

ARCHIVES
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OCEANOGRAPHIE PHYSIQUE

N° 1

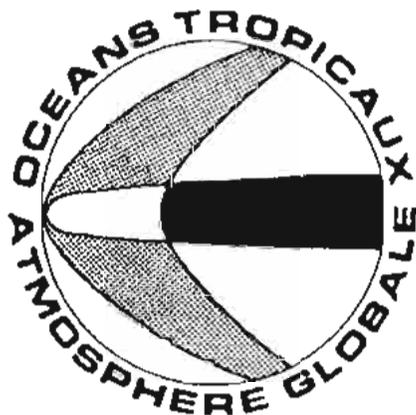
1990

Température et salinité de la surface de la mer
dans le Pacifique Sud-Ouest
0° - 30° S et 150° E - 160° W

Cartes bimestrielles (1970-1989)

Yves MONTEL
François MASIA
Pierre WAIGNA

Groupe SURTROPAC



INSTITUT FRANÇAIS DE RECHERCHE SCIENTIFIQUE
POUR LE DÉVELOPPEMENT EN COOPÉRATION

ORSTOM

CENTRE DE NOUMÉA

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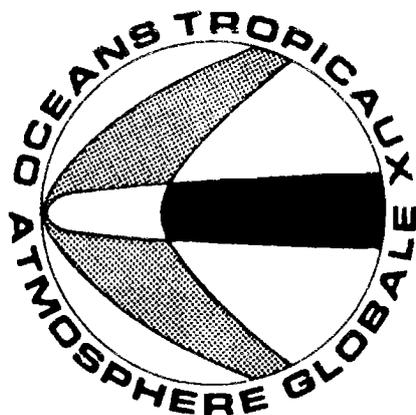
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RESUME

Les cartes des observations de surface de la mer (température et salinité), collectées dans le cadre du programme TOGA (Tropical Ocean and Global Atmosphere) par les équipages des navires marchands, des navires océanographiques et ceux de la Marine Nationale Française, sont présentées par bimestre de 1970 à 1989, dans la zone géographique 0° - 30°S et 150°E - 160°W.

ABSTRACT

Bi-monthly maps of sea surface observations (temperature - SST - and salinity - SSS -) collected within the framework of the TOGA programme (Tropical Ocean and Global Atmosphere) by the crews of ships of opportunity, research vessels and French Navy ships, are presented starting from 1970 to 1989, in the area: 0° - 30° S and 150° E - 160° W.

Salinité et Température
de la surface de la mer
dans le Pacifique Sud-Ouest
de 1970 à 1989

Objectifs:

Le but premier de cet atlas est de recenser et de présenter une distribution spatiale sommaire de la température et de la salinité de surface, qui sont deux paramètres de base permettant l'étude des échanges océan-atmosphère.

C'est à l'initiative de J.R. DONGUY et C. HENIN qu'à partir de 1969, un réseau d'observations de surface a été mis en place depuis le centre ORSTOM de Nouméa. Ce réseau a été ensuite étendu à la Polynésie Française à partir du centre ORSTOM de Papeete (1974) et aux océans Atlantique et Indien à partir des antennes ORSTOM du Havre et Marseille (1977).

Acquisition et traitement des observations:

Dans le cadre du programme SURTROPAC (SURveillance TRansOcéanique du PACifique) - composante du programme international TOGA (Tropical Ocean and Global Atmosphere) - des observations de surface de la mer sont faites par des équipages de navires marchands sélectionnés, de navires océanographiques et de bâtiments de la Marine Nationale Française.

De l'eau de mer de surface est prélevée dans un seau type "Météorologie Nationale". La température est repérée sur un thermomètre au 1/10ème °C. Un échantillon d'eau de mer est conservé dans un flacon spécial pour analyse ultérieure de la salinité au laboratoire.

Toutes ces informations (position, date et heure, température, salinité) sont conservées à Nouméa dans une banque de données.

Les logiciels de saisie (sur PC compatible), de gestion et de correction (sur station SUN), ont été mis au point par M.J. LANGLADE et B. CAMUSAT.

Toutes les données collectées ont été vérifiées et sont disponibles auprès du groupe SURTROPAC du centre ORSTOM de Nouméa.

Des observations antérieures à 1970 ont été introduites dans la base de données.

Présentation des observations:

Un atlas des observations de surface le long des lignes de navigation trans-équatoriales dans le Pacifique a déjà été réalisé (T. DELCROIX et F. MASIA, Atlas des variations de température et de salinité de surface du Pacifique tropical 1969 - 1988, Rapports scientifiques et techniques. Sciences de la mer. Océanographie Physique. ORSTOM Nouméa 1990 n°2).

Dans la zone Pacifique Sud-Ouest, la densité de la distribution spatio-temporelle est suffisante à partir de 1970 pour permettre de dresser des cartes géographiques de température et de salinité de surface.

La connaissance de ces deux paramètres de l'environnement marin peut-être très utile pour les études sur la pêche et le climat de cette région qui intéresse de nombreux pays insulaires.

Les résultats sont présentés ici par bimestre.

La zone géographique retenue va de l'équateur à 30° S, et de 150° E à 160° W.

Pour chaque page de l'atlas:

- la carte supérieure présente la distribution spatiale des isothermes de surface tracées tous les degrés (°C). La température supérieure à 28°C est représentée en grisé. Ces eaux caractérisent le "réservoir d'eaux chaudes" du Pacifique Ouest (Wyrki K. Some thoughts about the West Pacific Warm Pool. Proceeding of the Western Pacific International Meeting and Workshop on TOGA-COARE. Noumea, New-Caledonia May 24-30/1989).

- la carte inférieure présente la distribution spatiale des isohalines tracées tous les 0.2 usp (Unité de Salinité Pratique). La salinité supérieure à 35.5 usp est représentée en grisé. Ces eaux caractérisent une zone à forte évaporation lieu de formation d'eau type du Pacifique Tropical Sud.

Sur les deux types de cartes, une croix situe le lieu de l'observation. Le nombre d'observations pour chaque bimestre est indiqué en bas à droite de chaque carte.

Le tracé des isolignes et des zones grisées n'est fait que lorsque la densité des points d'observations est suffisante. La densité minimum est une observation dans un carré de 2° de longitude sur 2° de latitude. Si des points d'observations sont éloignés de plus de 4 degrés les isolignes ne sont plus tracées et il apparait une plage blanche dans la zone grisée.

La carte de la page 6 situe toutes les observations de 1970 à 1989 dans la zone considérée (62042 observations).

Remerciements:

Toutes ces observations n'ont pu se faire que grâce à la coopération bénévole des équipages des navires marchands du réseau SURTROPAC/TOGA.

Nous remercions également:

Les Agents des compagnies de navigation:

CGM, SATO, SOFRANA, AMAC, CWN, BALLANDE

La Société Le Nickel

Les Mines Pentecost

La Société Nouméa Nickel

La Marine Nationale Française

Les équipages des navires océanographiques de GENAVIR

Maryse SICARD

Anne DANDINE

Monsieur VIRATELLE

Armel LECORVAISIER

Henri WALICO

Sella WAIGNA

et tous les autres membres du Groupe SURTROPAC du centre ORSTOM de Nouméa.

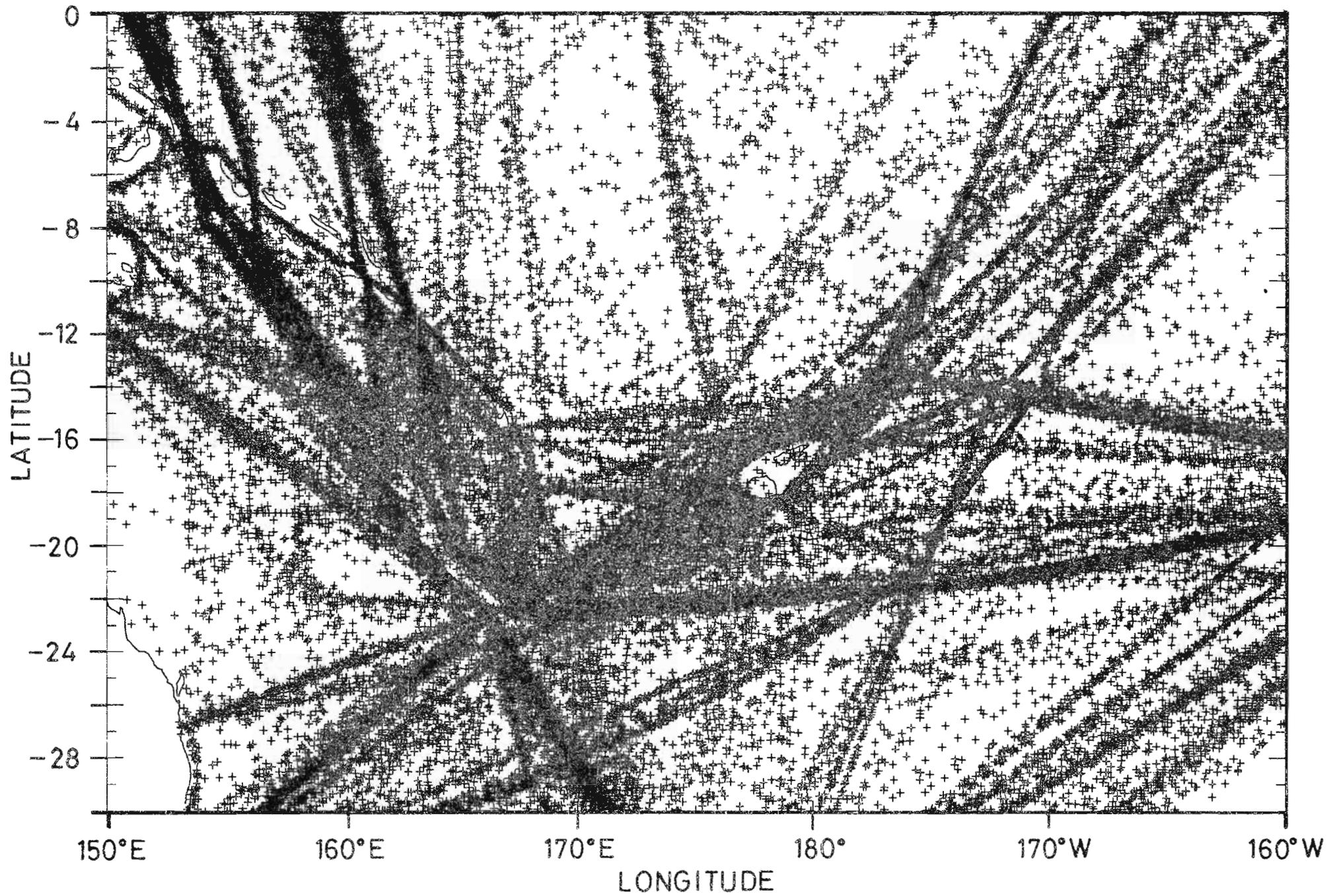
LES OBSERVATIONS DE SURFACE DE LA BANQUE ORSTOM

ONT ETE REALISEES A BORD DES NAVIRES SUIVANTS:

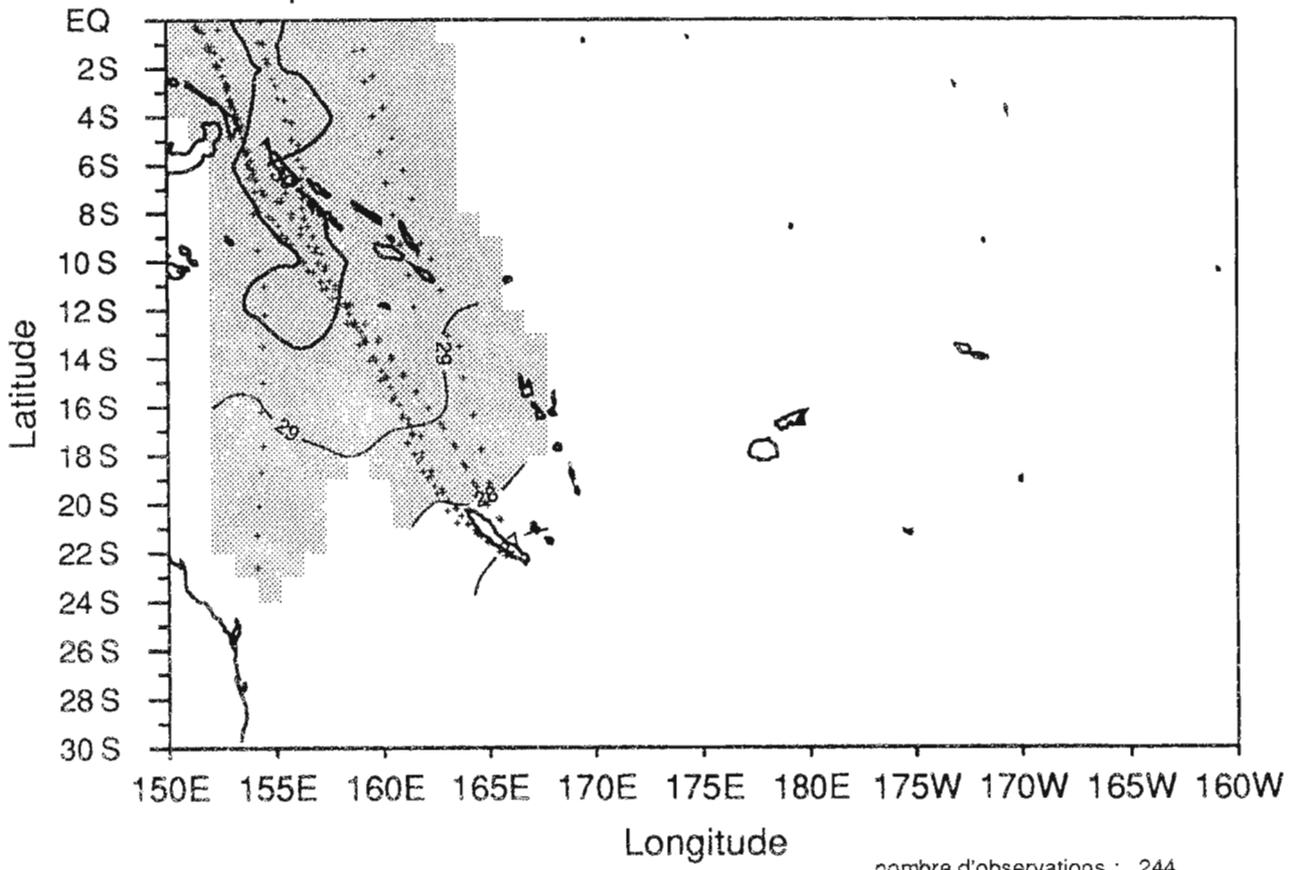
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N.O. ALIS	FRANCIS GARNIER	MARTIN CPT
ALBUNGA 1	FIJI MARU	MOANA
AMSTERDAM 2	FUA KAVENGA	MOANA PACIFIC
ANJOU	FERDINAND DE LESSEPS	MAURICIEN
AORAI	FETU MOANA	MOSEL
ARGO	FORUM SAMOA	MANSART
ALSACIEN	FIVE STAR	NANYO
ACT12	FUZAN	NESSBANK
AUNIS	GASIWARA	NICKEL I
AUVERGNE	GAUGUIN	NOROIT
BAYONNAISE	GLACIER	NIPPO MARU
BOUGAINVILLE	GOLDEN CAPE	VILLE DE NANTES
BLAISON CDT	LA GRACIEUSE	ORIANA
BALNY	GASCOYNE	ORAGE
BOUNTY	GYOKORYU	ORSOM 3
BOUSSOLE	GYRE	OURAGAN
BOURDONNAIS	HASSHIN	PARALLA
BOURDAIS CDT	HACHIYO MARU	PACIFIC NAVIGATOR
BORY CDT	E.V. HENRY	PAPENOO
CALEDONIEN	HISASHIMA	PACIFIC FERNANDA
CIRON	HAKURYU MARU	PACIFIC ROVER
CONFIANCE	HUGH SMITH	PIERRE LOTI
CHEVRONGENES	HORYU	PAIMPOLAISE
AMIRAL CHARNER	HIPPOPOTAME	POLYNESIA
CIELO DI ROMA	HAUSSMANN	POLYNESIE
COOK CPT	HUPEH	PACIFIC PRINCESS
CLYDEBANK	HORIZON	PACIFIC ISLANDER
CONTESSA	ILE DE LUMIERE	PUNARUU
CORIOLIS	ILE MAURICE	POYANG
CAPRICIEUSE	INDUNA	RAIMU
COQUILLE	ILE DE LA REUNION	RABELAIS
CARONTE	ILE STE MARIE	RACINE
SCOTT CPT	IVYBANK	RODIN
CONTENDER ARGENT	JEANNE D'ARC	REOBOTH
CHEVRON NAPLES	JACQUES CARTIER	LA RAILLEUSE
WALLIS CPT	JEBSEN SOUTHLAND	RIMBAUD
CEZANNE	JEAN LABORDE	RONCARD
DUMONT DURVILLE	JEAN MOULIN	ROUSSEAU
DIEPPOISE	JEBSEN TIMARU	ROSTAND
DEGAS	KERMADEC CPT	RADUGU
DILKARA	KOHE KOHE	RIVIERE CMT
DOUDART DE LAGREE	KENKON MARU	RYOFU MARU
DIAMOND STAR	KOYO	SATUMA
DUKE STAR	KORYU	SCHUKALSKY
DUNKERQUOISE	KWANGTUNG	SHANSI
ELBE	KOYO MARU	SHINRYU MARU
ESSO MONTREAL	LILLOOET	SING KIANG
ESSO ST JOHN	LOTUS	SOUFFLOT
ESTAFETTE	LA PEROUSE	SEA PRINCESS
EVERGREEN	LA LORIENTAISE	SIRIUS
FLOREANA	LUHESAND	SUROIT

STRANGER
SOUTH ISLANDER
SWALLOW
SHOYO MARU
TAYO
THEA S
TANGAROA
TAHITIEN
TIARE
TAKUYO MARU
TASMAN CPT
VILLE DE TANANARIVE
TUHAA PAE
TIARE MOANA
THREE STAR
TAINVI
TUI
UTRILLO
VAR
VAUBAN
VAUCLUSE
VILLE DE DUNKERQUE
VILLE DE HAVRE
VITYAZ
VILLE DE MAJUNGA
VILLE DE NOUMEA
VILLE DE ROUEN
VILLE DE TAMATAVE
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YUE MAN
YUE RIVER
YUNNAN
ZAMBEZE
ZEEBRUGE
ZELANDE
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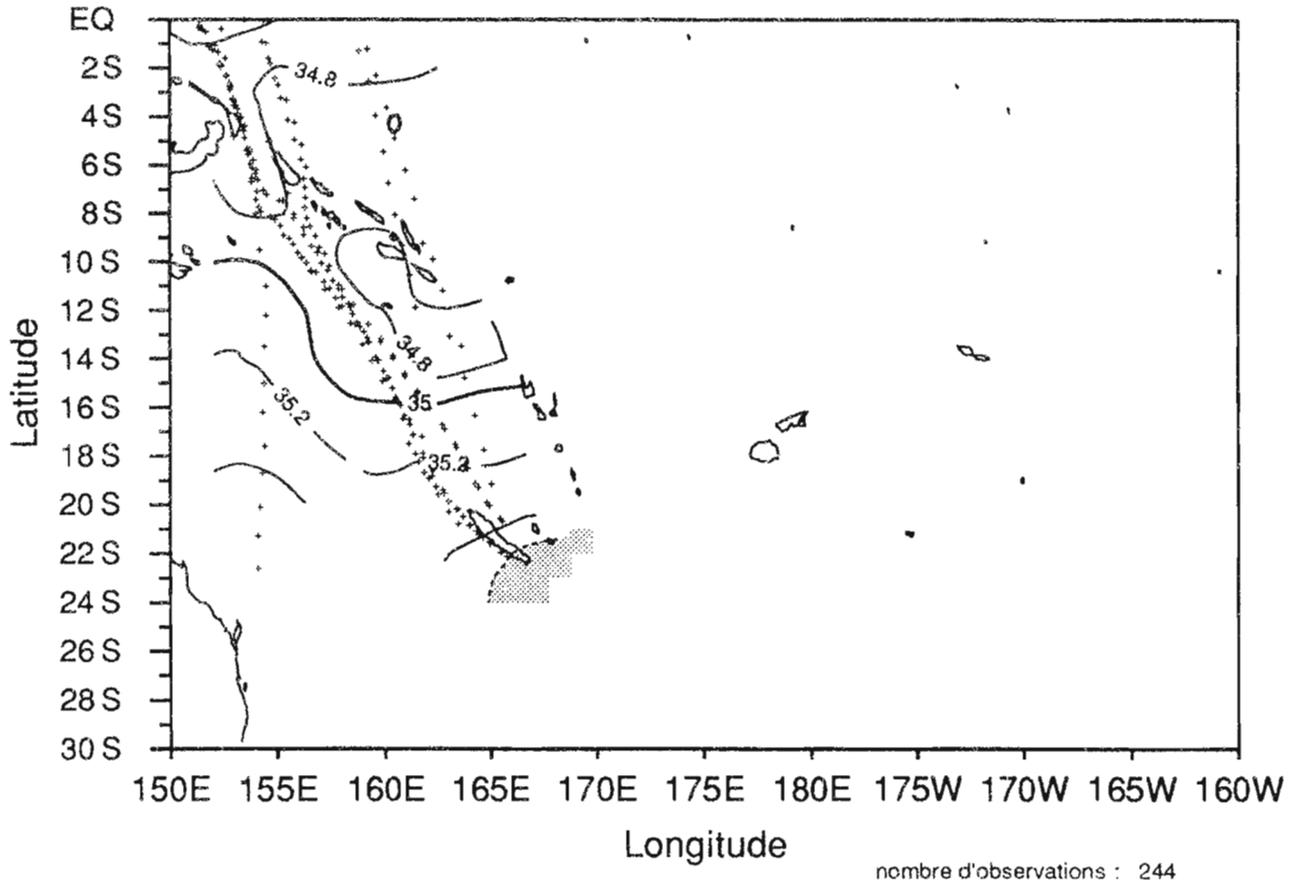
OBSERVATIONS ANNEES 70 à 89 LONG. 150°E - 160°W LAT. 30°S - 0° 62042 OBS.



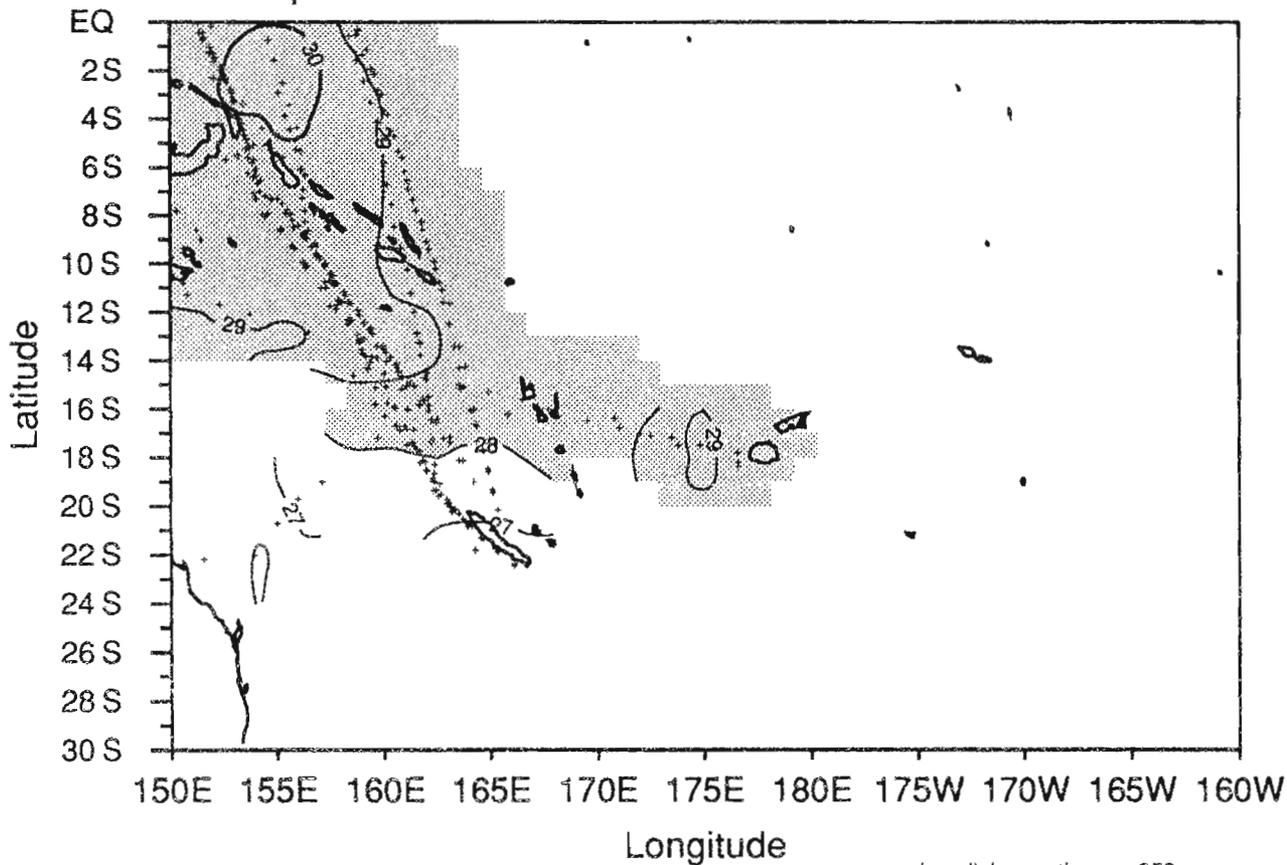
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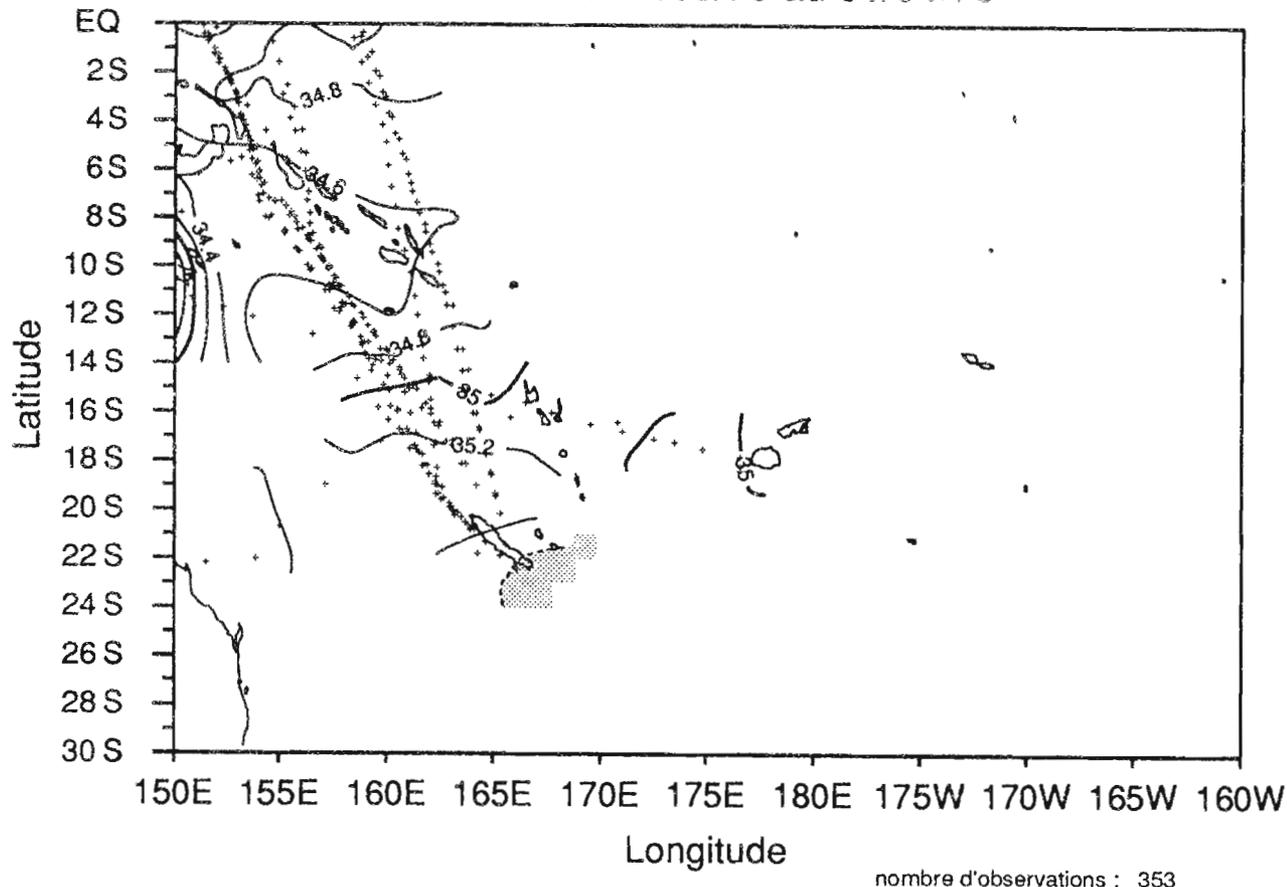
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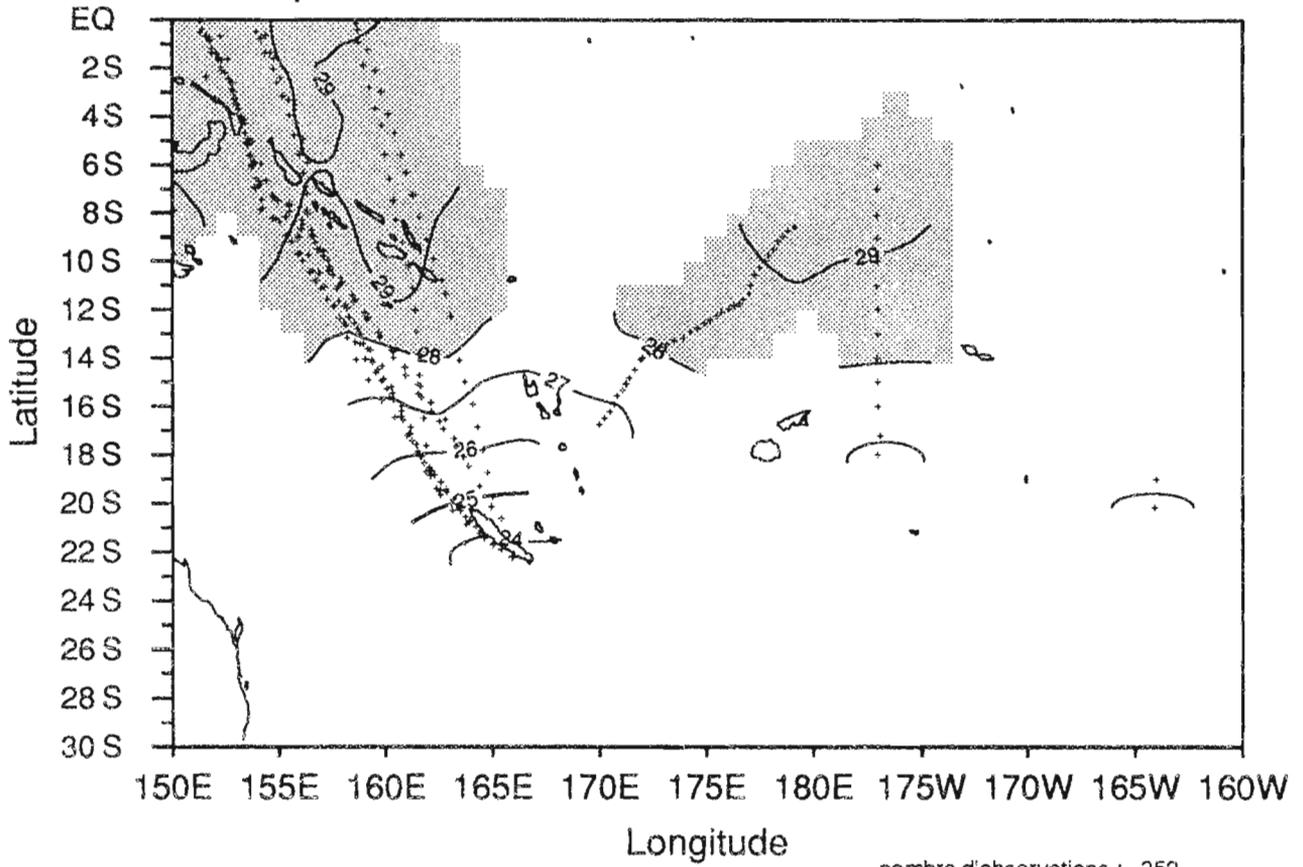
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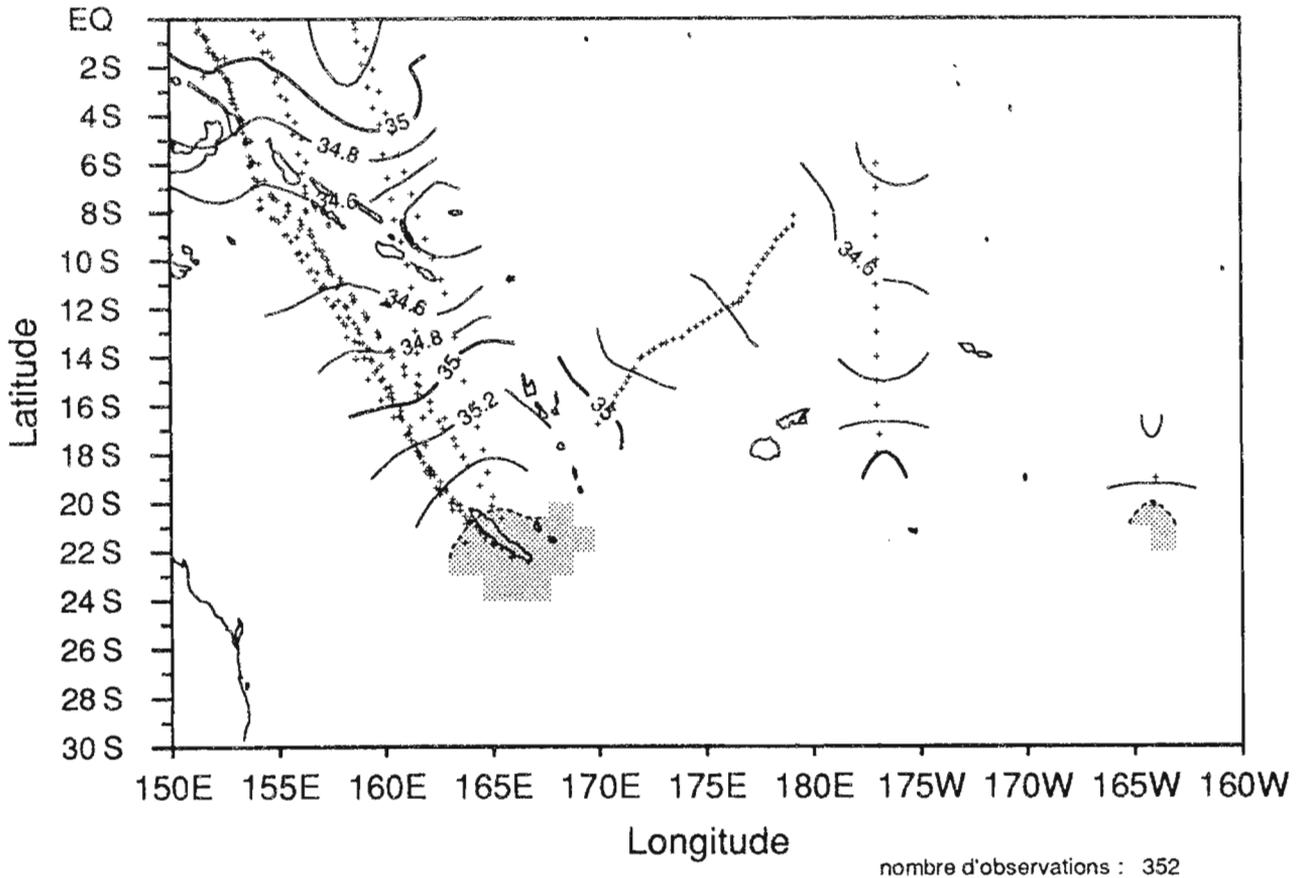
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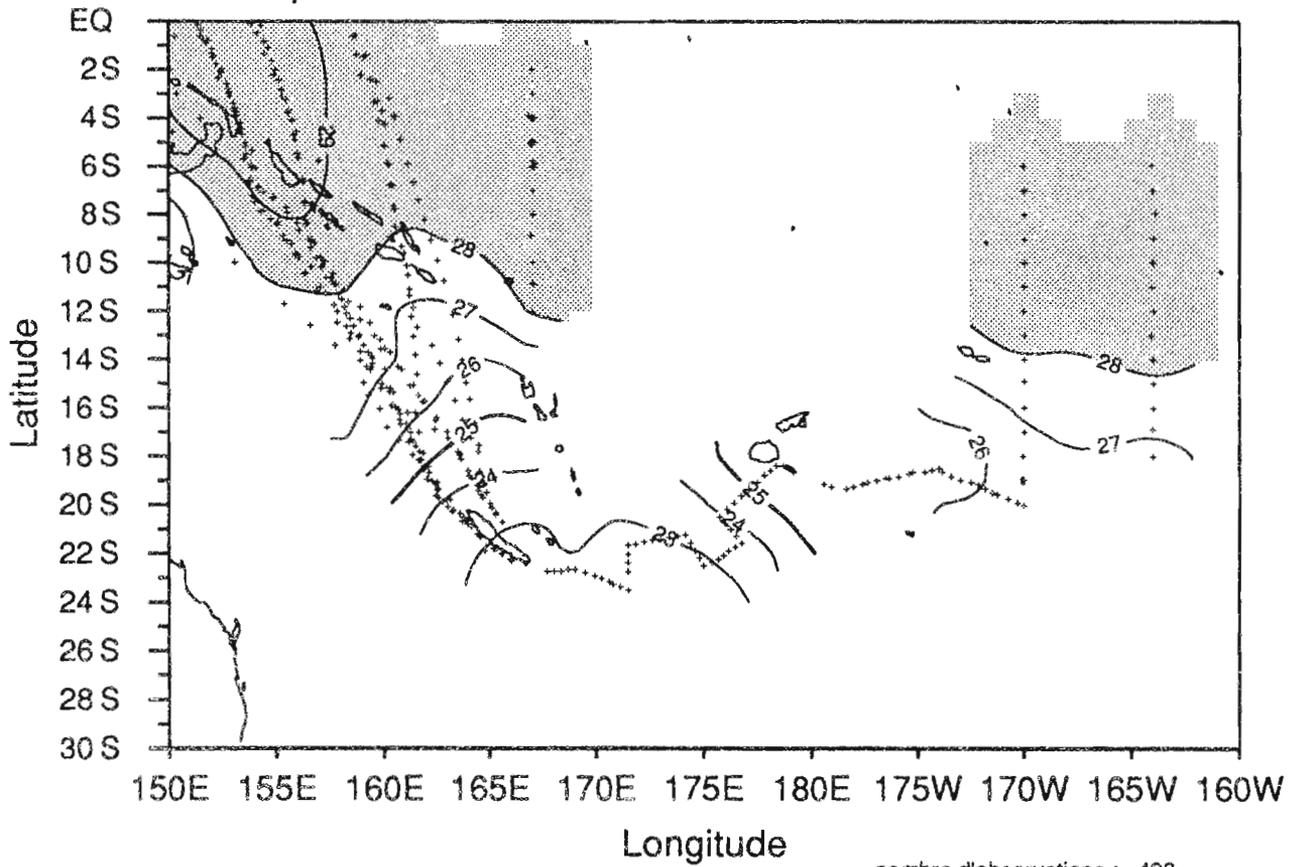
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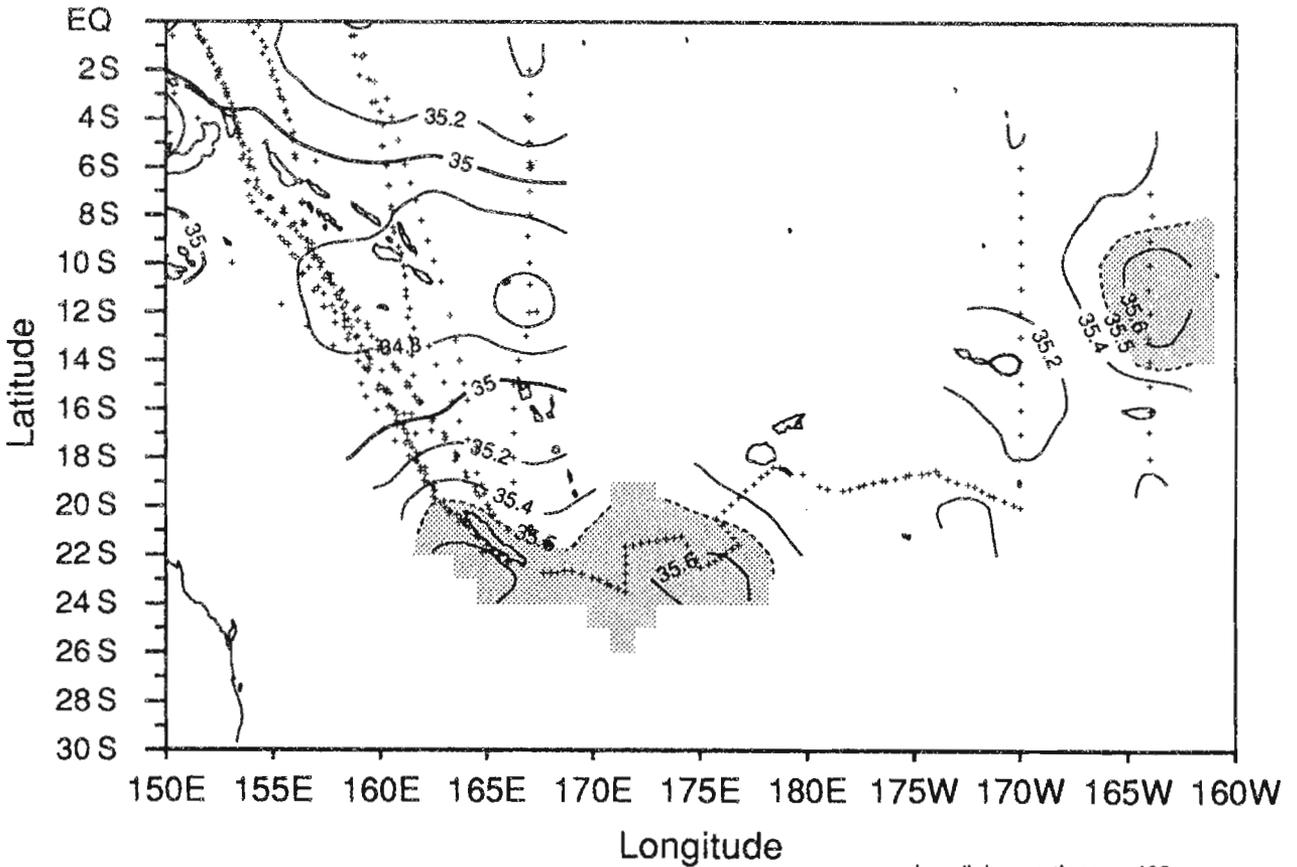


