0	146.0	240.5	132.7	83.0	49.5	35.7	106.0	268.3	209.2	90.3	1807.5	
CUARTIL INFERIOR	26.0	60.0	100.5	217.9	114.4	*****	*****	22.0	83.1	207.0	154.0	44.0	******	
VALOR MINIMO	8.0	14.5	16.5	141.5	58.0	30.0	0.0	10.0	58.5	200.0	80.0	34.0	1371.8	
PROMEDIOS	120.7	112.5	188.9	250.3	166.8	66.9	59.2	51.7	119.4	286.8	229.6	110.2	1786.6	
									TOTAL DE LOS PROMEDIOS MENSUALES =				1763.0	
PORCENTAJES	6.8	6.4	9.6	14.2	9.5	4.9	3.4	2.9	6.8	16.3	13.0	6.2		

TRIMESTRE MAS LLUVIOSO SEP OCT NOV **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 47. INDICE DE ARNOLDUS = 182.

DEV. ESTANDAR	134.3	79.0	106.1	65.5	73.3	38.5	37.2	40.7	57.0	95.2	106.6	74.4	270.1	
COEF. VARIACION	1.113	0.703	0.628	0.261	0.439	0.443	0.629	0.788	0.477	0.332	0.473	0.675	0.151	
COEF. ASIMETRIA	1.408	1.144	1.068	-0.000	1.644	0.060	0.635	0.946	1.632	1.238	0.301	1.008	0.579	

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212553	HDA JAVA	VIOTA	+04 27 00	+074 28 00	1640 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	-9.9	-9.9	-9.9	-9.9	108.6	120.3	129.5	95.7	268.8	232.7	172.8	-9.9
1961	125.8	101.6	156.8	260.9	49.8	86.7	105.0	31.8	54.5	260.3	232.2	59.8	1525.2
1962	65.0	104.3	98.6	142.5	178.3	135.4	83.3	91.7	51.3	324.1	195.8	133.5	1603.8
1963	81.5	149.7	96.5	269.9	385.3	52.0	61.0	64.3	38.8	254.2	346.2	188.7	2029.1
1964	39.9	112.8	45.8	223.2	151.5	139.2	129.9	79.9	82.7	135.0	198.3	160.6	1498.8
1965	46.7	26.9	49.5	341.6	97.4	26.2	14.9	48.7	84.5	288.9	322.6	120.6	1468.5
1966	32.7	77.3	214.7	116.4	216.7	159.3	44.2	97.6	88.1	294.0	236.2	148.6	1725.8
1967	28.7	103.9	290.1	267.1	159.0	97.6	45.4	20.0	66.4	164.9	288.9	136.0	1668.0
1968	69.5	97.7	51.2	376.7	155.8	172.7	62.4	34.8	125.2	277.2	222.3	68.3	1713.8
1969	96.1	34.3	50.5	230.3	225.8	84.7	25.9	36.7	142.2	411.7	341.2	24.7	1704.1
1970	101.8	258.8	32.1	70.0	200.2	-9.9	81.4	60.7	135.8	324.1	411.4	51.7	-9.9
1971	353.3	219.5	237.0	191.3	299.2	80.7	53.6	89.9	125.7	259.7	206.4	86.5	2203.2
1972	232.9	143.1	163.5	329.2	175.2	47.7	17.1	46.2	29.8	177.3	207.6	115.9	1685.5
1973	32.1	14.0	128.3	150.2	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR CANARAIMA

ESTACION X HDA JAVA MUNICIPIO DE VIOTA PERIODO 1960 - 1973 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOV	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1972	1685.5	1685.5	1685.5	-0.116	-0.015				+			
2	1971	2203.2	3888.7	1944.3	2.208	0.272				I +			
3	1969	1704.1	5592.8	1864.3	-0.033	0.268				+			
4	1968	1713.8	7306.6	1826.6	0.011	0.265				+			
5	1967	1668.0	8974.6	1794.9	-0.195	0.244				I +			
6	1966	1725.8	10700.4	1783.4	0.064	0.252				+			
7	1965	1468.5	12168.9	1738.4	-1.091	0.110				I+			
8	1964	1498.8	13667.7	1708.5	-0.555	-0.014				+			
9	1963	2025.1	15690.8	1744.1	1.426	0.172				I+			
10	1962	1603.8	17294.6	1730.1	-0.483	0.109				I+			
11	1961	1525.2	18820.8	1711.4	-0.836	0.0				+			
N	AN	T A	CU	MOV	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 11 ANOS = 1711.4
DESVIACION ESTANDAR = 222.7
COEFICIENTE DE VARIACION = 0.130

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IDAC-CRSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212553	HDA JAVA	VIOTA	+04 27 03	+074 27 03	1640 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	-9.9	-9.9	-9.9	-9.9	108.6	120.3	129.5	95.7	268.8	232.7	172.8	-9.9	1960
1961	125.8	101.8	156.8	260.9	49.8	66.7	105.0	31.8	84.5	260.3	232.2	59.8	1525.2	1961
1962	65.0	104.3	98.6	142.5	178.3	135.4	83.3	91.7	51.3	324.1	195.8	133.5	1603.8	1962
1963	81.5	149.7	96.5	269.9	365.3	93.0	61.0	64.3	38.8	254.2	346.2	188.7	2029.1	1963
1964	39.9	112.8	45.8	223.2	151.5	139.2	129.9	79.9	82.7	135.0	195.3	160.6	1498.8	1964
1965	46.7	26.9	49.5	341.6	97.4	26.2	14.9	48.7	84.5	288.9	322.6	120.6	1468.5	1965
1966	32.7	77.3	214.7	116.4	216.7	159.3	44.2	97.6	88.1	294.0	236.2	148.6	1725.8	1966
1967	28.7	103.9	290.1	267.1	159.0	97.6	45.4	20.0	66.4	164.9	286.9	136.0	1668.0	1967
1968	69.5	97.7	51.2	376.7	155.8	172.7	62.4	34.8	125.2	277.2	222.3	68.3	1713.8	1968
1969	96.1	34.3	50.5	230.3	225.8	84.7	25.9	36.7	142.2	411.7	341.2	24.7	1704.1	1969
1970	101.8	258.8	32.1	70.0	200.2	-9.9	81.4	60.7	135.8	324.1	411.4	51.7	-9.9	1970
1971	353.3	219.5	237.0	191.3	299.2	80.7	53.6	89.9	125.7	259.7	206.4	86.9	2203.2	1971
1972	232.9	143.1	163.5	329.2	175.2	47.7	17.1	46.2	29.8	177.3	207.6	115.9	1685.5	1972
1973	32.1	14.0	128.3	150.2	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1973
NUMERO DE ANOS	13	13	13	13	12	12	13	13	13	13	13	13	11	
VALOR MAXIMO	353.3	258.8	290.1	376.7	365.3	172.7	129.9	129.5	142.2	411.7	411.4	188.7	2203.2	
CUARTIL SUPERIOR	113.8	146.4	189.1	299.5	221.2	137.3	94.1	90.8	125.4	309.0	331.9	154.6	******	
MEDIANA	69.5	103.9	98.6	230.3	176.7	95.3	61.0	60.7	84.5	268.8	232.7	120.6	1685.5	
CUARTIL INFERIOR	36.3	55.8	50.0	146.3	153.6	82.7	35.0	35.7	52.5	215.6	207.0	64.0	******	
VALOR MINIMO	28.7	14.0	32.1	70.0	49.8	26.2	14.9	20.0	29.8	135.0	195.8	24.7	1468.5	
PROMEDIOS	100.5	111.1	124.2	228.4	151.2	102.6	65.0	64.0	86.2	264.6	264.8	112.9	1711.4	
										TOTAL DE LOS PROMEDIOS MENSUALES =			1715.4	
PORCENTAJES	5.9	6.5	7.2	13.3	11.1	6.0	3.8	3.7	5.0	15.4	15.4	6.6		
DEV. ESTANDAR	93.8	70.7	83.4	92.1	87.6	43.3	37.4	31.9	37.4	73.5	69.8	50.8	222.7	
COEF. VARIACION	0.934	0.637	0.671	0.403	0.458	0.422	0.576	0.499	0.434	0.278	0.264	0.449	0.130	
COEF. ASIMETRIA	2.031	0.720	0.735	-0.081	0.766	-0.033	0.388	0.571	0.096	-0.048	0.919	-0.262	1.318	

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 41. INDICE DE ARNOLDUS = 176.

PROYECTO IGAC-CRSTCM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Material Restringido
Uso Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212553	HDA JAVA	VIOTA	+04 27 03	+074 27 03	1640 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	91.6	121.5	116.2	135.5	141.2	108.6	120.3	129.5	95.7	268.8	232.7	172.8	1734.4	1960
1961	125.8	101.6	156.8	260.9	49.8	86.7	105.0	31.8	54.5	260.3	232.2	59.8	1525.2	1961
1962	65.0	104.3	98.6	142.5	178.3	135.4	83.3	91.7	51.3	324.1	195.8	133.5	1603.8	1962
1963	81.5	149.7	96.5	269.9	385.3	93.0	61.0	64.3	38.8	254.2	346.2	188.7	2029.1	1963
1964	39.9	112.8	45.8	223.2	151.5	139.2	129.9	79.9	82.7	135.0	198.3	160.6	1498.8	1964
1965	46.7	26.9	49.5	341.6	97.4	26.2	14.9	48.7	84.5	288.9	322.6	120.6	1468.5	1965
1966	32.7	77.3	214.7	116.4	216.7	159.3	44.2	97.6	88.1	294.0	236.2	148.6	1725.8	1966
1967	28.7	103.9	290.1	267.1	159.0	97.6	45.4	20.0	66.4	164.9	288.9	136.0	1668.0	1967
1968	69.5	97.7	51.2	376.7	155.8	172.7	62.4	34.8	125.2	277.2	222.3	68.3	1713.8	1968
1969	96.1	34.3	50.5	230.3	225.8	84.7	25.9	36.7	142.2	411.7	341.2	24.7	1704.1	1969
1970	101.8	256.8	32.1	70.0	200.2	102.6	81.4	60.7	135.8	324.1	411.4	51.7	1830.6	1970
1971	353.3	219.5	237.0	191.3	299.2	80.7	53.6	89.9	125.7	259.7	206.4	86.9	2203.2	1971
1972	232.9	143.1	163.5	329.2	175.2	47.7	17.1	46.2	29.8	177.3	207.6	115.9	1685.5	1972
1973	32.1	14.0	128.3	150.2	147.0	86.4	116.3	116.9	141.5	239.0	349.7	158.9	1680.3	1973
1974	118.7	254.7	156.9	208.7	102.9	60.0	26.3	64.8	116.6	275.8	216.5	68.3	1670.2	1974
1975	64.6	96.0	100.2	182.4	178.1	141.3	134.6	89.1	74.4	371.4	275.1	209.0	1916.2	1975
1976	115.3	128.9	197.0	228.7	66.9	119.3	32.2	10.7	90.1	382.4	242.2	186.4	1800.1	1976
1977	30.3	26.9	115.9	146.5	95.9	104.7	41.1	71.6	97.1	270.5	305.8	71.8	1378.1	1977
1978	19.4	64.9	108.8	280.9	155.7	83.5	54.9	24.0	41.0	251.1	118.0	157.0	1359.2	1978
1979	137.6	65.4	107.5	263.8	167.7	116.1	66.8	129.6	149.6	415.6	449.7	100.3	2169.7	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	353.3	258.8	290.1	376.7	385.3	172.7	134.6	129.6	149.6	415.6	449.7	209.0	2203.2	
CUARTIL SUPERIOR	117.0	136.0	160.2	268.5	189.2	127.3	94.1	90.8	125.4	324.1	331.9	159.7	1815.3	
MEDIANA	75.5	102.7	112.3	225.9	157.4	100.1	57.9	64.5	89.1	273.1	239.2	127.0	1694.8	
CUARTIL INFERIOR	36.3	65.1	73.9	148.3	122.1	84.1	36.6	35.7	60.4	252.6	212.0	70.0	1564.5	
VALOR MINIMO	19.4	14.0	32.1	70.0	49.8	26.2	14.9	10.7	29.8	135.0	118.0	24.7	1359.2	
PROMEDIOS	94.2	110.1	125.9	220.8	167.5	102.3	65.8	66.9	91.5	282.3	269.9	121.0	1718.2	
PORCENTAJES	5.5	6.4	7.3	12.8	9.7	6.0	3.8	3.9	5.3	16.4	15.7	7.0		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUL AGO SEP

INDICE DE FOURNIER = 46. INDICE DE ARNOLDUS = 160.

INDICE DE IRREGULARIDAD INTERANUAL =1.41

DEV. ESTANDAR	79.4	69.8	69.2	80.3	76.7	36.3	38.0	35.8	37.4	75.3	81.3	52.4	230.3
COEF. VARIACION	0.843	0.634	0.550	0.364	0.458	0.355	0.578	0.534	0.409	0.267	0.301	0.433	0.134

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	2097.	2013.	1912.	1718.	1524.	1423.	1339.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	2.157	0.864	0.755	0.101	1.206	-0.026	0.531	0.263	-0.021	0.036	0.538	-0.128	0.599

IMPRESO EN COLOMBIA POR BANARANJO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212026	VENTALARGA	ZIPAQUIRA	+05 04 00	+074 03 00	3062 METROS

ANO	ENE	FEB	MAR	APR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1947	-9.9	-9.9	-9.9	-9.9	-9.9	148.4	98.4	79.3	165.9	168.6	70.5	29.0	-9.9
1948	29.5	60.7	77.8	219.7	117.7	91.6	67.6	47.0	111.4	115.5	114.5	57.2	1110.2
1949	44.2	7.0	64.3	100.5	128.2	88.0	143.0	105.8	103.8	139.2	103.3	59.5	1086.8
1950	97.3	142.0	74.2	206.8	172.0	164.2	130.7	129.3	85.9	275.5	164.2	66.7	1728.8
1951	41.0	47.0	115.0	136.8	138.5	120.0	97.0	124.0	72.0	107.0	149.5	43.0	1190.8
1952	51.0	27.0	71.0	118.0	146.5	104.0	136.0	73.2	123.0	91.5	131.0	76.0	1148.2
1953	80.0	47.0	35.5	98.0	88.0	84.0	65.0	23.0	118.0	216.0	170.0	42.0	1066.5
1954	47.0	38.0	-9.9	152.0	104.0	135.0	101.0	78.0	23.0	178.0	190.0	94.0	-9.9
1955	21.0	58.0	60.4	230.0	93.0	166.0	165.0	-9.9	132.5	-9.9	114.0	78.0	-9.9
1956	35.0	125.0	88.0	80.6	121.1	136.3	67.3	72.0	143.1	251.7	115.5	92.5	1328.1
1957	49.0	28.0	91.0	-9.9	104.1	65.5	89.0	85.8	29.6	154.1	26.4	45.3	-9.9
1958	11.3	55.9	80.2	109.7	100.0	46.6	55.2	148.9	24.7	112.0	100.0	20.0	864.5
1959	0.0	39.0	53.0	42.0	144.0	113.0	104.2	74.0	95.0	100.0	151.0	19.0	934.2
1960	102.5	79.0	54.0	131.0	106.0	86.0	79.0	83.0	56.5	167.0	40.0	116.0	1100.0
1961	48.0	3.5	84.5	108.0	34.0	145.0	84.0	101.0	62.0	148.0	141.0	25.0	984.0
1962	40.5	58.0	71.0	150.5	123.6	134.0	90.0	132.5	67.0	136.0	223.0	59.0	1265.1
1963	10.0	68.5	77.0	84.5	195.5	142.5	120.0	86.0	28.5	72.0	181.0	42.0	1107.5
1964	23.0	42.5	50.5	79.0	130.0	161.0	118.5	39.0	58.0	85.0	89.0	81.5	961.0
1965	39.0	13.0	15.0	219.0	98.0	34.2	113.0	99.0	46.0	184.5	191.0	52.5	1104.2
1966	8.5	19.0	101.0	89.0	142.5	109.5	67.5	107.0	94.0	139.0	173.5	115.0	1165.5
1967	48.5	47.0	54.5	147.5	128.5	-9.9	-9.9	101.5	59.8	72.0	105.5	53.0	-9.9
1968	5.0	67.5	63.5	220.0	121.0	188.5	104.0	67.0	115.5	-9.9	129.0	22.0	-9.9
1969	81.5	71.0	7.0	186.5	105.0	94.9	54.0	74.0	84.0	167.0	97.0	53.0	1074.9
1970	50.0	76.0	27.0	110.0	118.0	84.0	50.0	52.0	-9.9	133.0	126.0	46.0	-9.9
1971	112.0	87.0	108.0	164.0	231.0	93.0	67.0	127.0	113.0	171.0	130.0	73.0	1436.0
1972	68.0	47.5	145.0	223.5	135.0	146.0	96.5	54.0	20.0	41.0	104.4	36.2	1119.1
1973	5.5	31.5	70.0	71.0	83.0	110.0	82.5	70.0	134.0	125.0	116.0	87.0	985.5
1974	29.0	81.5	91.0	130.8	91.3	42.0	44.5	93.0	133.0	199.0	195.0	30.0	1160.1
1975	16.0	67.0	73.0	91.0	105.0	89.0	101.0	110.0	100.0	130.0	124.0	117.0	1123.0
1976	21.0	69.0	101.0	120.0	97.0	77.0	105.0	39.0	80.0	121.0	92.0	28.0	950.0
1977	28.0	2.0	60.0	150.0	86.0	97.0	58.0	93.6	131.0	114.0	77.0	46.0	942.6
1978	0.0	20.0	97.0	167.0	115.0	137.0	35.0	46.0	109.0	137.0	35.0	80.0	978.0
1979	17.0	16.0	79.0	141.0	73.0	172.0	62.0	85.0	50.0	273.0	155.0	45.0	1168.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X VENTALARGA . MUNICIPIO DE ZIPAQUIRA PERIODO 1947 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1168.0	1168.0	1168.0	0.272	0.043	I	I	I	+ .	I	I	I
2	1978	976.0	2144.0	1072.0	-0.785	-0.083			.	+			
3	1977	942.6	3086.6	1029.5	-0.587	-0.241			.	+ I			
4	1976	950.0	4036.6	1009.6	-0.545	-0.392			.	+ I			
5	1975	1123.0	5161.6	1032.3	0.020	-0.389				+ .			
6	1974	1100.1	6261.7	1053.6	0.228	-0.352				+ I .			
7	1973	985.5	7307.2	1043.9	-0.747	-0.472			.	+ I			
8	1972	1119.1	8426.3	1053.3	-0.001	-0.472				+ .			
9	1971	1436.0	9862.3	1095.8	1.768	-0.189				+I		.	
10	1969	1074.9	10937.2	1093.7	-0.248	-0.229				* I			
11	1966	1165.5	12102.7	1100.2	0.258	-0.188				+I .			
12	1965	1104.2	13206.9	1100.6	-0.084	-0.201				+ .			
13	1964	961.0	14167.9	1089.8	-0.684	-0.343			.	+ I			
14	1963	1107.5	15275.4	1091.1	-0.066	-0.353				+ .			
15	1962	1285.1	16560.5	1104.0	0.926	-0.205				+ I	.		
16	1961	984.0	17544.5	1096.5	-0.756	-0.326			.	+ I			
17	1960	1100.0	18644.5	1096.7	-0.108	-0.343				+ . I			
18	1959	934.2	19578.7	1087.7	-1.034	-0.509			.	+ I			
19	1958	864.5	20443.2	1076.0	-1.423	-0.736			.	+ I			
20	1956	1328.1	21771.3	1088.6	1.166	-0.550				+ I	.		
21	1953	1066.5	22837.8	1067.5	-0.295	-0.597				+ . I			
22	1952	1148.2	23986.0	1090.3	0.161	-0.571				+ I .			
23	1951	1190.8	25176.8	1094.6	0.399	-0.507				+ I .			
24	1950	1728.8	26905.6	1121.1	3.403	0.037				+			
25	1949	1086.8	27992.4	1119.7	-0.182	0.008				.+			
26	1948	1110.2	29102.6	1119.3	-0.051	0.0				*			
N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 26 ANOS = 1119.3