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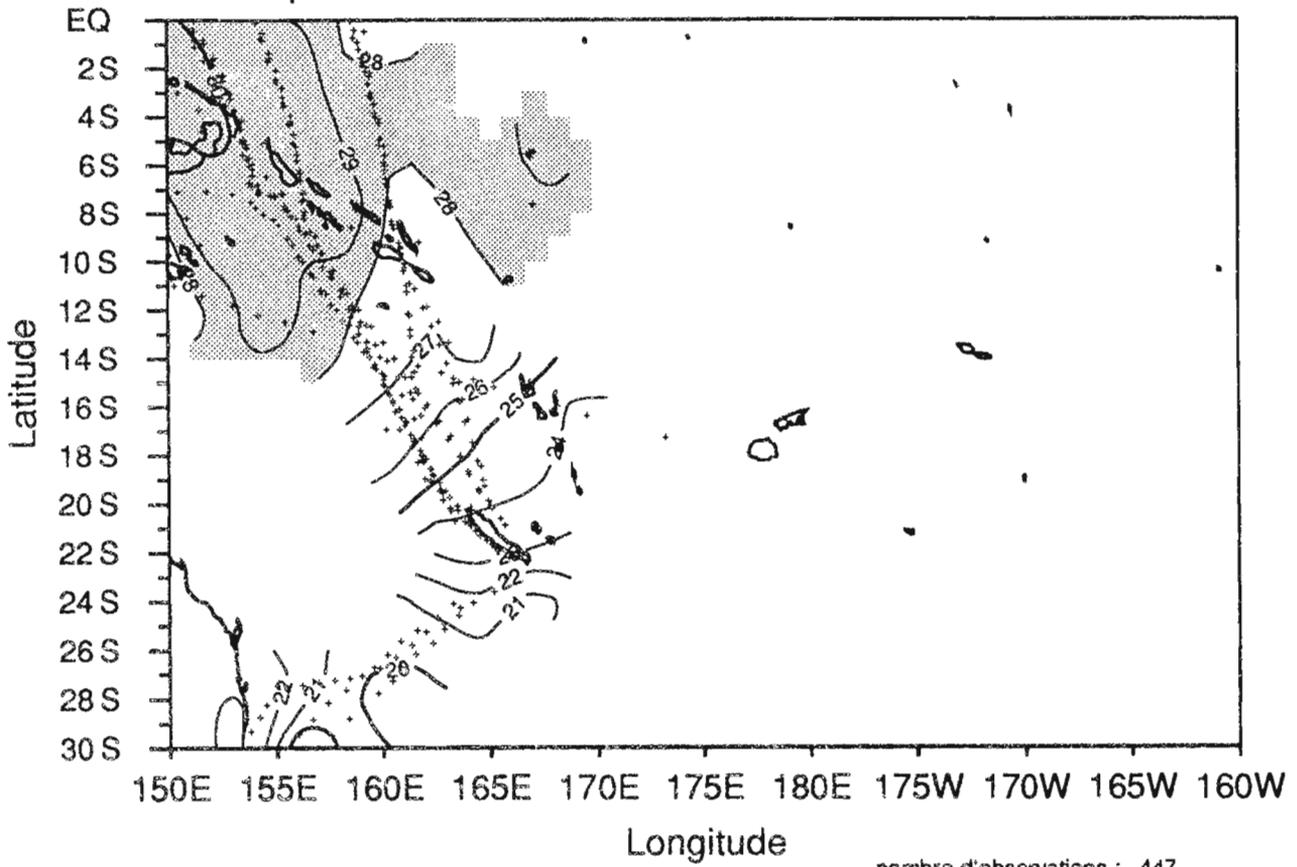
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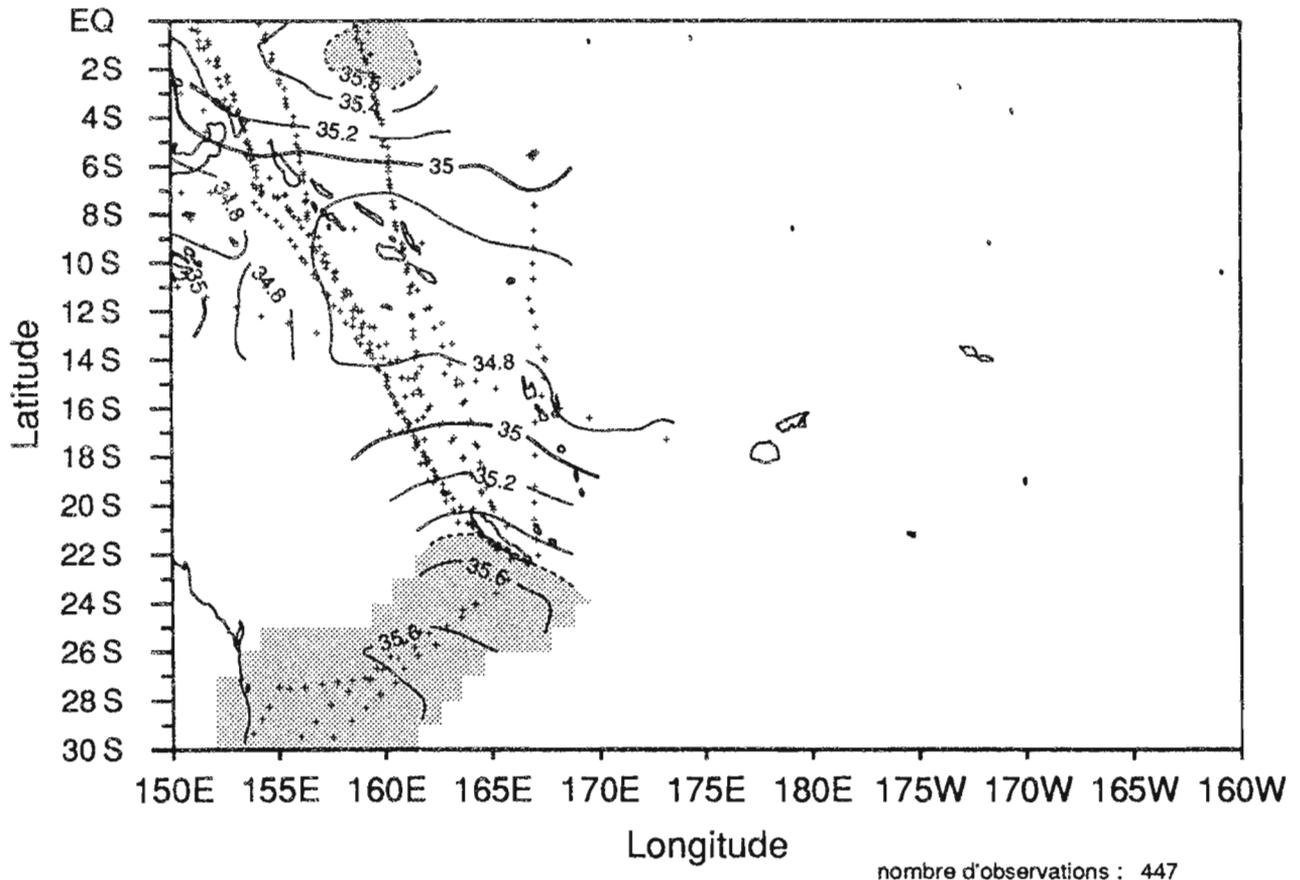


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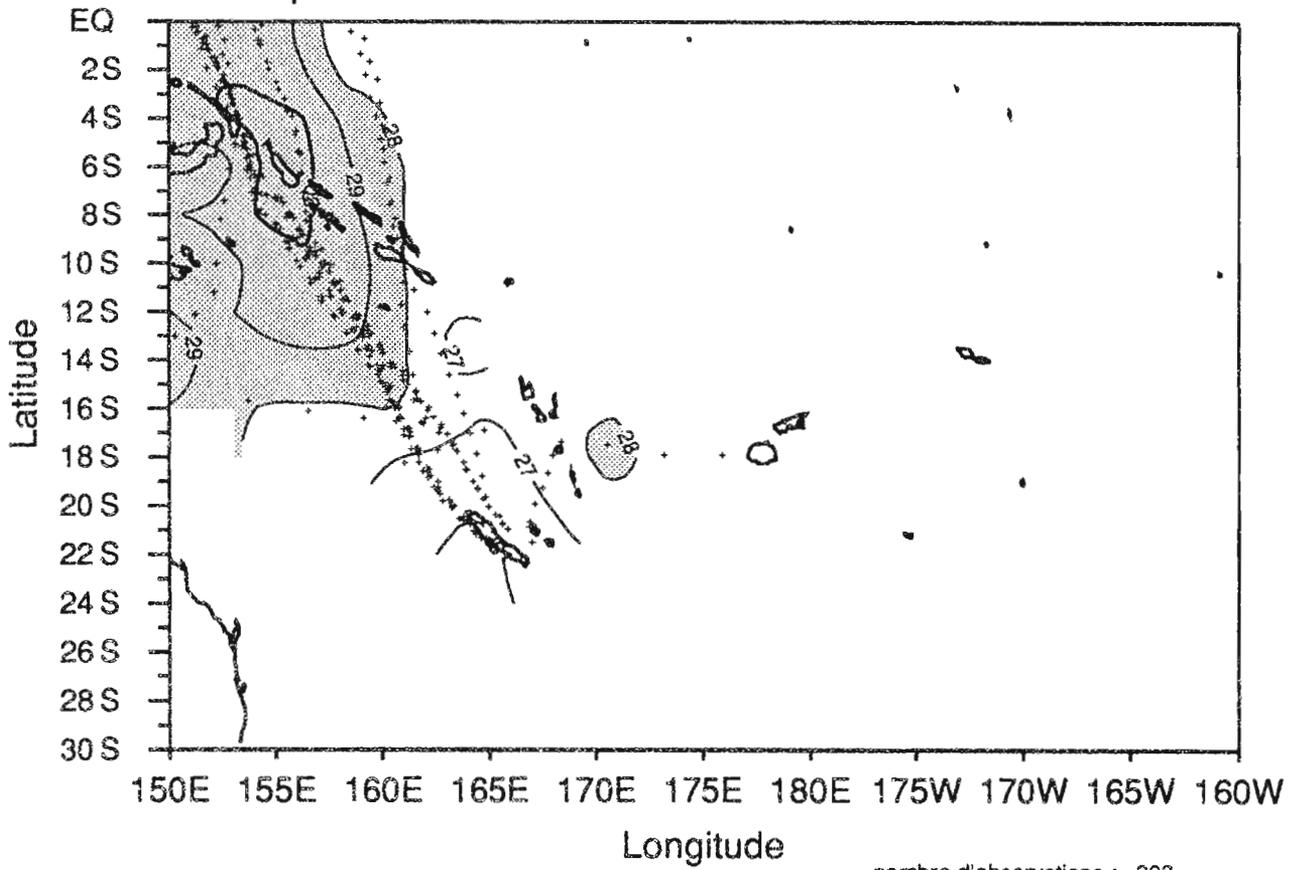
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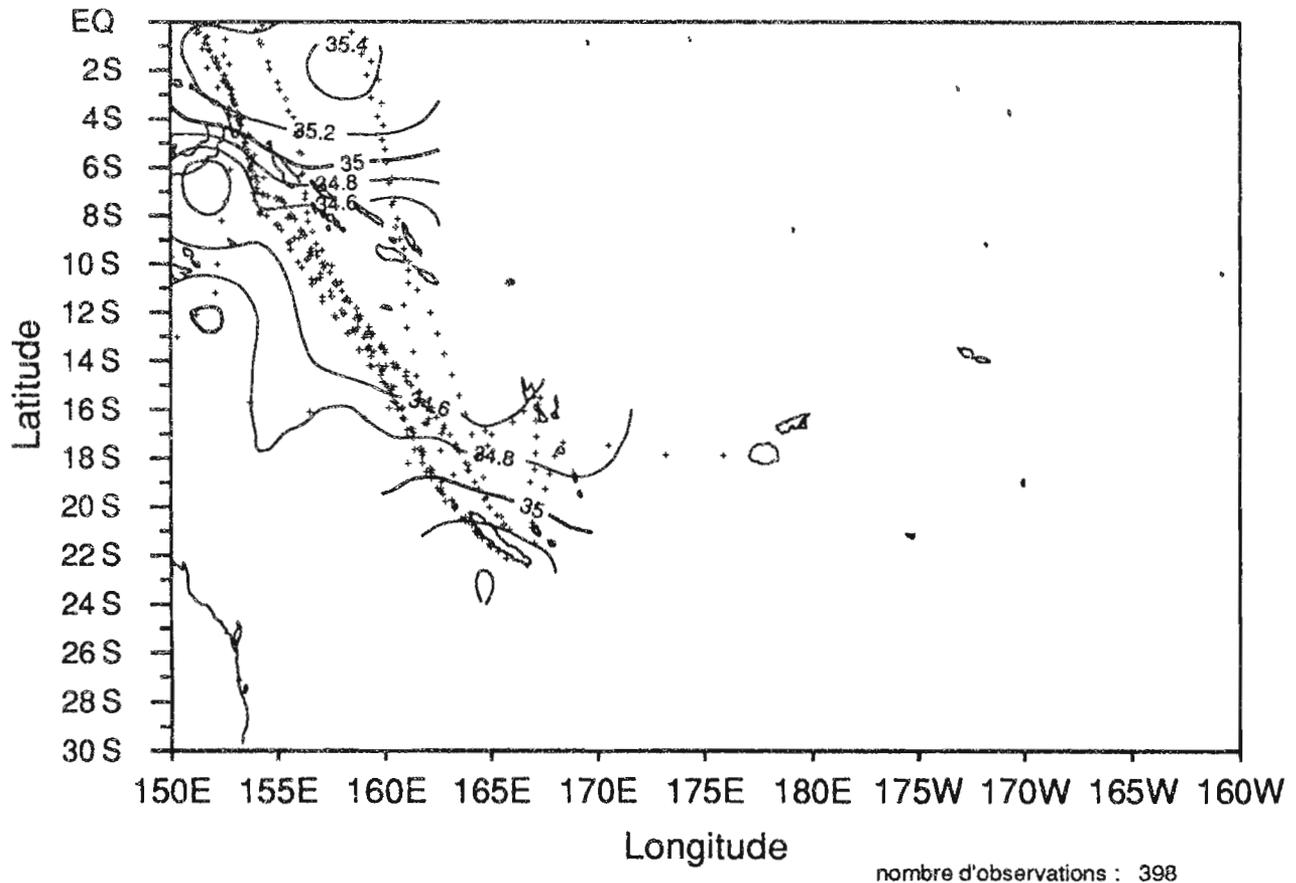
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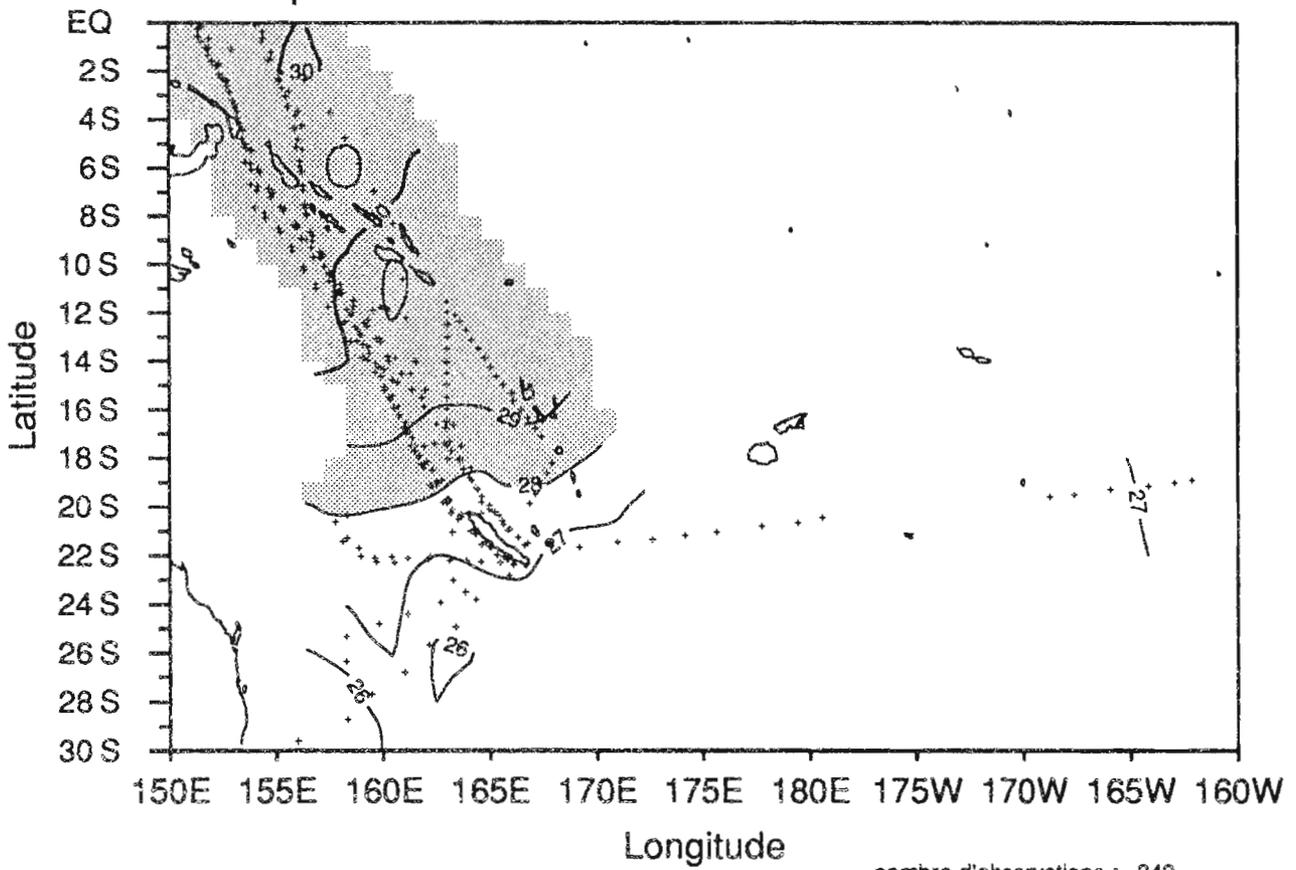
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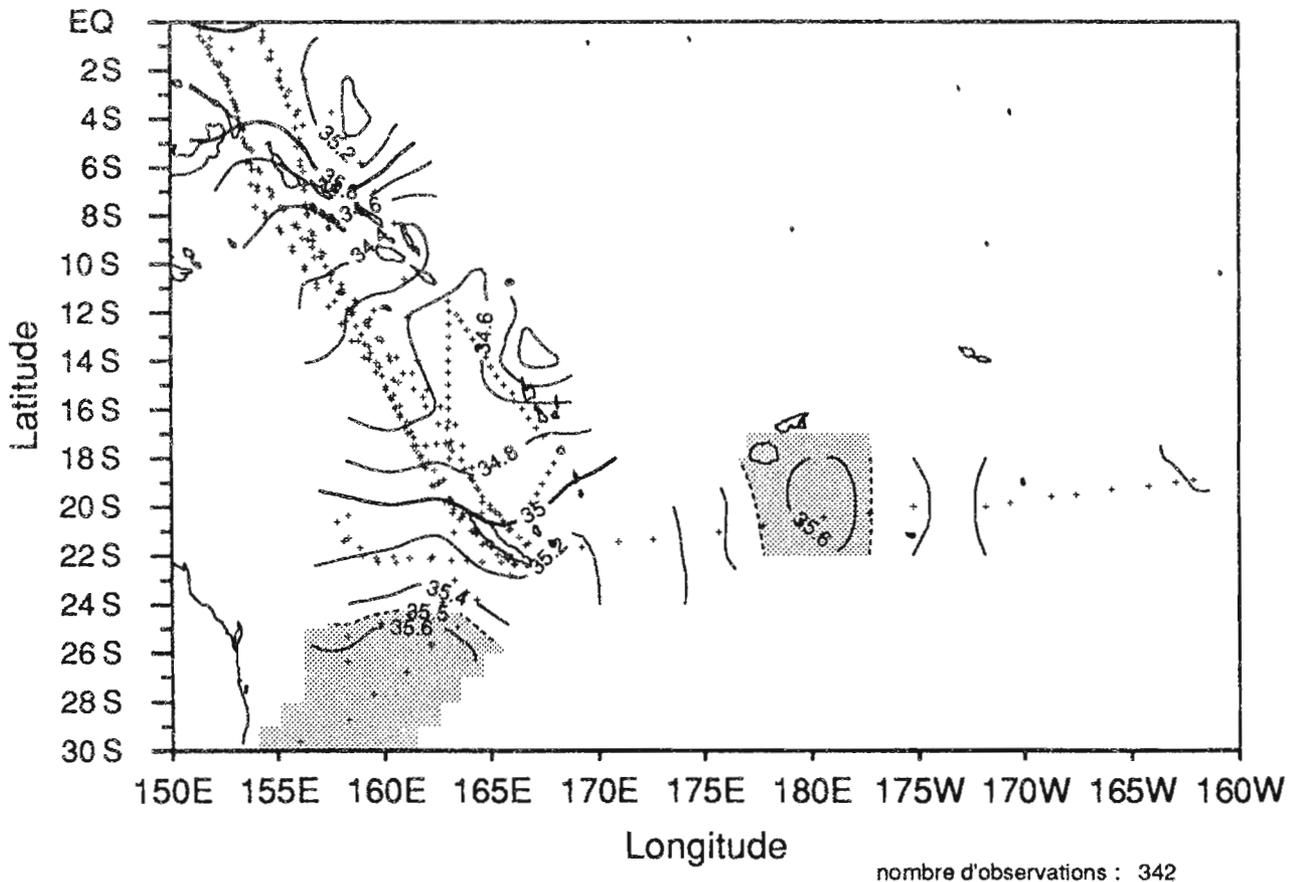
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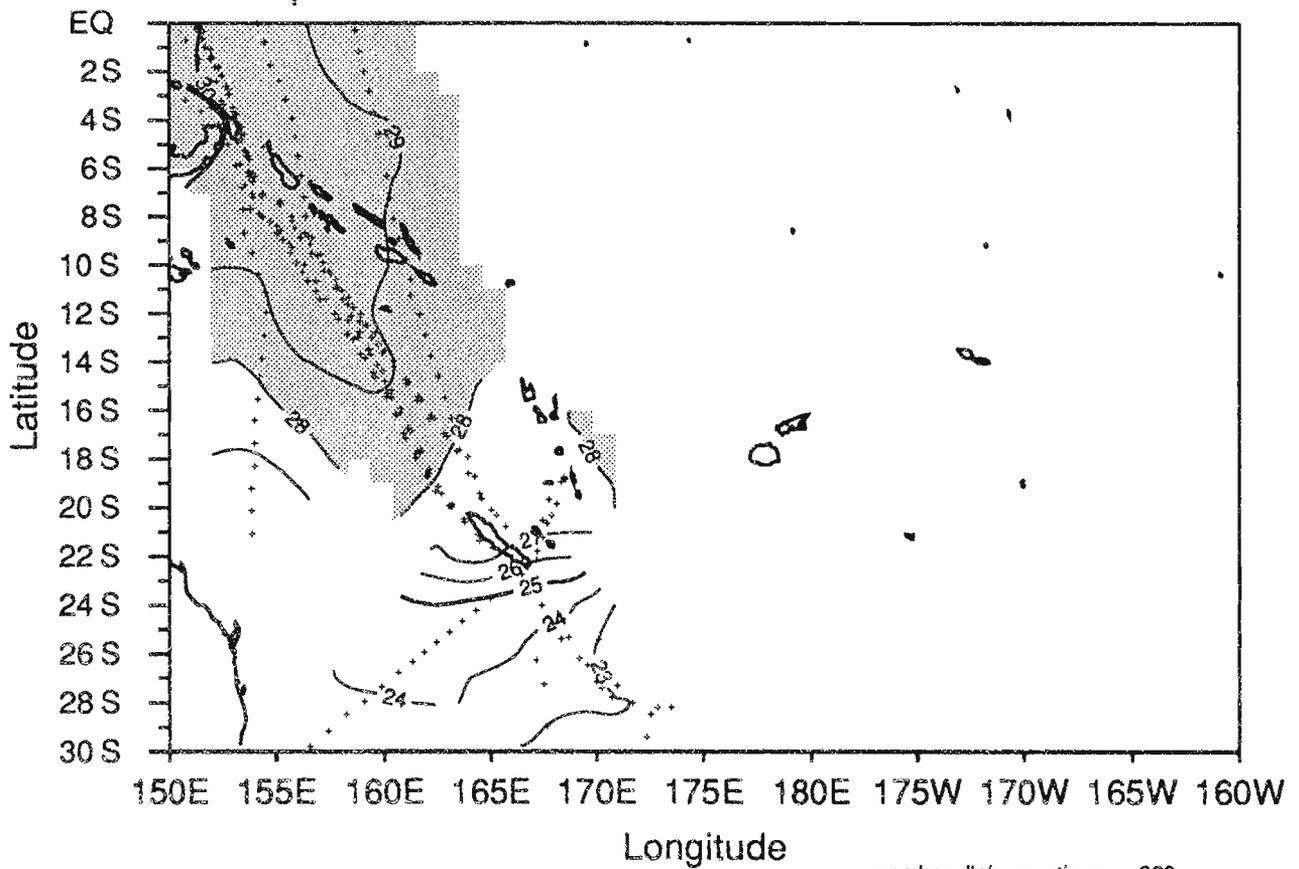
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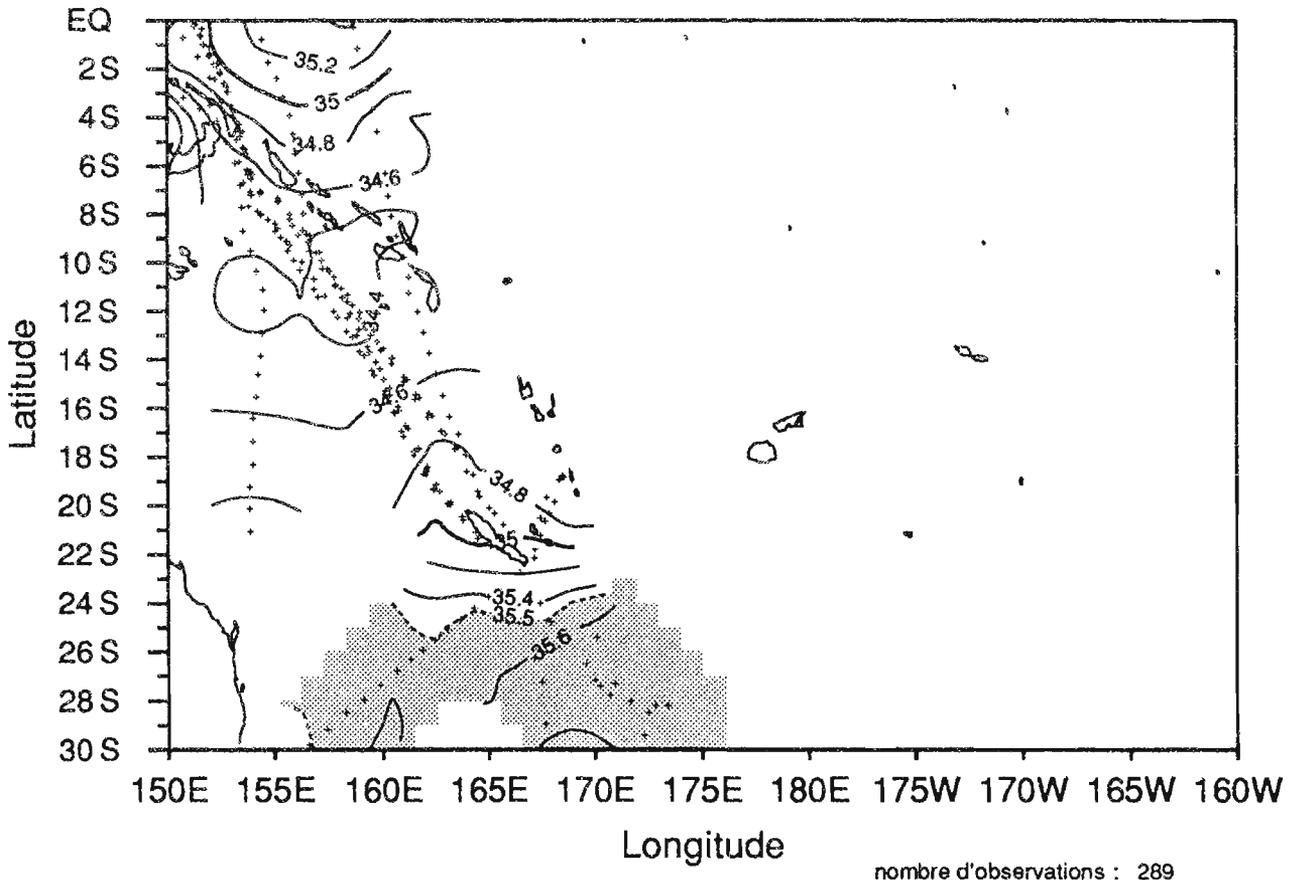
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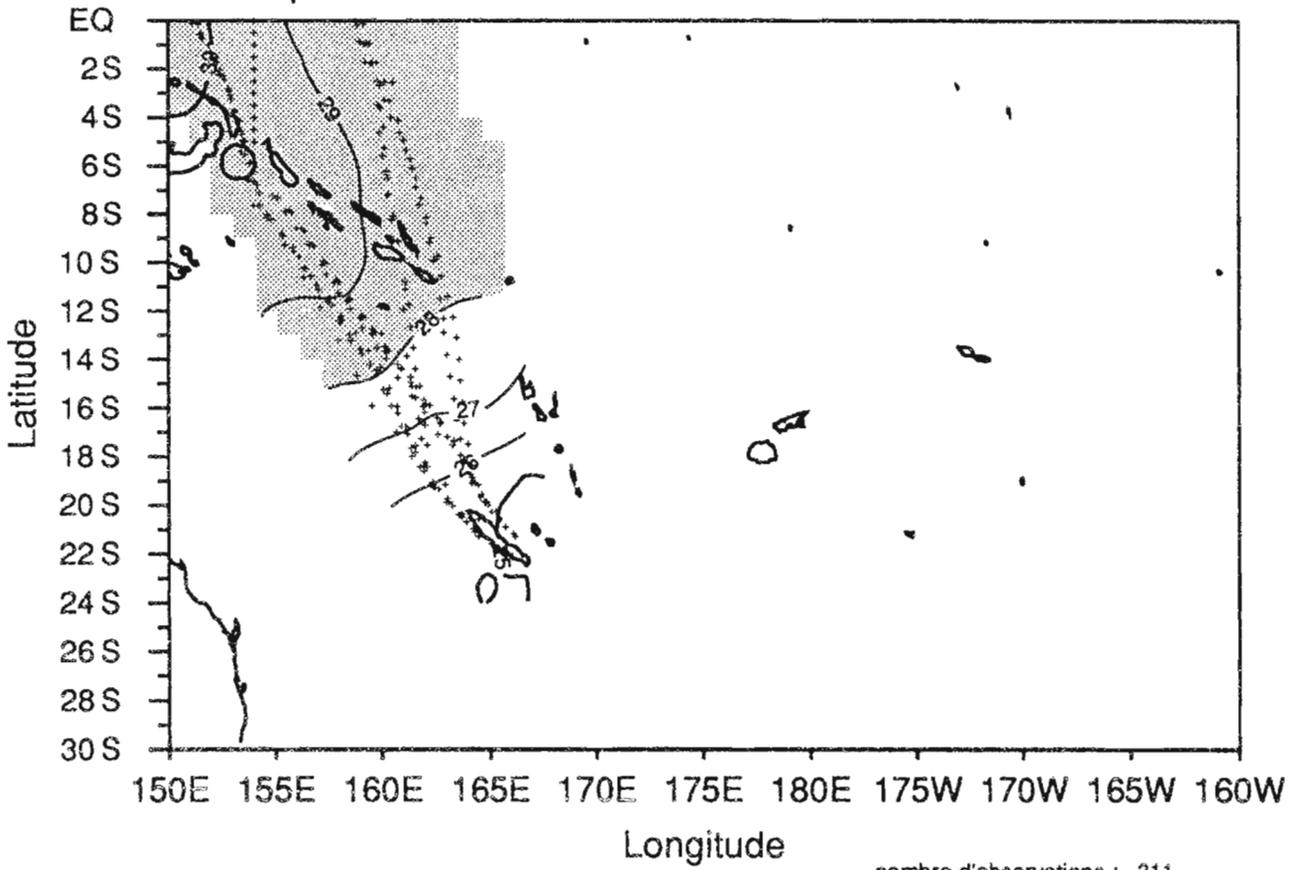
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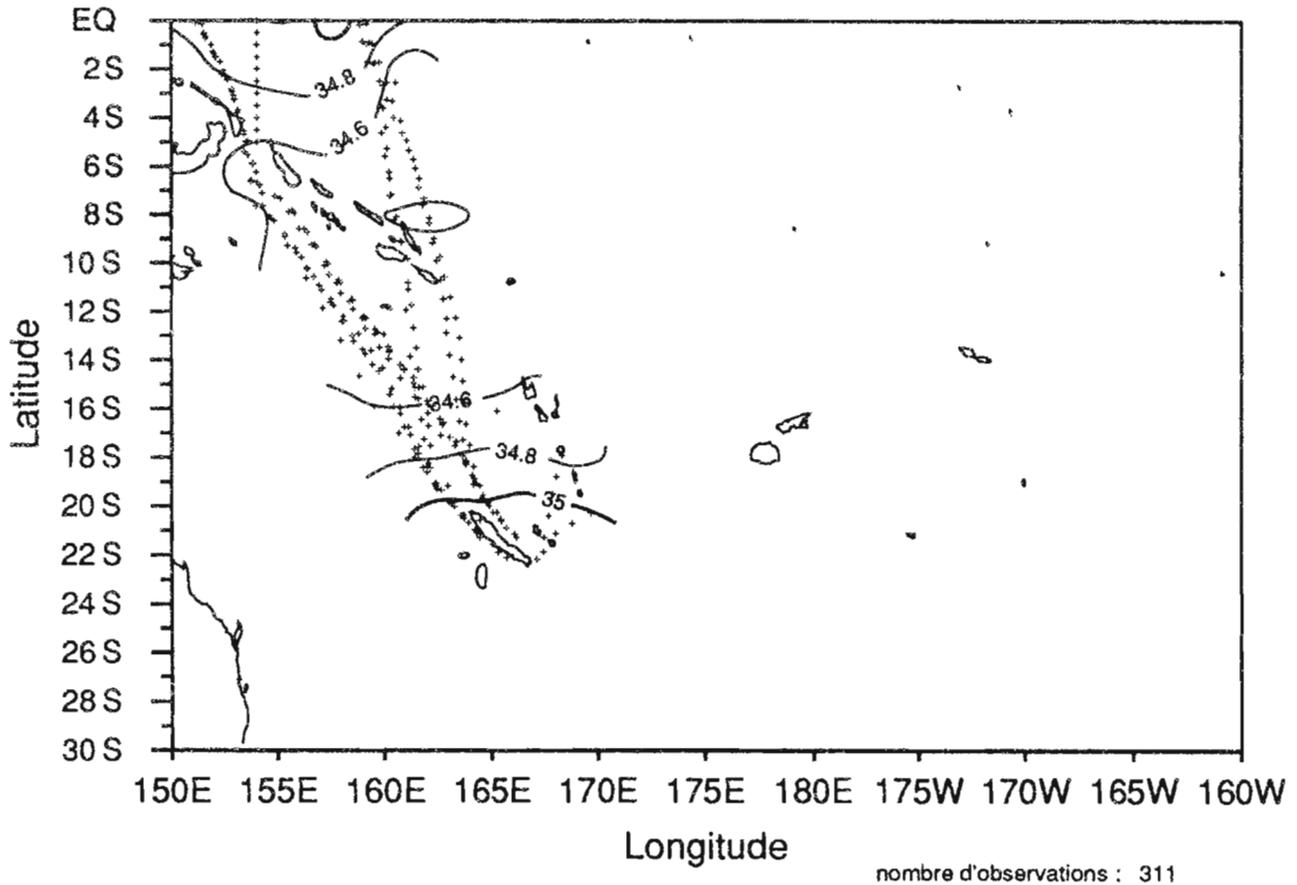
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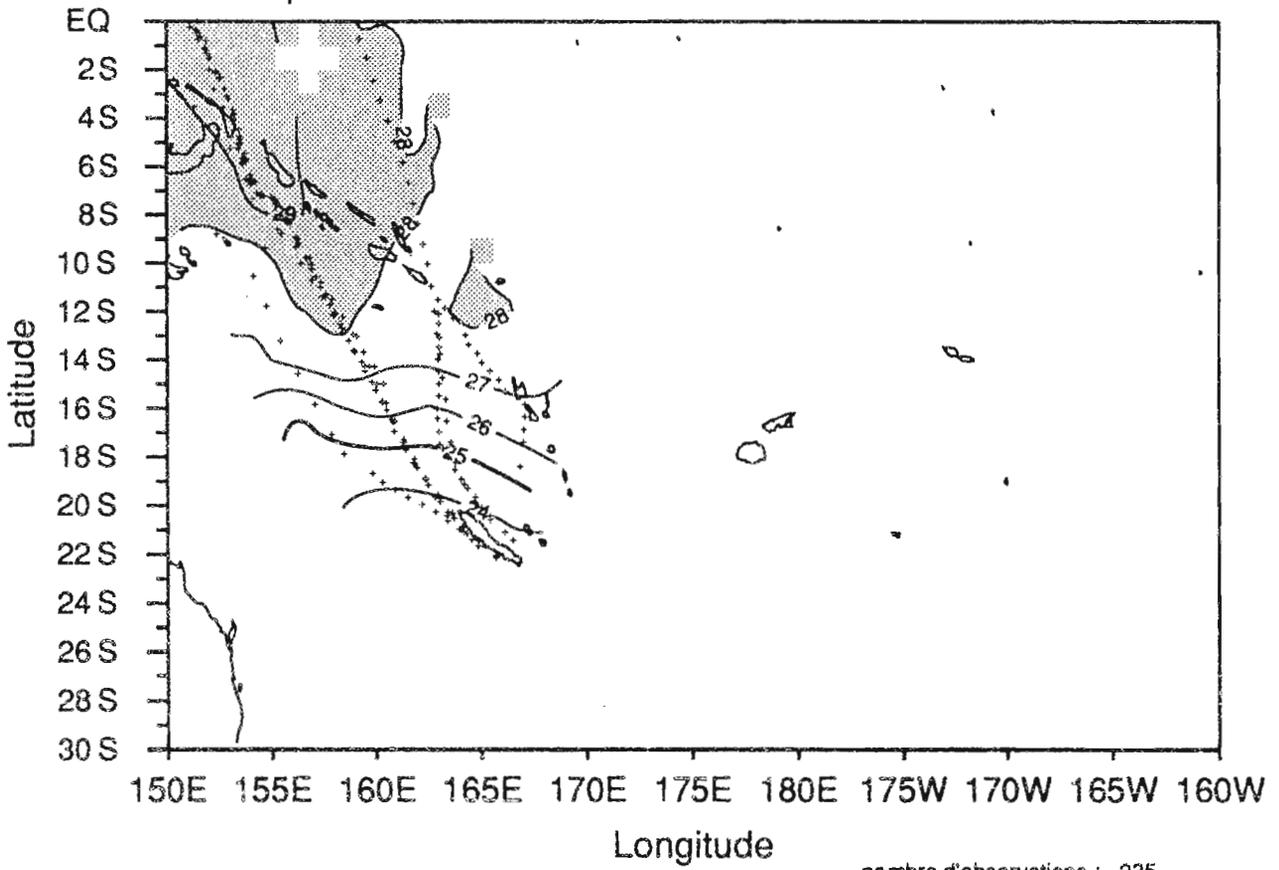
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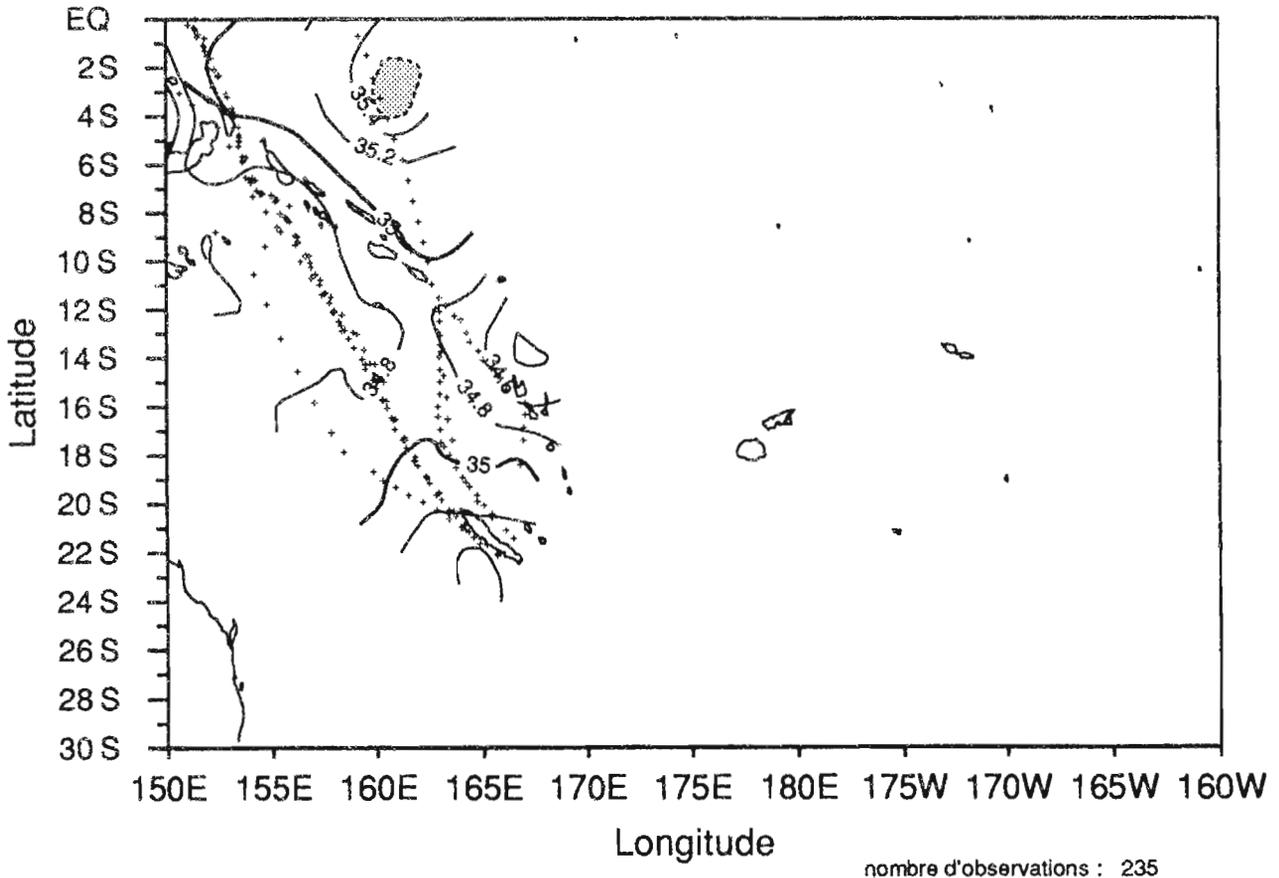
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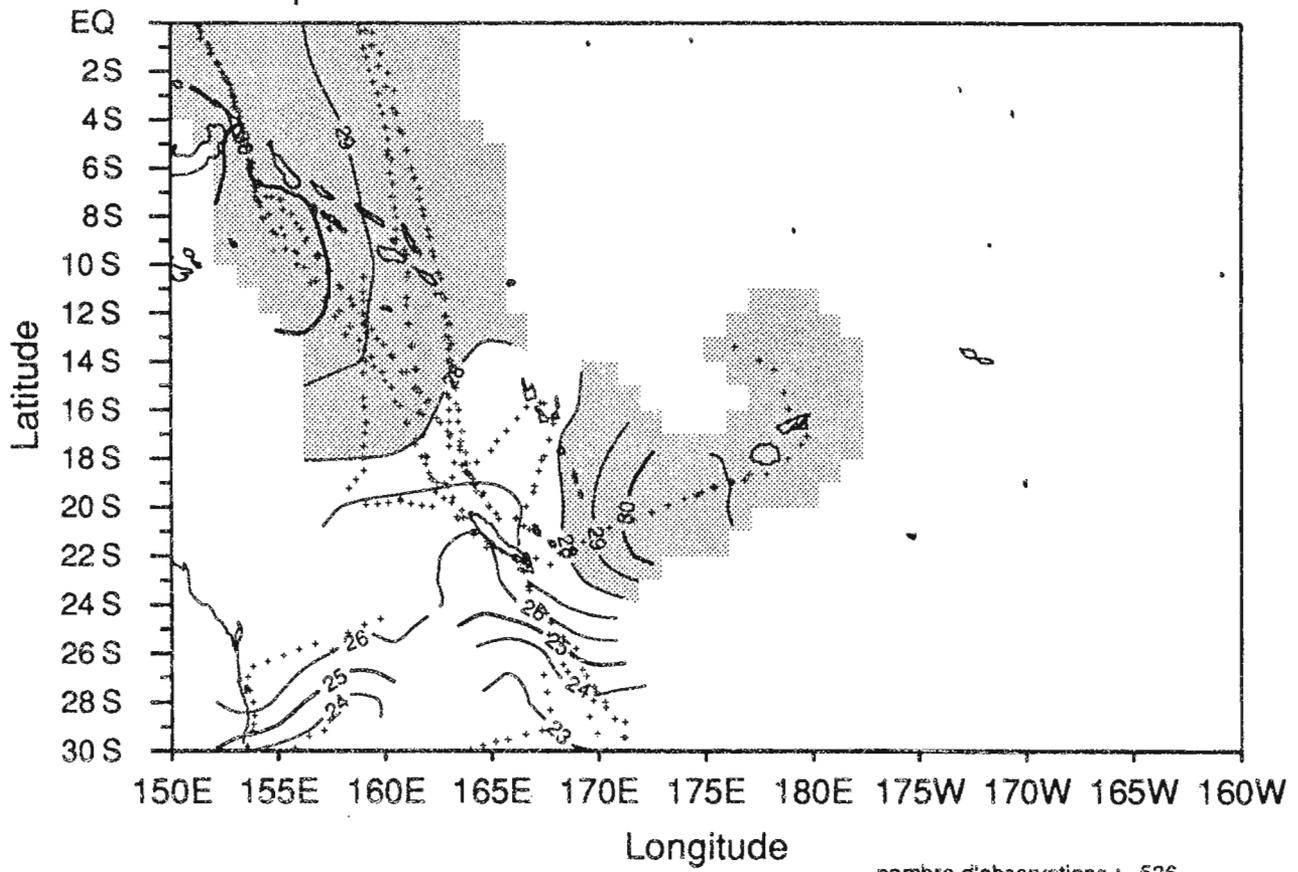
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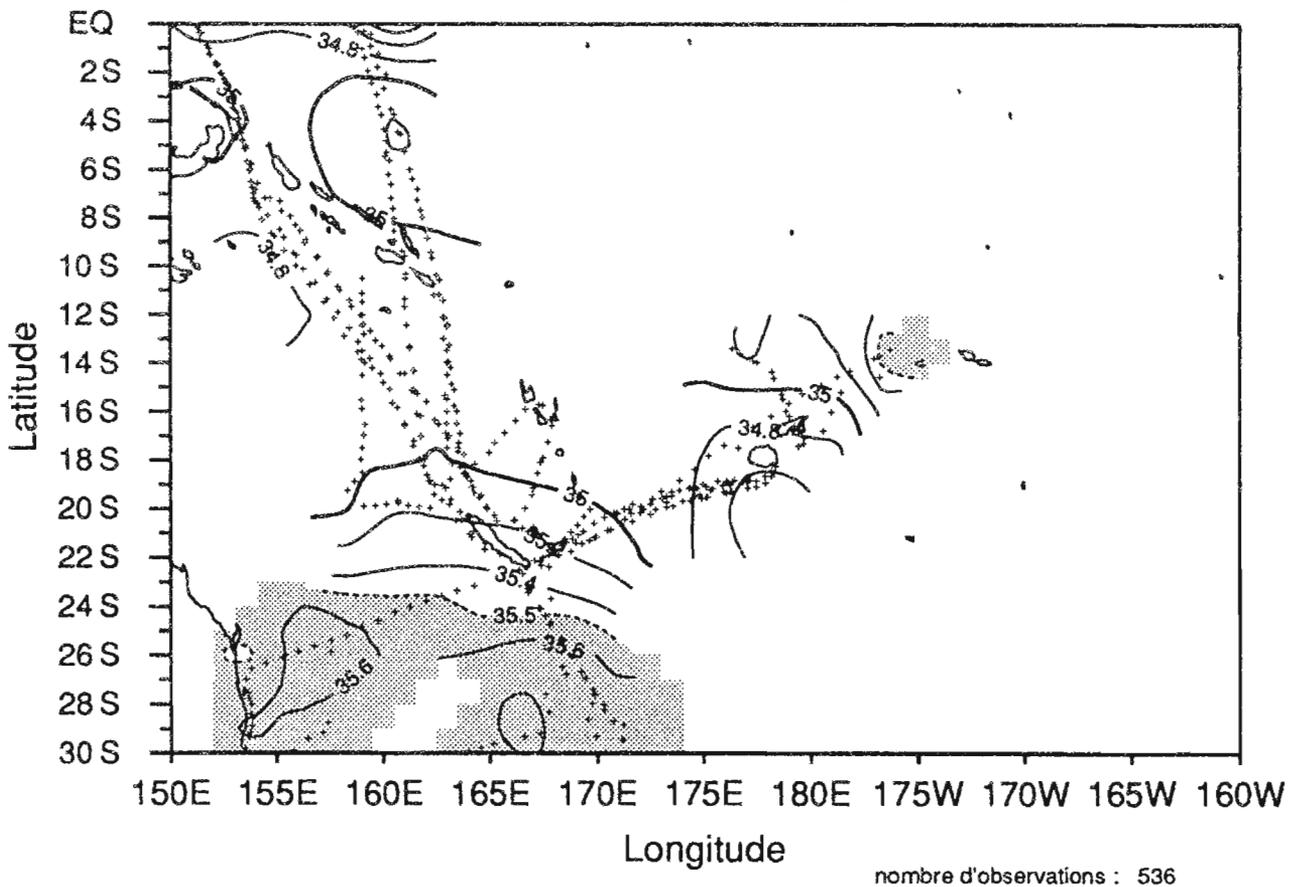
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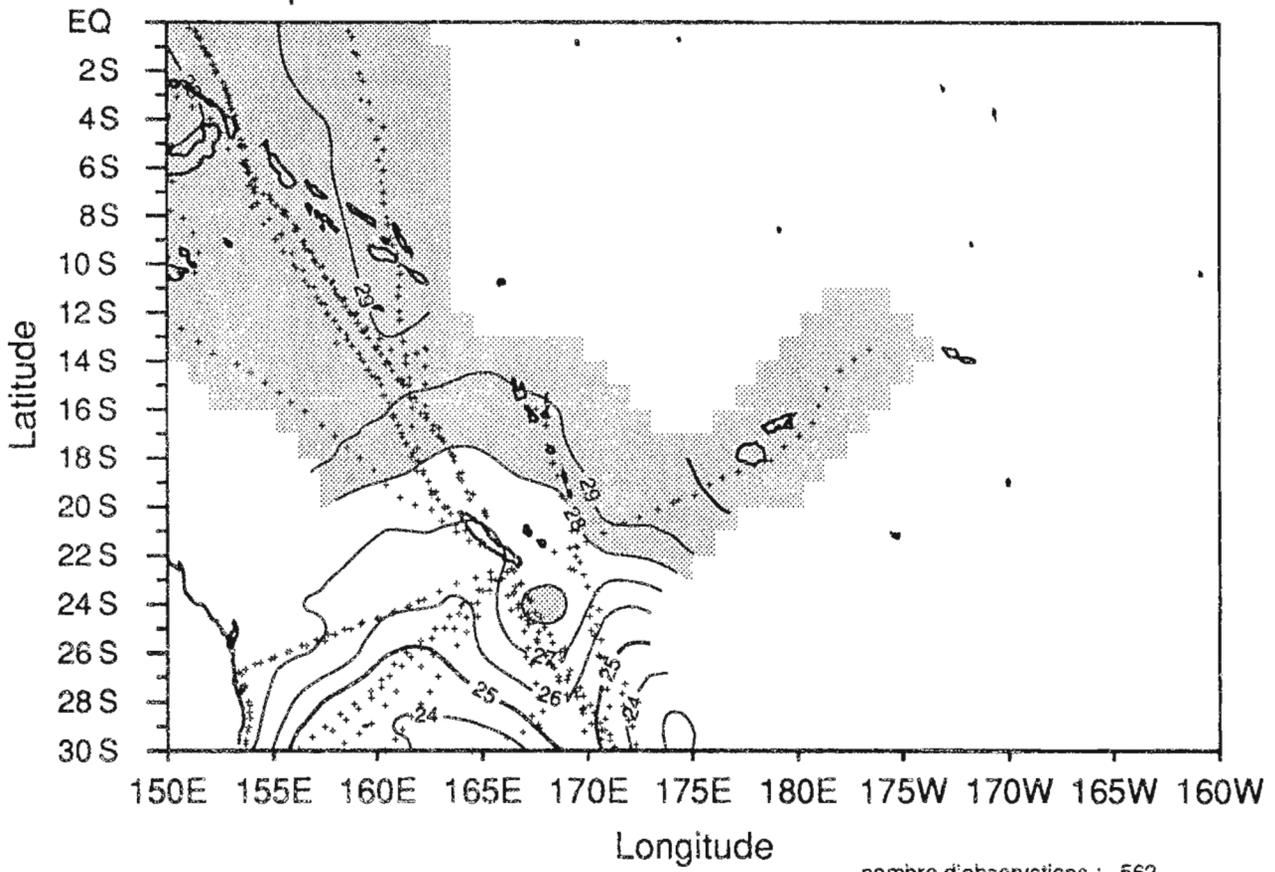
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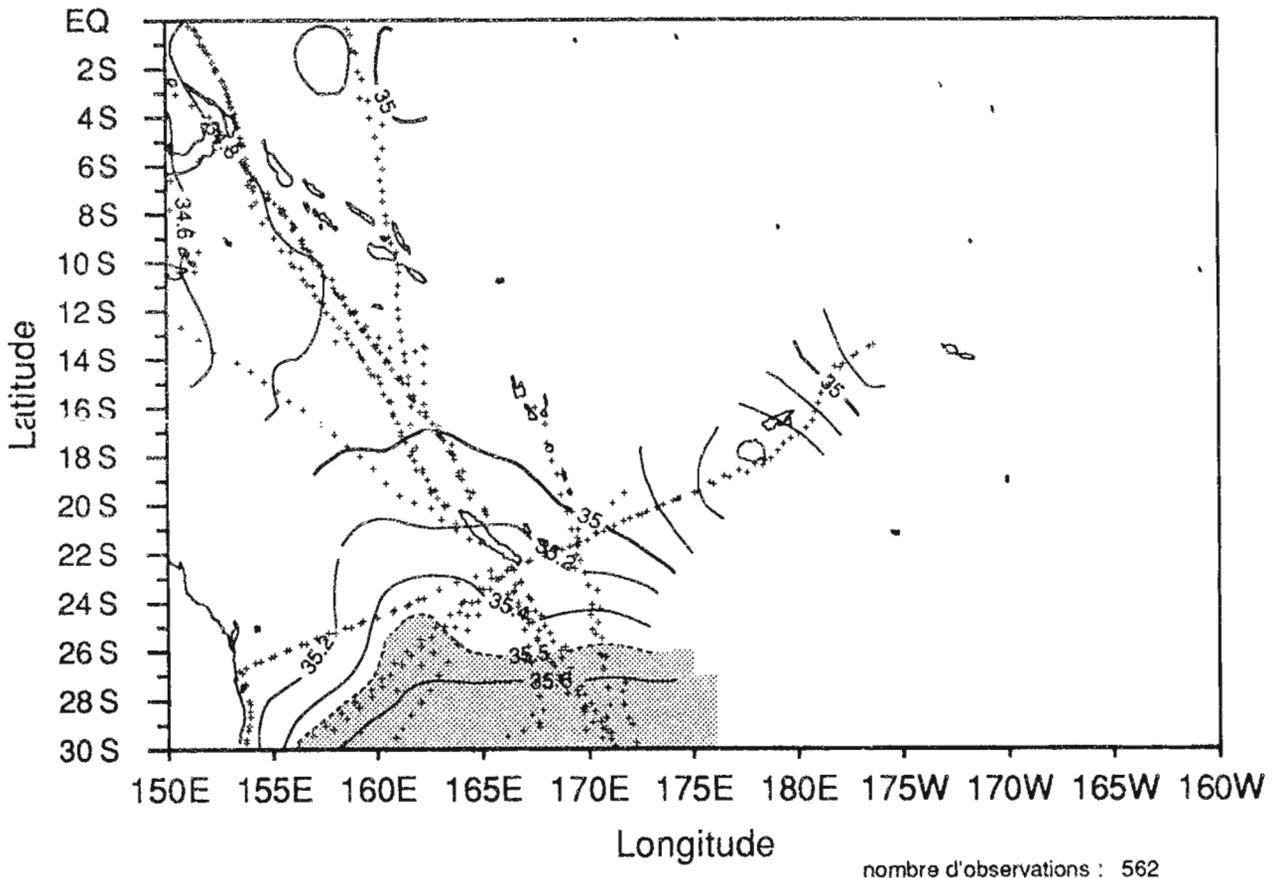
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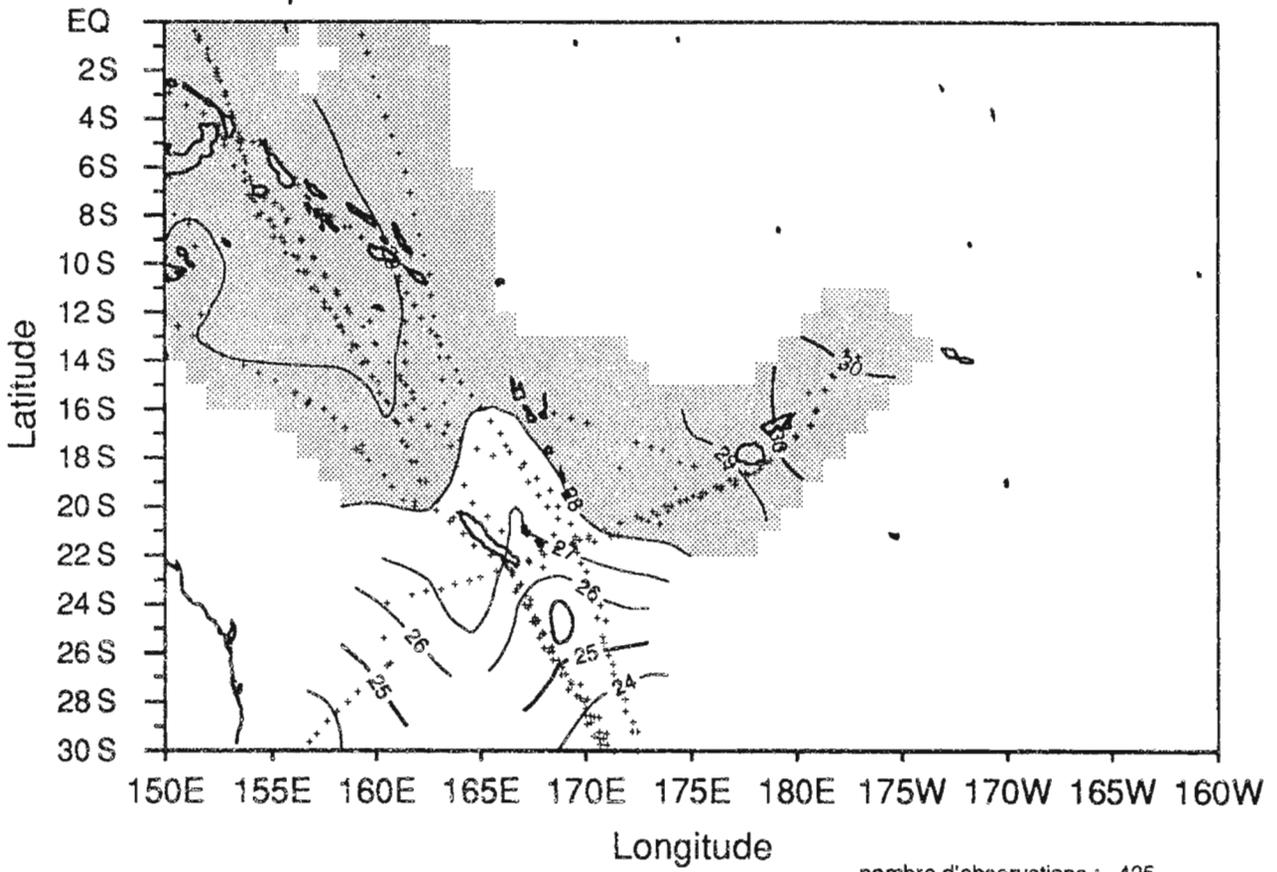
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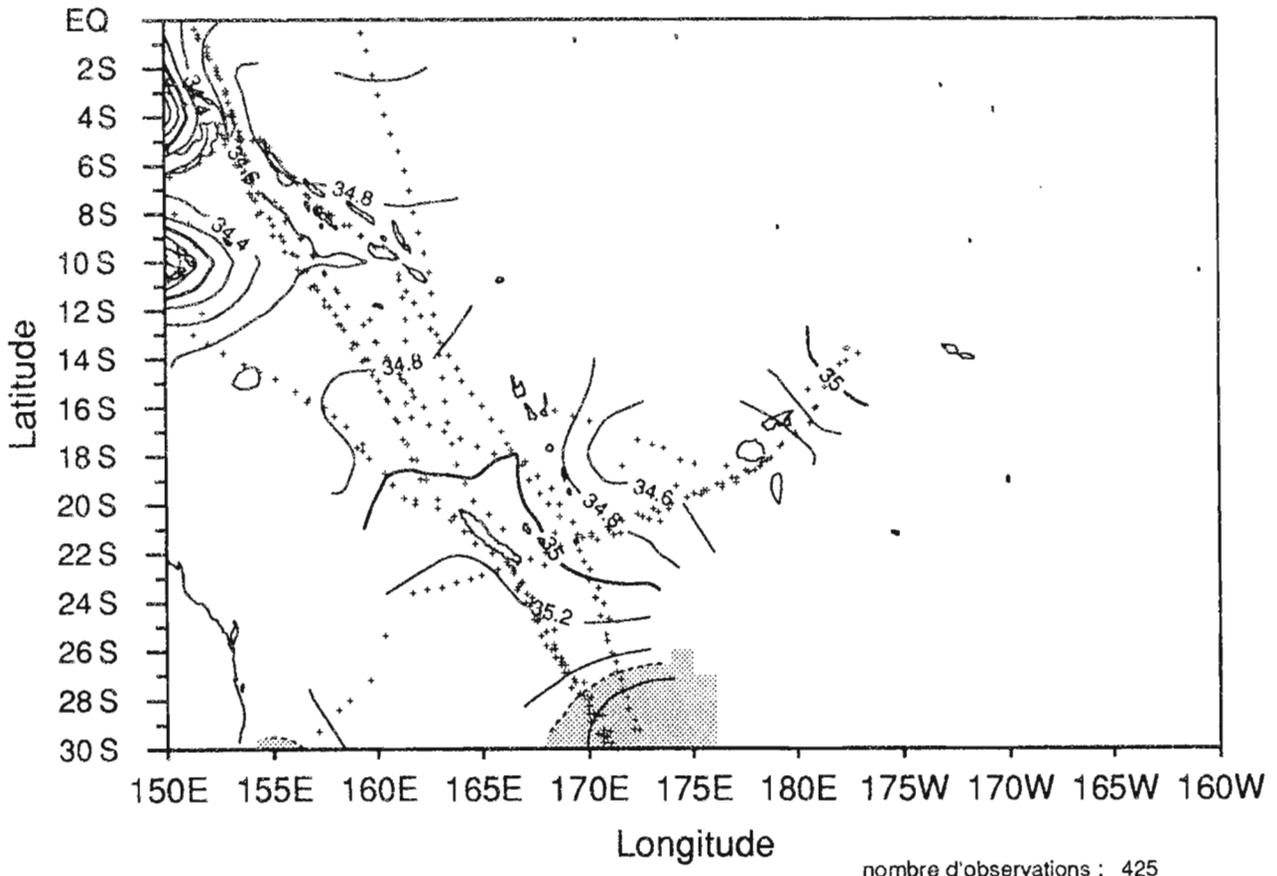
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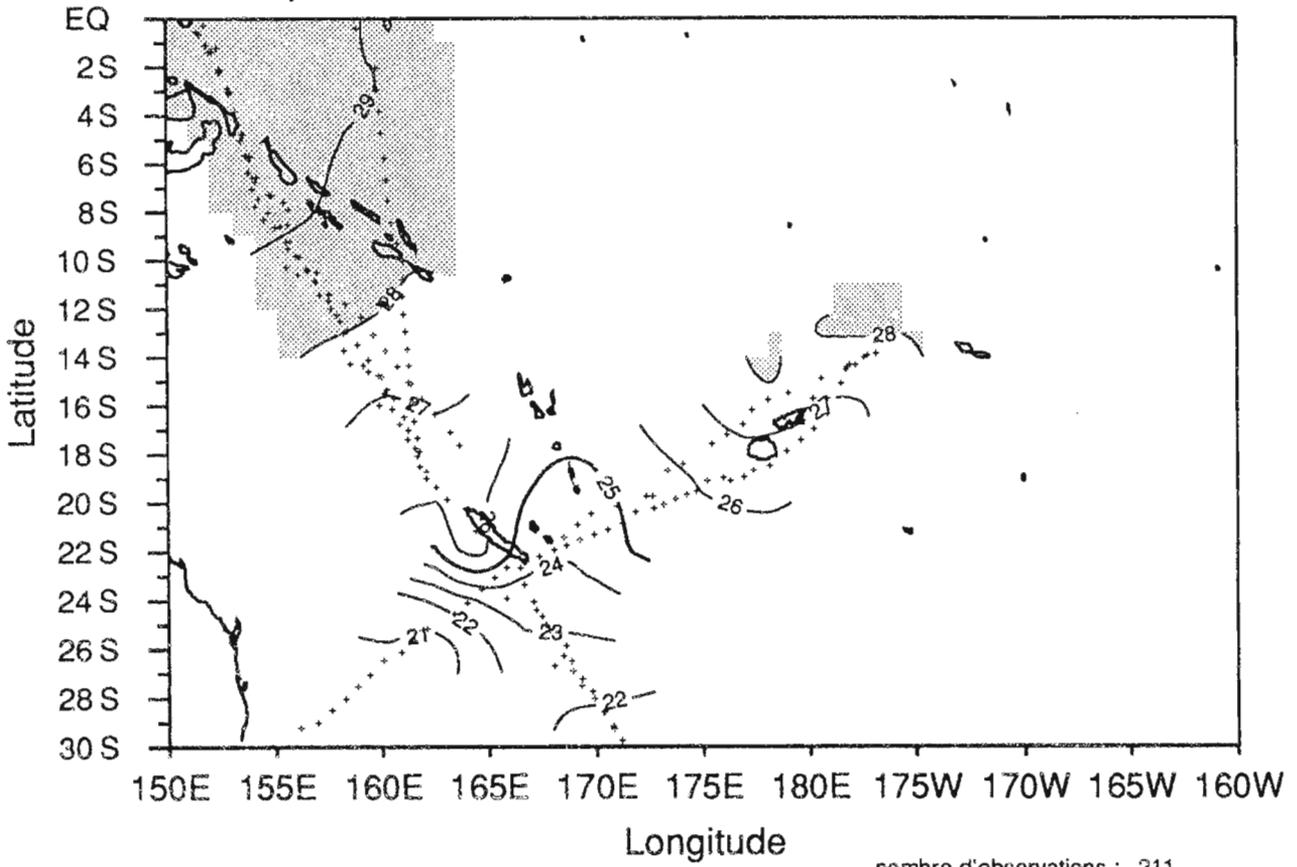
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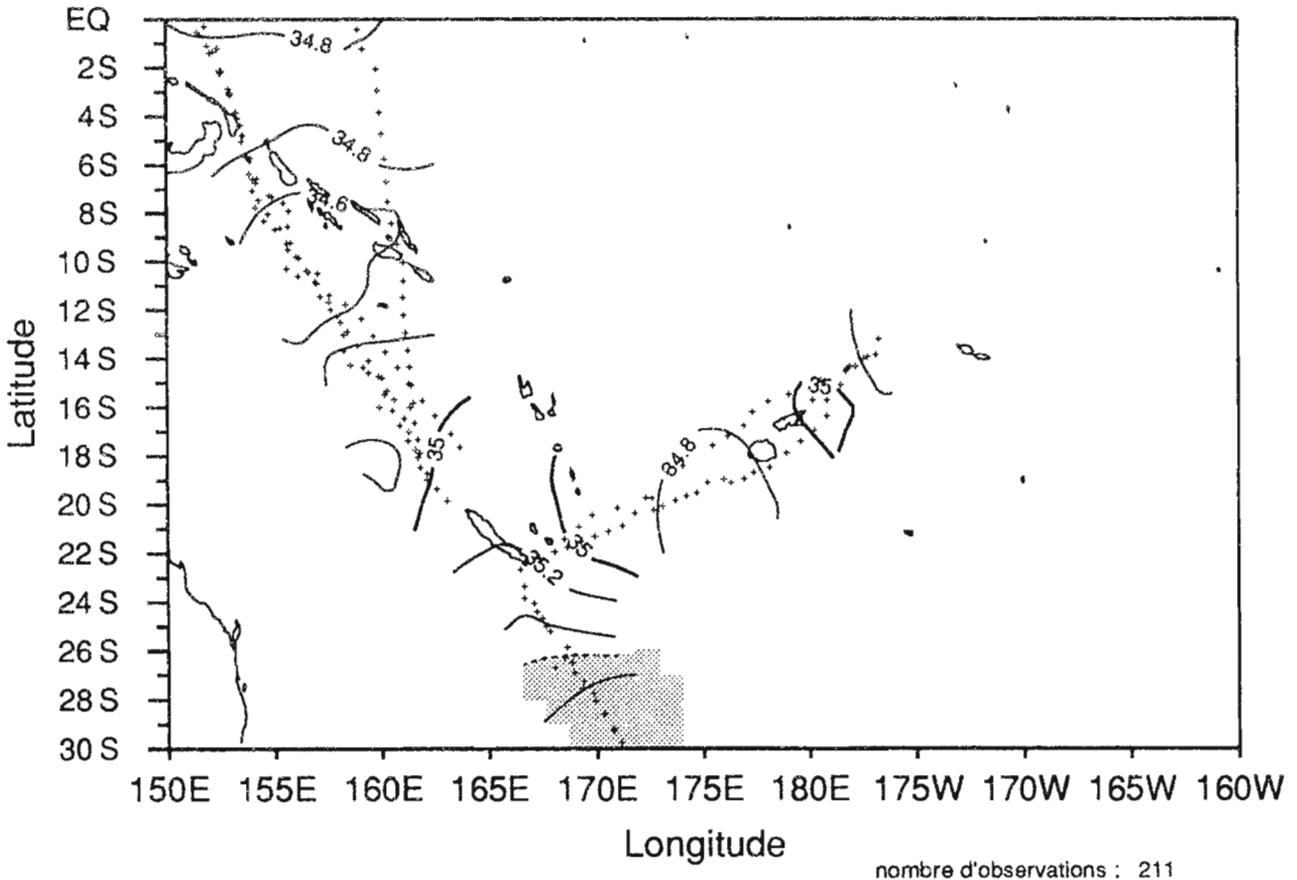
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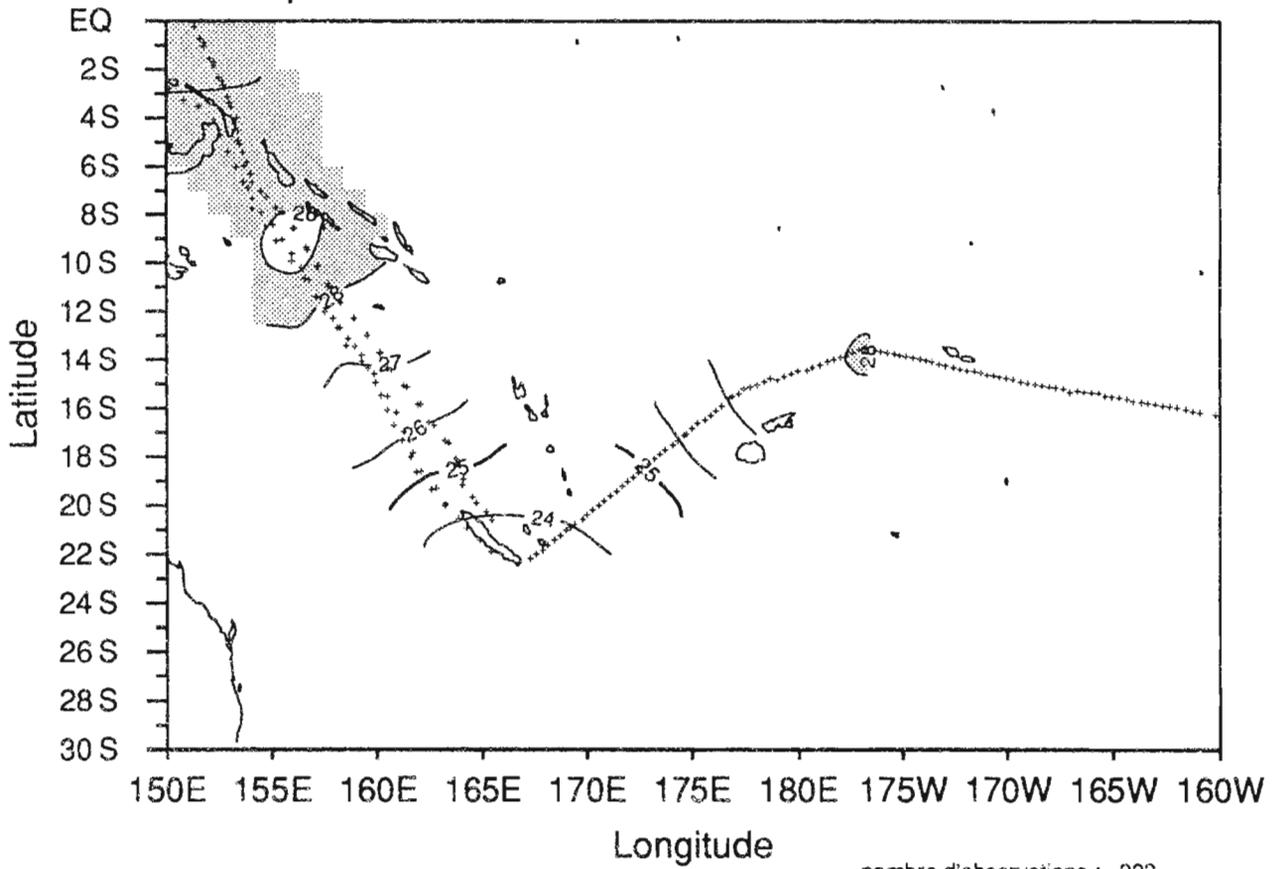
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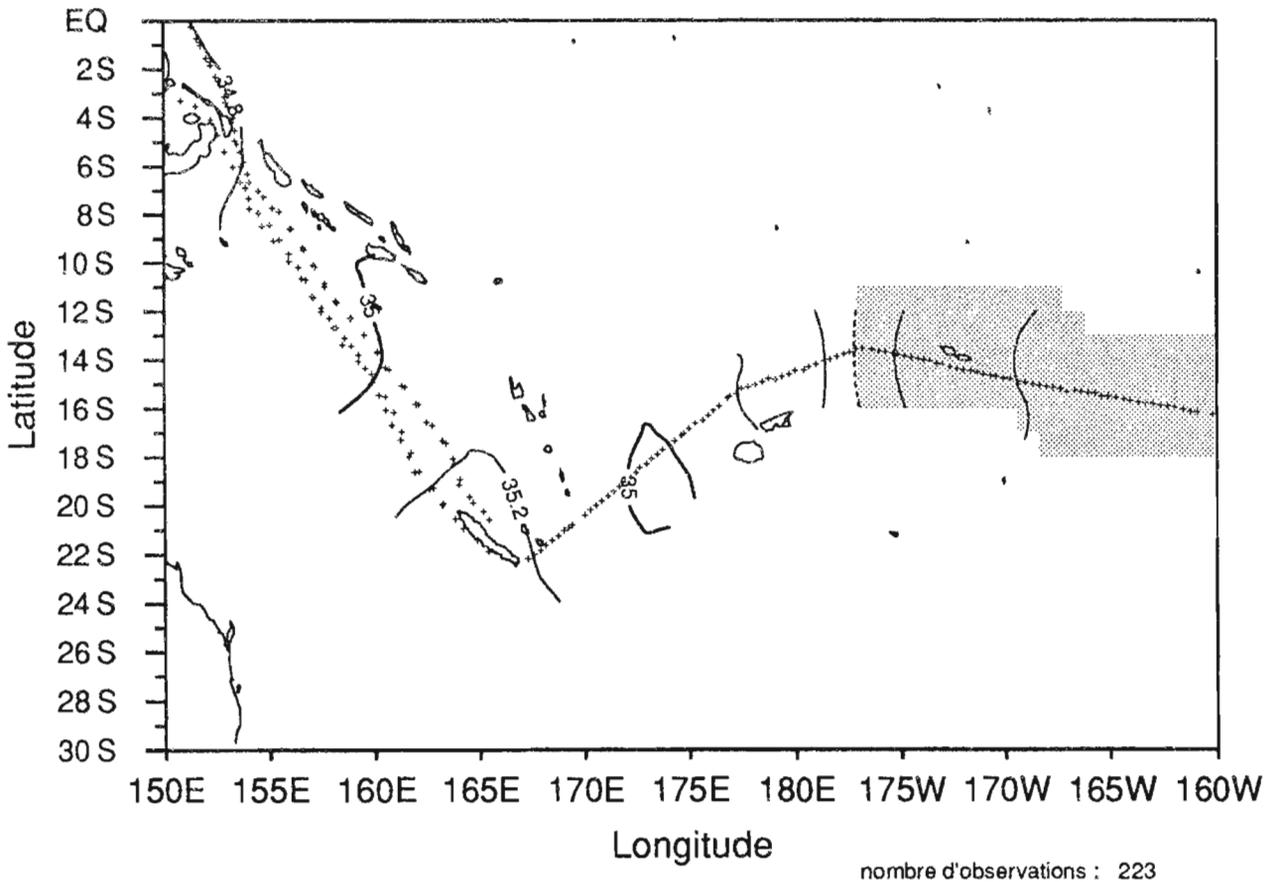
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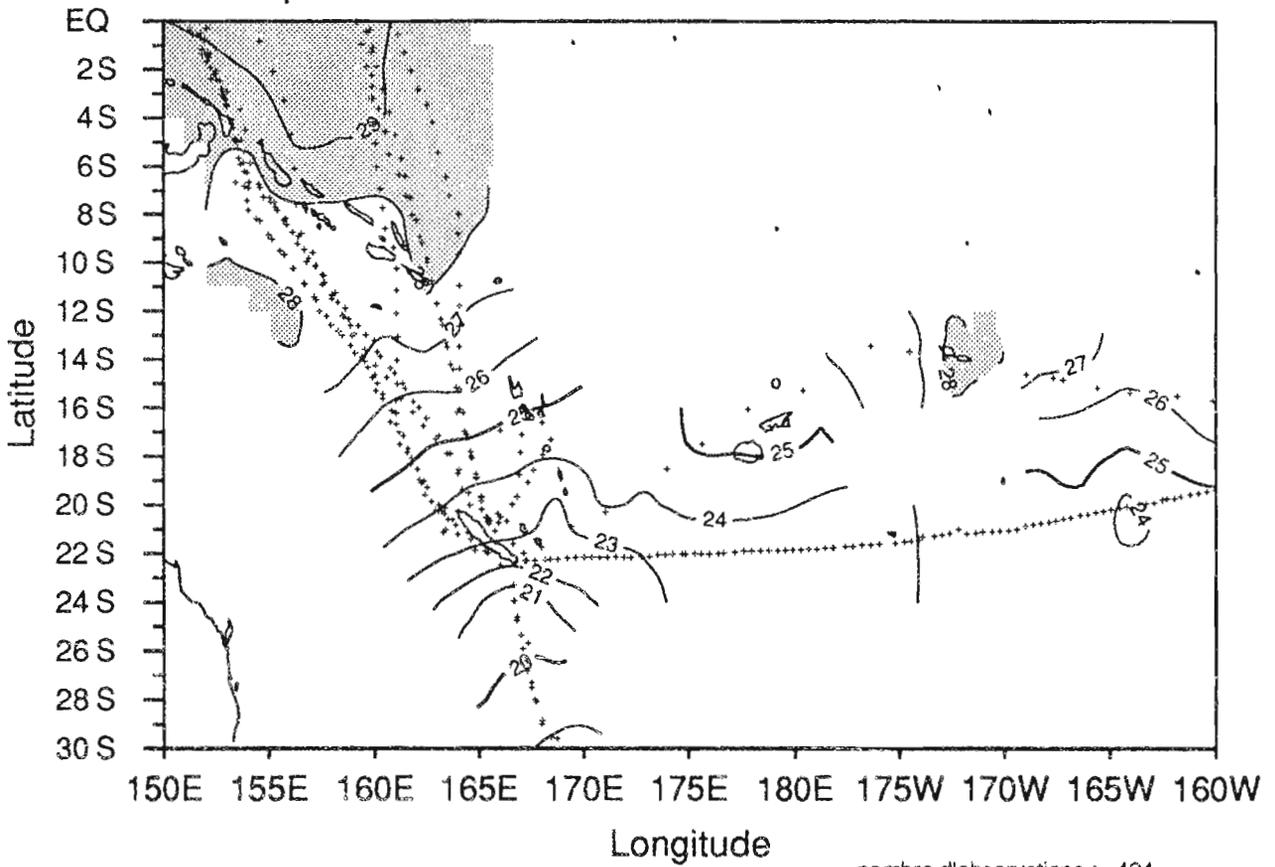
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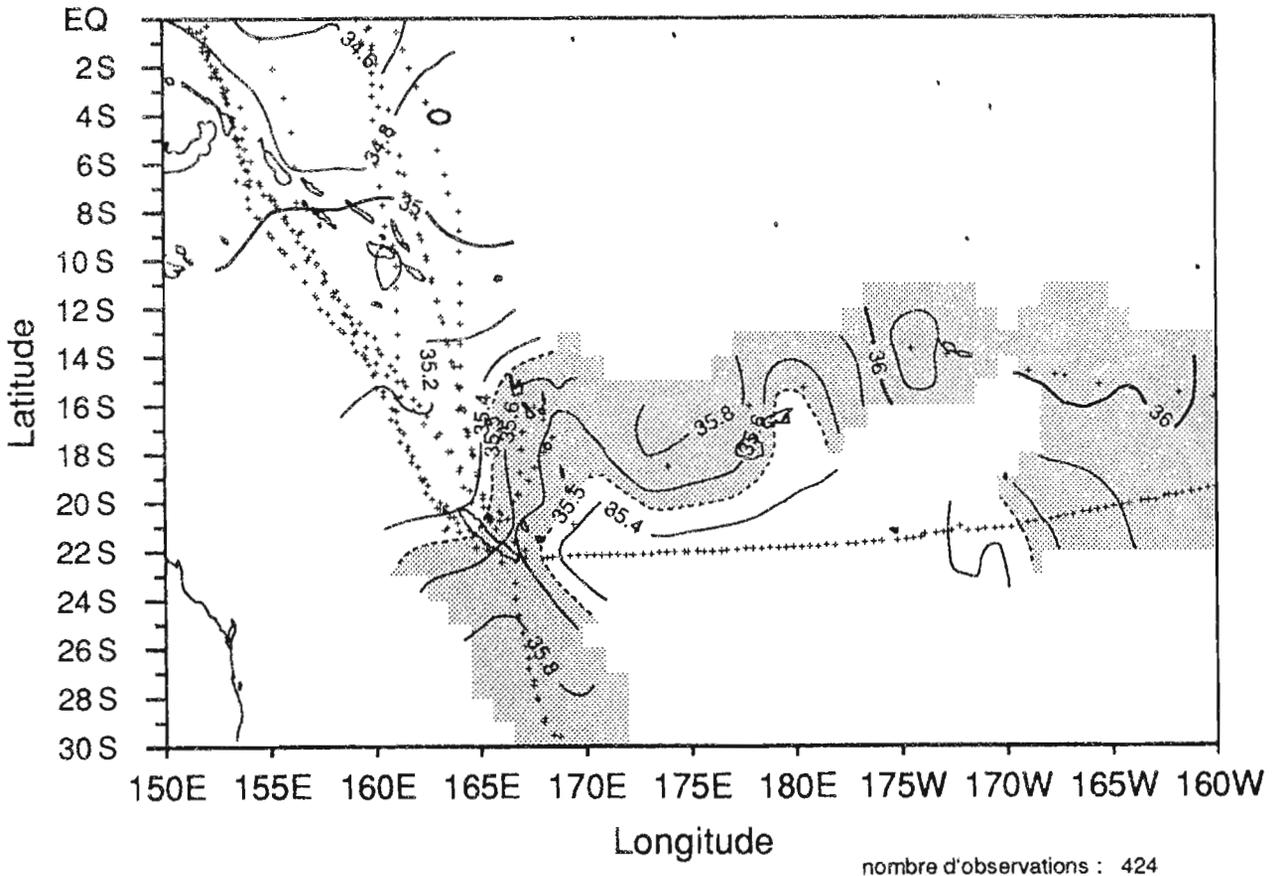
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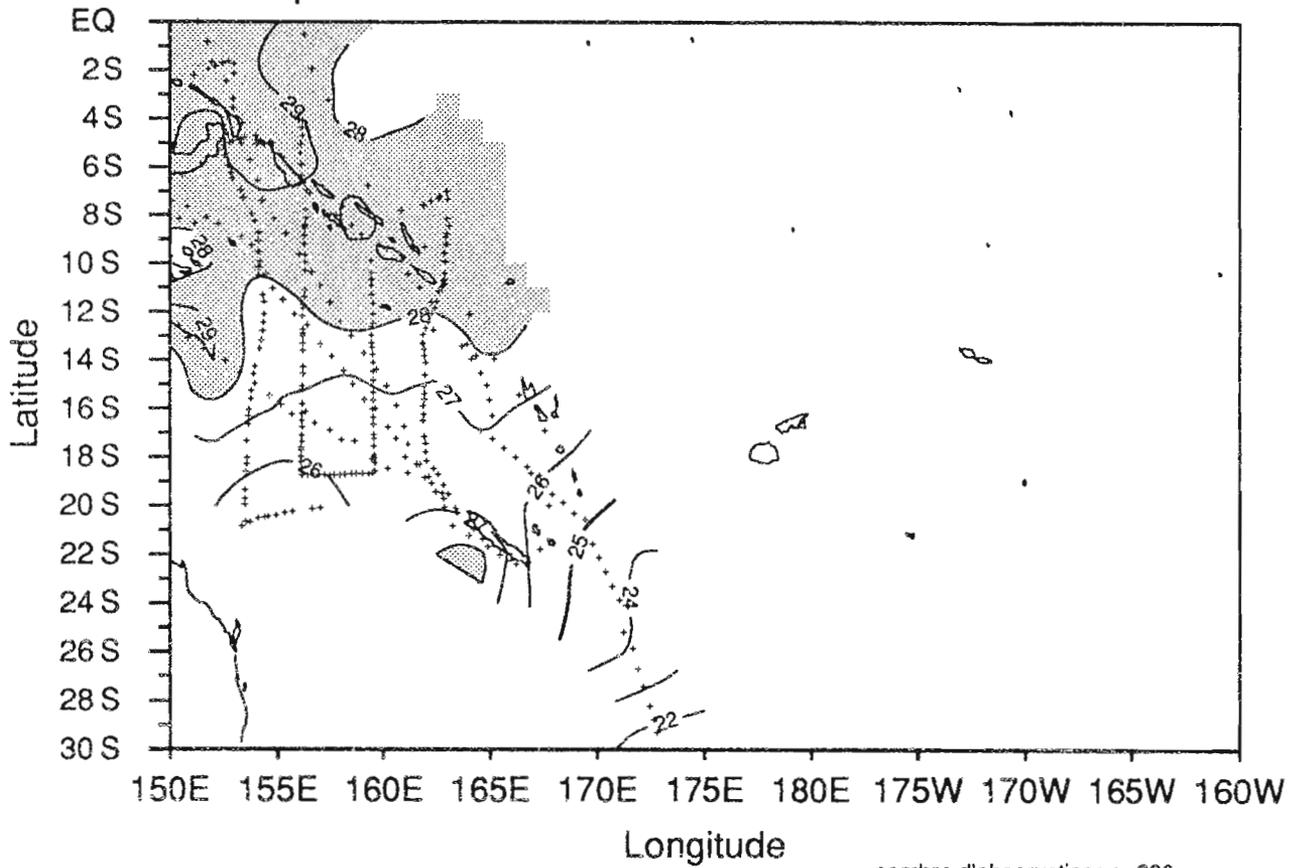
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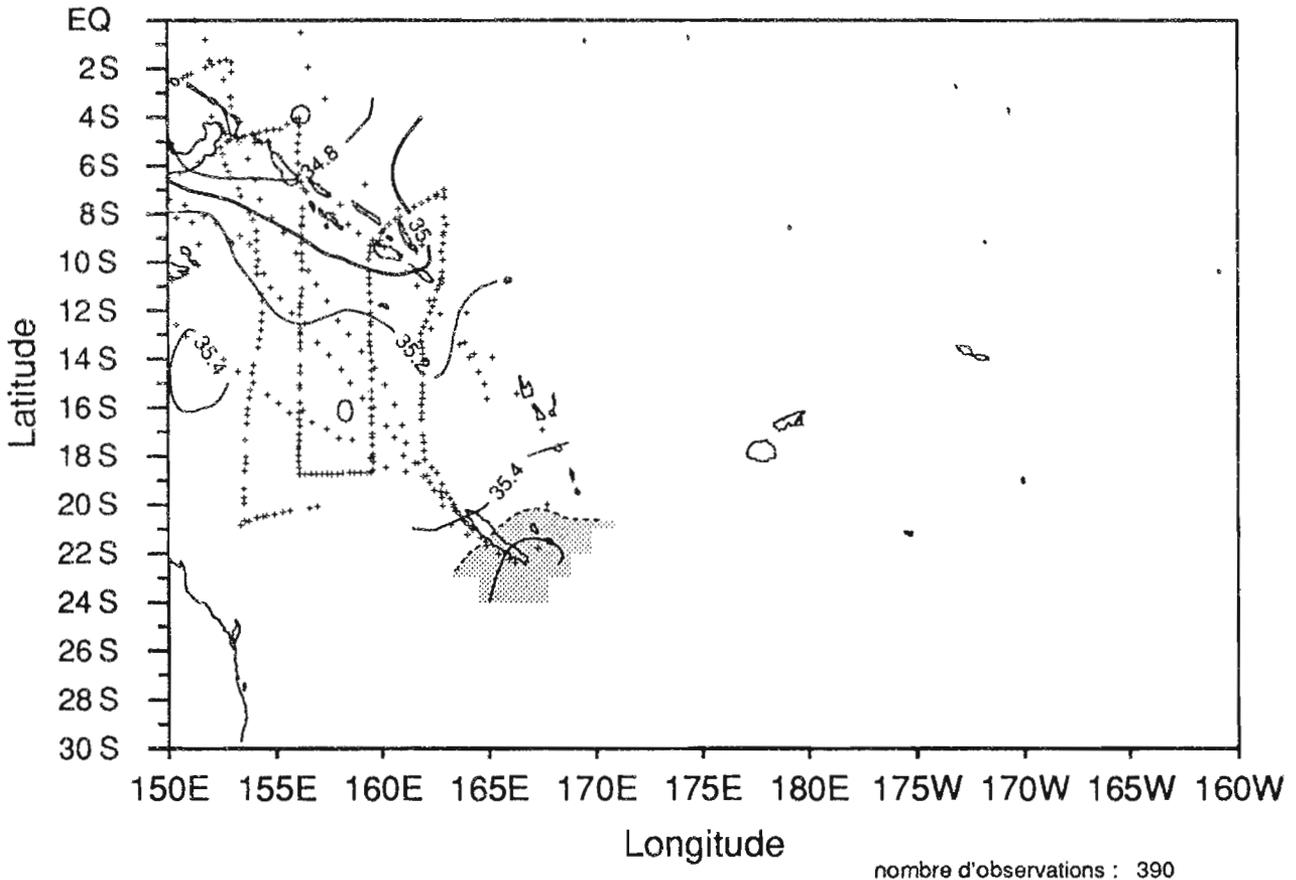
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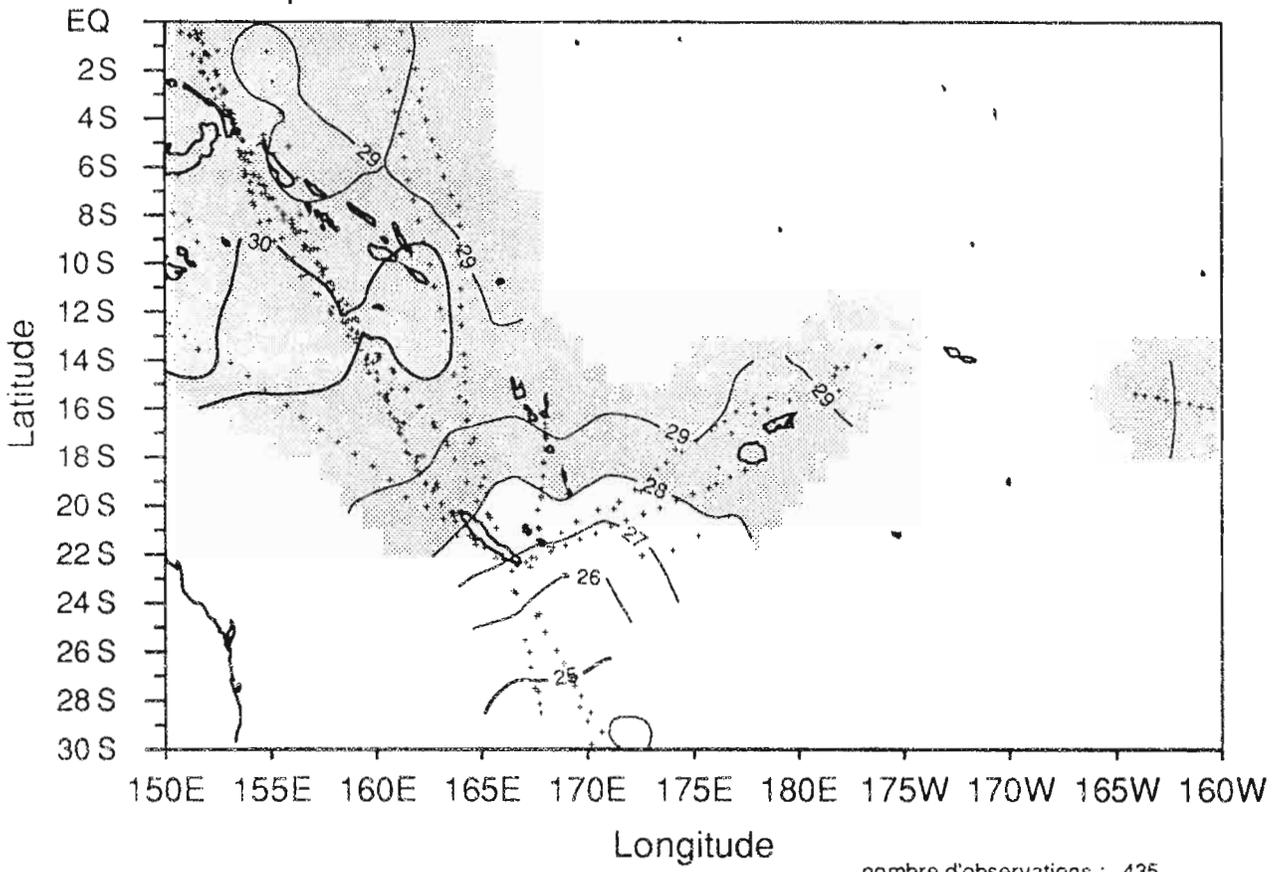
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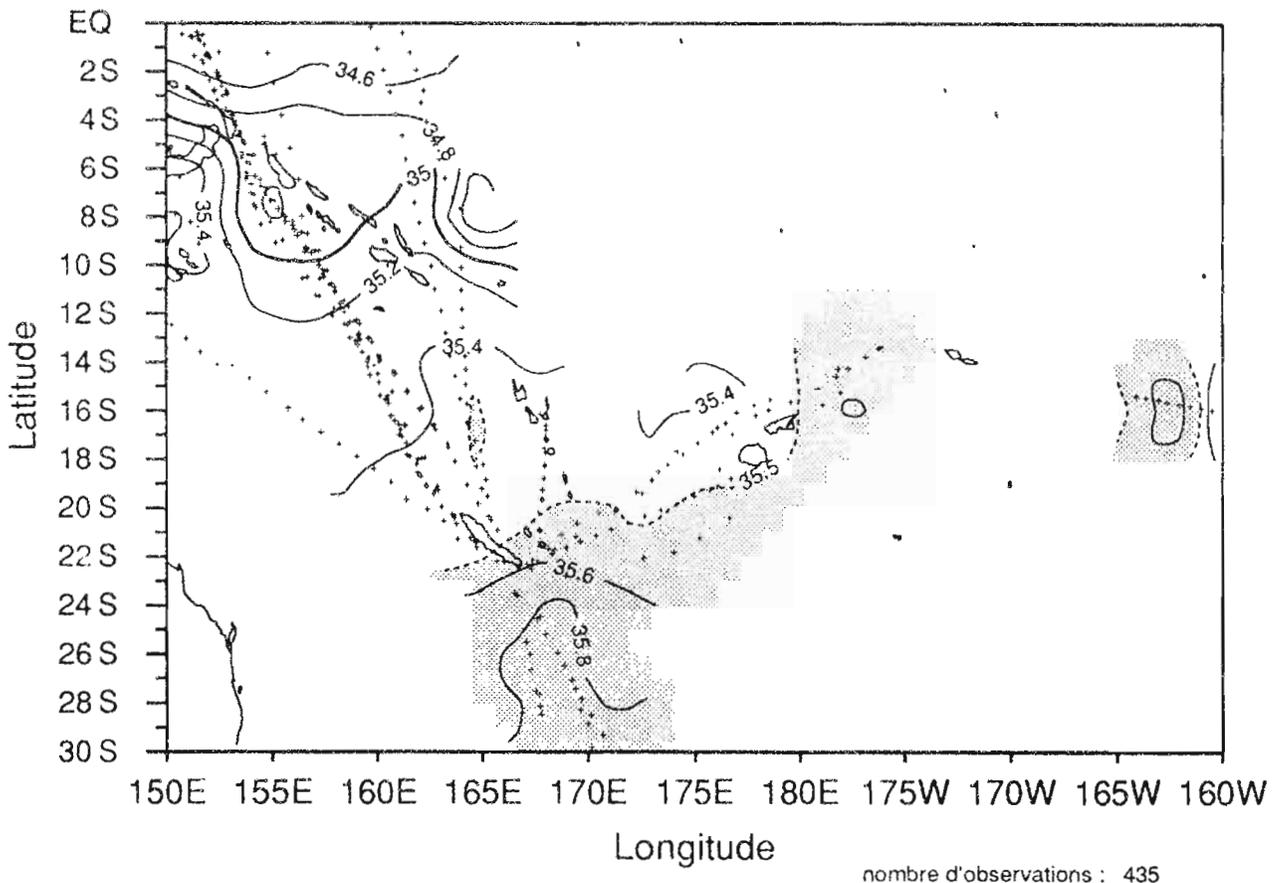
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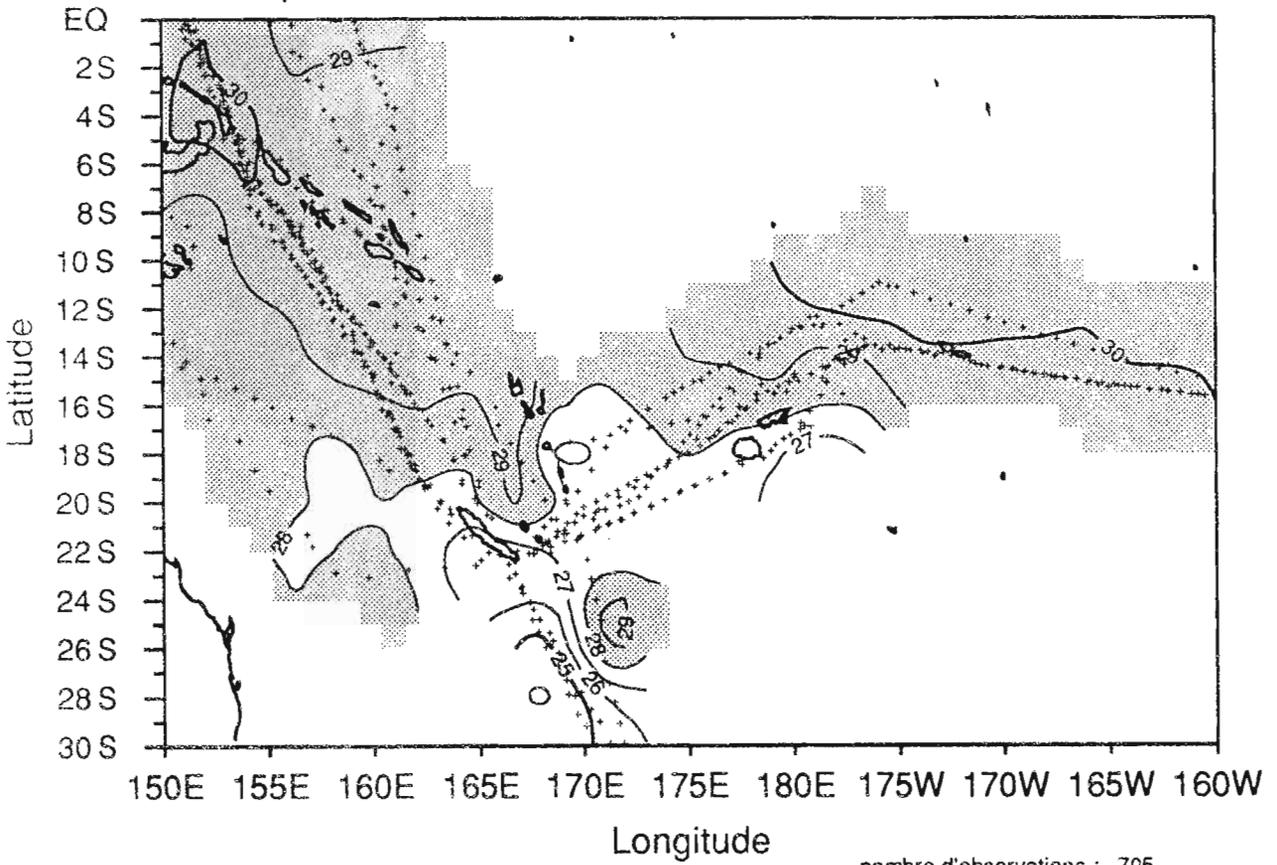
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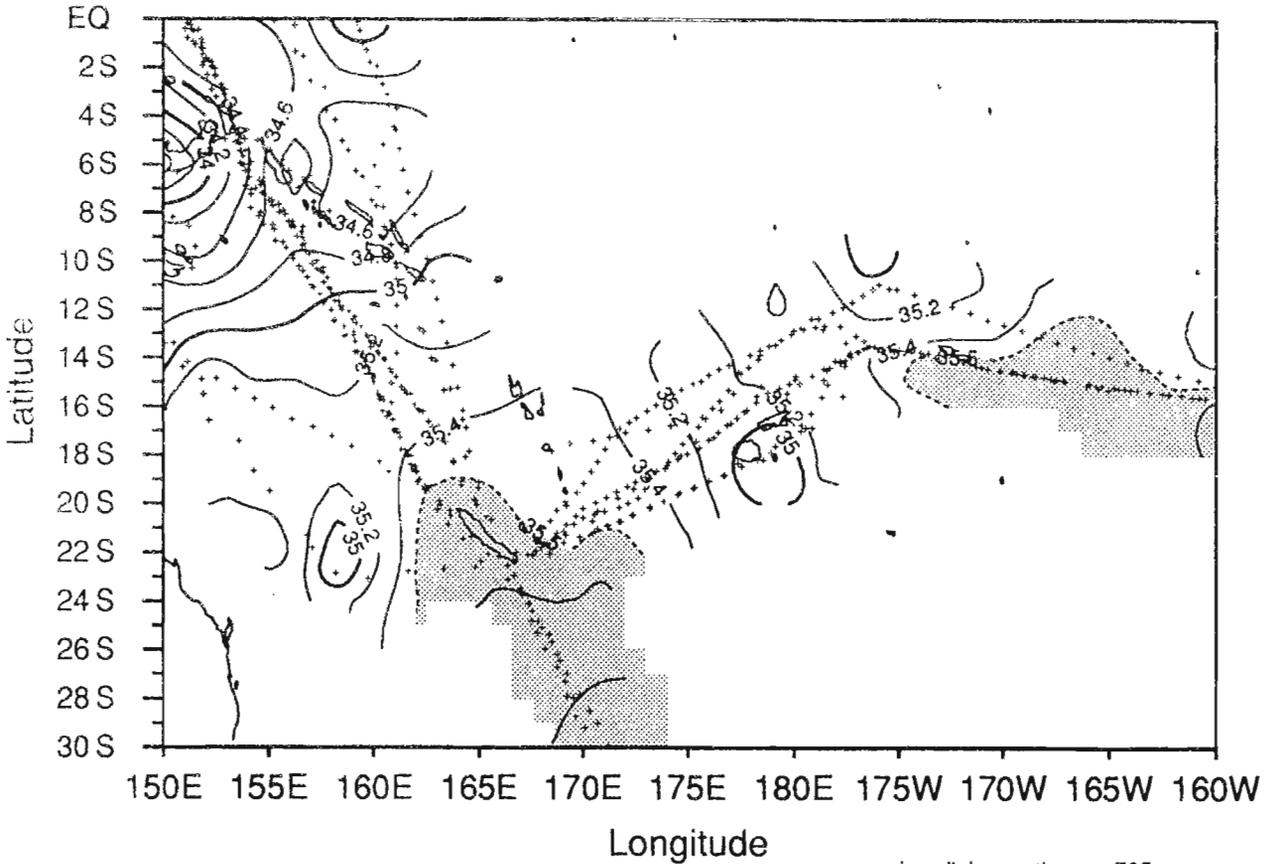