DESVIACION ESTANDAR = 179.1

COEFICIENTE DE VARIACION = 0.160

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212026	VENTALARGA	ZIPAQUIRA	+05 04 19	+074 03 27	3060 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1947	-9.9	-9.9	-9.9	-9.9	-9.9	148.4	98.4	79.3	165.9	168.6	70.5	29.0	-9.9	1947
1948	29.5	60.7	77.8	219.7	117.7	91.6	67.6	47.0	111.4	115.5	114.5	57.2	1110.2	1948
1949	44.2	7.0	64.3	100.5	128.2	88.0	143.0	105.8	103.8	139.2	103.3	59.5	1086.8	1949
1950	97.3	142.0	74.2	206.8	172.0	164.2	130.7	129.3	85.9	275.5	164.2	66.7	1728.8	1950
1951	41.0	47.0	115.0	136.8	138.5	120.0	97.0	124.0	72.0	107.0	145.5	43.0	1190.8	1951
1952	51.0	27.0	71.0	118.0	146.5	104.0	136.0	73.2	123.0	91.5	131.0	76.0	1148.2	1952
1953	80.0	47.0	35.5	98.0	88.0	84.0	65.0	23.0	118.0	216.0	170.0	42.0	1066.5	1953
1954	47.0	38.0	-9.9	152.0	104.0	135.0	101.0	78.0	23.0	178.0	190.0	94.0	-9.9	1954
1955	21.0	56.0	60.4	230.0	93.0	166.0	165.0	-9.9	132.5	-9.9	114.0	78.0	-9.9	1955
1956	35.0	125.0	88.0	80.6	121.1	136.3	67.3	72.0	143.1	251.7	115.5	92.5	1328.1	1956
1957	49.0	28.0	91.0	-9.9	104.1	65.5	89.0	65.8	29.6	154.1	26.4	45.3	-9.9	1957
1958	11.3	55.9	80.2	109.7	100.0	46.6	55.2	148.9	24.7	112.0	100.0	20.0	864.5	1958
1959	0.0	39.0	53.0	42.0	144.0	113.0	104.2	74.0	95.0	100.0	151.0	19.0	934.2	1959
1960	102.5	79.0	54.0	131.0	106.0	86.0	79.0	83.0	56.5	167.0	40.0	116.0	1100.0	1960
1961	48.0	3.5	84.5	108.0	34.0	145.0	84.0	101.0	62.0	148.0	141.0	25.0	984.0	1961
1962	40.5	58.0	71.0	150.5	123.6	134.0	90.0	132.5	67.0	136.0	223.0	59.0	1285.1	1962
1963	10.0	68.5	77.0	84.5	195.5	142.5	120.0	86.0	28.5	72.0	181.0	42.0	1107.5	1963
1964	23.0	42.5	50.5	79.0	130.0	161.0	118.5	39.0	58.0	89.0	89.0	81.5	961.0	1964
1965	39.0	13.0	15.0	219.0	98.0	34.2	113.0	99.0	46.0	184.5	191.0	52.5	1104.2	1965
1966	8.5	19.0	101.0	89.0	142.5	109.5	67.5	107.0	94.0	139.0	173.5	115.0	1165.5	1966
1967	48.5	47.0	54.5	147.5	128.5	-9.9	-9.9	101.5	59.8	72.0	105.5	53.0	-9.9	1967
1968	5.0	67.5	63.5	220.0	121.0	188.5	104.0	67.0	115.5	-9.9	129.0	22.0	-9.9	1968
1969	81.5	71.0	7.0	186.5	105.0	94.9	54.0	74.0	84.0	167.0	97.0	53.0	1074.9	1969
1970	50.0	76.0	27.0	110.0	118.0	84.0	50.0	52.0	-9.9	133.0	126.0	46.0	-9.9	1970
1971	112.0	87.0	108.0	164.0	231.0	53.0	67.0	127.0	113.0	171.0	130.0	73.0	1436.0	1971
1972	68.0	47.5	145.0	223.5	135.0	148.0	96.5	54.0	20.0	41.0	104.4	36.2	1119.1	1972
1973	5.5	31.5	70.0	71.0	83.0	110.0	82.5	70.0	134.0	125.0	116.0	87.0	985.5	1973
1974	29.0	61.5	91.0	130.8	91.3	42.0	44.5	93.0	133.0	199.0	195.0	30.0	1160.1	1974
1975	16.0	67.0	73.0	91.0	105.0	89.0	101.0	110.0	100.0	130.0	124.0	117.0	1123.0	1975
1976	21.0	69.0	101.0	120.0	97.0	77.0	105.0	39.0	80.0	121.0	92.0	28.0	950.0	1976
1977	28.0	2.0	60.0	150.0	86.0	97.0	58.0	93.6	131.0	114.0	77.0	46.0	942.6	1977
1978	0.0	20.0	97.0	167.0	115.0	137.0	35.0	46.0	109.0	137.0	35.0	80.0	978.0	1978
1979	17.0	16.0	79.0	141.0	73.0	172.0	62.0	85.0	80.0	273.0	155.0	45.0	1168.0	1979

Ministerio de Hacienda y Crédito Público

*** CARACTERISTICAS PLUVIOMETRICAS MENSUALES Y ANUALES DE LA PAGINA ANTERIOR ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
NUMERO DE ANOS	32	32	31	31	32	32	32	32	32	31	33	33	26	
VALOR MAXIMO	112.0	142.0	145.0	230.0	231.0	188.5	165.0	148.9	165.9	275.5	223.0	117.0	1728.8	
CUARTIL SUPERIOR	49.5	68.8	91.0	167.0	132.5	143.8	104.6	103.6	116.8	171.0	159.6	80.8	1165.5	
MEDIANA	37.0	47.3	73.0	131.0	116.3	109.8	89.5	84.0	89.9	137.0	124.0	53.0	1105.8	
CUARTIL INFERIOR	16.5	27.5	54.5	98.0	97.5	85.0	66.0	68.5	57.3	112.0	98.5	39.1	984.0	
VALOR MINIMO	0.0	2.0	7.0	42.0	34.0	34.2	35.0	23.0	20.0	41.0	26.4	19.0	864.5	
PROMEDIOS	39.4	51.3	72.2	138.0	118.0	111.5	89.1	84.4	86.5	146.1	125.0	59.1	1119.3	
										TOTAL DE LOS PROMEDIOS MENSUALES =			1120.4	
PORCENTAJES	3.5	4.6	6.4	12.3	10.5	9.9	8.0	7.5	7.7	13.0	11.2	5.3		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 19. INDICE DE ARNOLDUS = 105.

DEV. ESTANDAR	30.0	32.3	28.7	51.4	36.1	40.5	30.8	30.2	39.8	55.7	46.9	28.5	179.1	
COEF. VARIACION	0.761	0.630	0.398	0.372	0.306	0.363	0.345	0.358	0.460	0.381	0.375	0.482	0.160	
COEF. ASIMETRIA	0.869	0.781	-0.073	0.359	0.936	-0.090	0.424	0.075	-0.080	0.703	-0.119	0.544	1.715	

*PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212026	VENTALARGA	ZIPAQUIRA	+05 04 19	+074 03 27	3060 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	102.5	79.0	54.0	131.0	106.0	86.0	79.0	83.0	56.5	167.0	40.0	116.0	1100.0	1960
1961	48.0	3.5	84.5	108.0	34.0	145.0	84.0	101.0	62.0	148.0	141.0	25.0	984.0	1961
1962	40.5	58.0	71.0	150.5	123.6	134.0	90.0	132.5	67.0	136.0	223.0	59.0	1285.1	1962
1963	10.0	68.5	77.0	84.5	195.5	142.5	120.0	86.0	28.5	72.0	181.0	42.0	1107.5	1963
1964	23.0	42.5	50.5	79.0	130.0	161.0	118.5	39.0	58.0	89.0	89.0	81.5	961.0	1964
1965	39.0	13.0	15.0	219.0	98.0	34.2	113.0	99.0	46.0	184.5	191.0	52.5	1104.2	1965
1966	8.5	19.0	101.0	89.0	142.5	109.5	67.5	107.0	94.0	139.0	173.5	115.0	1165.5	1966
1967	48.5	47.0	54.5	147.5	128.5	148.6	156.6	101.5	59.8	72.0	105.5	53.0	1123.0	1967
1968	5.0	67.5	63.5	220.0	121.0	188.5	104.0	67.0	115.5	39.0	129.0	22.0	1142.0	1968
1969	81.5	71.0	7.0	186.5	105.0	94.9	54.0	74.0	84.0	167.0	97.0	53.0	1074.9	1969
1970	50.0	76.0	27.0	110.0	118.0	84.0	50.0	52.0	81.0	133.0	126.0	46.0	953.0	1970
1971	112.0	87.0	108.0	164.0	231.0	53.0	67.0	127.0	113.0	171.0	130.0	73.0	1436.0	1971
1972	68.0	47.5	145.0	223.5	135.0	148.0	96.5	54.0	20.0	41.0	104.4	36.2	1119.1	1972
1973	9.5	31.5	70.0	71.0	83.0	110.0	82.5	70.0	134.0	125.0	116.0	87.0	985.5	1973
1974	29.0	81.5	91.0	130.8	91.3	42.0	44.5	93.0	133.0	199.0	195.0	30.0	1160.1	1974
1975	16.0	67.0	73.0	91.0	105.0	89.0	101.0	110.0	100.0	130.0	124.0	117.0	1123.0	1975
1976	21.0	69.0	101.0	120.0	97.0	77.0	105.0	39.0	80.0	121.0	92.0	28.0	950.0	1976
1977	28.0	2.0	60.0	150.0	86.0	97.0	58.0	93.6	131.0	114.0	77.0	46.0	942.6	1977
1978	0.0	20.0	97.0	167.0	115.0	137.0	35.0	46.0	109.0	137.0	35.0	80.0	978.0	1978
1979	17.0	16.0	79.0	141.0	73.0	172.0	62.0	85.0	50.0	273.0	155.0	45.0	1168.0	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	112.0	87.0	145.0	223.5	231.0	188.5	156.6	132.5	134.0	273.0	223.0	117.0	1436.0	
CUARTIL SUPERIOR	49.3	70.0	94.0	165.5	129.3	146.5	104.5	101.3	111.0	167.0	164.3	80.8	1151.0	
MEDIANA	28.5	52.8	72.0	130.0	110.5	109.8	83.3	85.5	80.5	134.5	125.0	52.8	1105.8	
CUARTIL INFERIOR	13.0	19.5	54.3	99.5	94.1	85.0	60.0	60.5	57.3	101.5	94.5	39.1	981.0	
VALOR MINIMO	0.0	2.0	7.0	71.0	34.0	34.2	35.0	39.0	20.0	39.0	35.0	22.0	942.6	
PROMEDIOS	37.6	48.3	71.4	139.2	115.9	112.7	84.4	83.0	81.1	132.9	126.2	60.4	1093.1	
PORCENTAJES	3.4	4.4	6.5	12.7	10.6	10.3	7.7	7.6	7.4	12.2	11.5	5.5		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 18. INDICE DE ARNOLDUS = 103.

INDICE DE IRREGULARIDAD INTERANUAL =1.34

DEV. ESTANDAR	32.2	28.0	32.7	47.2	41.8	43.4	30.5	27.5	34.3	55.2	49.8	30.3	124.0
COEF. VARIACION	0.854	0.579	0.458	0.339	0.361	0.385	0.361	0.332	0.423	0.415	0.395	0.502	0.113

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1297.	1252.	1198.	1093.	989.	934.	889.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	1.063	-0.354	-0.053	0.435	1.068	-0.161	0.442	-0.064	0.031	0.406	0.068	0.761	1.018

IMPRESO EN COLOMBIA POR DANARIO

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212074	ZIPAQUIRA	ZIPAQUIRA	+05 02 00	+074 01 00	2655 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	CCT	NCV	DIC	TCTAL
1960	-9.9	9.5	69.8	115.3	67.3	102.7	120.4	109.7	56.9	140.9	35.8	136.8	-9.9
1961	22.4	5.6	101.5	78.1	12.8	147.8	26.2	125.1	115.1	253.2	61.5	5.3	958.6
1962	69.5	30.5	71.5	107.0	89.5	125.5	69.5	68.0	51.5	95.0	81.0	24.0	882.5
1963	7.0	93.0	54.1	63.7	149.7	37.5	37.0	22.0	21.1	105.0	110.5	20.0	720.6
1964	14.0	28.0	72.5	42.5	81.5	107.0	89.0	39.5	23.5	41.0	74.5	41.0	654.0
1965	38.0	7.0	29.0	219.0	123.2	11.9	23.2	20.5	13.2	95.6	180.5	29.0	790.1
1966	33.5	12.0	69.0	85.0	75.0	60.0	26.5	54.0	118.7	145.2	173.0	109.0	964.9
1967	30.0	21.5	63.7	123.5	44.3	102.0	42.3	57.7	56.1	44.3	100.0	49.6	735.0
1968	8.8	45.3	44.5	97.8	124.6	167.3	28.0	48.5	132.0	79.5	103.0	13.5	892.8
1969	59.0	57.0	6.5	167.5	51.0	83.5	23.0	35.0	59.0	195.0	113.0	44.0	893.5
1970	43.0	86.0	25.0	68.0	106.0	56.0	52.0	28.0	80.5	171.0	94.0	20.0	829.5
1971	47.0	112.0	100.3	93.9	177.5	84.6	41.0	135.0	95.0	141.1	100.0	67.0	1164.6
1972	99.1	39.8	102.9	257.4	236.7	146.0	43.5	27.0	15.5	67.5	126.5	6.7	1168.6
1973	9.0	8.5	42.5	55.0	99.2	61.0	67.6	66.0	179.2	115.5	153.6	121.0	1002.1
1974	18.0	104.0	85.0	62.3	89.7	52.9	34.5	106.0	126.3	181.0	187.0	74.0	1120.7
1975	30.5	89.5	112.0	77.2	97.3	47.0	106.0	78.0	155.0	171.0	104.0	134.6	1202.1
1976	8.0	60.0	162.0	163.1	135.1	61.0	33.0	22.5	3.0	113.0	22.0	36.5	839.2
1977	10.5	0.0	107.4	146.0	53.0	67.0	42.0	38.9	115.8	97.0	116.0	53.5	847.1
1978	0.0	20.0	95.4	170.0	114.0	50.0	14.0	61.0	48.0	30.0	19.0	0.0	621.4
1979	0.0	0.0	52.0	169.5	53.0	109.5	32.0	65.0	31.0	176.8	157.8	0.0	844.6

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM ### GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X ZIPAQUIRA MUNICIPIO DE ZIPAQUIRA PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	844.6	844.6	844.6	-0.334	-0.063				+			
2	1978	821.4	1666.0	733.0	-1.642	-0.374				+			
3	1977	847.1	2513.1	771.0	-0.320	-0.435				+			
4	1976	835.2	3152.3	708.1	-0.366	-0.504				+			
5	1975	1202.1	4354.4	870.9	1.760	-0.171					+		
6	1974	1120.7	5475.1	912.5	1.283	0.072					+		
7	1973	1002.1	6477.2	925.3	0.588	0.183					+		
8	1972	1168.6	7645.8	955.7	1.563	0.480					+		
9	1971	1164.6	8810.4	978.9	1.540	0.771					+		
10	1970	829.5	9639.9	964.0	-0.423	0.691				+			
11	1969	893.5	10533.4	957.6	-0.048	0.682				+			
12	1968	892.8	11426.2	952.2	-0.052	0.672				+			
13	1967	735.0	12161.2	935.5	-0.976	0.487				+			
14	1966	964.9	13126.1	937.6	0.370	0.557				+			
15	1965	790.1	13916.2	927.7	-0.653	0.434				+			
16	1964	654.0	14570.2	910.6	-1.451	0.159				+			
17	1963	720.6	15290.8	899.5	-1.061	-0.042				+			
18	1962	882.5	16173.3	898.5	-0.112	-0.063				+			
19	1961	958.6	17131.9	901.7	0.333	0.0				+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 19 ANOS = 901.7
DESVIACION ESTANDAR = 170.7
COEFICIENTE DE VARIACION = 0.189

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212074	ZIPAQUIRA	ZIPAQUIRA	+05 01 54	+074 00 43	2655 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y CCELES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	9.5	69.8	115.3	67.3	102.7	120.4	109.7	56.9	140.9	35.8	136.8	-9.9	1960
1961	22.4	5.6	101.5	78.1	12.8	147.8	26.2	125.1	115.1	253.2	61.5	9.3	958.6	1961
1962	69.5	30.5	71.5	107.0	69.5	125.5	69.5	68.0	51.5	95.0	61.0	24.0	882.5	1962
1963	7.0	93.0	54.1	63.7	149.7	37.5	37.0	22.0	21.1	105.0	110.5	20.0	720.6	1963
1964	14.0	28.0	72.5	42.5	61.5	107.0	89.0	39.5	23.5	41.0	74.5	41.0	654.0	1964
1965	38.0	7.0	29.0	219.0	123.2	11.9	23.2	20.5	13.2	195.6	180.5	29.0	790.1	1965
1966	33.5	12.0	69.0	85.0	75.0	60.0	26.5	54.0	118.7	149.2	173.0	109.0	964.9	1966
1967	30.0	21.5	63.7	123.5	44.3	102.0	42.3	57.7	56.1	44.3	100.0	49.6	735.0	1967
1968	8.8	45.3	44.5	97.8	124.6	167.3	28.0	48.5	132.0	79.5	103.0	13.5	892.8	1968
1969	59.0	57.0	6.5	167.5	51.0	83.5	23.0	35.0	59.0	195.0	113.0	44.0	893.5	1969
1970	43.0	80.0	25.0	68.0	106.0	56.0	52.0	28.0	80.5	171.0	94.0	20.0	829.5	1970
1971														1971
1972														1972
1973														1973
1974														1974
1975														1975
1976	8.0	60.0	162.0	163.1	135.1	81.0	33.0	22.5	3.0	113.0	22.0	36.5	839.2	1976
1977	10.5	0.0	107.4	146.0	53.0	67.0	42.0	38.9	115.8	97.0	116.0	53.5	847.1	1977
1978	0.0	20.0	95.4	170.0	114.0	50.0	14.0	61.0	48.0	30.0	19.0	0.0	621.4	1978
1979	0.0	0.0	52.0	169.5	53.0	105.5	32.0	65.0	31.0	178.6	157.8	0.0	844.6	1979
NUMERO DE ANOS	14	15	15	15	15	15	15	15	15	15	15	15	14	
VALOR MAXIMO	69.5	93.0	162.0	219.0	149.7	167.3	120.4	125.1	132.0	253.2	180.5	136.8	964.9	
CUARTIL SUPERICR	38.0	57.0	95.4	167.5	123.2	107.0	52.0	65.0	115.1	171.0	116.0	49.6	892.8	
MEDIANA	18.2	21.5	69.0	115.3	61.5	83.5	33.0	48.5	56.1	105.0	100.0	29.0	841.9	
CUARTIL INFERICR	8.0	7.0	44.5	78.1	53.0	56.0	26.2	28.0	23.5	79.5	61.5	13.5	735.0	
VALOR MINIMO	0.0	0.0	6.5	42.5	12.8	11.9	14.0	20.5	3.0	30.0	19.0	0.0	621.4	
PROMEDIOS	24.5	31.7	68.3	121.1	65.3	87.0	43.9	53.0	61.7	119.2	96.1	39.1	819.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		830.5	
PORCENTAJES	3.0	3.8	8.2	14.6	10.3	10.5	5.3	6.4	7.4	14.3	11.6	4.7		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 18. INDICE DE ARNOLDUS = 83.