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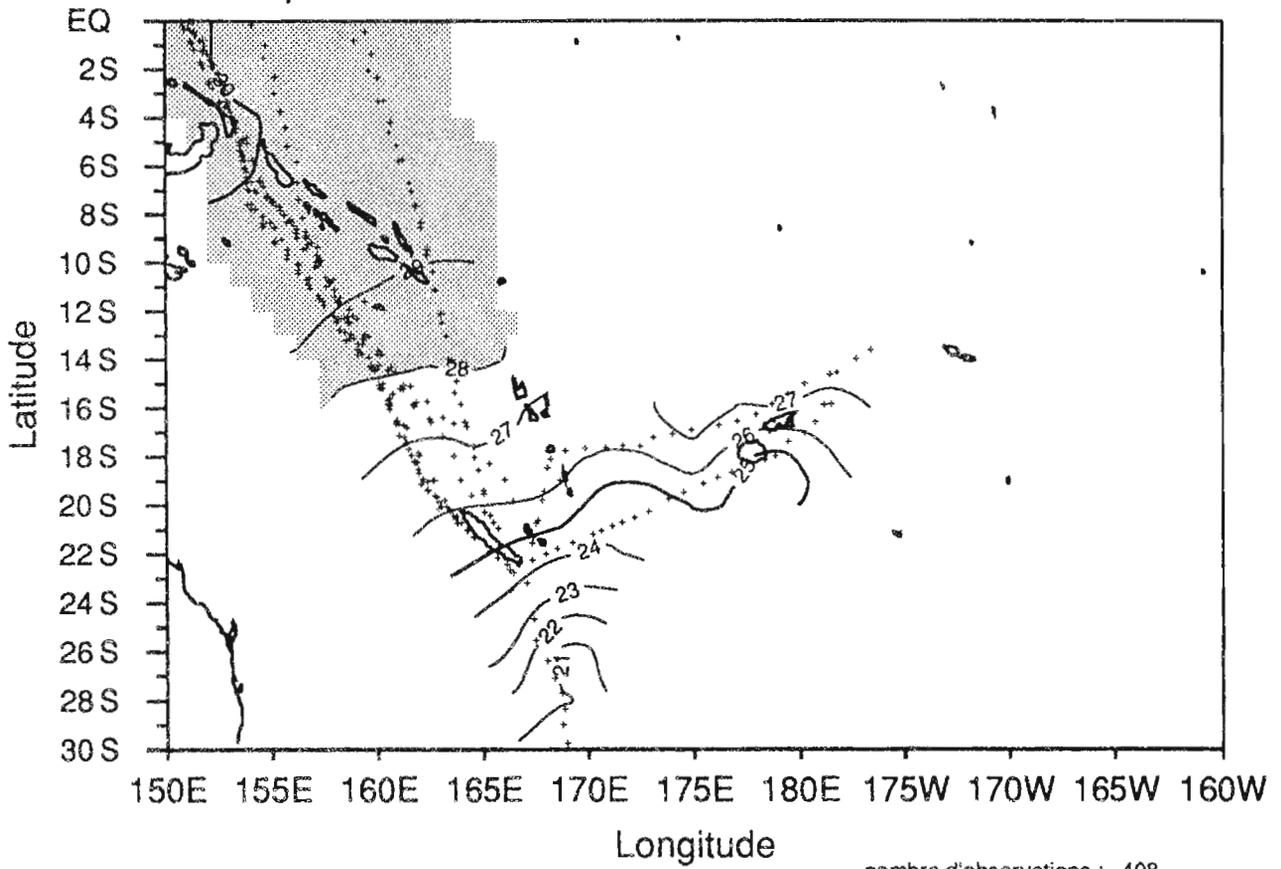
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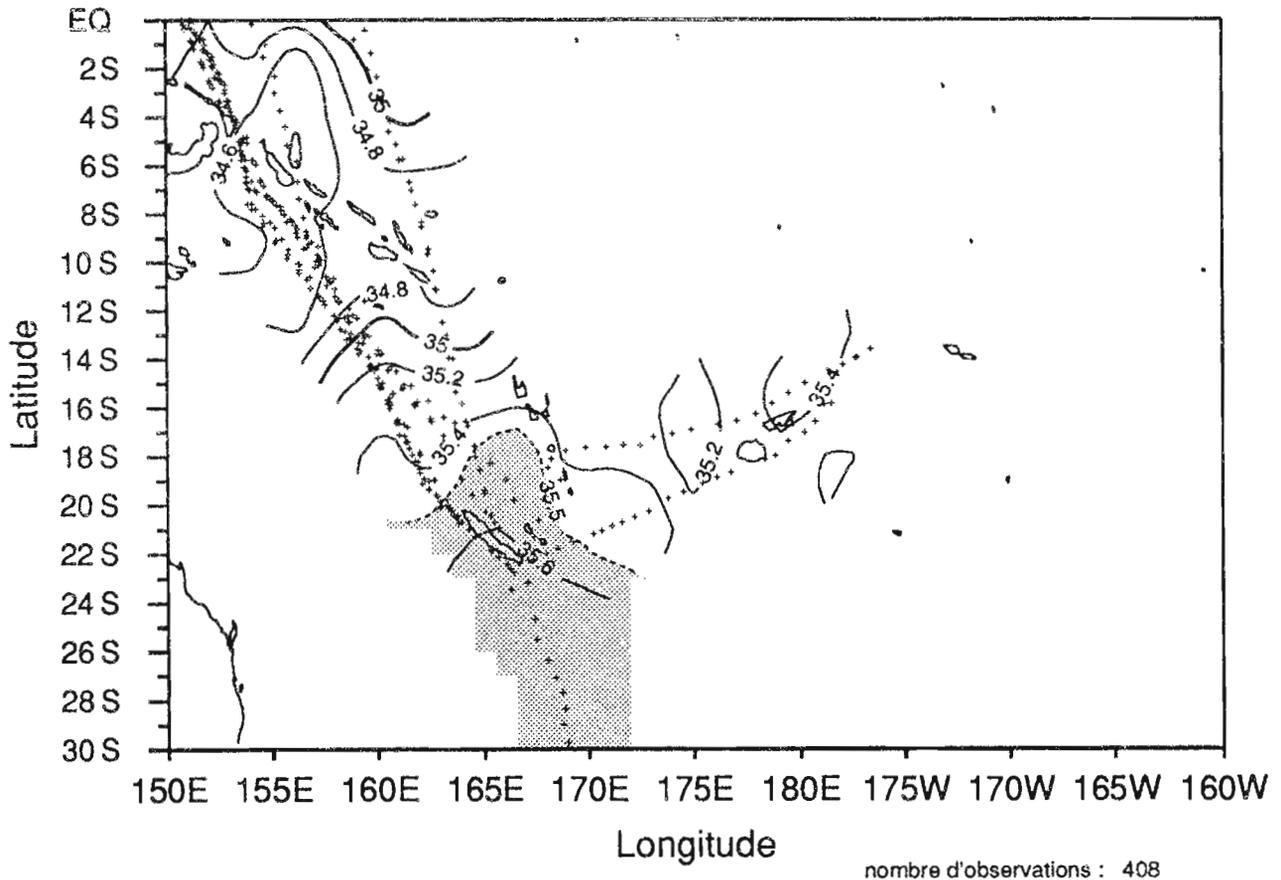


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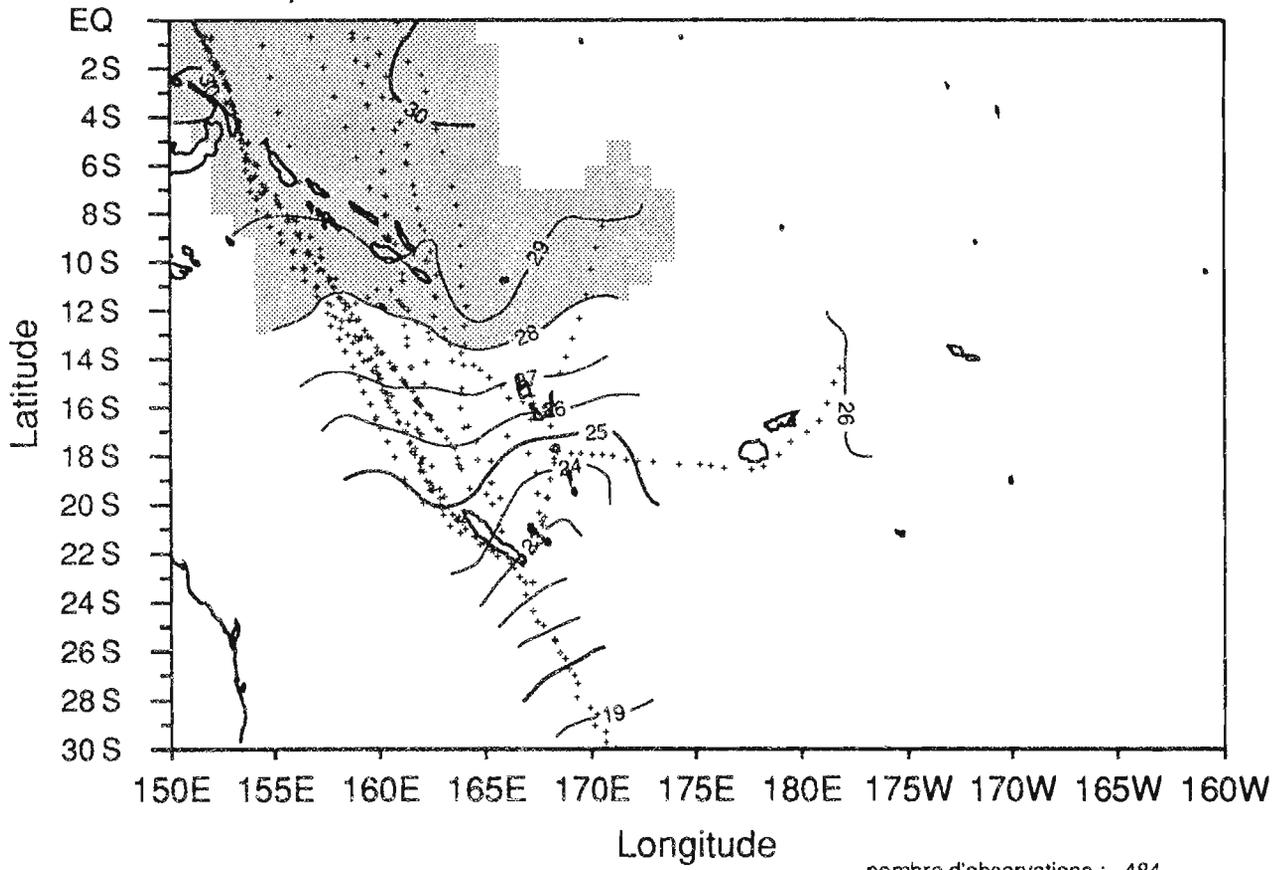
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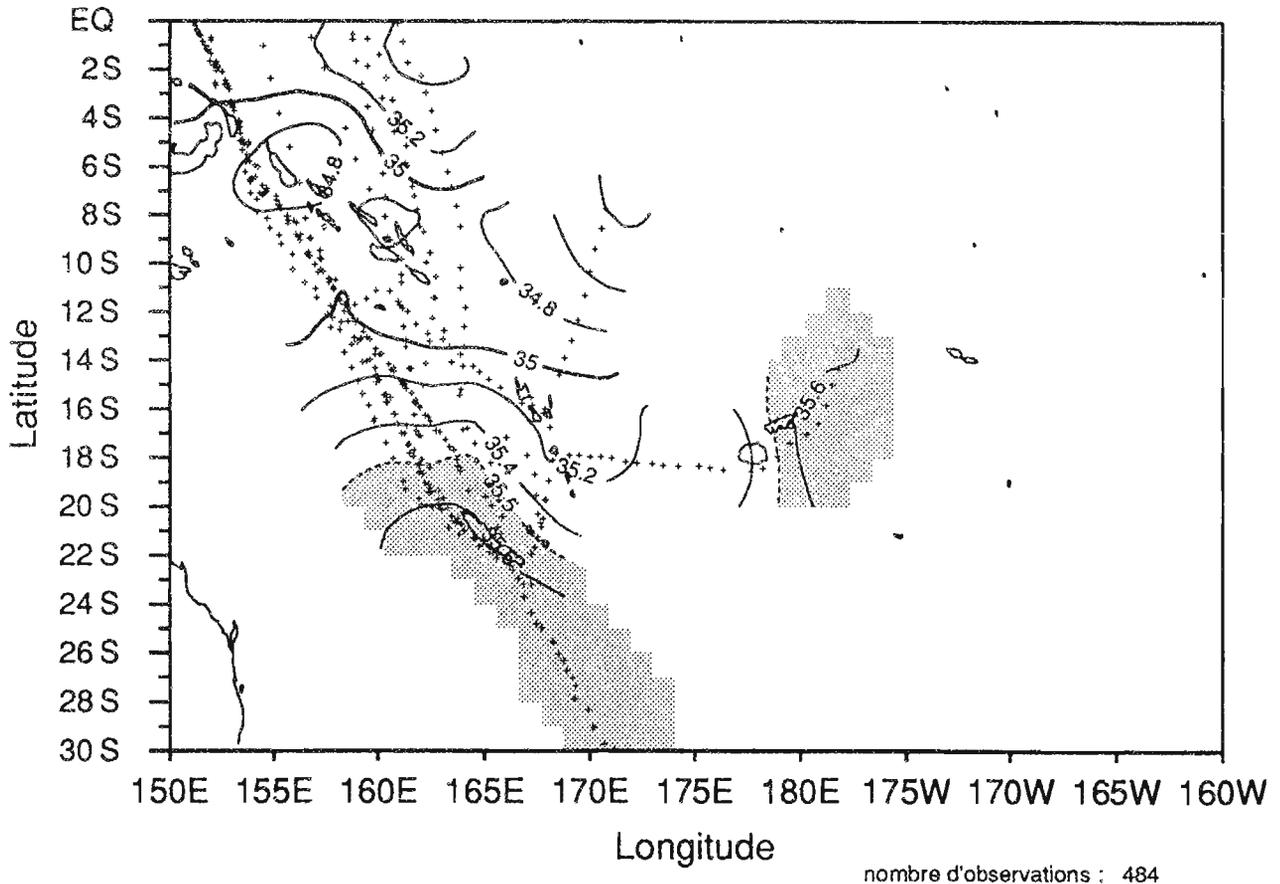
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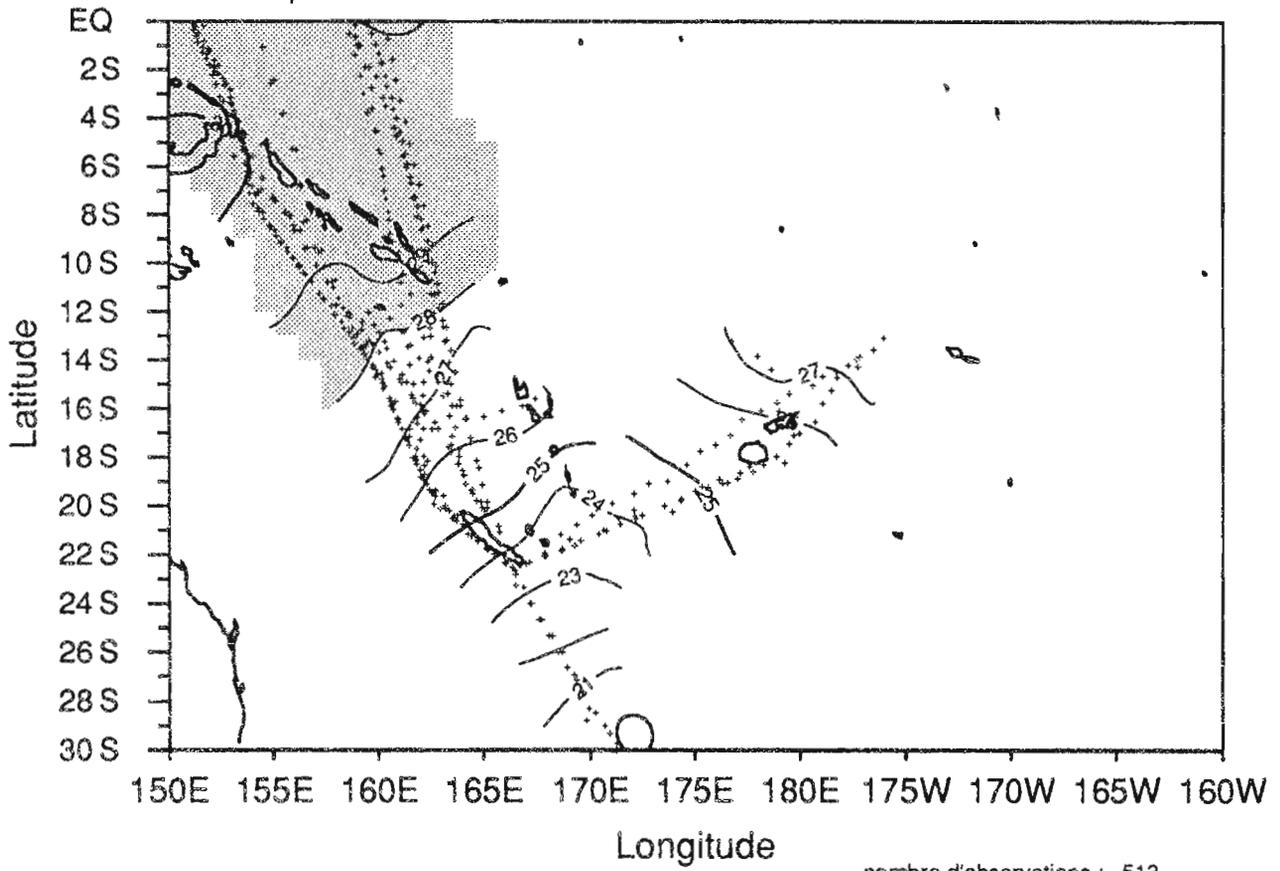
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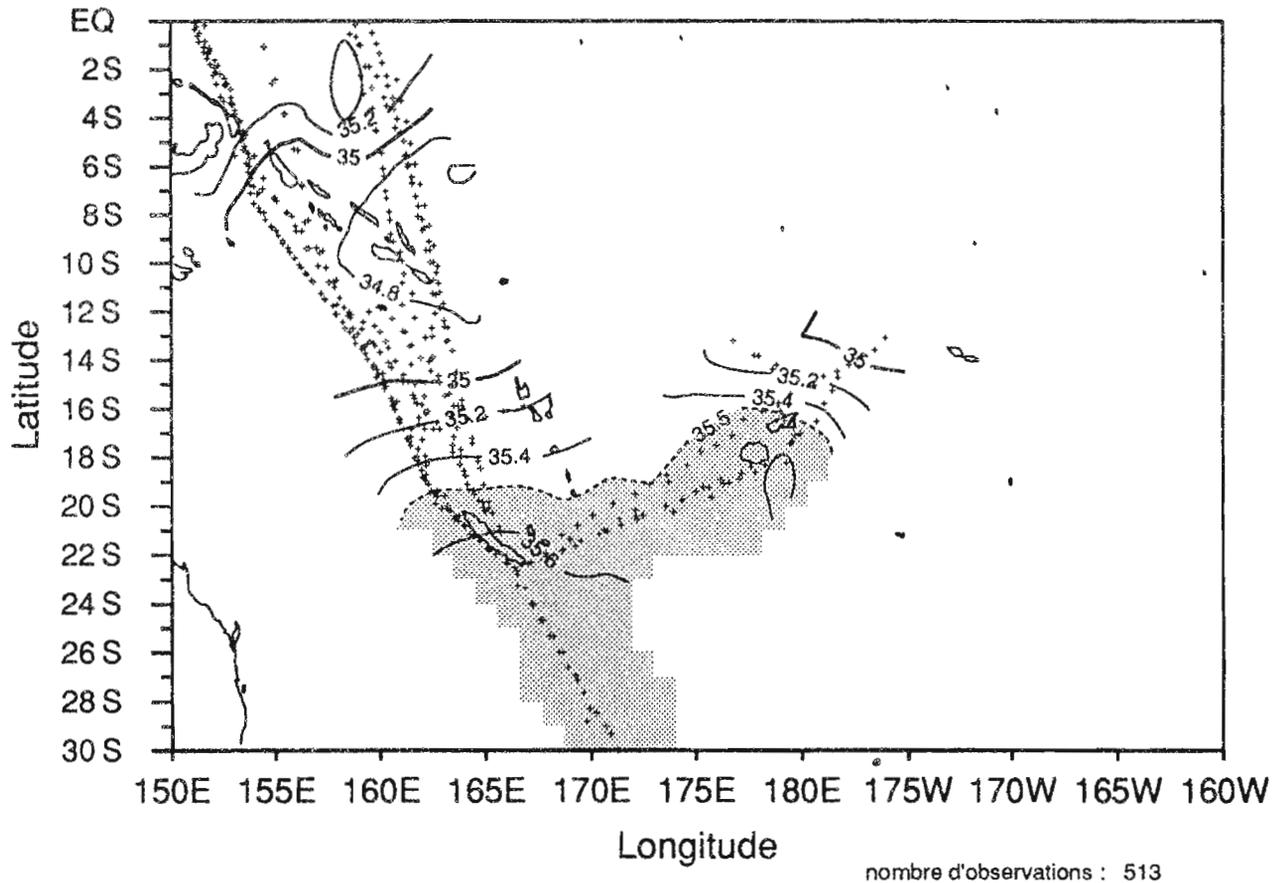
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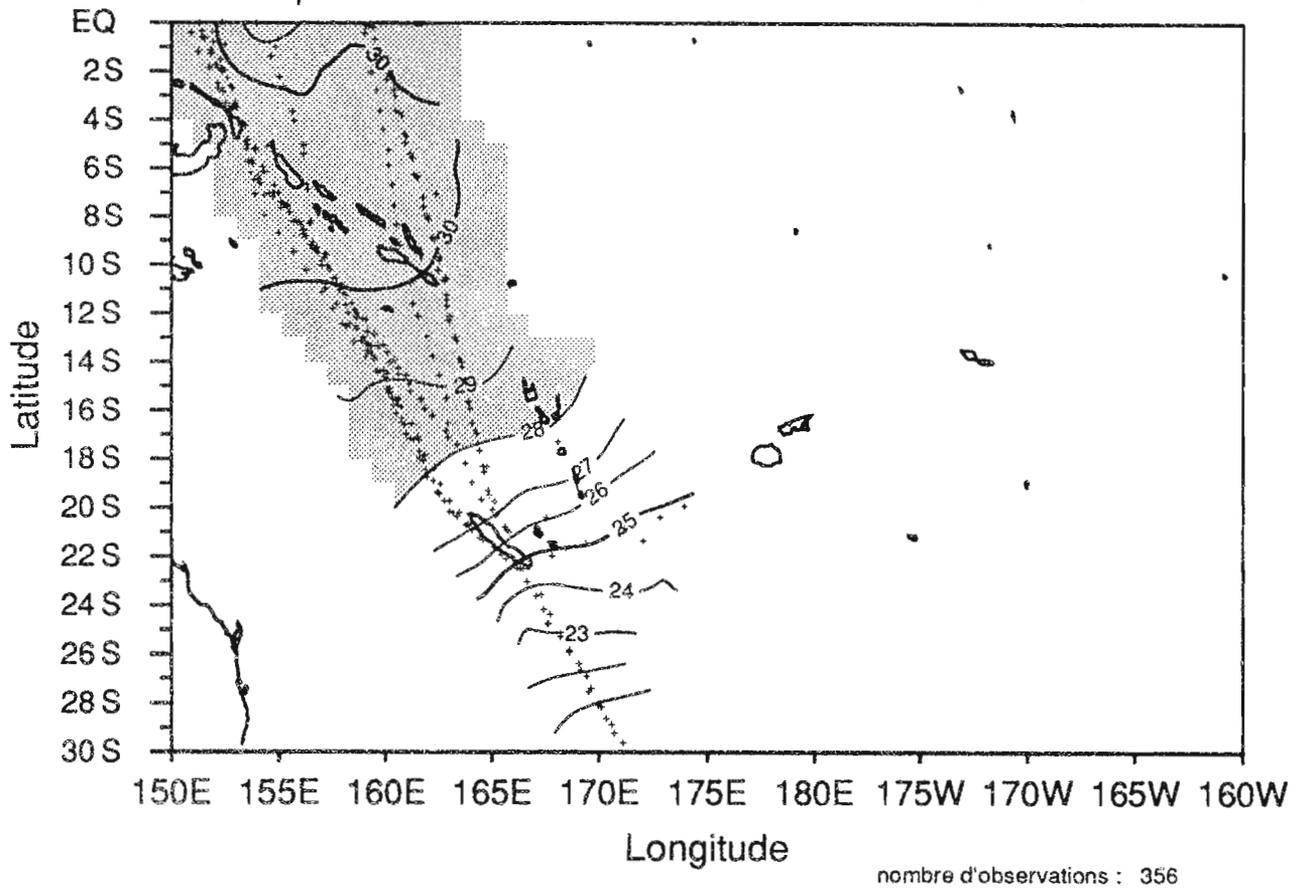
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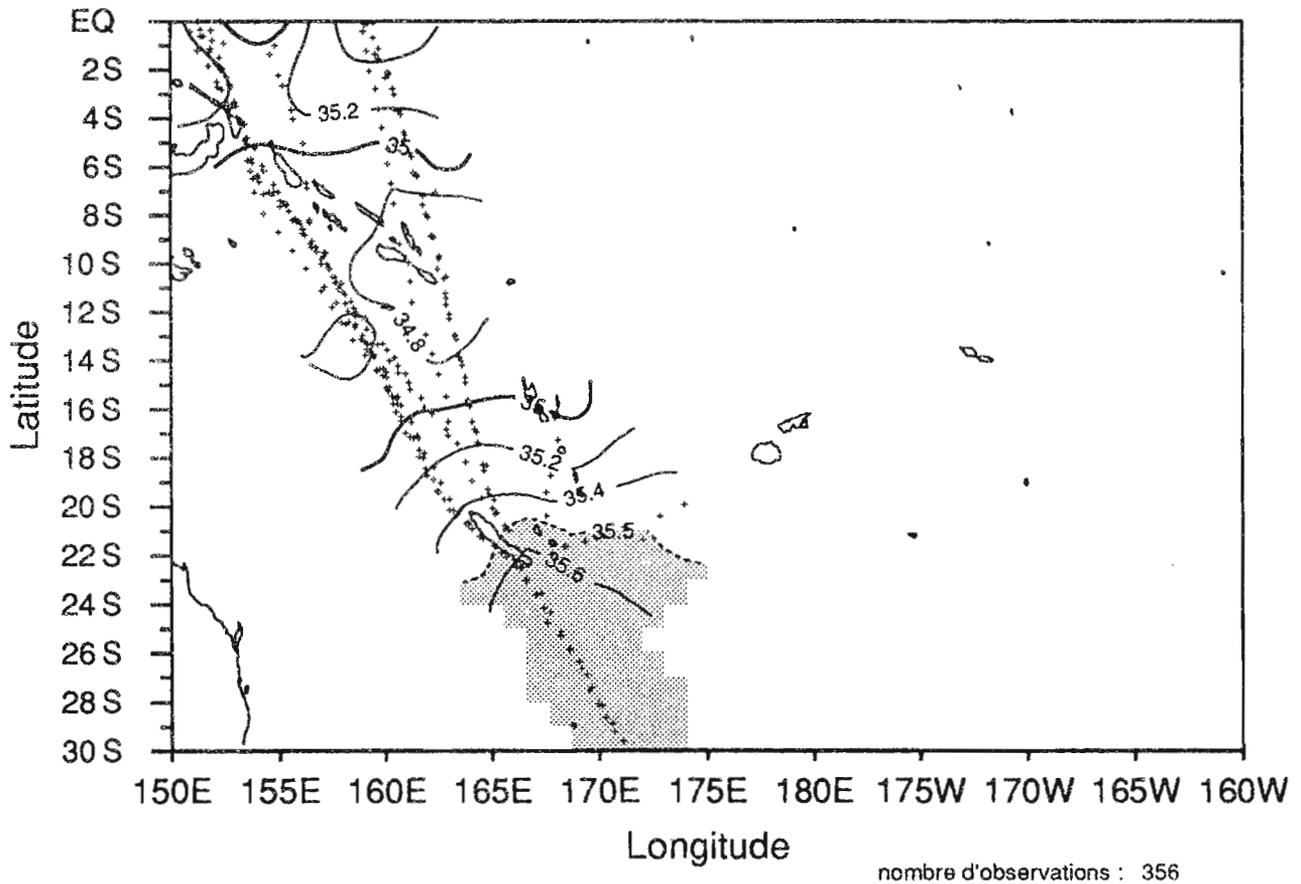
Salinite de surface du 01/09/73 au 31/10/73