DEV. ESTANDAR	21.8	30.2	38.2	50.1	39.2	41.8	28.7	30.7	41.9	62.4	49.8	38.2	104.4
COEF. VARIACION	0.885	0.953	0.560	0.413	0.599	0.480	0.655	0.578	0.678	0.523	0.518	0.978	0.127
COEF. ASIMETRIA	0.812	0.940	0.800	0.260	-0.039	0.192	1.721	1.264	0.425	0.514	0.111	1.622	-0.561

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
212074	ZIPAQUIRA	ZIPAQUIRA	+05 01 54	+074 00 43	2655 METROS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	22.4	9.5	69.8	115.3	67.3	102.7	120.4	109.7	56.9	140.9	35.8	136.8	987.5	1960
1961	22.4	5.6	101.5	74.1	12.8	147.8	26.2	125.1	115.1	253.2	61.5	9.3	958.6	1961
1962	69.5	30.5	71.5	107.0	89.5	125.5	69.5	68.0	51.5	95.0	81.0	24.0	882.5	1962
1963	7.0	93.0	54.1	63.7	149.7	37.5	37.0	22.0	21.1	105.0	110.5	20.0	720.6	1963
1964	14.0	28.0	72.5	42.5	81.5	107.0	89.0	39.5	23.5	41.0	74.5	41.0	654.0	1964
1965	38.0	7.0	29.0	219.0	123.2	11.9	23.2	20.5	13.2	95.6	180.5	29.0	790.1	1965
1966	33.5	12.0	69.0	85.0	75.0	60.0	26.5	54.0	118.7	149.2	173.0	109.0	964.9	1966
1967	30.0	21.5	63.7	123.5	44.3	102.0	42.3	57.7	56.1	44.3	100.0	49.6	735.0	1967
1968	8.8	45.3	44.5	97.8	124.6	167.3	28.0	48.5	132.0	79.5	103.0	13.5	892.8	1968
1969	59.0	57.0	6.5	167.5	51.0	83.5	23.0	35.0	59.0	195.0	113.0	44.0	893.5	1969
1970	43.0	86.0	25.0	66.0	106.0	56.0	52.0	28.0	80.5	171.0	94.0	20.0	829.5	1970
1971	37.7	89.8	80.4	75.3	142.4	43.9	32.8	108.3	76.2	113.1	80.2	53.7	933.8	1971
1972	73.1	29.3	75.9	190.0	174.8	107.8	32.1	19.9	11.4	49.8	93.4	4.9	862.4	1972
1973	7.2	6.8	34.3	44.4	80.1	65.4	54.6	53.3	144.8	96.5	124.1	97.8	809.3	1973
1974	12.0	69.2	56.6	41.4	59.7	35.2	23.0	70.5	84.0	120.4	124.4	49.2	745.6	1974
1975	21.5	63.1	79.0	54.5	68.6	33.2	74.8	55.0	109.3	120.6	73.4	95.0	848.0	1975
1976	8.0	60.0	162.0	163.1	135.1	81.0	33.0	22.5	3.0	113.0	22.0	36.5	839.2	1976
1977	10.5	0.0	107.4	146.0	53.0	67.0	42.0	38.9	115.8	97.0	116.0	53.5	847.1	1977
1978	0.0	20.0	95.4	170.0	114.0	50.0	14.0	61.0	48.0	30.0	19.0	0.0	621.4	1978
1979	0.0	0.0	52.0	169.5	53.0	105.5	32.0	65.0	31.0	178.8	157.8	0.0	844.6	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	73.1	93.0	162.0	219.0	174.8	167.3	120.4	125.1	144.8	253.2	180.5	136.8	987.5	
CUARTIL SUPERIOR	37.8	61.5	79.7	165.3	123.9	106.3	53.3	66.5	112.2	145.0	120.0	53.6	893.1	
MEDIANA	21.9	28.6	69.4	102.4	80.8	74.0	32.9	53.6	57.9	109.0	97.0	38.8	845.8	
CUARTIL INFERIOR	8.4	8.3	48.3	65.8	56.3	46.9	26.3	31.5	27.3	87.3	73.9	16.8	767.8	
VALOR MINIMO	0.0	0.0	6.5	41.4	12.8	11.9	14.0	19.9	3.0	30.0	19.0	0.0	621.4	
PROMEDIOS	25.9	36.7	67.5	111.1	90.3	79.5	43.8	55.1	67.6	114.4	96.9	44.3	833.0	
PORCENTAJES	3.1	4.4	8.1	13.3	10.8	9.5	5.3	6.6	8.1	13.7	11.6	5.3		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 16. INDICE DE ARNOLDUS = 81.

INDICE DE IRREGULARIDAD INTERANUAL =1.36

DEV. ESTANDAR	21.9	31.3	34.1	54.6	41.8	40.8	26.5	30.4	43.7	55.9	44.2	38.4	99.3
COEF. VARIACION	0.848	0.855	0.505	0.491	0.463	0.513	0.605	0.551	0.647	0.488	0.456	0.865	0.119

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	997.	960.	917.	833.	749.	706.	669.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.922	0.504	0.821	0.392	0.284	0.440	1.631	0.980	0.215	0.677	0.076	1.032	-0.528

IMPRESO EN COLOMBIA POR DANARAN,C

CODIGO				ESTACION			MUNICIPIO		LATITUD	LONGITUD	ALTITUD		
231210				ALBANIA			ALBANIA		+05 47 00	+073 35 00	1925 METROS		
ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1959	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	248.0	159.0	-9.9
1960	89.0	75.0	133.0	481.0	337.0	179.0	297.0	166.5	208.0	269.0	119.5	241.0	2615.0
1961	184.0	59.0	267.0	318.0	199.0	125.0	106.5	43.0	115.0	425.0	393.0	161.0	2395.5
1962	154.0	161.0	325.0	239.0	316.0	156.0	91.0	109.0	144.0	368.0	457.0	146.0	2708.0
1963	207.0	180.0	390.0	427.0	332.0	133.0	138.0	122.0	137.0	461.0	249.0	134.0	2850.0
1964	157.0	108.0	126.0	366.0	193.0	342.0	173.0	233.0	133.0	318.0	354.0	157.0	2660.0
1965	130.0	115.0	167.0	305.0	236.0	74.0	37.0	137.0	175.0	286.0	508.0	138.0	2308.0
1966	110.0	120.0	227.0	265.0	431.0	276.0	185.0	162.0	128.0	605.0	376.0	251.0	3176.0
1967	153.0	303.0	200.0	424.0	175.0	174.0	178.0	81.0	247.0	266.0	247.0	188.0	2638.0
1968	178.0	91.0	248.0	324.0	320.0	306.0	138.0	47.0	181.0	405.0	188.0	46.0	2474.0
1969	143.0	141.0	183.0	358.0	254.0	169.0	24.0	125.0	200.0	370.0	326.0	250.0	2563.0
1970	164.0	152.0	113.0	470.0	465.0	207.0	193.0	139.0	261.0	412.0	387.0	123.0	3086.0
1971	182.0	311.0	472.0	463.0	436.0	124.0	73.0	207.0	343.0	449.0	311.0	127.0	3498.0
1972	194.0	93.0	202.0	423.0	287.0	249.0	94.0	320.0	60.0	335.0	286.0	165.0	2708.0
1973	57.0	16.0	200.0	259.0	256.0	210.0	240.0	163.0	362.0	351.0	463.0	316.0	2893.0
1974													
1975													
1976													
1977													
1978													
1979	61.9	108.5	262.6	523.8	242.1	142.9	159.9	115.0	151.4	509.6	224.6	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR CARVAJAL

ESTACION X ALEANIA MUNICIPIO DE ALEANIA PERIODO 1959 - 1979 COEF DE CORRECCION 1.000

N	AÑO	T /	CO	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1973	2853.0	2893.0	2893.0	-0.424	0.050				+			
2	1972	2708.0	5601.0	2800.5	-0.146	0.033				+			
3	1971	3458.0	9059.0	3023.0	2.258	0.303				I +			
4	1970	3088.0	12145.0	3036.3	1.023	0.423				I +			
5	1969	2563.0	14708.0	2549.6	-0.554	0.353				I +			
6	1968	2474.0	17222.0	2870.3	-0.870	0.251				I +			
7	1967	2638.0	19860.0	2837.1	-0.362	0.208				I +			
8	1966	3174.0	24034.0	2879.5	1.302	0.361				I +			
9	1965	2308.0	25544.0	2816.0	-1.383	0.195				I+			
10	1964	2061.0	28004.0	2800.4	-0.254	0.164				I+			
11	1963	2801.0	30854.0	2804.5	0.253	0.199				I+			
12	1962	2708.0	33562.0	2796.8	-0.146	0.181				I+			
13	1961	2355.0	35917.0	2766.0	-1.113	0.051				+			
14	1960	2615.0	38532.0	2755.2	-0.434	0.0				+			

N	AÑO	T /	CO	MCY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 14 AÑOS = 2755.2

DESVIACION ESTANDAR = 323.3

COEFICIENTE DE VARIACION = 0.117

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRECER *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRESTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
231210	ALBANIA	ALBANIA	+05 47 00	+073 55 00	1925 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1959	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	246.0	159.0	-9.9	1959
1960	89.0	75.0	133.0	481.0	337.0	179.0	297.0	166.5	208.0	289.0	119.5	241.0	2615.0	1960
1961	184.0	59.0	267.0	318.0	199.0	125.0	106.5	43.0	115.0	425.0	393.0	161.0	2395.5	1961
1962	154.0	161.0	325.0	239.0	316.0	198.0	91.0	109.0	144.0	368.0	457.0	146.0	2708.0	1962
1963	207.0	180.0	390.0	427.0	332.0	133.0	138.0	122.0	137.0	401.0	249.0	134.0	2850.0	1963
1964	157.0	108.0	126.0	366.0	193.0	342.0	173.0	233.0	133.0	318.0	364.0	157.0	2660.0	1964
1965	130.0	115.0	167.0	305.0	236.0	74.0	37.0	137.0	175.0	286.0	506.0	138.0	2308.0	1965
1966	110.0	120.0	227.0	265.0	431.0	276.0	185.0	162.0	128.0	605.0	376.0	291.0	3176.0	1966
1967	153.0	303.0	200.0	424.0	175.0	174.0	178.0	81.0	247.0	268.0	247.0	188.0	2638.0	1967
1968	178.0	91.0	248.0	324.0	320.0	308.0	138.0	47.0	181.0	405.0	188.0	46.0	2474.0	1968
1969	143.0	141.0	183.0	358.0	254.0	189.0	24.0	125.0	200.0	370.0	326.0	250.0	2563.0	1969
1970	164.0	152.0	113.0	470.0	465.0	207.0	193.0	139.0	261.0	412.0	367.0	123.0	3086.0	1970
1971	182.0	311.0	472.0	403.0	436.0	124.0	73.0	207.0	343.0	449.0	311.0	127.0	3498.0	1971
1972	194.0	93.0	202.0	423.0	287.0	249.0	94.0	320.0	60.0	335.0	286.0	165.0	2708.0	1972
1973	57.0	16.0	200.0	259.0	256.0	210.0	240.0	163.0	362.0	351.0	463.0	316.0	2893.0	1973
1974														1974
1975														1975
1976														1976
1977														1977
1978														1978
1979	61.9	108.5	262.6	523.8	242.1	142.9	159.9	115.0	151.4	509.6	224.6	-9.9	-9.9	1979
NUMERO DE ANOS	15	15	15	15	15	15	15	15	15	15	16	15	14	
VALOR MAXIMO	207.0	311.0	472.0	523.8	465.0	342.0	297.0	320.0	362.0	605.0	506.0	316.0	3498.0	
CUARTIL SUPERIOR	182.0	161.0	267.0	463.0	337.0	249.0	185.0	166.5	247.0	425.0	390.0	241.0	2893.0	
MEDIANA	154.0	115.0	202.0	366.0	287.0	189.0	138.0	137.0	175.0	370.0	316.5	159.0	2684.0	
CUARTIL INFERIOR	110.0	91.0	167.0	305.0	236.0	133.0	91.0	109.0	133.0	318.0	247.5	134.0	2563.0	
VALOR MINIMO	57.0	16.0	113.0	239.0	175.0	74.0	24.0	43.0	60.0	268.0	119.5	46.0	2308.0	
PROMEDIOS	144.3	135.6	234.4	370.4	298.6	195.4	141.8	144.6	189.7	386.1	321.1	176.1	2755.2	
											TOTAL DE LOS PROMEDIOS MENSUALES =		2744.0	
PORCENTAJES	5.3	4.9	8.5	13.7	10.9	7.1	5.2	5.3	6.9	14.1	11.7	6.4		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB
INDICE DE FOURNIER = 54. INDICE DE ARNOLDUS = 264.

DEV. ESTANDAR	46.4	60.9	99.4	89.7	90.6	73.7	74.0	71.0	83.7	89.6	107.1	70.7	323.3
COEF. VARIACION	0.321	0.450	0.424	0.238	0.303	0.377	0.521	0.491	0.441	0.232	0.334	0.401	0.117
COEF. ASIMETRIA	-0.743	1.186	1.119	-0.017	0.553	0.485	0.322	0.525	0.838	0.990	0.007	0.533	0.937

PROYECTO IGAC-URSTON *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA URSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240204	ENCINO	ENCINO	+06 08 00	+073 07 00	1912 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1955	40.0	368.0	448.0	262.5	-9.9	232.0	351.0	132.0	474.0	632.0	306.0	379.0	-9.9
1956	379.0	409.0	258.0	213.0	-9.9	230.0	160.0	170.0	310.0	590.0	410.0	265.0	-9.9
1957	87.0	330.0	374.0	428.0	505.0	101.0	208.0	103.0	215.0	335.0	259.0	241.0	3186.0
1958	88.0	141.0	178.0	394.0	163.0	124.0	57.0	176.0	181.0	298.0	525.0	268.0	2593.0
1959	105.0	141.0	299.0	281.0	561.0	238.0	114.0	157.0	220.0	399.0	384.0	530.0	3429.0
1960	138.0	199.0	419.0	429.0	258.0	146.0	132.0	223.0	275.0	625.0	344.0	388.0	3576.0
1961	198.0	107.0	418.0	288.0	279.0	117.0	177.0	40.0	150.0	368.0	470.0	174.0	2786.0
1962	221.0	144.0	439.0	575.0	308.0	304.0	155.0	140.0	199.0	437.0	567.0	243.0	3732.0
1963	102.0	243.0	393.0	481.0	341.0	152.0	145.0	76.0	111.0	438.0	520.0	242.0	3244.0
1964	109.0	217.0	351.0	443.0	293.0	259.0	231.0	236.0	152.0	409.0	300.0	242.0	3302.0
1965	93.0	115.0	185.0	318.0	247.0	59.0	17.0	87.0	124.0	-9.9	-9.9	-9.9	-9.9
1966	-9.9	-9.9	-9.9	-9.9	456.0	354.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1967	-9.9	-9.9	387.0	504.0	280.0	136.0	97.0	82.0	84.0	362.0	348.0	326.0	-9.9
1968	149.0	214.0	265.0	519.0	425.0	250.0	244.0	224.0	327.0	371.0	366.0	110.0	3464.0
1969	287.0	294.0	87.0	92.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1970	127.0	305.0	105.0	449.0	220.0	247.0	96.0	228.0	155.0	620.0	626.0	343.0	3521.0
1971	607.0	499.0	530.0	364.0	270.0	122.0	83.0	226.0	275.0	336.0	489.0	107.0	3908.0
1972	281.0	189.0	400.0	503.0	404.0	211.0	153.0	279.0	224.0	270.0	362.0	135.0	3411.0
1973	96.9	69.0	440.0	571.0	340.0	203.0	127.0	198.0	323.0	680.0	977.0	374.0	4398.9
1974	433.0	550.0	334.0	539.0	379.0	163.0	168.0	208.0	346.0	443.0	747.0	62.0	4372.0
1975	77.0	289.0	344.0	207.0	265.0	78.0	139.0	158.0	168.0	142.0	567.0	319.0	2753.0
1976	76.0	222.0	500.0	377.0	279.0	85.0	15.0	95.0	107.0	622.0	252.0	190.0	2886.0
1977	121.0	132.0	279.0	-9.9	-9.9	283.0	191.0	118.0	358.0	450.0	396.0	248.0	-9.9
1978	140.0	-9.9	-9.9	-9.9	310.0	145.0	-9.9	-9.9	-9.9	298.0	383.0	274.0	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

ESTACION X ENCINO MUNICIPIO DE ENCINO PERIODO CCEF DE CORRECCION

1955 - 1976 1.000

N	AÑO	T /	CU	MCY	ECR	FCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1976	2886.0	2886.0	2886.0	-0.556	-0.154				+I			
2	1975	2763.0	5649.0	2819.5	-1.245	-0.346			+	I			
3	1974	4372.0	10011.0	3337.0	1.625	-0.064				+			
4	1973	4398.5	14409.5	3602.5	1.880	0.226				I +			
5	1972	3411.0	17820.5	3564.2	0.002	0.226				.+			
6	1971	3508.0	21328.5	3621.5	0.546	0.272				I +			
7	1970	3921.0	25249.5	3607.1	0.211	0.404				I . +			
8	1966	3464.0	28713.5	3589.2	0.102	0.420				I . +			
9	1964	3302.0	32015.5	3557.3	-0.206	0.388			.	I +			
10	1963	3244.0	35259.5	3526.0	-0.316	0.340			.	I +			
11	1962	3732.0	38991.5	3544.7	0.012	0.434				I + .			
12	1961	2786.0	41777.5	3481.5	-1.186	0.251			.	I +			
13	1960	3576.0	45353.5	3488.6	0.315	0.300				I + .			
14	1959	3429.0	48782.5	3484.5	0.036	0.309				. +			
15	1958	2593.0	51375.5	3425.1	-1.553	0.066			.	+			
16	1957	3186.0	54561.5	3410.1	-0.426	0.0			.	+			

N	AÑO	T /	CU	MCY	ECR	FCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 16 AÑOS = 3410.1

DESVIACION ESTANDAR = 522.0

COEFICIENTE DE VARIACION = 0.154

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CESTEN *** CREPC DE FITOCLIMATOLOGIA *** PROGRAMA CESTEN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240204	ENCINO	ENCINO	+06 08 25	+073 06 30	1910 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1959	105.0	141.0	299.0	281.0	561.0	238.0	114.0	157.0	220.0	399.0	384.0	530.0	3429.0	1959
1960	138.0	199.0	419.0	429.0	258.0	146.0	132.0	223.0	275.0	625.0	344.0	388.0	3576.0	1960
1961	198.0	107.0	418.0	288.0	279.0	117.0	177.0	40.0	150.0	368.0	470.0	174.0	2786.0	1961
1962	221.0	144.0	439.0	575.0	308.0	304.0	155.0	140.0	199.0	437.0	567.0	243.0	3732.0	1962
1963	102.0	243.0	393.0	481.0	341.0	152.0	145.0	76.0	111.0	438.0	520.0	242.0	3244.0	1963
1964	169.0	217.0	351.0	443.0	253.0	259.0	231.0	236.0	152.0	409.0	300.0	242.0	3302.0	1964
1965	93.0	115.0	185.0	318.0	247.0	59.0	17.0	67.0	124.0	-9.9	-9.9	-9.9	-9.9	1965
1966	-9.9	-9.9	-9.9	-9.9	456.0	354.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1966
1967	-9.9	-9.9	387.0	504.0	280.0	136.0	97.0	82.0	64.0	362.0	348.0	326.0	-9.9	1967
1968	149.0	214.0	265.0	519.0	425.0	250.0	244.0	224.0	327.0	371.0	366.0	110.0	3464.0	1968
1969	287.0	294.0	87.0	92.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1969
1970	127.0	305.0	105.0	449.0	220.0	247.0	96.0	228.0	155.0	620.0	626.0	343.0	3521.0	1970
1971	607.0	499.0	530.0	304.0	270.0	122.0	83.0	226.0	275.0	336.0	489.0	107.0	3508.0	1971
1972	281.0	189.0	400.0	503.0	404.0	211.0	153.0	279.0	224.0	270.0	362.0	135.0	3411.0	1972
1973	96.9	69.0	440.0	571.0	340.0	203.0	127.0	198.0	323.0	680.0	577.0	374.0	4398.9	1973
1974	433.0	550.0	334.0	539.0	379.0	163.0	168.0	208.0	346.0	443.0	747.0	62.0	4372.0	1974
1975														1975
1976	76.0	222.0	566.0	377.0	279.0	85.0	15.0	95.0	107.0	622.0	252.0	190.0	2886.0	1976
1977	121.0	132.0	279.0	-9.9	-9.9	283.0	191.0	118.0	358.0	450.0	396.0	248.0	-9.9	1977
1978	140.0	-9.9	-9.9	-9.9	310.0	145.0	-9.9	-9.9	-9.9	298.0	383.0	274.0	-9.9	1978
NUMERO DE ANOS	17	16	17	16	17	18	16	16	16	16	16	16	13	
VALOR MAXIMO	607.0	550.0	566.0	575.0	561.0	354.0	244.0	279.0	358.0	680.0	577.0	530.0	4398.9	
CUARTIL SUPERIOR	251.0	268.5	429.0	511.5	391.5	250.0	172.5	225.0	299.0	535.0	543.5	334.5	3820.0	
MEDIANA	140.0	206.5	387.0	446.0	308.0	183.0	138.5	177.5	209.5	423.0	390.0	242.5	3464.0	
CUARTIL INFERIOR	103.5	136.5	272.0	341.0	274.5	136.0	96.5	91.0	137.0	365.0	355.0	154.5	3273.0	
VALOR MINIMO	76.0	69.0	87.0	92.0	220.0	59.0	15.0	40.0	84.0	270.0	252.0	62.0	2786.0	
PROMEDIOS	196.7	227.5	346.9	420.8	332.4	193.0	134.1	163.6	214.4	445.5	470.7	249.3	3540.8	
											TOTAL DE LOS PROMEDIOS MENSUALES =		3394.7	
PORCENTAJES	5.8	6.7	10.2	12.4	9.8	5.7	3.9	4.8	6.3	13.1	13.9	7.3		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 65. INDICE DE ARNOLDUS = 327.

DEV. ESTANDAR	139.9	133.4	132.7	129.0	88.0	80.5	64.5	72.9	92.8	125.3	186.3	122.7	481.2
COEF. VARIACION	0.711	0.586	0.382	0.307	0.265	0.417	0.481	0.446	0.433	0.281	0.396	0.492	0.136
COEF. ASIMETRIA	1.985	1.444	-0.535	-1.098	1.234	0.259	-0.278	-0.195	0.227	0.695	1.558	0.567	0.445

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240125	GAMBITA	GAMBITA	+05 56 00	+073 23 00	1900 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1959	-9.9	-9.9	166.0	401.0	416.0	335.0	164.0	183.0	164.5	349.5	178.0	168.0	-9.9
1960	72.0	123.0	102.0	138.5	169.5	57.0	93.5	51.0	14.0	56.0	48.0	21.0	985.5
1961	26.5	-9.9	49.1	29.8	166.5	155.0	150.0	186.0	159.0	173.0	-9.9	-9.9	-9.9
1962	44.0	83.0	240.0	310.0	371.0	200.0	252.0	217.0	259.0	276.0	499.0	-9.9	-9.9
1963	-9.9	-9.9	-9.9	-9.9	675.0	474.0	843.0	569.0	440.0	704.0	607.0	192.0	-9.9
1964	250.0	441.0	138.0	437.0	292.0	325.0	262.0	330.0	575.0	837.0	51.0	27.0	3965.0
1965	-9.9	-9.9	368.0	497.0	380.0	50.0	305.0	534.0	557.0	477.0	737.0	210.0	-9.9
1966	160.0	130.0	122.0	278.0	369.0	204.0	149.0	192.0	150.0	621.0	688.0	633.0	3696.0
1967	150.0	180.0	149.0	407.0	409.0	246.0	179.0	296.0	207.0	275.0	205.0	117.0	2820.0
1968	-9.9	-9.9	-9.9	-9.9	350.0	270.0	228.0	180.0	200.0	371.0	254.0	20.0	-9.9
1969	90.0	150.0	115.0	463.0	185.0	262.0	135.0	170.0	237.0	457.0	-9.9	-9.9	-9.9
1970	-9.9	66.0	168.0	395.0	305.0	205.0	188.0	249.0	233.0	358.0	267.5	265.0	-9.9
1971	233.0	210.5	349.0	330.0	605.5	176.0	124.0	315.0	290.0	408.0	216.0	264.0	3521.0
1972	224.0	93.0	219.0	408.0	458.5	206.0	65.5	149.5	125.5	239.5	113.5	237.0	2539.0
1973	53.0	29.0	129.0	248.0	300.0	278.0	164.0	293.0	313.0	315.0	515.0	305.0	2942.0
1974	187.0	182.0	179.0	655.0	480.0	246.0	126.0	137.2	312.9	422.4	359.9	35.0	3322.4
1975	79.6	67.4	301.3	161.6	433.1	202.9	285.3	205.0	177.3	252.0	400.7	209.6	2775.8
1976	-9.9	179.2	253.2	256.7	-9.9	128.1	13.6	67.4	129.9	-9.9	-9.9	133.2	-9.9
1977	25.5	72.0	154.4	144.9	293.1	152.9	155.9	162.5	191.7	343.3	-9.9	-9.9	-9.9
1978	-9.9	78.7	199.2	459.1	304.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X CAMOTA MUNICIPIO DE CAMOTA PERIODO 1959 - 1978 COEF DE CORRECCION 1.000

N	AÑO	T/A	CO	MGY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1975	2775.6	2775.6	2775.8	-0.202	-0.000				+			
2	1974	3822.4	3098.2	3049.1	0.423	0.006				+	.		
3	1973	2542.0	3040.2	3013.4	-0.012	0.002				#			
4	1972	2555.0	11979.2	2894.8	-0.472	-0.078			.	+			
5	1971	3521.0	15100.2	3020.0	0.249	0.119				I+	.		
6	1967	2821.0	17920.2	2906.7	-0.151	0.070				.+			
7	1968	3656.0	21610.2	3088.0	0.845	0.322				I	+	.	
8	1964	3565.0	25980.2	3198.1	1.161	0.666				I		+	.
9	1960	565.5	26870.7	2952.3	-2.246	0.000			.	+			

N	AÑO	T/A	CO	MGY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 9 AÑOS = 2952.3

DESVIACION ESTANDAR = 675.7

COEFICIENTE DE VARIACION = 0.229

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CRECTN *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA CRECTN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240125	GAMEITA	GAMBITA	+05 56 52	+073 20 48	1890 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1967	150.0	180.0	149.0	407.0	409.0	246.0	179.0	296.0	207.0	275.0	205.0	117.0	2820.0	1967
1968	-9.9	-9.9	-9.9	-9.9	350.0	270.0	228.0	180.0	200.0	371.0	254.0	20.0	-9.9	1968
1969	90.0	140.0	115.0	463.0	165.0	262.0	135.0	170.0	237.0	457.0	-9.9	-9.9	-9.9	1969
1970	-9.9	65.0	168.0	395.0	305.0	205.0	188.0	249.0	233.0	358.0	267.5	265.0	-9.9	1970
1971	233.0	210.5	349.0	330.0	605.5	176.0	124.0	315.0	290.0	408.0	216.0	264.0	3521.0	1971
1972	224.0	93.5	219.0	408.0	458.5	206.0	65.5	149.5	125.5	239.5	113.5	237.0	2539.0	1972
1973	53.0	29.0	129.0	248.0	300.0	278.0	164.0	293.0	313.0	315.0	515.0	305.0	2942.0	1973
1974	187.0	182.0	179.0	655.0	480.0	246.0	126.0	137.2	312.9	422.4	359.9	35.0	3322.4	1974
1975	79.6	67.4	301.3	161.6	433.1	202.5	285.3	205.0	177.3	252.0	400.7	209.6	2775.8	1975
1976	-9.9	179.2	253.2	296.7	-9.9	128.1	13.6	67.4	129.9	-9.9	-9.9	133.2	-9.9	1976
1977	25.5	72.0	164.4	144.9	253.1	192.9	155.9	162.5	193.7	343.3	-9.9	-9.9	-9.9	1977
1978	-9.9	78.7	195.2	459.1	304.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1978
NUMERO DE ANOS	8	11	11	11	11	11	11	11	11	10	8	9	6	
VALOR MAXIMO	233.0	210.5	349.0	655.0	605.5	278.0	285.3	315.0	313.0	457.0	515.0	305.0	3521.0	
CUARTIL SUPERIOR	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	******	
MEDIANA	120.0	93.0	179.0	395.0	350.0	206.0	155.9	180.0	207.0	350.6	260.8	209.6	2881.0	
CUARTIL INFERIOR	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	******	
VALOR MINIMO	25.5	29.0	115.0	144.9	165.0	128.1	13.6	67.4	125.5	239.5	113.5	20.0	2539.0	
PROMEDIOS	130.3	118.9	201.5	360.8	374.8	219.4	161.3	202.2	219.9	344.1	291.4	176.2	2986.7	
PORCENTAJES	4.7	4.3	7.2	12.9	13.4	7.9	5.4	7.2	7.9	12.3	10.4	6.3		

TOTAL DE LOS PROMEDIOS MENSUALES = 2790.8

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 50. INDICE DE ARNOLDUS = 264.

DEV. ESTANDAR	79.4	62.2	73.5	147.1	116.0	45.6	73.6	77.6	65.4	73.7	127.3	104.1	366.8
COEF. VARIACION	0.609	0.523	0.365	0.408	0.310	0.208	0.466	0.384	0.297	0.214	0.437	0.591	0.123
COEF. ASIMETRIA	0.111	0.153	0.931	0.310	0.449	-0.545	-0.108	0.033	0.124	-0.027	0.556	-0.447	0.525

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
24J121	JESUS MARIA	JESUS MARIA	+05 53 00	+073 47 00	1920 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1958	-9.9	-9.9	124.8	482.3	306.0	265.0	71.5	203.0	214.5	441.0	258.0	113.0	-9.9
1959	14.5	35.0	300.0	385.5	346.0	418.0	179.5	268.0	296.5	283.0	284.5	203.5	3014.0
1960	84.5	85.0	217.5	477.0	277.0	180.0	184.0	211.5	244.5	357.0	350.5	229.0	2897.5
1961	70.5	73.0	262.0	292.0	296.5	176.0	219.5	89.5	171.5	355.0	363.5	154.0	2523.0
1962	168.0	58.0	265.0	204.0	309.0	404.0	130.0	230.0	201.0	325.0	428.0	67.0	2789.0
1963	133.0	123.0	350.0	423.0	311.0	129.0	240.0	158.0	139.0	261.0	264.0	82.0	2613.0
1964	41.0	130.0	136.0	491.0	381.0	237.0	316.0	172.0	244.0	267.0	260.0	145.0	2820.0
1965	93.0	222.0	158.0	298.0	343.0	259.0	43.0	200.0	330.0	359.0	480.0	173.0	2958.0
1966	142.0	13.0	236.0	231.0	518.0	365.0	194.0	180.0	167.0	469.0	279.0	95.0	2909.0
1967	140.0	170.0	68.0	222.0	329.0	146.0	168.0	141.0	220.0	321.0	133.0	102.0	2160.0
1968	96.0	40.0	201.0	469.0	335.0	408.0	225.0	140.0	437.0	451.0	197.0	125.0	3124.0
1969	134.0	86.0	179.0	359.0	302.0	272.5	58.0	185.0	282.0	396.0	314.0	217.5	2785.0
1970	74.0	42.0	176.0	378.0	341.0	293.5	111.0	171.0	313.5	377.0	183.5	183.5	2644.0
1971	274.0	175.0	413.0	310.0	597.0	211.0	144.0	328.5	391.5	445.0	186.0	140.5	3615.5
1972	171.0	139.5	322.5	333.0	536.0	252.0	262.0	363.5	207.0	280.0	363.5	158.5	3388.5
1973	57.5	2.0	185.5	281.5	325.5	361.5	278.0	311.5	420.0	276.0	501.0	365.0	3367.0
1974	197.0	195.0	144.0	536.0	659.0	272.0	179.0	163.0	472.0	526.0	377.0	41.0	3763.0
1975	54.0	143.0	318.0	208.0	579.0	160.0	370.5	324.0	349.5	398.5	372.0	269.0	3545.5
1976	98.0	206.0	280.0	423.0	405.0	119.0	33.0	77.0	144.0	380.0	206.0	77.5	2448.5
1977	49.0	118.0	207.0	199.0	307.0	279.0	313.0	273.5	410.0	351.0	338.0	98.0	2942.5
1978	-9.9	55.0	264.0	409.0	396.0	292.0	319.0	101.0	216.5	408.0	200.0	166.0	-9.9
1979	92.0	124.0	262.0	447.0	341.0	205.0	176.0	189.0	380.0	370.0	285.0	76.0	2951.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANAGRAN

ESTACION X JESUS MARIA MUNICIPIO DE JESUS MARIA PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

ESTACION Y CENTRAL AZ MUNICIPIO DE PUENTE NACIONAL PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	CLX	CLY	RAN	FCAN	F = -4. 1	-3. 1	-2. 1	-1. 1	0.0 I	+1. I	+2. I	+3. I	+4. I
					F :	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1979	25510.	27000.	0.978	-0.023					+				
2	1977	58540.	49930.	1.211	0.182					I+				
3	1976	82420.	76300.	1.097	0.227					I +				
4	1975	111680.	105760.	0.920	0.121					I+				
5	1974	102550.	136000.	0.995	0.120					+I				
6	1972	166430.	104450.	1.115	0.239					I +				
7	1971	222550.	198000.	0.905	0.200					I+				
8	1970	249503.	262990.	0.957	0.158					I+				
9	1968	260627.	251010.	1.038	0.196					I+				
10	1967	301987.	274490.	0.867	0.083					+				
11	1966	331550.	299520.	1.072	0.190					I+				
12	1965	366540.	322800.	1.150	0.282					I +				
13	1964	368740.	355770.	0.837	0.054					+				
14	1963	414870.	379010.	0.927	0.023					+				
15	1962	442700.	407250.	0.924	-0.056					+				
16	1961	467950.	426920.	1.005	0.0					+				
					F =	-4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CLX	CLY	RAN	FCAN	1	1	1	1	I	I	I	I	I
					F :	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 2524.5 2000.7