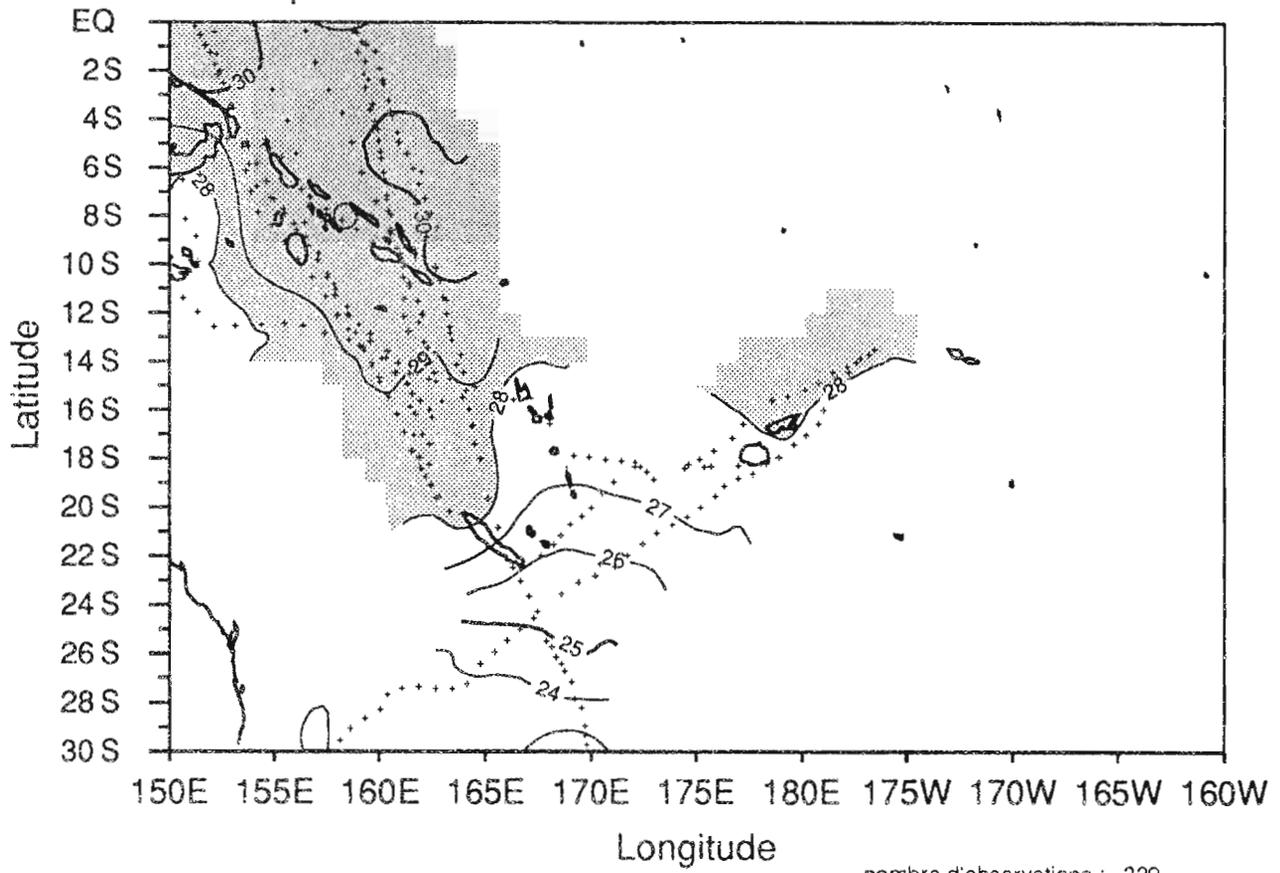
Temperature de surface du 01/11/73 au 31/12/73



Salinite de surface du 01/11/73 au 31/12/73

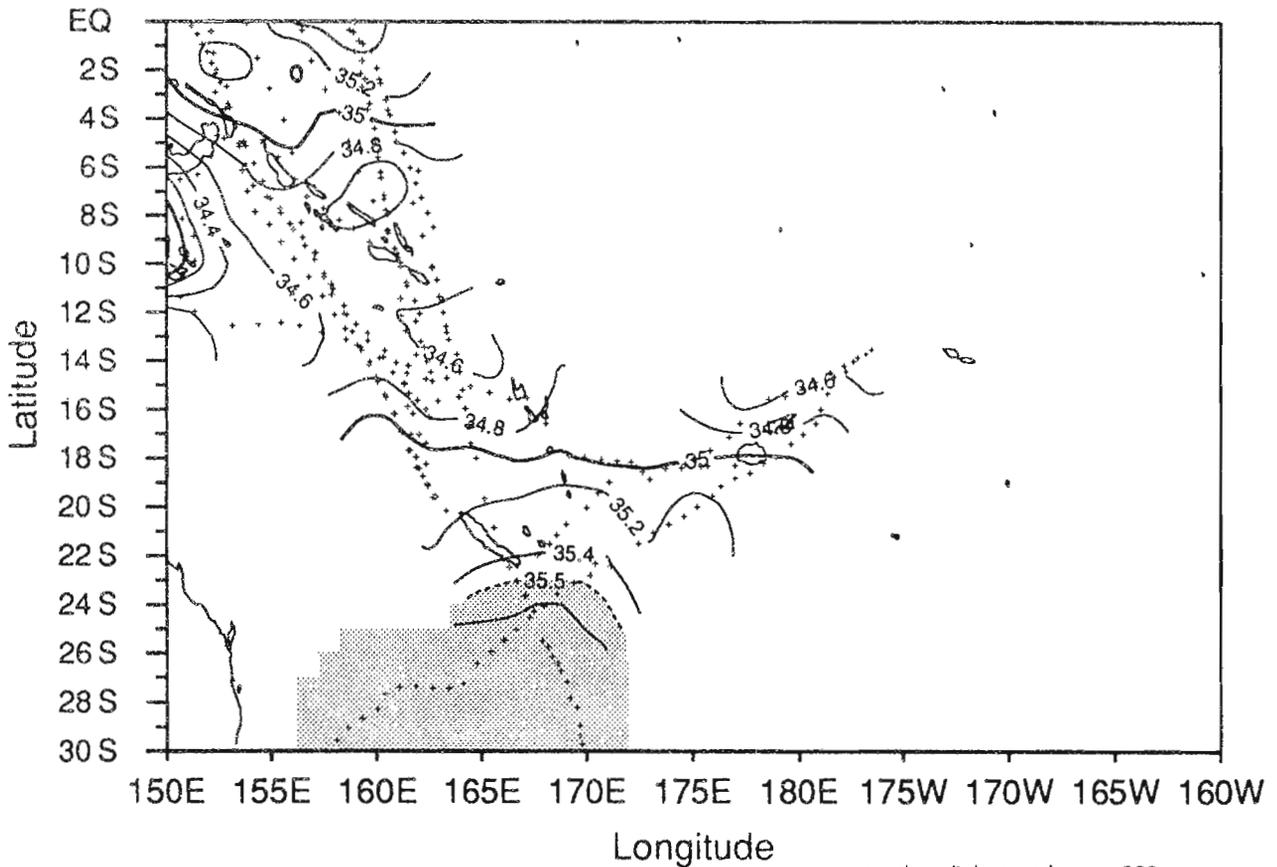


Temperature de surface du 01/01/74 au 28/02/74



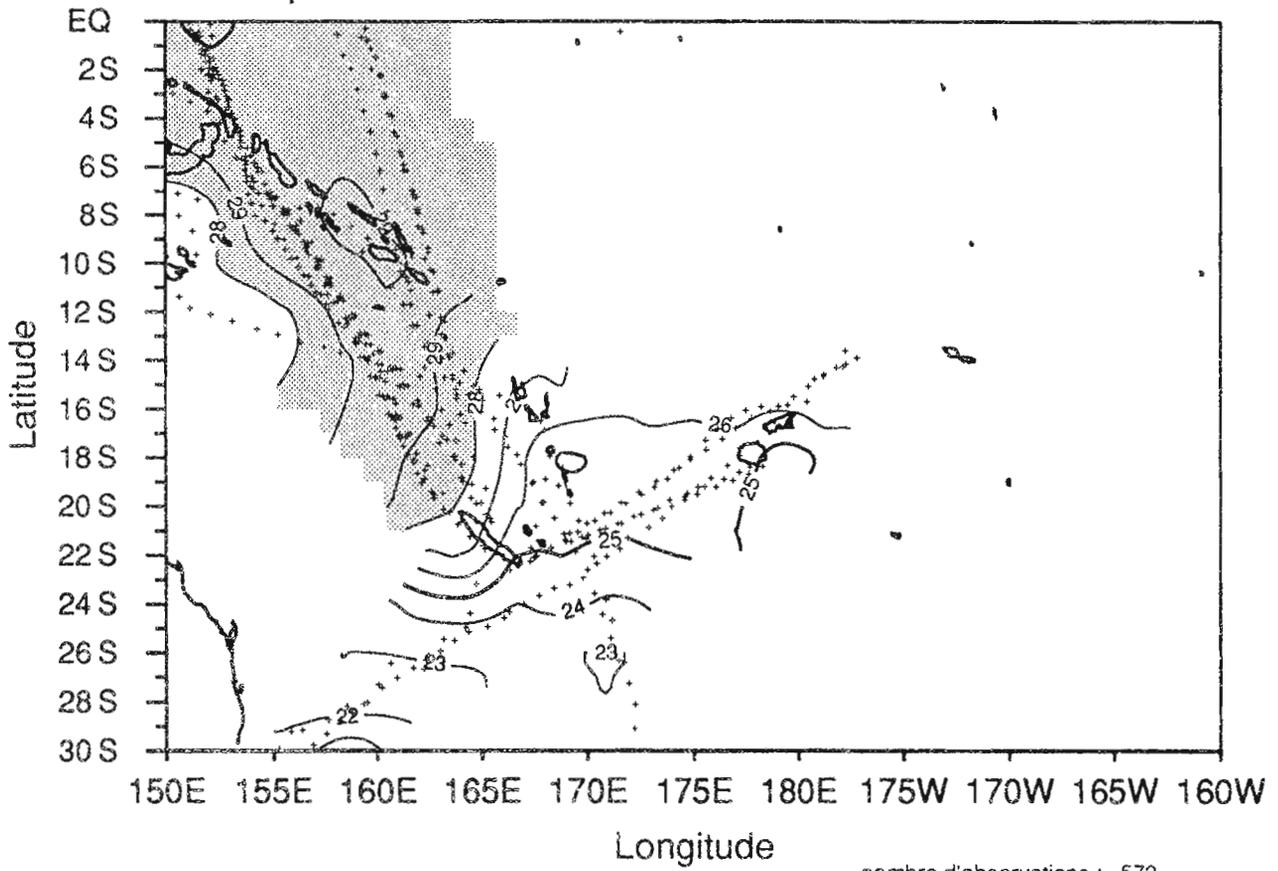
nombre d'observations : 329

Salinite de surface du 01/01/74 au 28/02/74

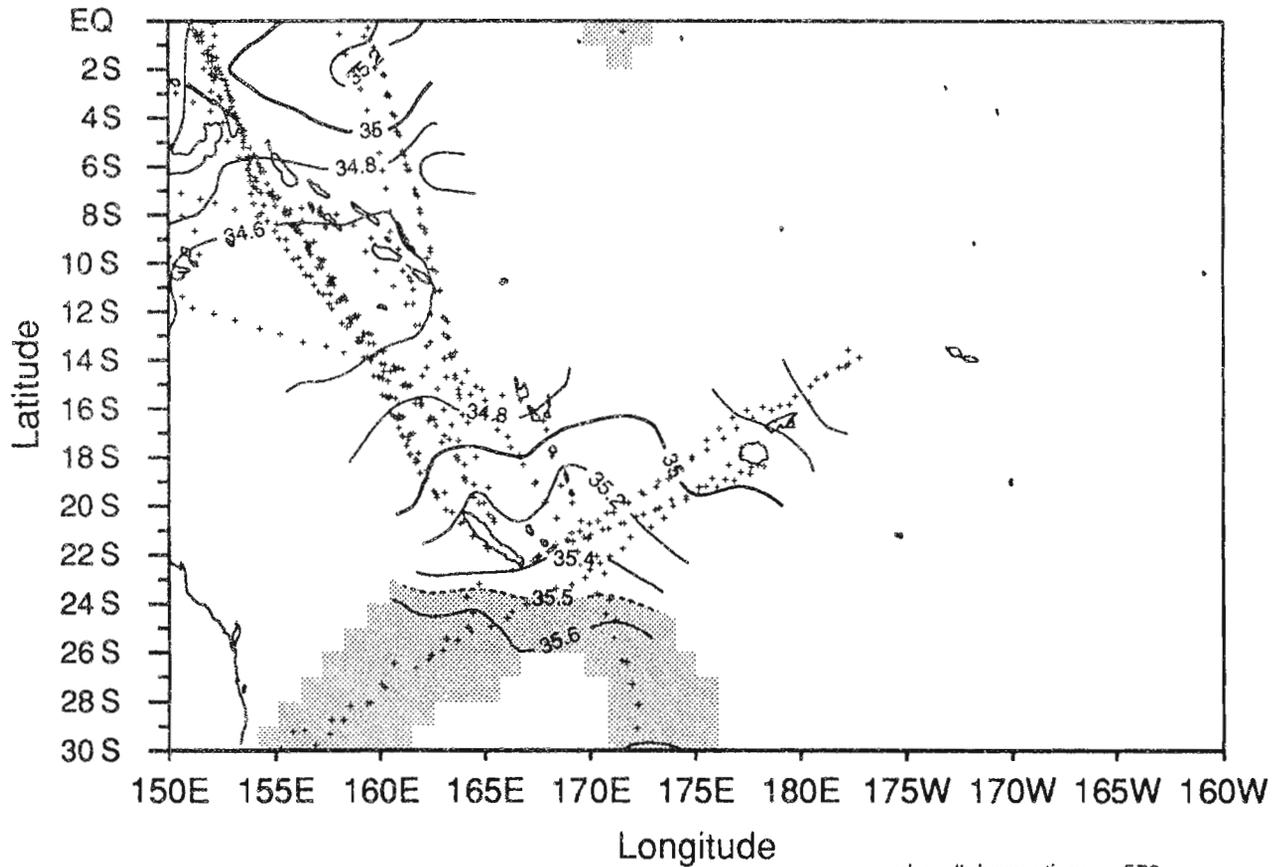


nombre d'observations : 329

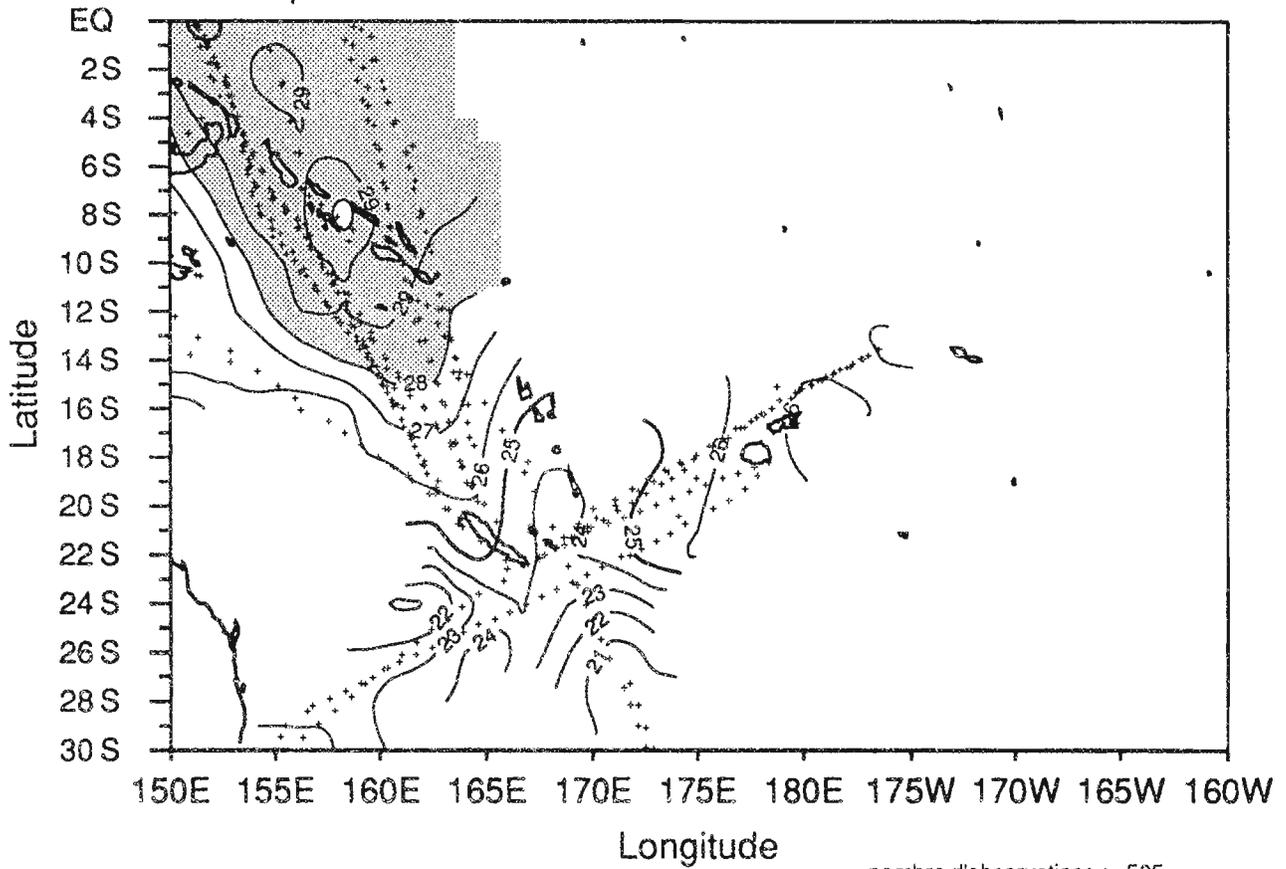
Temperature de surface du 01/03/74 au 30/04/74



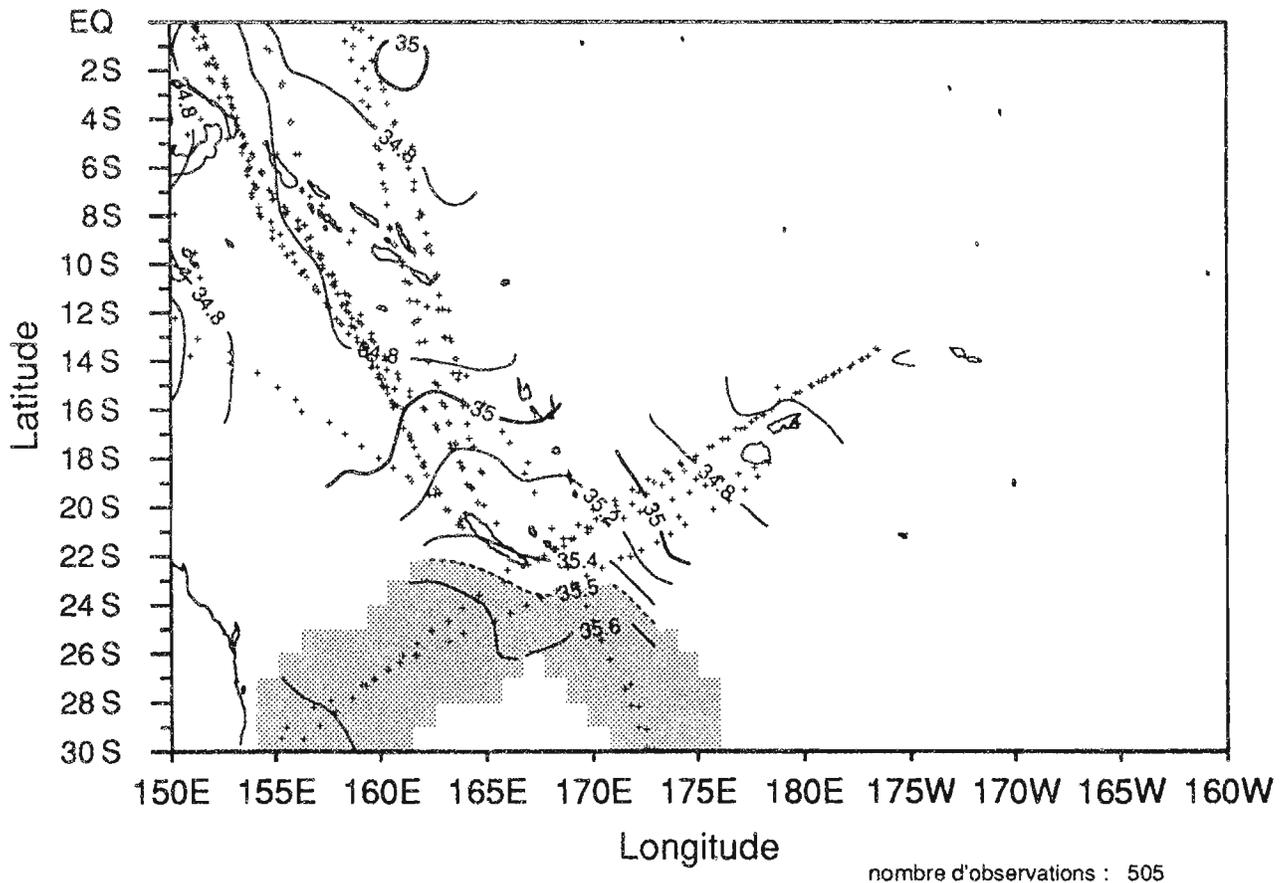
Salinite de surface du 01/03/74 au 30/04/74