RAZONES PROPUESTAS Y/X = 0.917

X/Y = 1.091

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240121	JESUS MARIA	JESUS MARIA	+05 52 43	+073 47 12	1875 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	-9.9	-9.9	124.8	482.3	306.0	265.0	71.5	203.0	214.5	441.0	256.0	113.0	-9.9	1958
1959	14.5	35.0	300.0	385.5	346.0	418.0	179.5	268.0	296.5	283.0	284.5	203.5	3014.0	1959
1960	84.5	85.0	217.5	477.0	277.0	180.0	164.0	211.5	244.5	357.0	350.5	229.0	2897.5	1960
1961	70.5	73.0	262.0	292.0	296.5	176.0	219.5	89.5	171.5	355.0	363.5	154.0	2523.0	1961
1962	168.0	98.0	265.0	204.0	309.0	404.0	130.0	230.0	201.0	325.0	426.0	87.0	2789.0	1962
1963	133.0	123.0	350.0	423.0	311.0	129.0	240.0	158.0	139.0	261.0	264.0	82.0	2613.0	1963
1964	41.0	130.0	136.0	491.0	381.0	237.0	316.0	172.0	244.0	267.0	260.0	145.0	2820.0	1964
1965	93.0	222.0	158.0	298.0	343.0	259.0	43.0	200.0	330.0	359.0	480.0	173.0	2958.0	1965
1966	142.0	13.0	236.0	231.0	518.0	385.0	194.0	180.0	167.0	469.0	279.0	95.0	2509.0	1966
1967	140.0	170.0	68.0	222.0	329.0	146.0	168.0	141.0	220.0	321.0	133.0	102.0	2160.0	1967
1968	96.0	40.0	201.0	469.0	335.0	408.0	225.0	140.0	437.0	451.0	197.0	125.0	3124.0	1968
1969	134.0	80.0	179.0	359.0	302.0	272.5	58.0	185.0	282.0	396.0	314.0	217.5	2785.0	1969
1970	74.0	42.0	176.0	378.0	341.0	293.5	111.0	171.0	313.5	377.0	183.5	183.5	2644.0	1970
1971	274.0	175.0	413.0	310.0	597.0	211.0	144.0	328.5	391.5	445.0	186.0	140.5	3615.5	1971
1972	171.0	139.5	322.5	333.0	536.0	252.0	262.0	363.5	207.0	280.0	363.5	158.5	3388.5	1972
1973	57.5	2.0	185.5	281.5	325.5	361.5	278.0	311.5	420.0	278.0	501.0	365.0	3367.0	1973
1974	197.0	195.0	144.0	536.0	659.0	272.0	179.0	163.0	472.0	528.0	377.0	41.0	3763.0	1974
1975	54.0	143.0	318.0	208.0	579.0	160.0	370.5	324.0	349.5	398.5	372.0	269.0	3545.5	1975
1976	98.0	206.0	280.0	423.0	405.0	119.0	33.0	77.0	144.0	380.0	206.0	77.5	2448.5	1976
1977	49.0	118.0	207.0	199.0	307.0	279.0	313.0	273.5	410.0	351.0	336.0	98.0	2942.5	1977
1978	-9.9	55.0	264.0	409.0	396.0	292.0	319.0	101.0	216.5	408.0	200.0	166.0	-9.9	1978
1979	92.0	124.0	262.0	447.0	341.0	209.0	176.0	189.0	360.0	370.0	265.0	76.0	2951.0	1979
NUMERO DE ANOS	20	21	22	22	22	22	22	22	22	22	22	22	20	
VALOR MAXIMO	274.0	222.0	413.0	536.0	659.0	418.0	370.5	363.5	472.0	528.0	501.0	365.0	3763.0	
CUARTIL SUPERIOR	141.0	156.5	280.0	447.0	405.0	293.5	262.0	268.0	380.0	408.0	363.5	183.5	3245.5	
MEDIANA	94.5	118.0	226.8	368.5	341.0	262.0	181.8	187.0	263.3	364.5	284.8	142.8	2925.8	
CUARTIL INFERIOR	64.0	48.5	176.0	281.5	309.0	180.0	130.0	158.0	207.0	321.0	206.0	95.0	2714.5	
VALOR MINIMO	14.5	2.0	68.0	199.0	277.0	119.0	33.0	77.0	139.0	261.0	133.0	41.0	2160.0	
PROMEDIOS	109.1	106.4	230.4	357.2	388.2	260.4	191.5	203.6	264.1	368.2	301.1	149.1	2962.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		2949.5	
PORCENTAJES	3.7	3.6	7.8	12.1	13.2	8.8	6.5	6.9	9.6	12.5	10.2	5.1		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 51. INDICE DE ARNOLDUS = 261.

DEV. ESTANDAR	61.8	64.7	82.8	105.6	112.3	91.4	94.7	79.2	101.8	71.4	96.1	75.7	410.1
COEF. VARIACION	0.566	0.609	0.359	0.296	0.289	0.351	0.494	0.389	0.358	0.194	0.326	0.507	0.138
COEF. ASIMETRIA	0.961	0.150	0.193	-0.077	1.314	0.265	0.027	0.454	0.313	0.305	0.338	1.147	0.260

PROYECTO IGAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240168	CENTRAL N2	PUENTE NACIONAL	+05 48 00	+073 43 00	2145 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1960	-9.9	-9.9	-9.9	441.7	462.0	130.0	191.5	158.6	219.0	335.3	322.2	242.7	-9.9
1961	100.0	47.5	263.3	251.7	206.6	114.0	113.6	91.5	160.8	278.5	339.7	195.3	2162.9
1962	143.2	57.8	233.2	378.5	307.3	360.0	108.0	174.0	162.5	402.0	374.0	47.0	2767.5
1963	138.0	161.5	360.5	369.5	261.2	110.5	239.5	152.0	67.0	225.0	387.5	112.0	2584.2
1964	57.0	183.5	151.0	533.5	327.0	376.0	210.0	269.5	270.5	242.5	354.0	114.5	3089.0
1965	77.5	102.0	84.5	372.1	227.0	146.0	48.0	283.5	232.0	264.0	417.0	103.0	2356.6
1966	68.0	52.0	236.5	208.5	367.0	327.0	149.0	153.0	164.0	404.5	217.0	130.5	2487.0
1967	115.5	159.5	147.5	324.3	331.2	145.2	138.7	115.2	96.3	347.8	192.6	165.5	2283.3
1968	110.0	130.4	171.3	468.4	255.6	327.4	131.2	44.4	282.3	456.5	237.0	109.0	2762.5
1969	80.4	131.4	154.7	456.5	175.5	-9.9	28.4	118.5	365.4	321.9	253.7	158.2	-9.9
1970	50.1	49.1	119.8	432.5	303.7	133.5	112.2	156.4	263.5	366.2	290.2	256.1	2533.3
1971	250.7	156.8	455.2	402.2	587.1	166.1	69.7	285.1	242.7	457.7	188.5	169.2	3420.0
1972	162.0	149.5	254.8	382.0	445.0	197.3	96.7	183.3	161.0	311.6	347.1	165.4	2785.7
1973	24.6	9.5	199.6	319.7	209.4	323.6	162.4	278.9	303.7	267.4	655.7	254.6	3009.3
1974	-9.9	-9.9	248.1	523.4	436.6	317.6	161.0	121.6	498.6	461.9	388.0	44.1	-9.9
1975	42.2	179.0	304.2	277.7	605.8	191.4	373.5	252.6	281.7	431.7	392.9	199.5	3532.2
1976	120.0	141.2	196.6	311.9	337.0	145.1	0.5	77.9	167.5	305.6	126.6	115.0	2044.9
1977	25.0	43.0	120.5	120.6	212.1	165.5	248.5	185.4	285.9	401.5	362.5	116.1	2227.2
1978	14.9	80.7	223.6	400.5	225.4	165.5	270.2	83.9	285.2	164.6	215.6	193.4	2323.9
1979	57.0	86.4	352.5	354.0	355.5	226.6	227.5	161.9	263.4	356.4	229.1	55.9	2766.2

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X CENTRAL N2 MUNICIPIO DE FUENTE NACIONAL PERIODO 1960 - 1979 COEF DE CORRECCION 1.000

N	AN	I /	CO	MOY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	2700.2	2700.2	2700.2	0.247	C.C4C				+ .			
2	1978	2320.5	5020.7	2545.0	-0.786	-C.C8E			.	+			
3	1977	2227.2	7247.5	2439.1	-1.004	-0.245			.	+ I			
4	1976	2144.5	9392.2	2348.5	-1.428	-C.48C			.	+ I	.		
5	1975	3332.2	12694.4	2578.9	2.C2L	-C.152				+I		.	
6	1974	3C25.3	15965.7	2663.5	C.557	C.CC5				+	.		
7	1972	2725.7	18709.4	2801.3	C.252	C.C97				+ .			
8	1971	3421.C	22185.4	2773.7	1.765	C.343				I +		.	
9	1970	2553.3	24722.7	2747.C	-C.254	C.255				. I +			
10	1968	2722.5	27465.2	2748.5	C.235	C.334				I .+			
11	1967	2223.3	29708.5	2700.2	-C.674	C.192			.	I+			
12	1966	2487.C	32295.5	2688.C	-C.401	C.127			.	I+			
13	1965	2356.C	34612.1	2662.5	-C.704	C.C13			.	+			
14	1964	3C65.C	37701.1	2692.9	C.557	C.175				I+	.		
15	1963	2264.2	40265.3	2685.7	-C.175	C.14C				.I+			
16	1962	2767.5	43032.8	2690.8	C.250	C.187				I+.			
17	1961	2162.5	45215.7	2659.7	-1.154	C.C			.	+			

N	AN	I /	CO	MOY	ECR	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 17 AÑOS = 2659.7
DESVIACION ESTANDAR = 430.6
COEFICIENTE DE VARIACION = 0.162

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IGAC-CREDEN *** CALCULO DE HIDROCLIMATOLOGIA *** PROGRAMA CREDEN

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2401od	CENTRAL N2	PUENTE NACIONAL	+05 48 07	+073 42 35	2145 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	-9.9	-9.9	441.7	462.0	130.0	191.5	158.6	219.0	339.3	322.2	242.7	-9.9	1960
1961	100.0	47.9	203.3	251.7	206.6	114.0	113.6	91.5	160.8	278.5	339.7	195.3	2162.9	1961
1962	143.2	57.6	233.2	378.5	307.3	380.0	108.0	174.0	162.5	402.0	374.0	47.0	2767.5	1962
1963	138.0	101.5	360.5	369.5	261.2	110.5	239.5	152.0	67.0	225.0	387.5	112.0	2584.2	1963
1964	57.0	185.5	151.0	533.5	327.0	370.0	210.0	269.5	270.5	242.5	354.0	114.5	3089.0	1964
1965	77.5	102.0	84.5	372.1	227.0	140.0	46.0	283.5	232.0	264.0	417.0	103.0	2356.6	1965
1966	68.0	82.0	236.5	208.5	367.0	337.0	149.0	153.0	164.0	404.5	217.0	130.5	2487.0	1966
1967	115.5	159.5	147.5	324.3	331.2	149.2	138.7	115.2	96.3	347.6	192.6	165.5	2283.3	1967
1968	110.0	130.4	171.3	465.4	255.6	327.4	121.2	44.4	262.3	498.5	237.0	109.0	2762.5	1968
1969	80.4	131.4	194.7	456.9	175.5	-9.9	28.4	118.5	365.4	321.9	253.7	198.2	-9.9	1969
1970	50.1	49.1	119.8	432.5	303.7	133.5	112.2	156.4	263.5	366.2	290.2	256.1	2533.3	1970
1971	250.7	156.8	455.2	402.2	557.1	165.1	69.7	285.1	242.7	457.7	188.5	189.2	3420.0	1971
1972	162.0	149.5	254.8	352.0	445.0	157.3	96.7	183.3	161.0	311.6	347.1	165.4	2785.7	1972
1973	24.6	9.5	199.6	319.7	209.4	323.8	162.4	278.9	363.7	287.4	655.7	254.6	3089.3	1973
1974	-9.9	-9.9	248.1	523.4	436.6	317.8	161.0	121.6	498.6	481.9	388.0	44.1	-9.9	1974
1975	42.2	179.0	304.2	277.7	605.8	191.4	373.5	252.6	281.7	431.7	392.9	199.5	3532.2	1975
1976	120.0	141.2	196.6	311.9	337.0	145.1	0.5	77.9	167.5	305.6	126.6	115.0	2044.9	1976
1977	25.0	43.0	120.5	120.8	212.1	105.5	248.5	185.4	285.9	401.9	362.5	116.1	2227.2	1977
1978	14.9	60.7	223.6	400.5	225.4	185.9	270.2	83.9	285.2	184.6	215.6	153.4	2323.9	1978
1979	97.0	86.4	352.5	354.0	365.5	226.6	227.5	161.9	263.4	356.4	229.1	55.9	2766.2	1979
NUMERO DE ANOS	18	18	19	20	20	19	20	20	20	20	20	20	17	
VALOR MAXIMO	250.7	183.5	455.2	533.5	605.8	380.0	373.5	285.1	498.6	498.5	655.7	256.1	3532.2	
CUARTIL SUPERIOR	120.0	156.8	263.3	437.1	401.8	323.8	218.8	219.0	283.7	403.3	380.8	196.7	2937.3	
MEDIANA	88.7	116.2	223.6	370.8	317.1	165.1	143.8	157.5	253.0	343.5	330.9	141.9	2584.2	
CUARTIL INFERIOR	50.1	52.0	151.0	315.8	226.2	133.5	102.3	116.8	163.3	282.9	223.0	110.5	2303.6	
VALOR MINIMO	14.9	9.5	84.5	120.8	175.5	105.5	0.5	44.4	67.0	184.6	126.6	44.1	2044.9	
PROMEDIOS	93.1	106.7	227.2	364.8	330.4	211.7	154.0	167.4	241.6	345.4	314.5	148.3	2659.7	
												TOTAL DE LOS PROMEDIOS MENSUALES =	2705.4	
PORCENTAJES	3.4	3.9	8.4	13.5	12.2	7.8	5.7	6.2	8.9	12.8	11.6	5.5		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 49. INDICE DE ARNOLDUS = 262.

DEV. ESTANDAR	58.4	54.4	92.9	101.8	119.7	97.5	90.4	73.2	99.5	86.2	116.1	64.7	430.6
COEF. VARIACION	0.627	0.510	0.409	0.279	0.362	0.461	0.587	0.437	0.412	0.250	0.369	0.436	0.162
COEF. ASIMETRIA	1.030	-0.191	0.785	-0.518	0.869	0.671	0.508	0.347	0.604	0.055	1.077	0.097	0.625

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
2401119	CAMPINA SUAITA	SUAITA	+06 07 00	+073 28 00	1650 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1958	-9.9	-9.9	66.9	209.5	332.0	282.5	141.5	250.5	193.0	245.0	216.0	151.0	-9.9
1959	23.0	73.0	129.0	326.0	269.0	256.0	185.0	381.0	260.0	440.0	154.0	250.0	2746.0
1960	44.0	102.0	138.0	429.0	307.0	172.0	278.0	243.0	224.0	270.0	173.5	142.0	2522.5
1961	142.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	84.5	346.4	335.6	142.5	-9.9
1962	93.0	21.0	137.0	127.0	81.0	78.0	78.0	75.0	93.0	135.0	105.0	41.0	1064.0
1963	161.0	-9.9	-9.9	-9.9	304.0	55.0	147.0	204.0	242.0	330.0	-9.9	-9.9	-9.9
1964	64.0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	174.0	202.0	357.0	352.0	142.0	-9.9
1965	-9.9	86.0	122.0	243.0	260.0	105.0	80.0	182.0	189.0	157.0	413.0	128.0	-9.9
1966	149.0	13.0	129.0	203.0	440.0	231.0	157.0	224.0	216.0	443.0	205.0	96.0	2506.0
1967	56.0	134.0	35.0	307.0	325.0	201.0	125.0	72.0	186.0	300.0	121.0	76.0	1538.0
1968	47.0	92.0	175.0	274.0	337.0	282.0	237.0	133.0	366.0	411.0	242.0	57.0	2653.0
1969	74.0	108.0	158.0	153.0	288.0	365.0	236.0	173.0	189.0	373.0	322.0	135.0	2618.0
1970	144.0	97.0	201.0	328.0	-9.9	233.0	204.0	205.0	192.0	342.6	287.0	234.0	-9.9
1971	212.0	181.0	269.0	311.0	461.0	158.0	248.0	253.0	301.0	410.0	173.0	235.0	3252.0
1972	246.0	129.0	132.0	331.0	281.0	151.0	194.0	205.0	222.0	160.0	154.0	168.0	2413.0
1973	123.0	13.0	273.0	173.0	239.5	223.0	187.0	239.0	209.0	212.0	343.0	198.0	2432.5
1974	167.0	100.0	200.0	437.0	486.0	245.0	173.0	387.0	371.0	504.0	532.0	59.0	3665.0
1975	46.0	71.0	217.0	351.0	-9.9	-9.9	-9.9	-9.9	226.0	364.0	268.0	230.0	-9.9
1976	69.0	118.0	212.0	345.0	397.0	165.0	148.0	259.0	134.0	316.0	180.0	417.0	2760.0
1977	370.0	162.0	155.0	156.0	327.0	282.0	258.0	202.0	259.0	240.0	274.0	79.0	2764.0
1978	55.0	-9.9	-9.9	-9.9	352.0	-9.9	-9.9	-9.9	-9.9	187.0	104.0	178.0	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANAE

ESTACION X CAMPINA SUALTA MUNICIPIO DE SUALTA PERIODO COEF DE CORRECCION
1958 - 1978 1.000

ESTACION Y BERTHA MUNICIPIO DE MONICLINA PERIODO COEF DE CORRECCION
1958 - 1978 1.000

N	AÑO	CLX	CLY	RAN	F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
					FCAN I	I	I	I	I	I	I	I	I
					F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1977	2764.	1493.	1.436	C.327				I +				.
2	1976	3524.	3400.	1.075	C.405				I + .				
3	1974	5165.	3379.	1.495	C.E75				I +				.
4	1972	11002.	7302.	0.945	C.E25			.	I +				
5	1971	14654.	10016.	0.952	C.761			.	I +				
6	1969	17472.	11981.	1.035	C.795				I . +				
7	1968	20125.	14079.	0.962	C.776				.I +				
8	1967	22063.	15702.	0.894	C.EE7			.	I +				
9	1966	24565.	17020.	1.048	C.731				I . +				
10	1962	25033.	19023.	0.415	C.143				I+				
11	1960	28156.	21720.	0.954	C.C74			.	+				
12	1959	30502.	24002.	0.535	-C.CCO			.	+				
					F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AÑO	CLX	CLY	RAN	FCAN I	I	I	I	I	I	I	I	I
					F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 2575.1 2000.1

RAZONES PROMEDIOS Y/X = 0.777
X/Y = 1.287

****
* PRUEBAS DE CCELE MASA *
****

PROYECTO IGAC-CRSTCM *** GRUPO DE AGROCLIMATOLOGIA *** PROGRAMA GRSTCM

Ministerio de Hacienda
y
Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240120	VELEZ	VELEZ	+06 01 00	+073 40 00	2170 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JJL	AGO	SEP	CCT	NCV	DIC	TOTAL
1958	-9.9	-9.9	73.5	127.5	228.5	123.5	119.5	120.0	99.5	209.0	116.0	28.0	-9.9
1959	8.0	7.0	125.5	223.5	256.0	228.0	288.0	165.0	157.0	335.0	154.0	125.0	2072.0
1960	25.0	28.0	134.0	330.0	196.0	460.0	360.0	-9.9	90.0	235.0	141.0	175.0	-9.9
1961	0.0	0.0	127.0	269.0	214.0	145.0	95.0	141.0	292.0	325.0	396.0	101.0	2105.0
1962	48.0	0.0	280.0	150.0	305.0	225.0	275.0	133.0	150.0	185.0	220.0	-9.9	-9.9
1963	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	49.0	257.0	113.0	64.0	-9.9
1964	26.0	134.0	60.0	304.0	283.0	161.0	209.0	187.0	132.0	151.0	111.0	28.0	1786.0
1965	39.0	44.0	34.0	129.0	80.0	33.0	121.0	87.0	245.0	226.0	242.0	93.0	1373.0
1966	180.0	0.0	77.0	219.0	333.0	155.0	150.0	147.0	134.0	315.0	177.0	50.0	1937.0
1967	39.0	59.0	66.0	233.0	499.0	240.0	63.0	146.0	70.0	85.0	196.0	108.0	1804.0
1968	80.0	48.0	150.0	244.0	406.0	326.0	260.0	212.0	310.0	272.0	97.0	12.0	2417.0
1969	35.0	23.0	68.0	276.0	198.0	152.0	170.0	122.0	208.0	251.0	-9.9	71.0	-9.9
1970	55.0	5.0	118.0	219.0	276.0	201.0	90.0	202.0	226.0	317.0	129.0	200.0	2038.0
1971	148.0	140.0	131.0	235.0	473.0	203.0	128.0	177.0	259.0	406.0	177.0	56.0	2535.0
1972	76.0	29.0	139.0	297.0	325.0	133.0	73.0	107.0	142.0	127.0	141.0	67.0	1656.0
1973	9.0	11.0	123.0	206.0	193.0	125.0	127.0	185.0	202.0	188.0	312.0	95.0	1776.0
1974	82.0	77.0	99.5	295.7	340.5	129.0	180.3	86.8	223.7	301.8	162.6	5.7	1984.6
1975	52.9	52.8	139.5	176.6	125.9	148.1	257.1	194.7	171.7	336.8	222.6	128.4	2007.1
1976	44.9	97.5	189.0	230.9	320.1	173.1	60.1	125.3	96.8	173.4	73.0	15.1	1599.2
1977	20.7	53.0	104.3	99.4	159.4	266.9	159.8	186.9	176.5	241.1	-9.9	-9.9	-9.9
1978													
1979	23.5	36.4	62.3	323.7	234.5	245.0	85.2	188.5	199.7	297.2	132.0	45.1	1873.1

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X VELEZ MUNICIPIO DE VELEZ PERIODO 1956 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CO	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1672.1	1673.1	1673.1	-0.195	-0.030				.+			
2	1978	1595.2	3472.3	1736.1	-1.116	-0.202			.	+ I			
3	1977	2007.1	5479.4	1826.5	0.257	-0.162				+I .			
4	1976	1584.0	7464.0	1866.0	0.181	-0.134				+I.			
5	1975	1776.0	9240.0	1848.0	-0.822	-0.219			.	+ I			
6	1974	1650.0	10890.0	1815.0	-0.926	-0.357			.	+ I			
7	1973	2535.0	13451.0	1918.7	2.036	-0.044				+		.	
8	1972	2038.0	15489.0	1933.6	0.361	0.011				+ .			
9	1971	2417.0	17906.0	1967.3	1.038	0.263				I +		.	
10	1970	1804.0	19690.0	1969.0	-0.428	0.197			.	I+			
11	1969	1937.0	21627.0	1966.1	0.021	0.201				. +			
12	1968	1373.0	23000.0	1916.7	-1.880	-0.086			.	+			
13	1967	1786.0	24786.0	1906.6	-0.488	-0.163				. +I			
14	1966	2105.0	26891.0	1920.8	0.887	-0.073				+ .			
15	1965	2072.0	28963.0	1930.9	0.470	0.000				+ .			

N	AN	T A	CO	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 15 ANOS = 1930.9
DESVIACION ESTANDAR = 256.8
COEFICIENTE DE VARIACION = 0.134

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO IDAC-CRSTON *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
240120	VELEZ	VELEZ	+06 00 45	+073 40 40	2220 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1958	-9.9	-9.9	73.5	127.5	228.5	123.5	119.5	120.0	99.5	209.0	116.0	28.0	-9.9	1958
1959	8.0	7.0	125.5	223.5	256.0	228.0	288.0	165.0	157.0	335.0	154.0	125.0	2072.0	1959
1960	25.0	28.0	134.0	330.0	196.0	460.0	360.0	-9.9	90.0	235.0	141.0	175.0	-9.9	1960
1961	0.0	0.0	127.0	209.0	214.0	145.0	95.0	141.0	292.0	325.0	356.0	101.0	2105.0	1961
1962	48.0	0.0	280.0	150.0	305.0	225.0	275.0	133.0	150.0	185.0	220.0	-9.9	-9.9	1962
1963	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	49.0	257.0	113.0	64.0	-9.9	1963
1964	20.0	134.0	60.0	304.0	283.0	161.0	209.0	187.0	132.0	151.0	111.0	28.0	1786.0	1964
1965	39.0	44.0	34.0	129.0	80.0	33.0	121.0	87.0	245.0	226.0	242.0	93.0	1373.0	1965
1966	180.0	0.0	77.0	219.0	323.0	155.0	150.0	147.0	134.0	315.0	177.0	80.0	1937.0	1966
1967	39.0	59.0	66.0	233.0	459.0	240.0	63.0	146.0	70.0	85.0	196.0	108.0	1804.0	1967
1968	80.0	48.0	150.0	244.0	406.0	326.0	260.0	212.0	310.0	272.0	97.0	12.0	2417.0	1968
1969	35.0	23.0	68.0	276.0	198.0	152.0	170.0	122.0	208.0	251.0	-9.9	71.0	-9.9	1969
1970	55.0	5.0	118.0	219.0	276.0	201.0	90.0	202.0	226.0	317.0	129.0	200.0	2038.0	1970
1971	148.0	140.0	131.0	235.0	473.0	203.0	128.0	177.0	259.0	408.0	177.0	56.0	2535.0	1971
1972	70.0	29.0	139.0	297.0	325.0	133.0	73.0	107.0	142.0	127.0	141.0	67.0	1656.0	1972
1973	9.0	11.0	123.0	206.0	193.0	125.0	127.0	185.0	202.0	188.0	312.0	95.0	1776.0	1973
1974	82.0	77.0	99.5	295.7	340.5	129.0	180.3	86.8	223.7	301.8	161.6	5.7	1984.6	1974
1975	52.9	52.8	139.5	176.6	125.9	148.1	257.1	194.7	171.7	336.6	222.6	128.4	2007.1	1975
1976	44.9	97.5	189.0	230.9	320.1	173.1	60.1	125.3	96.8	173.4	73.0	15.1	1599.2	1976
1977	20.7	53.0	104.3	99.4	159.4	266.9	159.8	166.9	176.5	241.1	-9.9	-9.9	-9.9	1977
1978														1978
1979	23.5	36.4	62.3	323.7	234.5	245.0	85.2	188.5	199.7	297.2	132.0	45.1	1873.1	1979
NUMERO DE ANOS	19	19	20	20	20	20	20	19	21	21	19	19	15	
VALOR MAXIMO	180.0	140.0	280.0	330.0	459.0	460.0	360.0	212.0	310.0	408.0	356.0	200.0	2535.0	
CUARTIL SUPERIOR	76.0	59.0	136.5	285.8	329.0	234.0	233.0	187.0	224.8	316.0	220.0	108.0	2072.0	
MEDIANA	39.0	36.4	120.5	231.9	266.0	167.0	139.0	147.0	171.7	251.0	154.0	67.0	1937.0	
CUARTIL INFERIOR	23.5	7.0	70.8	191.3	197.0	139.0	92.5	122.0	115.8	186.5	116.0	28.0	1776.0	
VALOR MINIMO	0.0	0.0	34.0	99.4	80.0	33.0	60.1	86.8	49.0	85.0	73.0	5.7	1373.0	
PROMEDIOS	52.2	44.5	115.0	229.4	272.3	193.6	163.5	153.3	173.0	249.3	174.3	77.2	1530.9	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1697.9	
PORCENTAJES	2.8	2.3	6.1	12.1	14.3	10.2	8.6	8.1	9.1	13.1	9.2	4.1		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 35. INDICE DE ARNOLDUS = 15C.

DEV. ESTANDAR	46.1	42.4	54.6	66.8	107.6	89.8	65.5	38.9	71.7	80.0	78.7	53.9	296.8
COEF. VARIACION	0.883	0.955	0.474	0.291	0.395	0.464	0.523	0.254	0.414	0.321	0.452	0.698	0.154
COEF. ASIMETRIA	1.657	1.092	1.362	-0.372	0.450	1.309	0.785	-0.245	0.155	-0.179	1.474	0.752	0.333

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211923	CARMEN DE APICALA	CAR DE APICALA	+04 10 00	+074 45 00	450 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JJL	AGO	SEP	CCT	NCV	DIC	TCTAL
1972	-9.9	102.0	107.0	215.0	222.0	135.0	0.0	172.0	43.0	121.0	194.0	58.0	-9.9
1973	42.0	6.0	163.0	207.0	211.0	146.0	68.0	189.0	140.0	35.0	230.0	52.0	1489.0
1974	103.0	148.0	136.0	218.0	268.0	100.0	27.0	40.0	295.0	250.0	203.0	40.0	1828.0
1975	31.0	155.0	150.0	262.0	299.0	74.0	165.0	67.5	283.0	214.0	244.0	79.0	2023.5
1976	88.0	101.0	303.0	190.0	226.0	71.0	0.0	7.0	92.0	143.0	131.0	182.0	1534.0
1977	21.0	52.0	47.0	95.0	130.0	167.0	88.0	45.0	196.0	168.0	200.0	109.0	1318.0

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILINETROS (LOS VALORES FALTANTES SE HAN SENALADC CCN -9.9)

PROYECTC IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DENEGRO

ESTACION X CARMEN DE APICALA MUNICIPIO DE CAR DE APICALA PERIODO 1972 - 1977 COEF DE CORRECCION 1.000

ESTACION Y TIBACUY MUNICIPIO DE TIBACUY PERIODO 1972 - 1977 COEF DE CORRECCION 1.000

					F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CLX	CUY	RAN	FCAN	I	I	I	I	I	I	I	I
					F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1977	1318.	791.	1.112	0.081				+	.			
2	1976	2652.	1626.	0.969	0.071				.+				
3	1975	4878.	3220.	0.908	0.031			.	+				
4	1974	6704.	4419.	1.018	0.051				+.				
5	1973	8153.	5408.	0.947	0.0			.	+				

					F = -4.	-3.	-2.	-1.	0.0	+1.	+2.	+3.	+4.
N	AN	CLX	CUY	RAN	FCAN	I	I	I	I	I	I	I	I
					F : 0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 1636.5 1093.7

RAZONES PROMEDIOS Y/X = 0.667

X/Y = 1.496

****
* PRUEBAS DE DOBLE MASA *
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PRLYDOB IDAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211923	CARMEN DE APICALA	CAR DE APICALA	+04 09 14	+074 43 39	0320 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1972	-9.9	102.0	107.0	215.0	222.0	135.0	0.0	172.0	43.0	121.0	194.0	58.0	-9.9	1972
1973	42.0	6.0	163.0	207.0	211.0	146.0	68.0	189.0	140.0	35.0	230.0	52.0	1489.0	1973
1974	103.0	146.0	136.0	218.0	268.0	100.0	27.0	40.0	295.0	250.0	203.0	40.0	1828.0	1974
1975	31.0	155.0	150.0	262.0	299.0	74.0	165.0	67.5	283.0	214.0	244.0	79.0	2023.5	1975
1976	83.0	101.0	303.0	190.0	226.0	71.0	0.0	7.0	92.0	143.0	131.0	182.0	1534.0	1976
1977	21.0	52.0	47.0	95.0	130.0	167.0	68.0	45.0	196.0	168.0	200.0	109.0	1318.0	1977
NUMERO DE ANOS	5	6	6	6	6	6	6	6	6	6	6	6	5	
VALOR MAXIMO	103.0	155.0	303.0	262.0	299.0	167.0	165.0	189.0	295.0	250.0	244.0	182.0	2023.5	
MEDIANA	42.0	101.5	143.0	211.0	224.0	117.5	47.5	56.3	168.0	155.5	201.5	68.5	1534.0	
VALOR MINIMO	21.0	6.0	47.0	95.0	130.0	71.0	0.0	7.0	43.0	35.0	131.0	40.0	1318.0	
PROMEDIOS	57.0	94.0	151.0	197.8	226.0	115.5	58.0	86.8	174.8	155.2	200.3	86.7	1638.5	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1603.1	
PORCENTAJES	3.6	5.9	9.4	12.3	14.1	7.2	3.6	5.4	10.9	9.7	12.5	5.4		
DEV. ESTANDAR	36.3	57.0	85.1	55.7	57.5	39.2	63.5	75.3	102.0	75.3	39.1	52.6	282.9	
COEF. VARIACION	0.637	0.607	0.564	0.282	0.255	0.344	1.094	0.868	0.584	0.485	0.195	0.607	0.173	
COEF. ASIMETRIA	0.516	-0.599	1.419	-1.402	-0.670	0.043	0.978	0.701	0.031	-0.504	-1.125	1.462	0.486	

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB
INDICE DE FOURNIER = 32. INDICE DE ARREOLOS = 157.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA
PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
121509	MARANGONES	ESPINAL	+04 13 00	+074 56 00	0370 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1959	-9.9	-9.9	-9.9	-9.9	-9.9	164.0	37.0	114.0	18.0	223.0	152.0	90.0	-9.9
1960	77.0	110.0	83.0	363.0	111.0	203.0	139.0	146.0	64.0	210.0	237.0	95.0	1818.0
1961	148.0	80.0	124.0	337.0	105.0	63.0	77.0	17.0	75.0	149.0	166.0	53.0	1394.0
1962													
1963	38.0	136.0	125.0	140.0	160.0	-9.9	-9.9	29.0	16.0	135.0	184.0	-9.9	-9.9
1964	-9.9	-9.9	41.0	170.0	197.0	32.0	92.0	32.0	46.0	84.0	150.0	-9.9	-9.9
1965	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	118.0	340.0	-9.9	-9.9
1966	-9.9	69.0	123.0	160.0	323.0	92.0	39.0	12.0	88.0	266.0	75.0	78.0	-9.9
1967	53.0	71.0	124.0	62.0	235.0	117.0	84.0	12.0	68.0	94.0	126.0	26.0	1072.0
1968	101.0	45.0	140.0	130.0	104.0	209.0	38.0	6.0	202.0	209.0	80.0	74.0	1350.0
1969	23.0	-9.9	-9.9	291.0	-9.9	66.0	12.0	78.0	186.0	232.0	191.0	26.0	-9.9
1970	49.0	29.0	46.0	276.0	78.0	102.0	21.0	122.0	54.0	108.0	146.0	140.0	1171.0
1971	105.0	95.0	272.0	149.0	267.0	27.0	86.0	40.0	-9.9	-9.9	-9.9	-9.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

ESTACION X MARANGUA MUNICIPIO DE ESPINAL PERIODO COEF DE CORRECCION
1959 - 1971 1.000

ESTACION Y TIBACUY MUNICIPIO DE TIBACUY PERIODO COEF DE CORRECCION
1959 - 1971 1.000

N	AN	CLX	CUY	RAN	FCAN	F = -4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
					F :	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
1	1970	1171.	1065.	0.880	-0.117				.	+I				
2	1968	2521.	2504.	0.773	-0.407			.		+ I				
3	1967	3553.	3493.	0.883	-0.512				. +	I				
4	1961	4587.	4491.	1.138	-0.288					+ I	.			
5	1960	6605.	5541.	1.405	0.0					+				.
					F =	-4. I	-3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I	+4. I
N	AN	CLX	CUY	RAN	FCAN									
					F :	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4

PROMEDIOS = 1301.0 1108.3

RAZONES PROMEDIOS Y/X = 0.814 X/Y = 1.222

****
* PRUEBAS DE DOBLE MASA *
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PROYECTO IGAC-CRSTCM *** GRUPO DE FISIOCLIMATOLOGIA *** PROGRAMA ORSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211852	NATAIMA	ESPINAL	+04 12 00	+074 56 00	0431 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1971	75.0	56.0	95.0	194.0	162.0	104.0	46.0	54.0	86.5	178.5	165.5	62.0	1278.5
1972	171.4	30.6	106.3	297.8	155.4	56.4	4.5	74.1	12.2	238.5	139.2	28.2	1314.8
1973	62.4	13.6	38.3	163.1	141.3	81.9	112.6	94.9	179.0	79.6	145.6	67.6	1180.1
1974	69.1	66.3	84.8	189.5	310.1	72.8	3.7	15.8	172.0	278.6	97.0	30.1	1389.8
1975	10.8	125.7	234.4	73.3	394.6	86.3	78.6	69.8	180.6	251.8	132.3	51.1	1689.3
1976	114.8	75.7	183.8	98.8	228.2	51.9	0.0	16.2	73.2	100.2	133.6	146.5	1223.1
1977	11.7	172.7	127.6	54.9	151.8	163.9	33.0	42.7	117.7	265.1	147.2	52.1	1340.4
1978	12.0	111.0	133.9	321.1	237.3	53.0	43.2	13.0	178.8	124.6	115.6	116.3	1460.0
1979	39.9	53.9	109.3	150.1	202.9	16.6	18.6	169.7	144.0	190.3	54.6	51.1	1207.2