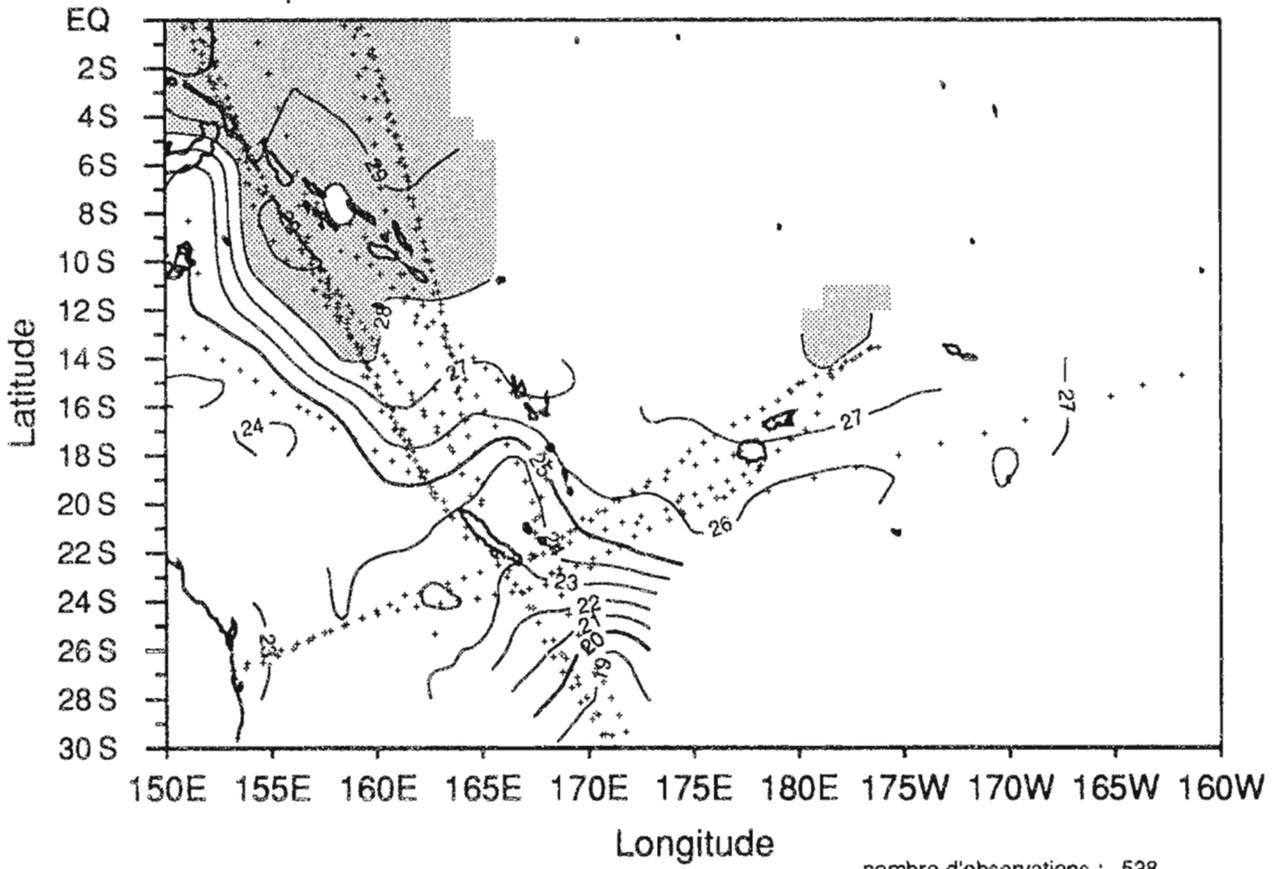
Temperature de surface du 01/05/74 au 30/06/74



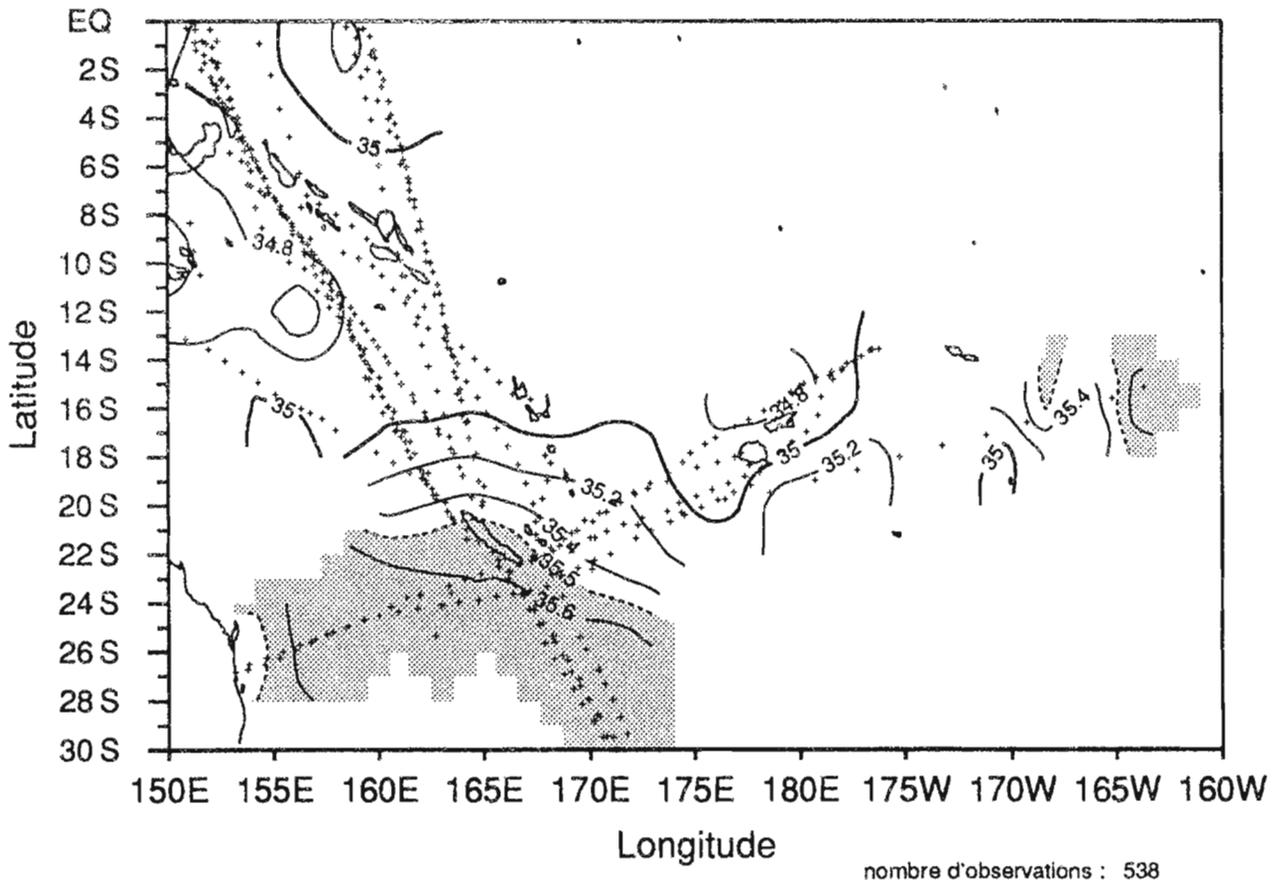
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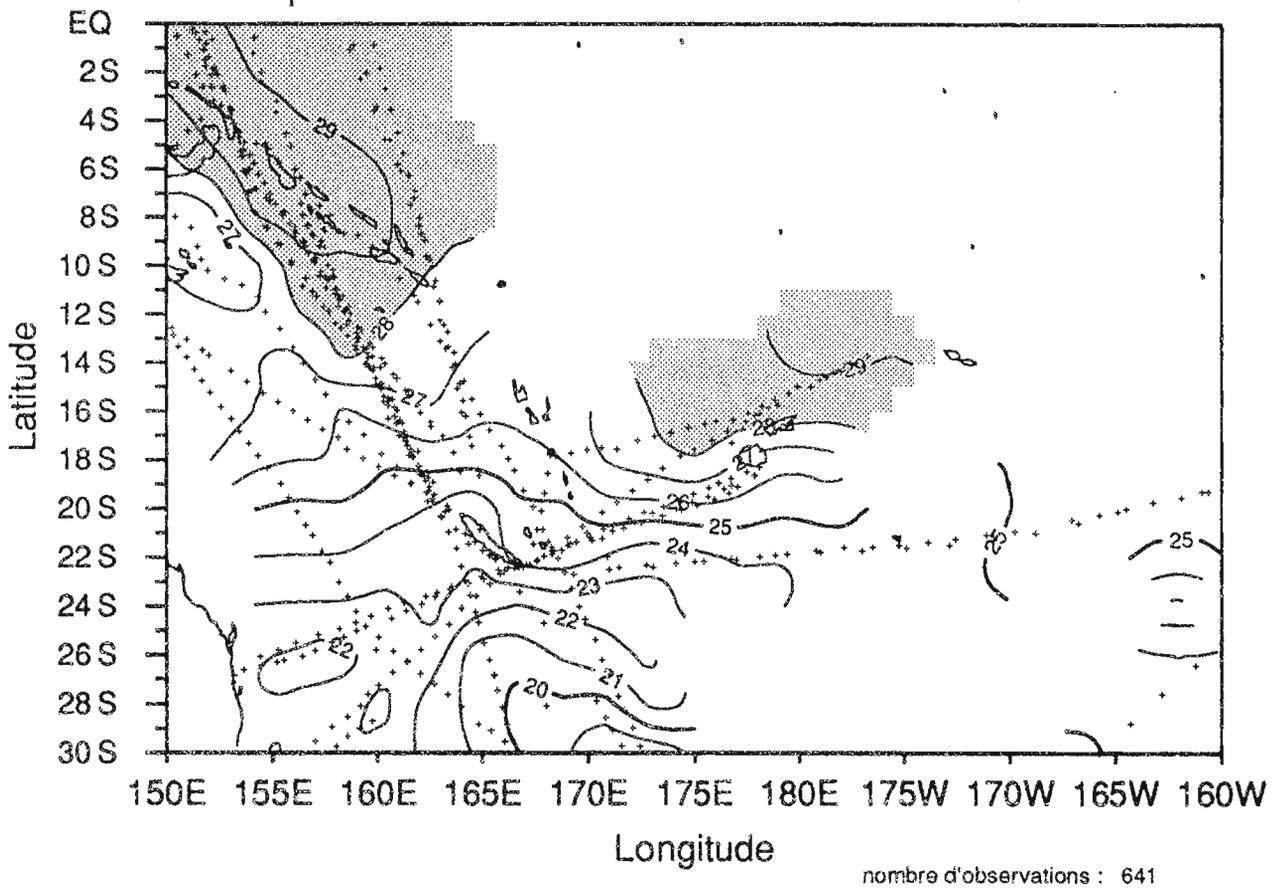
Temperature de surface du 01/07/74 au 31/08/74



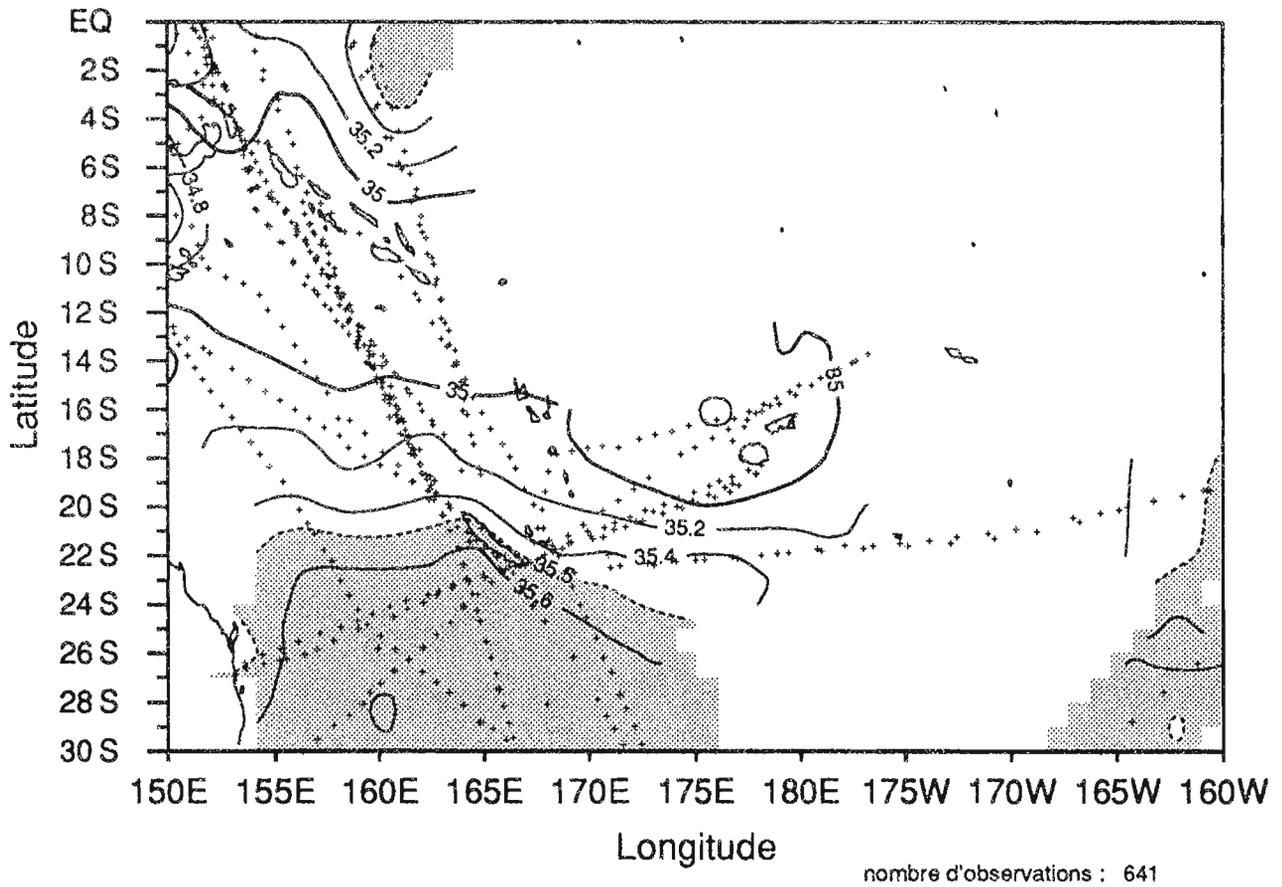
Salinite de surface du 01/07/74 au 31/08/74



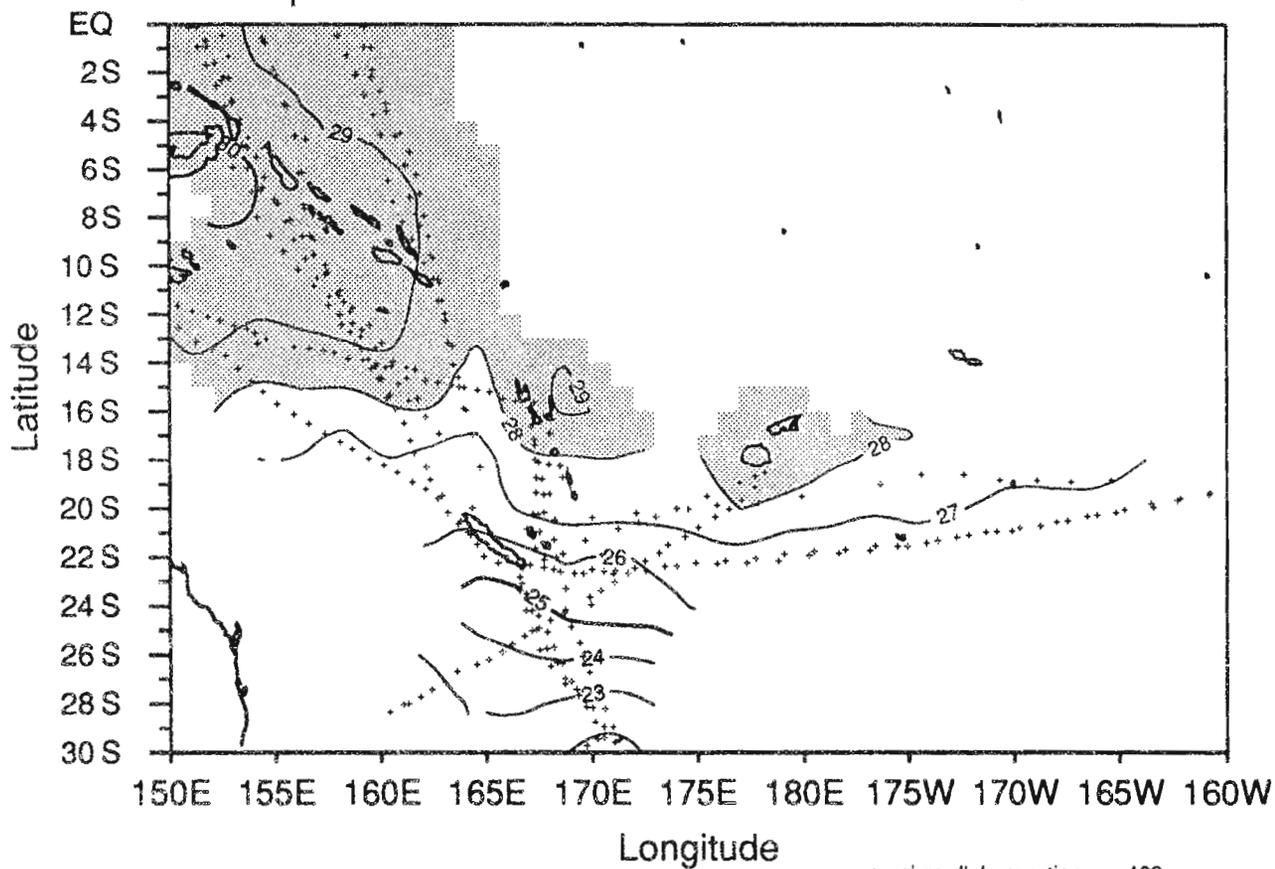
Temperature de surface du 01/09/74 au 31/10/74



Salinite de surface du 01/09/74 au 31/10/74

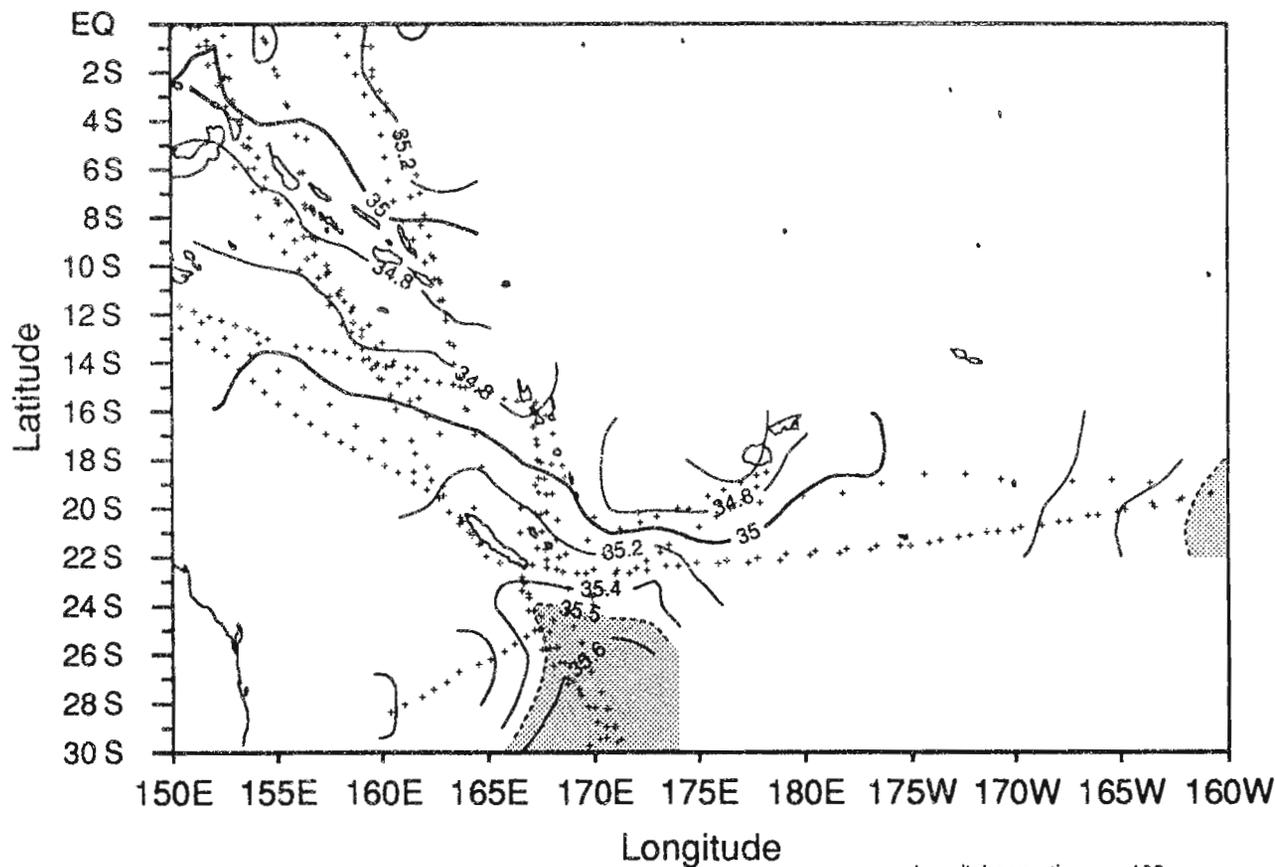


Temperature de surface du 01/11/74 au 31/12/74



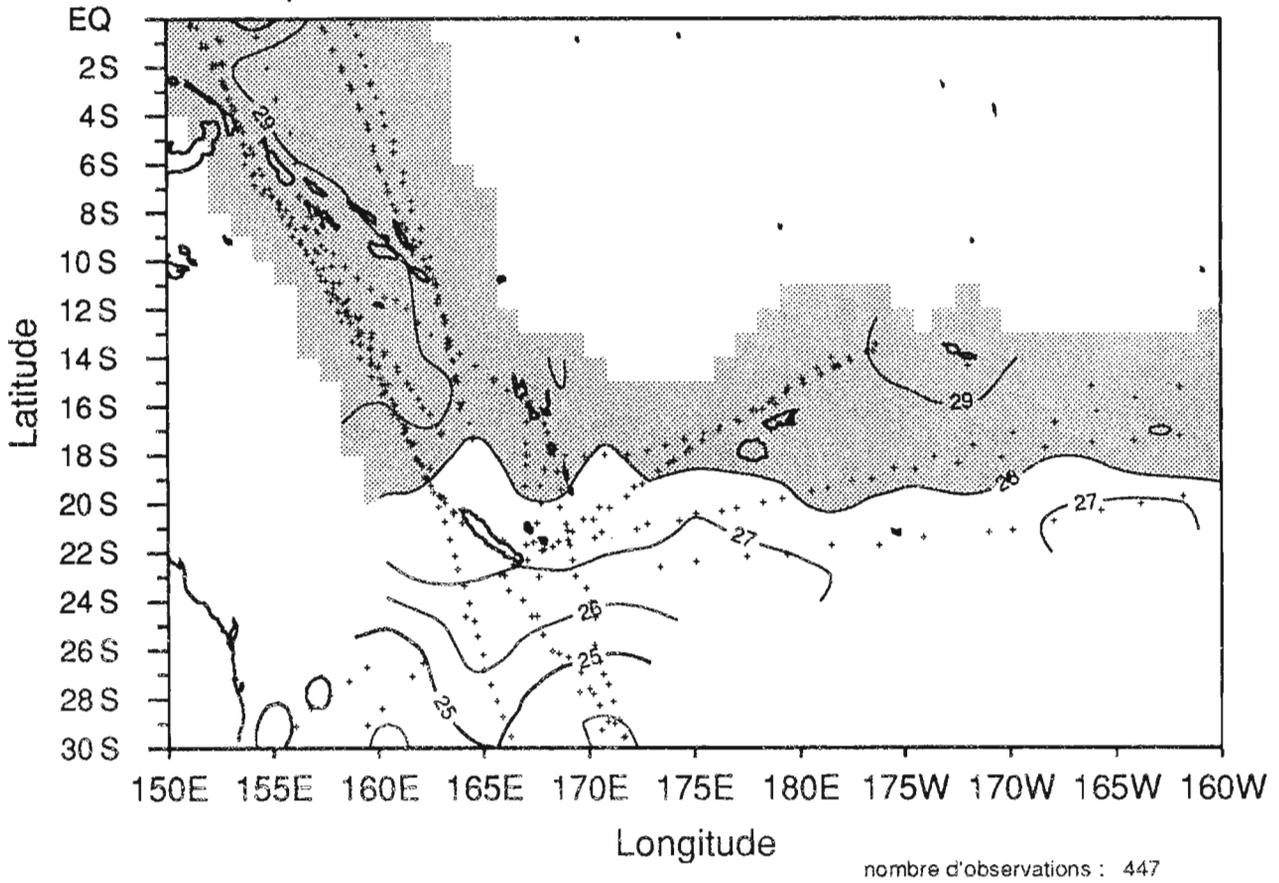
nombre d'observations : 409

Salinite de surface du 01/11/74 au 31/12/74

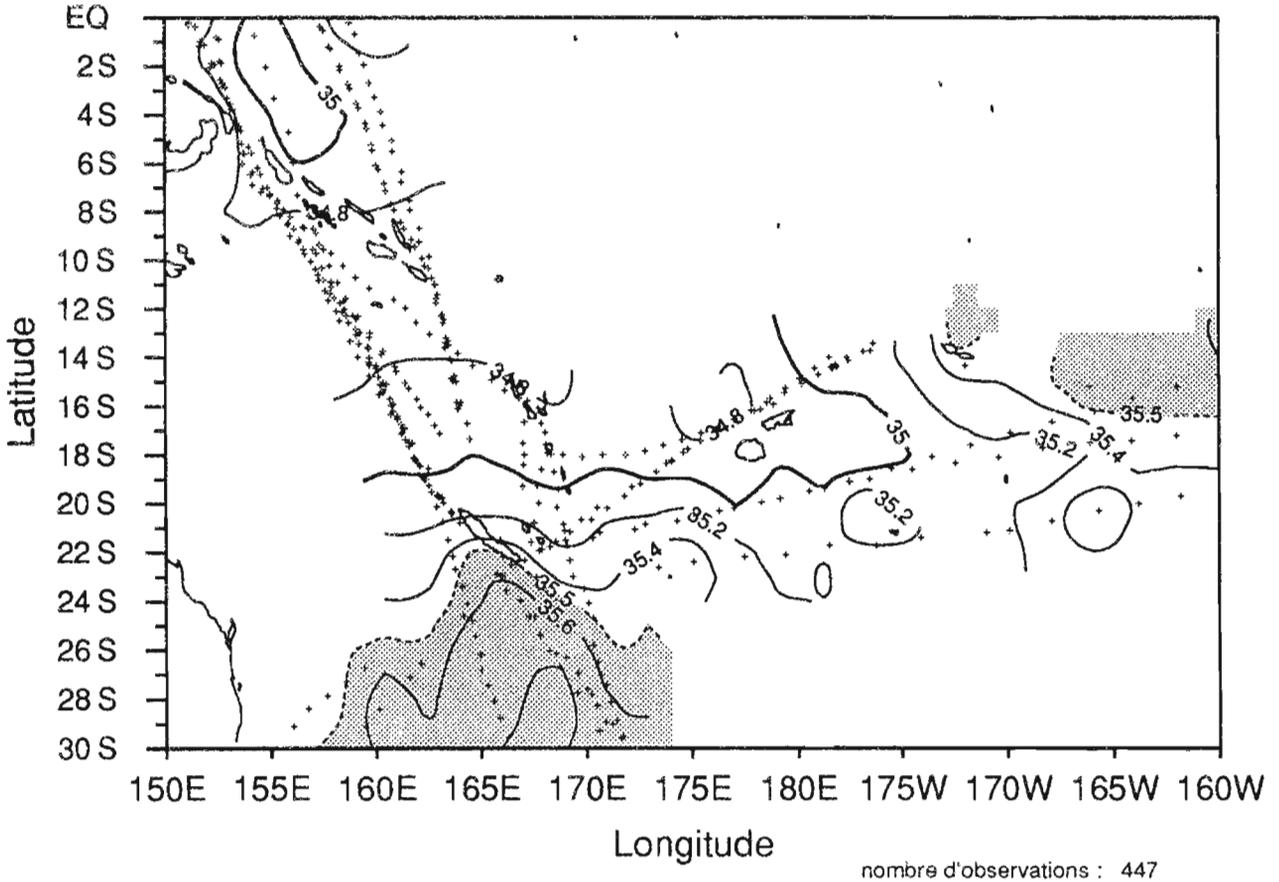


nombre d'observations : 409

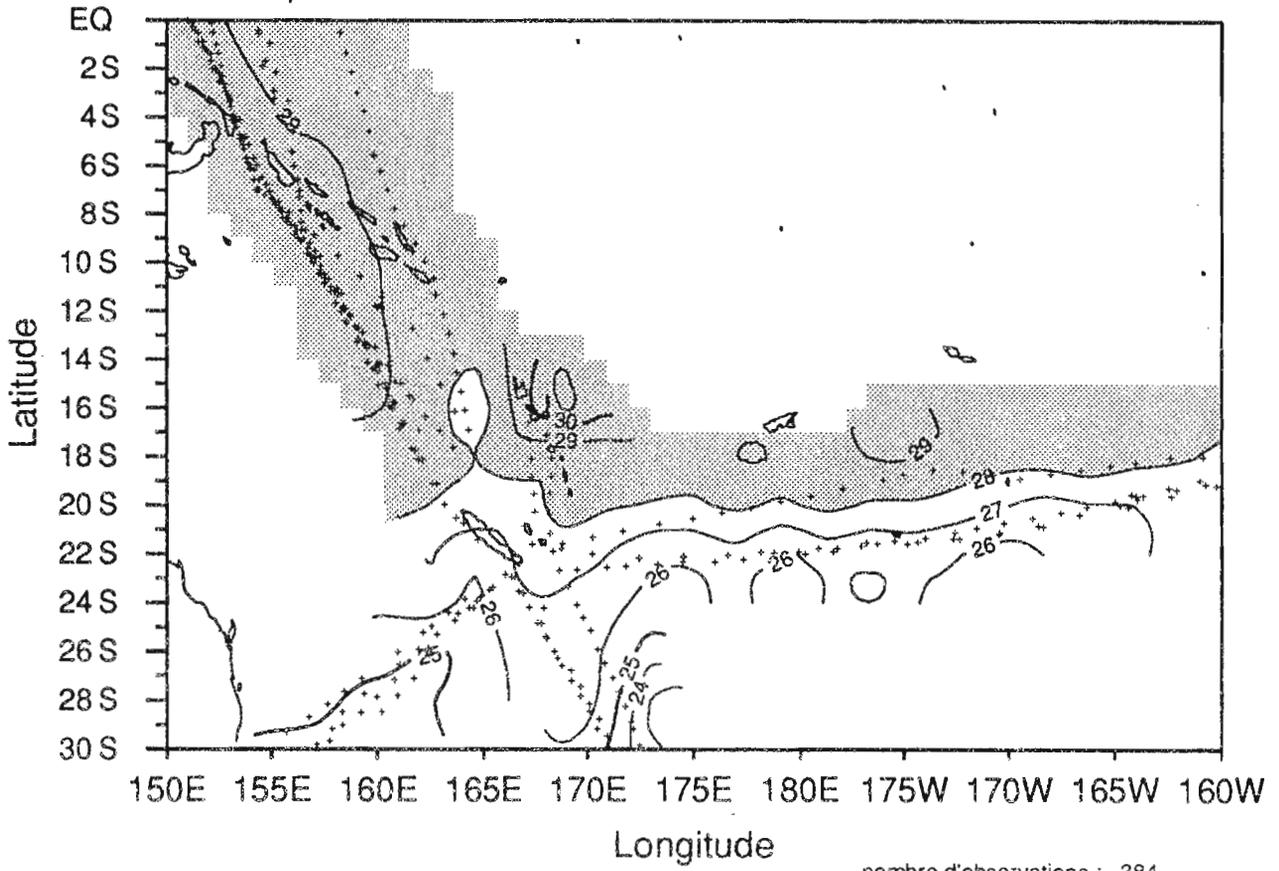
Temperature de surface du 01/01/75 au 28/02/75