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

ESTACION X NATAIMA MUNICIPIO DE ESPINAL PERIODO 1971 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1979	1207.2	1207.2	1207.2	-0.856	-0.101				+I			
2	1978	1460.0	2667.2	1333.6	0.742	-0.013				+	•		
3	1977	1340.4	4007.6	1335.9	-0.014	-0.015				*			
4	1976	1223.1	5230.7	1307.7	-0.755	-0.104			•	+I			
5	1975	1689.3	6920.0	1384.0	2.192	0.154				I+		•	
6	1974	1389.8	8309.8	1385.0	0.299	0.189				I+.			
7	1973	1180.1	9489.9	1355.7	-1.027	0.068			•	+			
8	1972	1314.8	10804.7	1350.6	-0.176	0.048				.+			
9	1971	1278.5	12083.2	1342.6	-0.405	0.000			•	+			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 9 ANOS = 1342.6
DESVIACION ESTANDAR = 158.2
COEFICIENTE DE VARIACION = 0.118

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-CRSTCN *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRSTCM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211252	NATAIMA	ESPINAL	+04 12 00	+074 56 00	0325 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1971	75.0	56.0	95.0	194.0	162.0	104.0	46.0	54.0	86.5	178.5	165.5	62.0	1278.5	1971
1972	171.4	30.8	106.3	297.8	155.4	56.4	4.5	74.1	12.2	238.5	139.2	28.2	1314.8	1972
1973	62.4	13.6	38.3	163.1	141.3	81.9	112.6	94.9	179.0	79.6	145.8	67.6	1180.1	1973
1974	69.1	66.3	84.8	189.5	310.1	72.8	3.7	15.8	172.0	278.6	97.0	30.1	1389.8	1974
1975	10.8	125.7	234.4	73.3	394.6	86.3	78.6	69.8	160.6	251.8	132.3	51.1	1689.3	1975
1976	114.8	75.7	183.8	98.8	228.2	51.9	0.0	16.2	73.2	100.2	133.8	146.5	1223.1	1976
1977	11.7	172.7	127.6	54.9	181.8	163.9	33.0	42.7	117.7	265.1	147.2	52.1	1340.4	1977
1978	12.0	111.0	133.9	321.1	237.3	53.0	43.2	13.0	178.8	124.6	119.8	116.3	1460.0	1978
1979	39.5	53.9	109.3	156.1	202.9	16.6	18.6	169.7	144.0	190.3	94.8	81.1	1207.2	1979
NUMERO DE ANOS	9	9	9	9	9	9	9	9	9	9	9	9	9	
VALOR MAXIMO	171.4	172.7	234.4	321.1	394.6	163.9	112.6	169.7	180.6	278.6	165.5	146.5	1689.3	
MEDIANA	62.4	66.3	109.3	163.1	202.9	72.8	33.0	54.0	144.0	190.3	133.8	52.1	1314.8	
VALOR MINIMO	10.8	13.6	38.3	54.9	141.3	16.6	0.0	13.0	12.2	79.6	54.8	28.2	1180.1	
PROMEDIOS	63.0	78.4	123.7	172.1	220.4	76.3	37.8	61.1	127.1	189.7	125.7	67.2	1342.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1342.6	
PORCENTAJES	4.7	5.8	9.2	12.8	16.4	5.7	2.8	4.6	9.5	14.1	9.4	5.0		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 36. INDICE DE ARREGUDUS = 135.

DEV. ESTANDAR	53.7	49.9	57.1	92.2	84.9	41.4	37.8	49.9	59.6	74.4	33.0	39.3	158.2
COEF. VARIACION	0.853	0.636	0.462	0.536	0.385	0.542	1.001	0.817	0.469	0.392	0.262	0.585	0.118
COEF. ASIMETRIA	1.027	0.739	0.741	0.481	1.239	1.014	1.037	1.315	-0.925	-0.328	-1.333	1.305	1.404

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA CRSTCM

Biblioteca Hacienda y Crédito

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211854	AEROPUERTO SANTIAGO VILA	FLANDES	+04 16 00	+074 49 00	0286 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1966	91.5	16.0	67.7	113.9	210.3	175.7	34.0	76.7	95.2	248.7	126.0	7.6	1263.3
1967	117.5	232.6	174.1	88.7	149.3	153.1	27.2	69.0	102.2	115.0	142.0	32.5	1403.2
1968	127.8	54.7	104.5	-9.9	93.3	198.8	59.9	18.5	143.0	150.7	63.8	17.2	-9.9
1969	19.9	54.1	82.4	161.9	75.2	71.7	3.5	20.3	149.5	210.0	163.7	62.5	1094.7
1970	48.1	32.4	29.5	209.3	166.7	39.4	14.2	36.4	47.9	256.9	76.1	73.5	1023.4
1971	94.3	105.5	361.4	160.8	274.5	64.0	30.7	95.0	81.4	268.5	120.1	51.8	1708.2
1972	66.6	57.9	62.2	182.4	165.5	100.3	1.1	90.9	26.9	62.0	68.5	56.5	940.8
1973	50.5	4.5	74.2	67.8	137.7	68.9	64.0	95.9	120.6	59.1	85.0	102.0	930.2
1974	157.7	47.7	75.6	179.1	241.4	64.8	4.4	21.9	205.0	322.5	81.6	22.4	1424.1
1975	20.4	84.8	102.9	111.7	160.0	50.6	106.9	37.2	109.5	271.6	92.1	51.9	1259.6
1976	57.4	49.9	190.2	200.5	141.7	74.9	0.8	6.6	15.3	106.4	107.5	85.1	1036.3
1977	2.1	83.2	-9.9	120.5	122.1	115.5	-9.9	-9.9	142.6	-9.9	169.9	34.9	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

ESTACION A AGREGGERTE SANTIAGO VILA MUNICIPIO DE PLANES PERIODO 1960 - 1977 COEF DE CORRECCION 1.000

N	AÑO	T A	CO	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1976	1036.3	1036.3	1036.3	-0.632	-0.092				+			
2	1975	1255.6	2291.9	1147.9	0.469	0.011				+			
3	1974	1424.1	3716.0	1240.0	1.155	0.259				I +			
4	1973	994.2	4710.2	1177.5	-0.867	0.074				+			
5	1972	940.8	5651.0	1130.2	-0.223	-0.102				+I			
6	1971	1748.2	7399.2	1233.2	2.324	0.394				I +			
7	1970	1022.4	8422.6	1203.2	-0.488	0.291				I +			
8	1969	1094.7	9517.3	1189.7	-0.154	0.250				I +			
9	1967	1402.2	10920.5	1213.4	1.073	0.475				I +			
10	1966	1263.3	12183.8	1218.4	0.699	0.586				I +			
11	1965	812.3	12996.1	1181.5	-1.350	0.297				I +			
12	1964	697.4	13693.5	1141.5	-1.001	0.083				+			
13	1963	571.7	14265.2	1096.6	-0.697	-0.065				+			
14	1962	1284.4	15549.6	1110.7	0.566	0.060				+			
15	1961	1173.4	16723.0	1115.3	0.276	0.0				+			

N	AÑO	T A	CO	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 15 AÑOS = 1115.3

DESVIACION ESTANDAR = 243.6

COEFICIENTE DE VARIACION = 0.214

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO ISAL-ERSTON *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ERSTON

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211854	AEROPUERTO SANTIAGO VILA	FLANDES	+04 17 00	+074 48 00	0285 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	-9.9	-9.9	-9.9	-9.9	-9.9	65.0	72.1	54.7	13.1	166.7	126.1	57.1	-9.9	1960
1961	42.5	15.2	86.5	129.6	47.6	40.8	156.3	7.6	221.5	168.1	118.7	39.0	1073.4	1961
1962	38.7	97.7	142.1	139.2	187.9	125.7	18.5	59.5	117.6	193.3	117.0	47.2	1284.4	1962
1963														1963
1964	1.0	10.0	31.0	201.0	142.0	93.7	97.1	53.7	38.5	54.9	156.5	18.0	897.4	1964
1965														1965
1966	91.5	16.0	67.7	113.9	210.3	175.7	34.0	76.7	95.2	248.7	126.0	7.6	1263.3	1966
1967	117.5	232.6	174.1	88.7	149.3	153.1	27.2	69.0	102.2	115.0	148.0	32.5	1403.2	1967
1968	127.8	54.7	104.5	-9.9	53.3	198.8	59.9	18.5	143.0	150.7	63.8	17.2	-9.9	1968
1969	19.9	54.1	82.4	181.9	75.2	71.7	3.5	20.3	149.5	210.0	163.7	62.5	1094.7	1969
1970	48.1	32.9	20.5	209.3	166.7	39.4	14.2	36.4	47.9	256.9	78.1	73.5	1023.4	1970
1971	94.5	105.5	361.4	160.8	274.5	64.0	30.7	95.0	81.4	268.5	120.1	51.8	1708.2	1971
1972	66.6	57.9	62.2	182.4	165.5	100.3	1.1	90.9	26.9	62.6	66.5	56.5	940.8	1972
1973	50.5	9.5	74.2	67.8	137.7	68.9	64.0	55.9	120.6	59.1	85.0	102.0	930.2	1973
1974	157.7	47.7	75.6	179.1	241.4	64.8	4.4	21.9	205.0	322.5	81.6	22.4	1424.1	1974
1975	20.4	84.8	162.9	111.7	160.0	50.6	106.9	37.2	109.5	271.6	92.1	51.9	1259.6	1975
1976	57.4	49.9	190.2	200.5	141.7	74.9	0.8	6.6	15.3	106.4	107.5	85.1	1036.3	1976
1977	2.1	83.2	-9.9	126.5	122.1	115.5	-9.9	-9.9	142.6	-9.9	169.9	34.9	-9.9	1977
NUMERO DE ANOS	15	15	14	14	15	16	15	15	16	15	16	16	13	
VALOR MAXIMO	157.7	232.6	361.4	209.3	274.5	198.8	156.3	95.9	221.5	322.5	169.9	102.0	1708.2	
CUARTIL SUPERIOR	94.5	84.8	162.9	182.4	187.9	120.6	72.1	76.7	142.8	256.9	135.0	59.8	1343.6	
MEDIANA	50.5	54.1	84.4	150.0	149.3	73.3	30.7	53.7	105.8	168.1	117.8	49.5	1094.7	
CUARTIL INFERIOR	20.4	16.0	67.7	113.9	122.1	64.4	4.4	20.3	43.2	106.4	83.3	27.4	982.1	
VALOR MINIMO	1.0	4.5	20.5	67.8	47.6	39.4	0.8	6.6	13.1	54.9	63.8	7.6	897.4	
PROMEDIOS	62.4	63.1	116.8	149.5	154.3	93.9	46.0	49.6	101.9	177.0	113.7	47.4	1179.9	
												TOTAL DE LOS PROMEDIOS MENSUALES =	1175.6	
PORCENTAJES	5.3	5.4	9.9	12.7	13.1	8.0	3.9	4.2	8.7	15.1	9.7	4.0		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 27. INDICE DE ARNOLDUS = 117.

DEV. ESTANDAR	46.7	56.6	87.3	44.8	59.5	47.9	46.1	31.3	63.0	85.8	33.6	25.8	237.3
COEF. VARIACION	0.749	0.898	0.747	0.300	0.386	0.510	1.002	0.631	0.619	0.485	0.295	0.543	0.201
COEF. ASIMETRIA	0.598	2.000	1.795	-0.307	0.246	1.002	1.115	0.155	0.266	0.004	0.165	0.447	0.847

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
21185A	AEROPUERTO SANTIAGO VILA	FLANDES	+04 17 00	+074 48 00	0285 METRUS

*** LLUVIAS MENSUALES Y ANUALES EXTENDIDAS POR CORRELACIONES Y REGRESIONES ***

*** PERIODO COMUN DE 20 ANOS (1960-1979) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1960	99.3	132.4	130.0	184.8	61.3	65.0	72.1	54.7	13.1	166.7	128.1	57.1	1164.6	1960
1961	42.5	15.2	86.5	129.6	47.6	40.8	156.3	7.6	221.5	168.1	118.7	39.0	1073.4	1961
1962	38.7	97.7	142.1	139.2	187.9	125.7	18.5	59.5	117.6	193.3	117.0	47.2	1284.4	1962
1963	75.2	51.2	241.6	98.0	269.2	55.1	19.1	18.4	31.8	96.3	213.5	7.3	1176.7	1963
1964	1.0	10.0	31.0	201.0	142.0	93.7	97.1	53.7	38.5	54.9	156.5	18.0	897.4	1964
1965	82.9	1.4	121.0	170.7	86.7	0.0	32.3	48.7	129.6	143.2	236.8	118.0	1171.3	1965
1966	91.5	16.0	67.7	113.9	210.3	175.7	34.0	76.7	95.2	248.7	126.0	7.6	1263.3	1966
1967	117.5	232.6	174.1	88.7	149.3	153.1	27.2	69.0	102.2	115.0	142.0	32.5	1403.2	1967
1968	127.8	54.7	104.5	163.7	93.3	198.8	59.9	18.5	143.0	150.7	63.8	17.2	1195.9	1968
1969	19.9	54.1	82.4	181.9	75.2	71.7	3.5	20.3	149.5	210.0	163.7	62.5	1094.7	1969
1970	48.1	32.4	20.5	209.3	166.7	39.4	14.2	36.4	47.9	256.9	78.1	73.5	1023.4	1970
1971	94.5	105.5	361.4	160.8	274.5	64.0	30.7	95.0	81.4	268.5	120.1	51.8	1708.2	1971
1972	66.6	57.9	62.2	182.4	165.5	100.3	1.1	90.9	26.9	62.0	68.5	56.5	940.8	1972
1973	50.5	4.5	74.2	67.8	137.7	68.9	64.0	95.9	120.6	59.1	85.0	102.0	930.2	1973
1974	157.7	47.7	75.6	179.1	241.4	64.8	4.4	21.9	205.0	322.5	81.6	22.4	1424.1	1974
1975	20.4	84.8	162.9	111.7	160.0	50.6	106.9	37.2	109.5	271.6	92.1	51.9	1259.6	1975
1976	57.4	49.9	190.2	200.5	141.7	74.9	0.8	6.6	15.3	106.4	107.5	85.1	1036.3	1976
1977	2.1	83.2	19.6	126.5	122.1	115.5	77.9	39.8	142.6	184.4	169.9	34.9	1118.5	1977
1978	3.9	93.7	82.5	232.1	174.0	70.0	38.8	14.6	160.8	131.9	45.9	77.2	1125.4	1978
1979	31.2	47.3	166.3	225.7	180.4	189.7	17.3	198.9	134.7	296.0	81.1	17.1	1585.7	1979
NUMERO DE ANOS	20	20	20	20	20	20	20	20	20	20	20	20	20	
VALOR MAXIMO	157.7	232.6	361.4	232.1	274.5	198.8	156.3	198.9	221.5	322.5	236.8	118.0	1708.2	
CUARTIL SUPERIOR	93.0	89.2	164.6	192.6	184.1	120.6	68.0	72.8	142.8	252.8	149.3	68.0	1273.8	
MEDIANA	53.9	52.6	95.5	167.2	154.6	70.8	31.5	44.2	113.5	167.4	117.8	49.5	1167.9	
CUARTIL INFERIOR	25.8	24.2	70.9	120.2	107.7	59.5	15.7	19.4	43.2	110.7	81.3	20.2	1054.8	
VALOR MINIMO	1.0	1.4	19.6	67.8	47.6	0.0	0.8	6.6	13.1	54.9	45.9	7.3	897.4	
PROMEDIOS	61.4	63.6	119.8	158.4	154.3	90.9	43.8	53.2	104.3	175.3	115.8	48.9	1193.9	
PORCENTAJES	5.1	5.3	10.0	13.3	12.9	7.6	3.7	4.5	8.7	14.7	10.0	4.1		

TRIMESTRE MAS LLUVIOSO MAR ABR MAY **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 26. INDICE DE ARNOLDUS = 119.

INDICE DE IRREGULARIDAD INTERANUAL =1.59

DEV. ESTANDAR	44.1	53.7	82.0	46.8	63.7	53.5	41.4	44.7	60.6	81.7	49.7	31.0	210.8
COEF. VARIACION	0.718	0.845	0.684	0.296	0.413	0.588	0.944	0.841	0.581	0.466	0.415	0.634	0.177

LLUVIAS ANUALES CALCULADAS PARA ALGUNAS FRECUENCIAS

FRECUENCIAS	0.05	0.10	0.20	0.50	0.80	0.90	0.95
VALORES	1541.	1464.	1371.	1194.	1016.	924.	847.

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

COEF. ASIMETRIA	0.464	1.675	1.407	-0.289	0.239	0.735	1.267	1.893	0.073	0.181	0.825	0.593	0.913

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IMPRESO EN COLOMBIA POR CARVAJAL

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211922	EL SALERO	MELGAR	+04 14 00	+074 35 00	650 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1972	212.0	125.0	180.0	273.0	92.0	61.0	0.0	115.0	41.0	118.0	329.0	27.0	1593.0
1973	33.0	19.0	228.0	160.0	124.0	250.0	119.0	203.0	310.0	113.0	638.0	213.0	2410.0
1974	107.0	161.0	313.0	392.0	456.0	60.0	19.0	104.0	126.0	299.0	279.0	62.0	2378.0
1975	49.0	330.0	232.0	297.0	338.0	57.0	134.0	153.0	330.0	380.0	300.0	314.0	2954.0
1976	71.0	130.0	387.0	255.0	229.0	11.0	2.0	27.0	67.0	250.0	62.0	61.0	1552.0
1977	38.0	-9.9	108.0	223.0	143.0	-9.9	-9.9	150.0	170.0	185.0	341.0	112.0	-9.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR CARVAJAL

ESTACION A EL SALERO MUNICIPIO DE MELCAR PERIODO 1972 - 1977 COEF DE CORRECCION 1.000

N	AÑO	I/A	CO	MOY	ECH	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1970	1552.0	1552.0	1552.0	-1.040	-0.287				+ I			
2	1975	2954.0	4506.0	2253.0	1.299	0.005				+			
3	1974	2378.0	6884.0	2294.7	0.335	0.162				I+			
4	1973	2410.0	9294.0	2323.5	0.365	0.268				I +			
5	1972	1593.0	10887.0	2177.4	-0.577	0.0				+			

N	AÑO	I/A	CO	MOY	ECF	PCAN	F = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 5 AÑOS = 2177.4

DESVIACION ESTANDAR = 597.9

COEFICIENTE DE VARIACION = 0.275

****
* PRUEBAS DE SIMPLE MASA *
****

PROYECTO LOA-CRESTA *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA CRESTA

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211702	LAS DOS AGUAS	SUAREZ	+04 16 00	+074 47 00	306 METROS

ANO	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1951	153.0	78.0	83.0	294.0	253.0	79.0	82.0	133.0	81.0	241.0	273.0	128.0	1878.0
1952	40.0	59.0	95.0	310.0	258.0	0.0	11.0	53.0	160.0	85.0	358.0	49.0	1482.0
1953	151.0	362.0	185.0	72.0	136.0	61.0	30.0	24.0	207.0	319.0	279.0	58.0	1904.0
1954	19.0	0.0	137.0	259.0	195.0	67.0	21.0	41.0	29.0	447.0	137.0	44.0	1416.0
1955	30.0	77.0	174.0	299.0	269.0	140.0	103.0	112.0	175.0	272.0	224.0	137.0	2012.0
1956	58.0	302.0	156.0	253.0	383.0	79.0	53.0	16.0	161.0	250.0	176.0	113.0	2000.0
1957	66.0	111.0	77.0	274.0	280.0	57.0	42.0	3.0	53.0	164.0	110.0	15.0	1252.0
1958	5.0	62.0	42.0	216.0	171.0	53.0	49.0	51.0	69.9	113.0	137.5	59.0	1068.4
1959	10.0	7.0	4.0	133.0	240.0	215.8	82.5	93.0	61.0	127.5	138.0	65.0	1176.8
1960	69.6	126.5	96.4	263.1	51.0	246.5	124.5	78.0	20.5	266.0	159.5	77.0	1578.6
1961	109.0	13.0	73.5	147.0	-9.9	40.5	202.5	7.0	146.0	248.5	-9.9	-9.9	-9.9
1962													
1963	74.5	82.1	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
1964													
1965													
1966													
1967	58.0	180.8	166.5	107.1	187.3	155.9	31.0	53.7	127.5	65.0	115.0	16.0	1303.8
1968	174.8	66.2	94.1	152.5	126.8	173.5	53.3	6.2	205.8	205.7	72.9	19.5	1351.3
1969	23.3	105.5	54.0	264.1	117.1	69.4	1.8	9.0	82.8	126.7	165.5	65.2	1084.4
1970	47.0	17.5	23.7	115.1	146.5	52.3	34.7	16.8	64.3	343.7	87.0	37.3	985.9
1971	82.1	201.6	288.9	111.4	286.4	45.2	40.0	176.5	102.9	247.0	117.8	37.5	1737.3
1972	62.5	99.0	91.3	245.1	-9.9	-9.9	0.6	76.1	11.9	-9.9	-9.9	-9.9	-9.9
1973	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	72.5	126.8	145.3	-9.9
1974	184.3	116.0	129.0	171.1	320.5	97.7	0.2	56.4	234.8	305.1	79.9	24.7	1719.7
1975	6.9	97.1	193.7	111.2	157.3	70.0	114.5	41.1	114.7	268.5	187.5	87.0	1449.5
1976	32.5	78.5	198.0	213.4	-9.9	75.8	-9.9	-9.9	33.0	99.4	87.5	166.0	-9.9
1977	4.5	75.8	23.5	166.0	103.5	142.0	103.5	50.6	186.0	216.5	249.5	14.5	1335.9

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda
y
Crédito Público

IMPRESO EN COLOMBIA POR DATAGRAFO

ESTACION X LAS DOS AGUAS MUNICIPIO DE SUAREZ PERIODO 1951 - 1977 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.
1	1977	1335.9	1335.9	1335.9	-0.458	-0.101				+I			
2	1975	1449.5	2785.4	1392.7	-0.110	-0.125				*I			
3	1974	1719.7	4505.1	1501.7	0.718	0.033				+	.		
4	1971	1737.3	6242.4	1560.6	0.772	0.203				I +	.		
5	1970	985.9	7228.3	1445.7	-1.530	-0.133			.	+I			
6	1969	1084.4	8312.7	1385.4	-1.228	-0.403			.	+ I			
7	1968	1351.3	9664.0	1380.6	-0.410	-0.494				* I			
8	1967	1303.8	10967.8	1371.0	-0.556	-0.616				+. I			
9	1960	1578.6	12546.4	1394.0	0.286	-0.553				+ I .			
10	1959	1176.8	13723.2	1372.3	-0.945	-0.761			. +	I			
11	1958	1068.4	14791.6	1344.7	-1.277	-1.041			. +	I			
12	1957	1252.0	16043.6	1337.0	-0.715	-1.198			+ .	I			
13	1956	2000.0	18043.6	1388.0	1.577	-0.952			+	I	.		
14	1955	2012.0	20055.6	1432.5	1.613	-0.497				+ I	.		
15	1954	1416.0	21471.6	1431.4	-0.212	-0.544				+ . I			
16	1953	1904.0	23375.6	1461.0	1.282	-0.262				+ I	.		
17	1952	1482.0	24857.6	1462.2	-0.010	-0.264				+ .			
18	1951	1878.0	25735.6	1485.3	1.293	0.0				+	.		

N	AN	T A	CU	MOY	ECR	PCAN	P = -3.	-2.	-1.	0.0	+1.	+2.	+3.

PROMEDIO DE LOS 18 ANOS = 1485.3
DESVIACION ESTANDAR = 320.6
COEFICIENTE DE VARIACION = 0.220

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211702	LAS DOS AGUAS	SUAREZ	+04 16 00	+074 47 00	306 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1957	66.0	111.0	77.0	274.0	280.0	57.0	42.0	3.0	53.0	164.0	110.0	15.0	1252.0	1957
1958	5.0	62.0	42.0	216.0	171.0	53.0	49.0	51.0	69.9	113.0	137.5	99.0	1068.4	1958
1959	10.0	7.0	4.0	133.0	240.0	215.8	62.5	93.0	61.0	127.5	136.0	65.0	1176.8	1959
1960	69.6	120.5	96.4	263.1	81.0	246.5	124.5	78.0	20.5	266.0	155.5	77.0	1578.6	1960
1961	109.0	13.0	73.5	147.0	-9.9	40.5	202.5	7.0	146.0	248.5	-9.9	-9.9	-9.9	1961
1962														1962
1963	74.5	82.1	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	1963
1964														1964
1965														1965
1966														1966
1967	58.0	180.8	166.5	107.1	187.3	195.9	31.0	53.7	127.5	65.0	115.0	16.0	1303.8	1967
1968	174.8	66.2	94.1	152.5	126.8	173.5	53.3	6.2	205.8	205.7	72.9	19.5	1351.3	1968
1969	23.3	105.5	54.0	204.1	117.1	69.4	1.8	9.0	82.8	126.7	165.5	65.2	1084.4	1969
1970	47.0	17.5	23.7	115.1	146.5	52.3	34.7	16.8	64.3	343.7	87.0	37.3	985.9	1970
1971	82.1	201.6	288.9	111.4	280.4	45.2	40.0	176.5	102.9	247.0	117.8	37.5	1737.3	1971
1972	62.5	99.0	91.3	245.1	-9.9	-9.9	0.6	76.1	11.9	-9.9	-9.9	-9.9	-9.9	1972
1973	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	72.5	126.8	145.3	-9.9	1973
1974	184.3	116.0	129.0	171.1	320.5	97.7	0.2	56.4	234.8	305.1	79.9	24.7	1719.7	1974
1975	6.9	97.1	193.7	111.2	157.3	70.0	114.5	41.1	114.7	268.5	187.5	87.0	1449.5	1975
1976	32.5	78.3	198.0	213.4	-9.9	75.8	-9.9	-9.9	33.0	99.4	87.5	165.0	-9.9	1976
1977	4.5	75.8	23.5	166.0	103.5	142.0	103.5	50.6	186.0	216.5	249.5	14.5	1335.9	1977
NUMERO DE ANOS	16	16	15	15	12	14	14	14	15	15	14	14	12	
VALOR MAXIMO	184.3	201.6	288.9	274.0	320.5	246.5	202.5	176.5	234.8	343.7	249.5	165.0	1737.3	
CUARTIL SUPERIOR	78.3	113.5	166.5	245.1	260.0	173.5	103.5	76.1	146.0	266.0	159.5	87.0	1514.0	
MEDIANA	60.3	89.6	91.3	166.0	164.1	72.9	45.5	50.8	82.8	205.7	122.3	51.3	1319.8	
CUARTIL INFERIOR	16.6	64.1	42.0	115.1	121.9	53.0	31.0	9.0	53.0	113.0	87.5	19.5	1130.6	
VALOR MINIMO	4.5	7.0	4.0	107.1	81.0	40.5	0.2	3.0	11.9	65.0	72.9	14.5	985.9	
PROMEDIOS	63.1	90.0	103.7	179.3	182.3	109.6	62.9	51.3	100.9	191.3	121.0	62.0	1337.0	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1327.5	
PORCENTAJES	4.8	6.8	7.8	13.5	13.7	8.3	4.7	3.9	7.6	14.4	9.9	4.7		

TRIMESTRE MAS LLUVIOSO ABR MAY JUN **** TRIMESTRE MENOS LLUVIOSO DIC ENE FEB

INDICE DE FOURNIER = 26. INDICE DE ARNOLDUS = 132.

DEV. ESTANDAR	55.0	53.8	78.8	61.4	82.9	70.8	57.2	46.6	67.9	88.1	48.1	48.7	247.0
COEF. VARIACION	0.872	0.597	0.759	0.342	0.455	0.646	0.910	0.907	0.673	0.460	0.397	0.785	0.185
COEF. ASIMETRIA	1.123	0.379	0.971	0.353	0.312	0.863	1.137	1.475	0.652	0.094	1.127	0.992	0.378

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211652	LUIS BUSTAMANTE	VILLARICA	+03 58 00	+074 37 00	1620 METROS

ANO	ENE	FEB	MAR	AER	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL
1964	41.6	191.8	66.0	329.7	215.4	148.5	129.6	121.0	114.2	118.1	264.8	242.5	1983.2
1965	85.8	32.7	117.3	293.2	124.9	51.9	23.8	45.1	72.9	374.6	360.8	102.4	1685.4
1966	3.5	64.8	199.2	123.1	201.3	120.6	79.4	157.3	83.2	238.1	311.0	162.4	1737.9
1967	44.2	98.2	204.6	373.8	256.7	111.7	72.4	45.9	60.0	231.3	360.2	56.5	1915.5
1968	59.7	69.1	65.8	362.4	240.3	158.5	61.6	102.7	186.6	223.9	321.0	116.6	1968.2
1969	122.1	84.5	172.4	239.0	151.4	102.7	43.6	82.4	240.5	-9.9	293.7	149.3	-9.9
1970	44.6	67.7	113.8	155.8	63.0	77.4	81.2	-9.9	30.9	265.8	153.8	105.0	-9.9
1971	320.8	240.2	260.4	229.8	180.2	85.7	88.1	138.1	76.4	246.5	213.2	113.1	2192.5
1972	136.6	74.8	361.5	275.6	316.8	98.9	24.9	96.1	107.4	132.4	279.1	96.6	2000.7
1973	40.7	57.2	151.6	146.7	101.7	162.3	112.8	124.1	177.4	266.4	187.0	310.1	1858.0
1974	181.1	305.3	262.0	152.3	134.9	98.3	113.1	64.9	225.4	276.0	313.7	45.7	2172.7
1975	15.5	259.1	201.6	252.5	226.8	119.0	168.5	89.9	103.7	293.8	307.1	456.3	2493.8
1976	52.9	235.4	315.5	244.4	175.1	64.3	33.0	26.8	95.8	263.4	190.3	41.0	1737.9
1977	53.7	56.3	248.2	367.6	194.7	143.1	104.9	56.9	158.0	306.6	163.1	-9.9	-9.9
1978	-9.9	-9.9	-9.9	299.3	203.2	113.1	221.7	84.8	104.5	265.5	218.5	214.8	-9.9
1979	52.1	51.9	313.9	226.4	131.3	333.0	81.0	185.8	163.7	233.9	282.4	145.9	2201.3

DATOS ORIGINALES DE LLUVIAS MENSUALES Y ANUALES EN MILIMETROS (LOS VALORES FALTANTES SE HAN SENALADO CON -9.9)

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

Ministerio de Hacienda y Crédito Público

IMPRESO EN COLOMBIA POR DANARANJO

ESTACION X LUIS BUSTAMANTE MUNICIPIO DE VILLARICA PERIODO 1964 - 1979 COEF DE CORRECCION 1.000

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I
1	1979	2201.3	2201.3	2201.3	0.869	0.103				+			
2	1978	1737.9	3939.2	1969.6	-1.089	-0.026				+			
3	1977	2493.8	5433.0	2144.3	2.105	0.224				+			
4	1976	2172.7	8605.7	2151.4	0.748	0.312				+			
5	1975	1858.0	10463.7	2092.7	-0.581	0.243				+			
6	1974	2000.7	12464.4	2077.4	0.022	0.246				+			
7	1973	2192.5	14656.9	2093.8	0.832	0.345				+			
8	1968	1968.2	16625.1	2078.1	-0.116	0.331				+			
9	1967	1915.5	18540.6	2060.1	-0.338	0.291				+			
10	1966	1737.9	20278.5	2027.8	-1.089	0.162				+			
11	1965	1685.4	21963.9	1996.7	-1.311	0.006				+			
12	1964	1983.2	23947.1	1995.6	-0.052	0.0				*			

N	AN	T A	CU	MOY	ECR	PCAN	P = -3. I	-2. I	-1. I	0.0 I	+1. I	+2. I	+3. I

PROMEDIO DE LOS 12 ANOS = 1995.6
DESVIACION ESTANDAR = 236.0
COEFICIENTE DE VARIACION = 0.119

****
* PRUEBAS DE SIMPLE MASA *
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PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA *** PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público

CODIGO	ESTACION	MUNICIPIO	LATITUD	LONGITUD	ALTITUD
211652	LUIS BUSTAMANTE	VILLARICA	+03 58 00	+074 37 00	1620 METROS

*** LLUVIAS MENSUALES Y ANUALES SELECCIONADAS POR SIMPLES Y DOBLES MASAS ** (LOS VALORES FALTANTES SE HAN SEÑALADO CON -9.9) ***

ANOS	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	TOTAL	ANOS
1964	41.6	191.8	66.0	329.7	215.4	148.5	129.6	121.0	114.2	118.1	264.8	242.5	1983.2	1964
1965	85.8	32.7	117.3	293.2	124.9	81.9	23.8	45.1	72.9	374.6	360.8	102.4	1685.4	1965
1966	3.5	64.8	199.2	123.1	201.3	120.6	79.4	157.3	63.2	232.1	311.0	162.4	1737.9	1966
1967	44.2	98.2	204.6	373.8	256.7	111.7	72.4	45.9	60.0	231.3	360.2	56.5	1915.5	1967
1968	59.7	69.1	65.8	362.4	240.3	156.5	61.6	102.7	186.6	223.9	321.0	116.6	1968.2	1968
1969	122.1	84.5	172.4	239.0	151.4	102.7	43.6	82.4	240.5	-9.9	293.7	149.3	-9.9	1969
1970	44.8	87.7	113.8	155.8	63.0	77.4	81.2	-9.9	30.9	265.8	153.8	105.0	-9.9	1970
1971	320.8	240.2	260.4	229.8	160.2	85.7	88.1	138.1	76.4	246.5	213.2	113.1	2192.5	1971
1972	136.6	74.8	361.5	275.6	316.8	98.9	24.9	96.1	107.4	132.4	279.1	96.6	2000.7	1972
1973	40.7	57.2	151.6	146.7	101.7	162.3	112.8	124.1	177.4	286.4	167.0	310.1	1858.0	1973
1974	181.1	305.3	262.0	152.3	134.9	98.3	113.1	64.5	225.4	276.0	313.7	45.7	2172.7	1974
1975	15.6	259.1	201.6	252.5	226.8	119.0	168.5	89.9	103.7	293.8	307.1	456.3	2493.8	1975
1976	52.9	235.4	315.5	244.4	175.1	64.3	33.0	26.8	95.8	263.4	190.3	41.0	1737.9	1976
1977	53.7	56.3	248.2	367.6	194.7	143.1	104.9	56.9	158.0	306.6	163.1	-9.9	-9.9	1977
1978	-9.9	-9.9	-9.9	299.3	203.2	113.1	221.7	84.8	104.5	265.5	218.5	214.8	-9.9	1978
1979	52.1	51.9	313.9	226.4	131.3	333.0	81.0	185.8	163.7	233.9	282.4	145.9	2201.3	1979
NUMERO DE ANOS	15	15	15	16	16	16	16	15	16	15	16	15	12	
VALOR MAXIMO	320.8	305.3	361.5	373.8	316.8	333.0	221.7	185.8	240.5	374.6	360.8	456.3	2493.8	
CUARTIL SUPERIOR	122.1	235.4	262.0	314.5	221.1	145.6	112.9	124.1	170.5	286.4	312.3	214.8	2182.6	
MEDIANA	52.9	74.8	201.6	248.4	167.4	112.4	81.1	89.9	105.9	263.4	260.7	116.6	1975.7	
CUARTIL INFERIOR	41.6	57.2	117.3	191.1	133.1	92.0	52.6	56.9	79.8	231.3	201.7	96.6	1797.9	
VALOR MINIMO	3.5	32.7	65.8	123.1	63.0	51.9	23.8	26.8	30.9	118.1	153.8	41.0	1685.4	
PROMEDIOS	83.7	125.9	203.6	254.5	182.4	124.3	90.0	94.8	125.0	250.0	263.7	157.2	1995.6	
											TOTAL DE LOS PROMEDIOS MENSUALES =		1955.1	
PORCENTAJES	4.3	6.4	10.4	13.0	9.3	6.4	4.6	4.8	6.4	12.8	13.5	8.0		

TRIMESTRE MAS LLUVIOSO OCT NOV DIC **** TRIMESTRE MENOS LLUVIOSO JUN JUL AGO

INDICE DE FOURNIER = 36. INDICE DE ARNOLDUS = 166.

DEV. ESTANDAR	80.7	92.0	90.8	81.3	63.7	64.2	52.8	44.5	60.3	63.3	67.4	111.1	236.6
COEF. VARIACION	0.965	0.731	0.446	0.319	0.349	0.516	0.586	0.470	0.483	0.253	0.256	0.707	0.119
COEF. ASIMETRIA	2.078	0.501	0.044	-0.085	0.145	2.423	1.026	0.453	0.531	-0.546	-0.265	1.592	0.646

PROYECTO IGAC-ORSTOM *** GRUPO DE HIDROCLIMATOLOGIA

PROGRAMA ORSTOM

Ministerio de Hacienda y Crédito Público