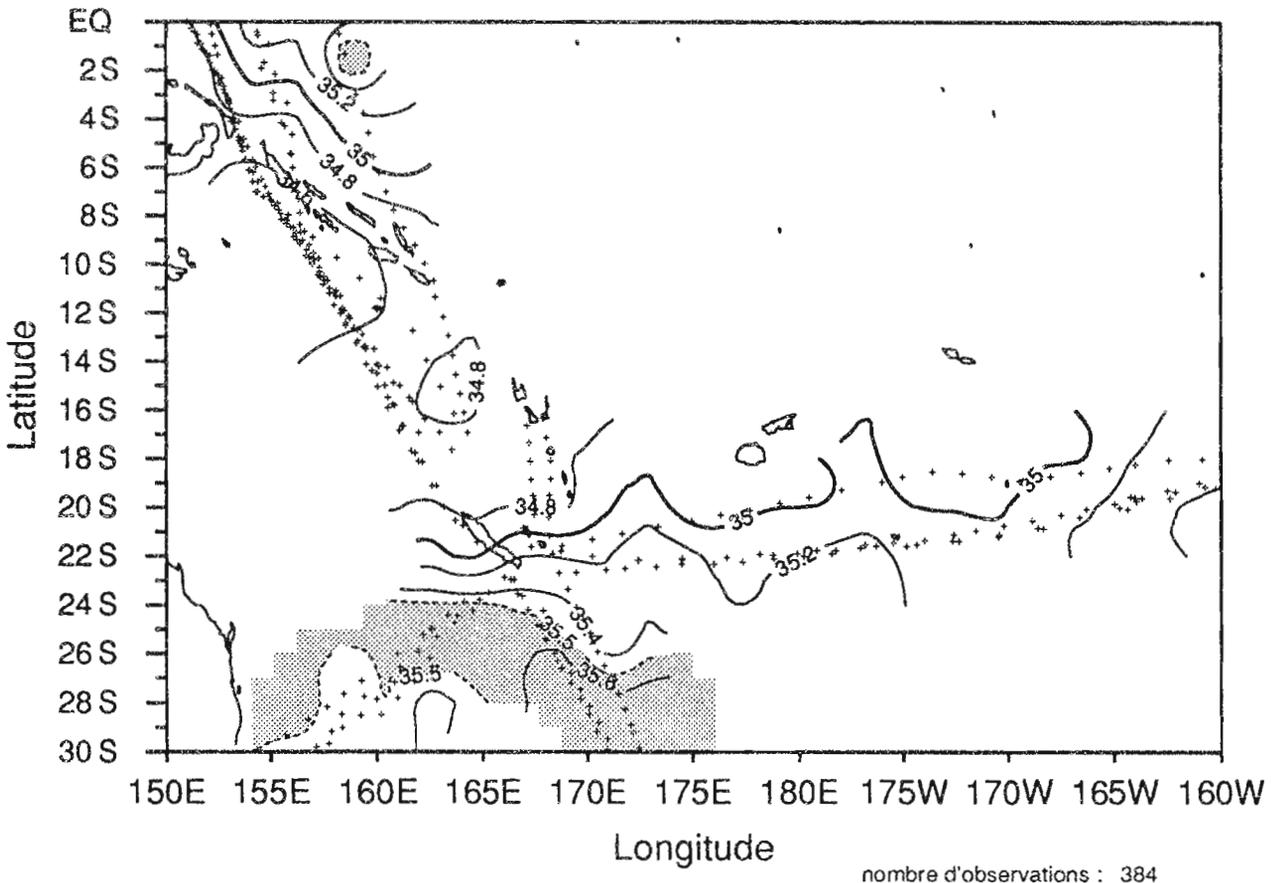
Salinite de surface du 01/01/75 au 28/02/75



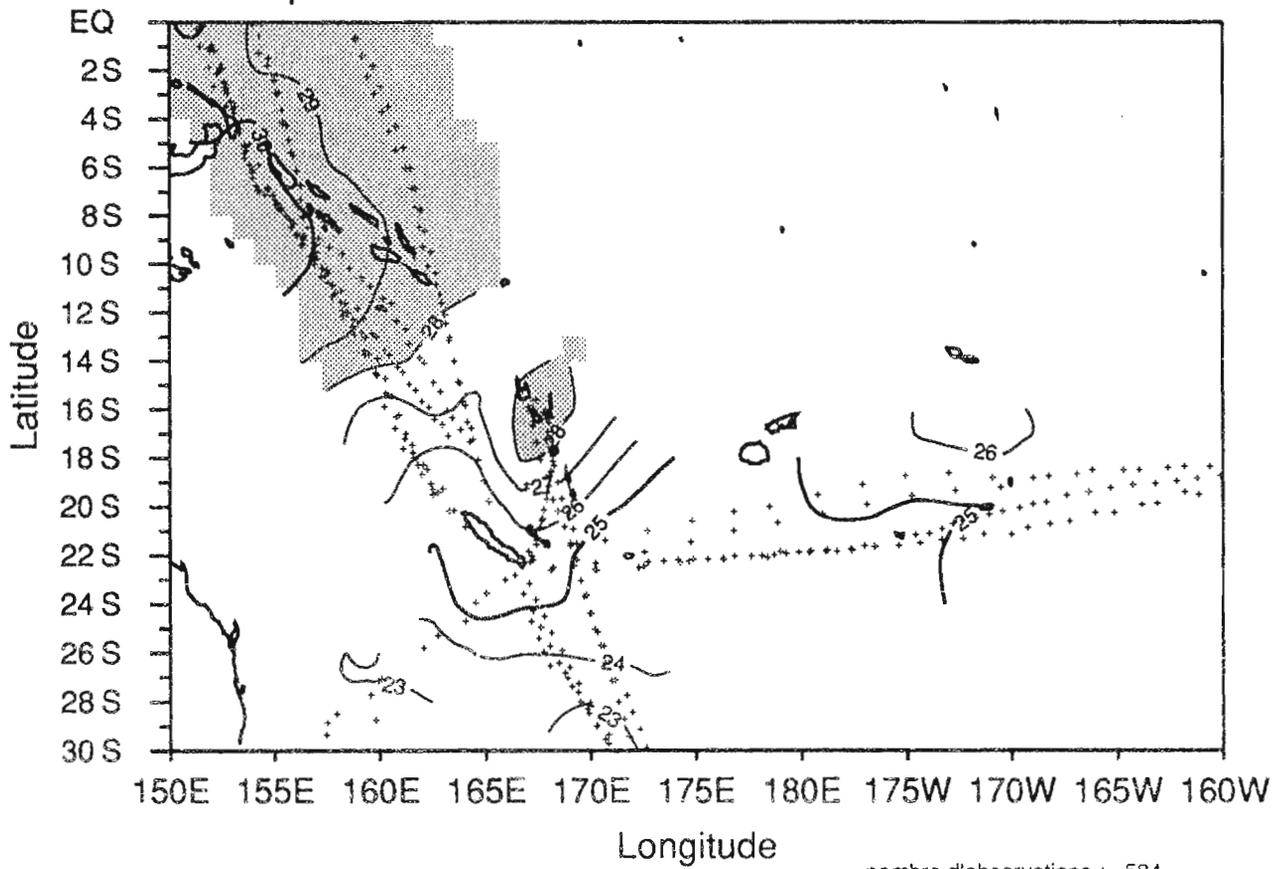
Temperature de surface du 01/03/75 au 30/04/75



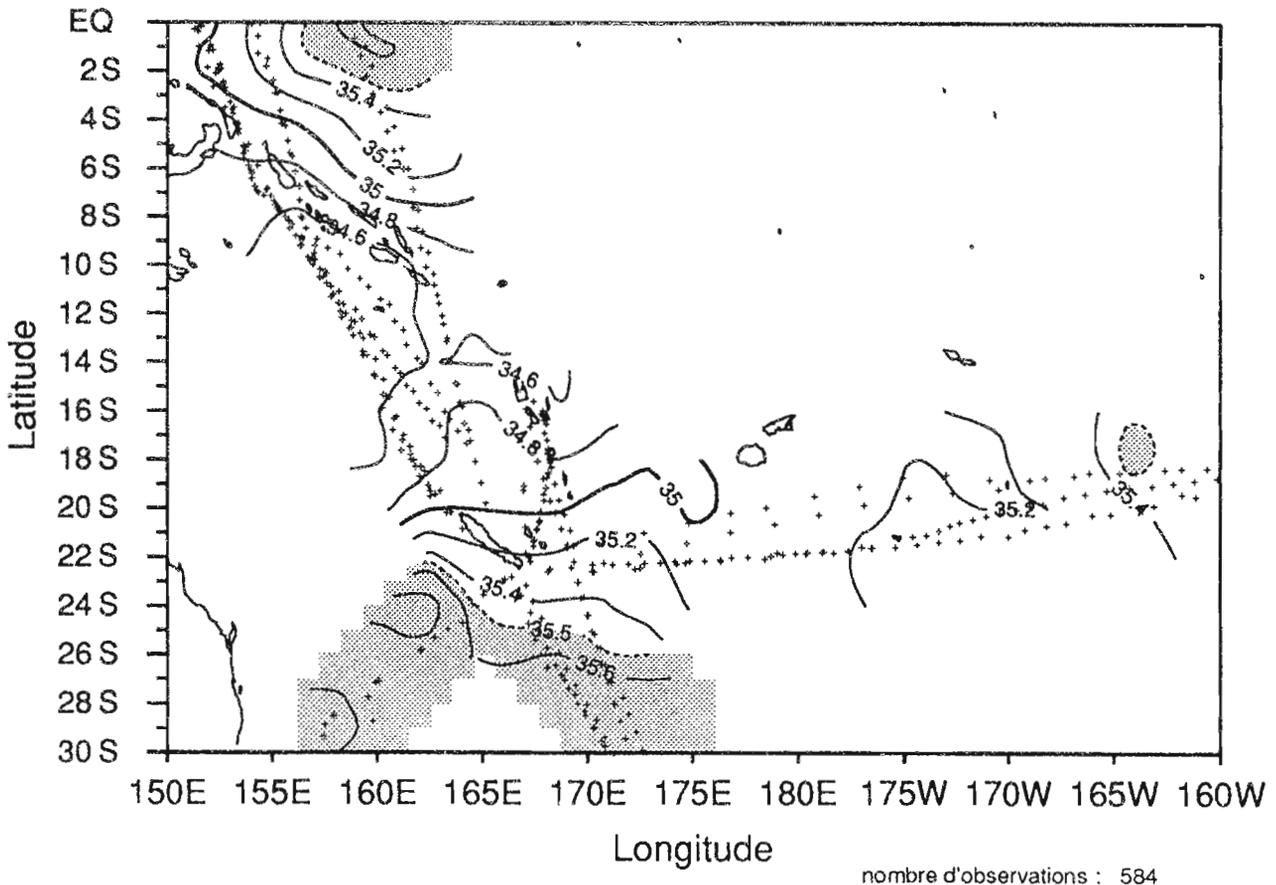
Salinite de surface du 01/03/75 au 30/04/75



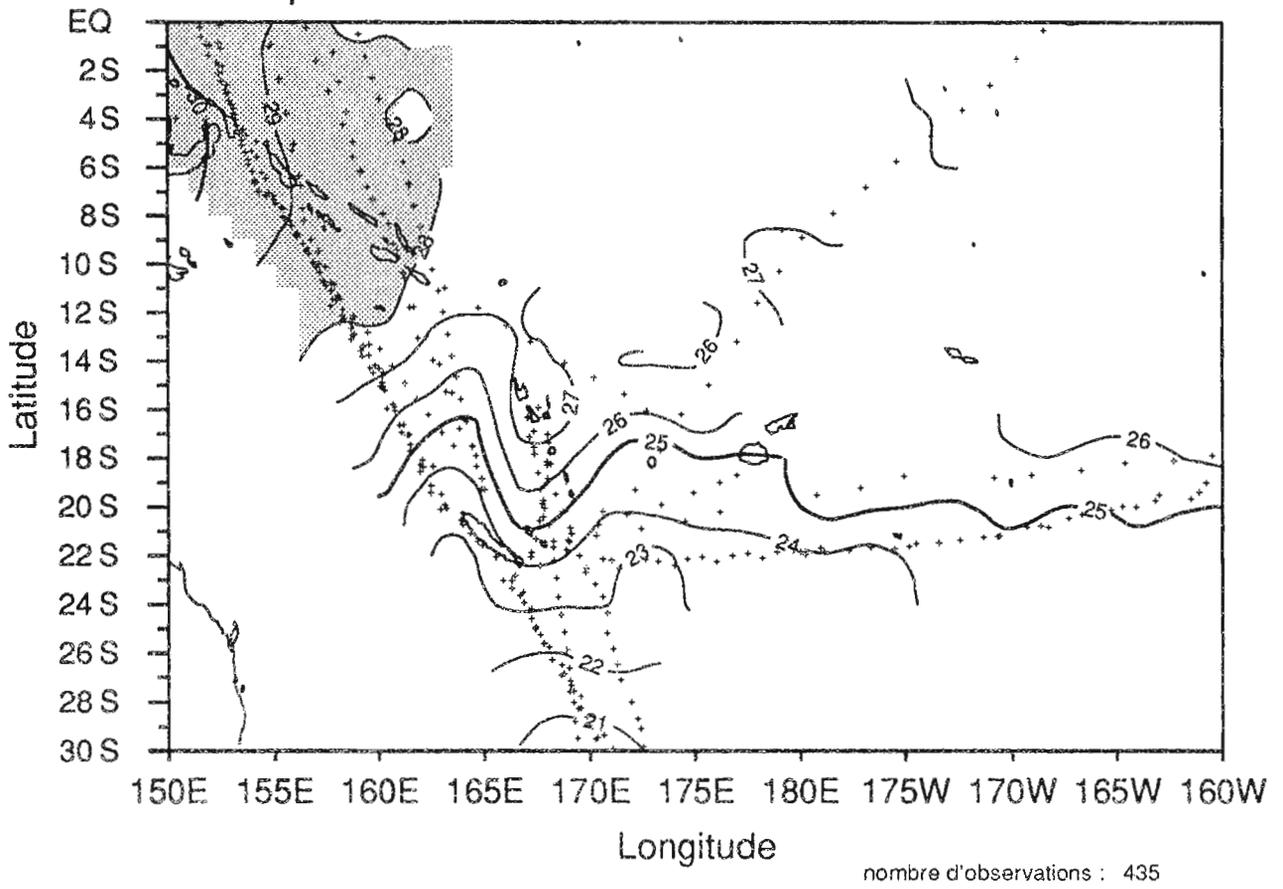
Temperature de surface du 01/05/75 au 30/06/75



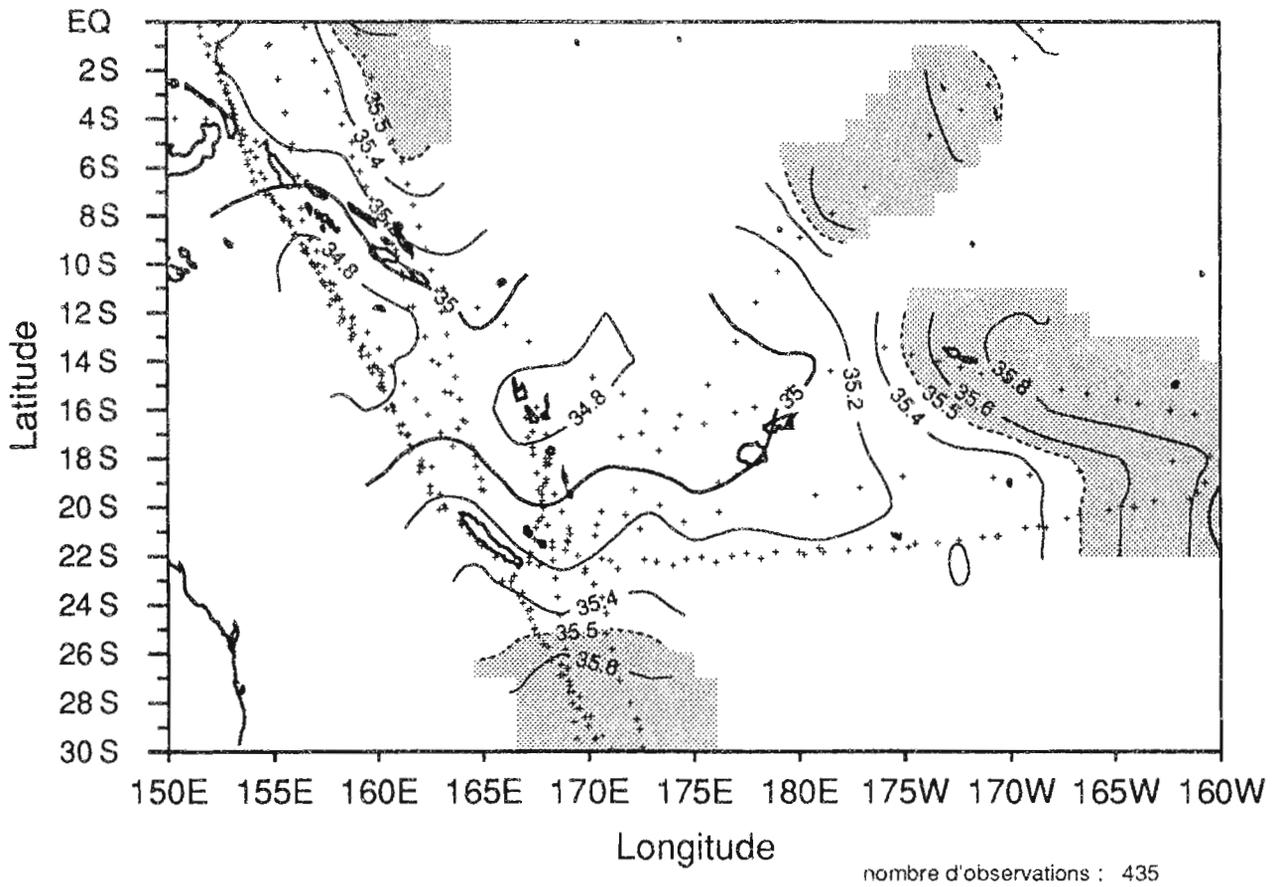
Salinite de surface du 01/05/75 au 30/06/75



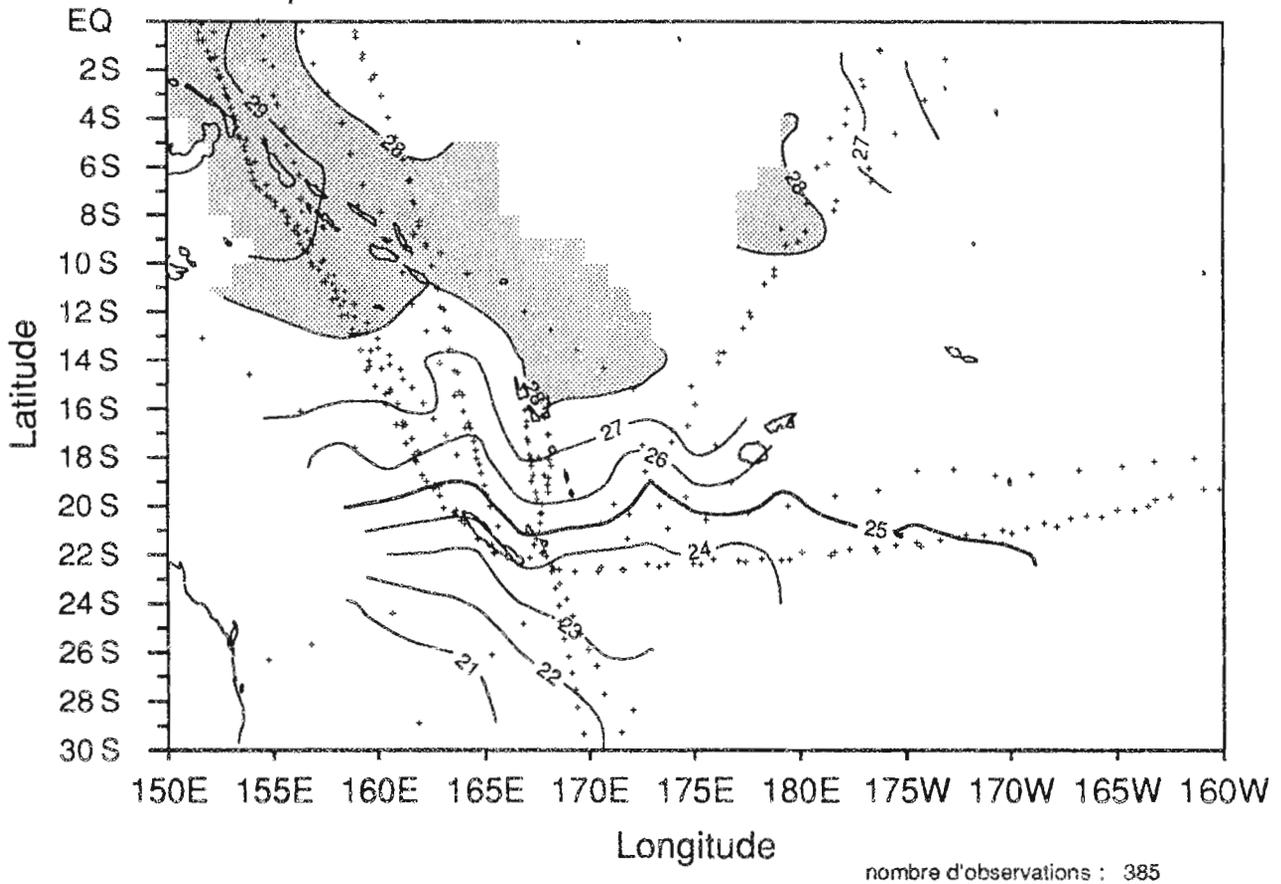
Temperature de surface du 01/07/75 au 31/08/75



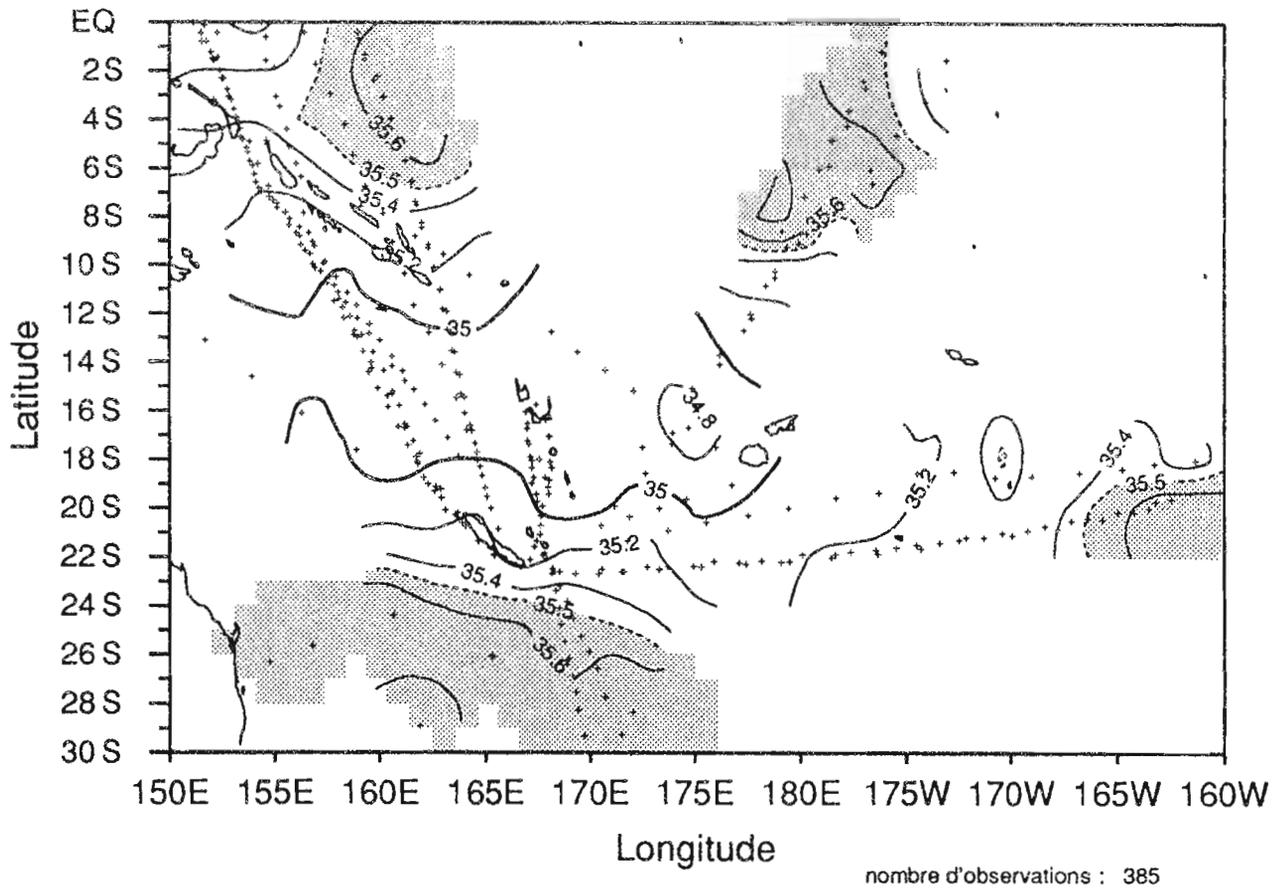
Salinite de surface du 01/07/75 au 31/08/75



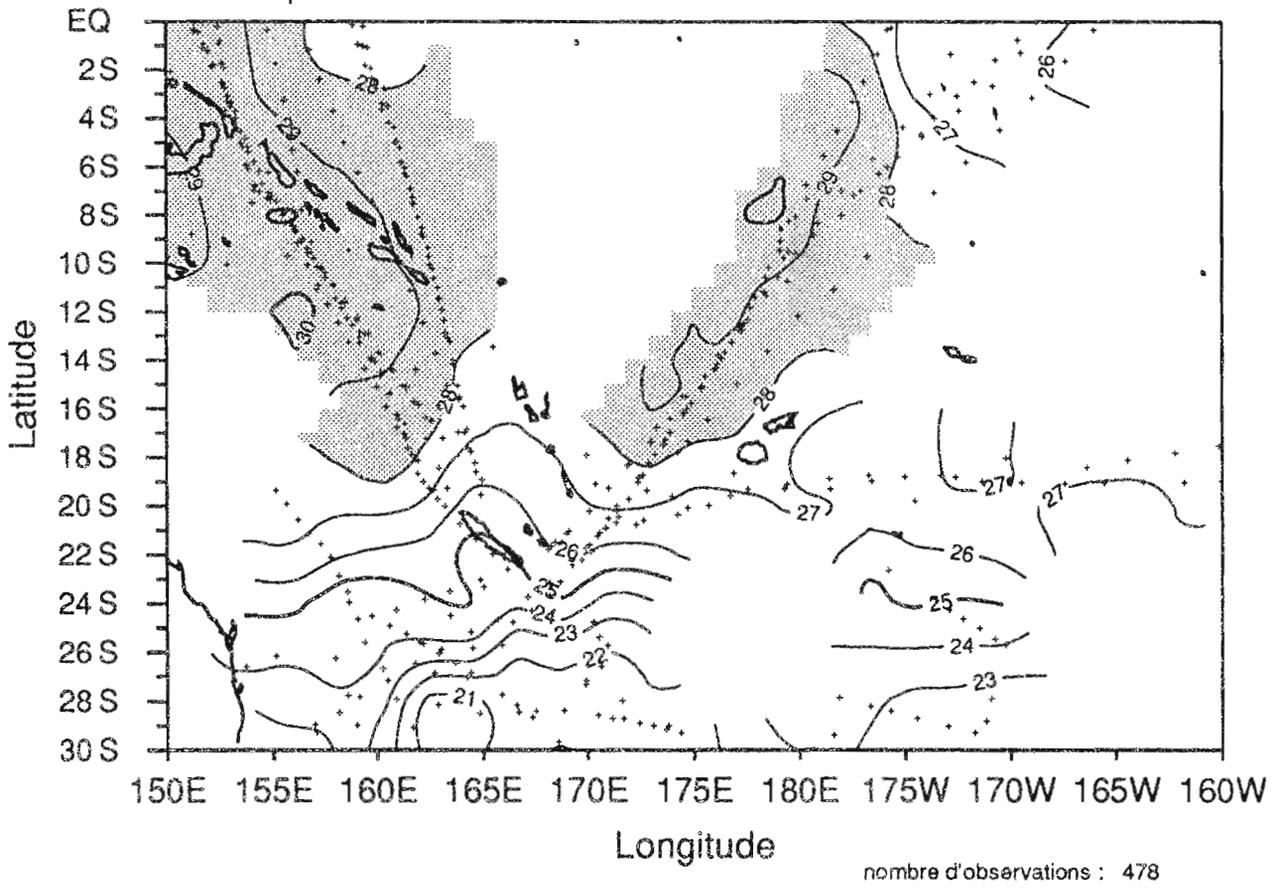
Temperature de surface du 01/09/75 au 31/10/75



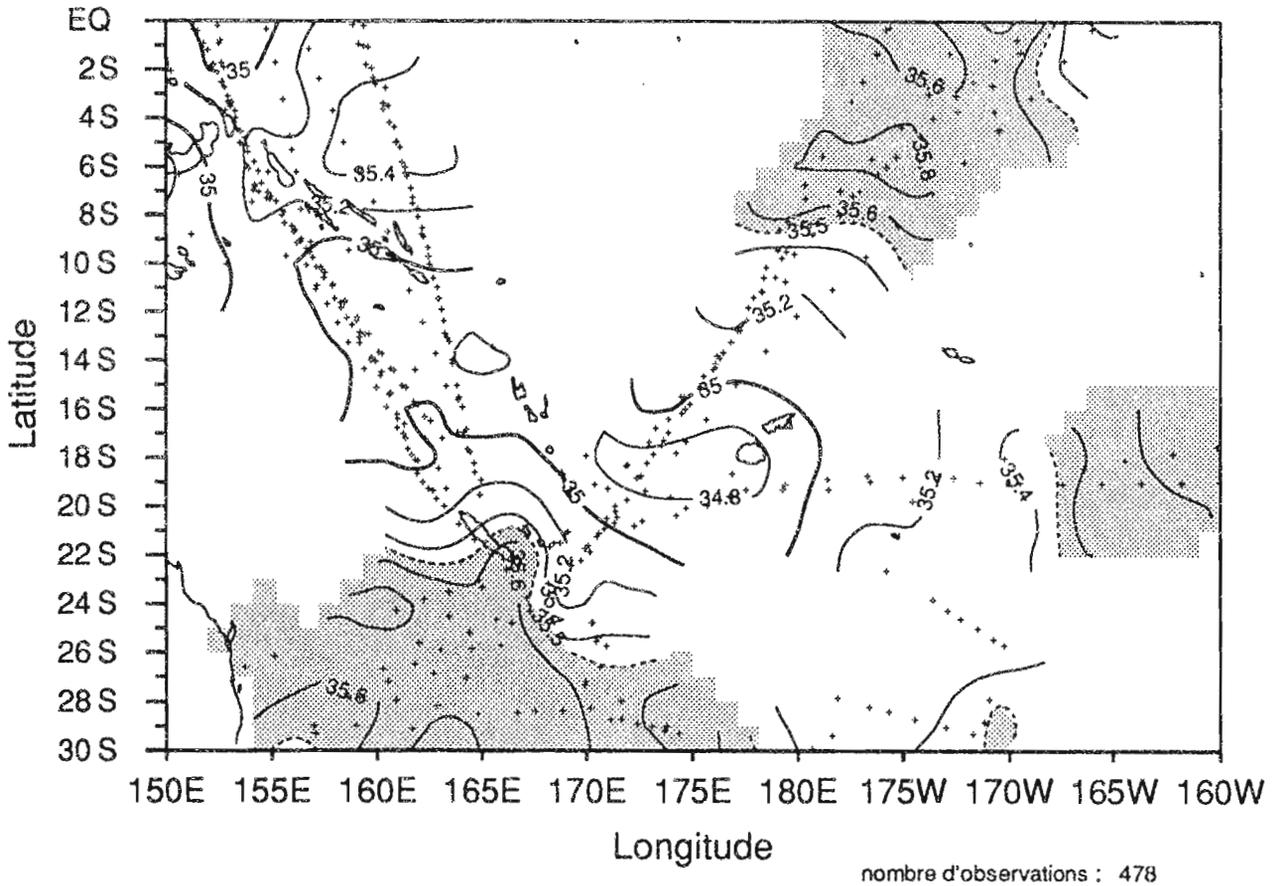
Salinite de surface du 01/09/75 au 31/10/75



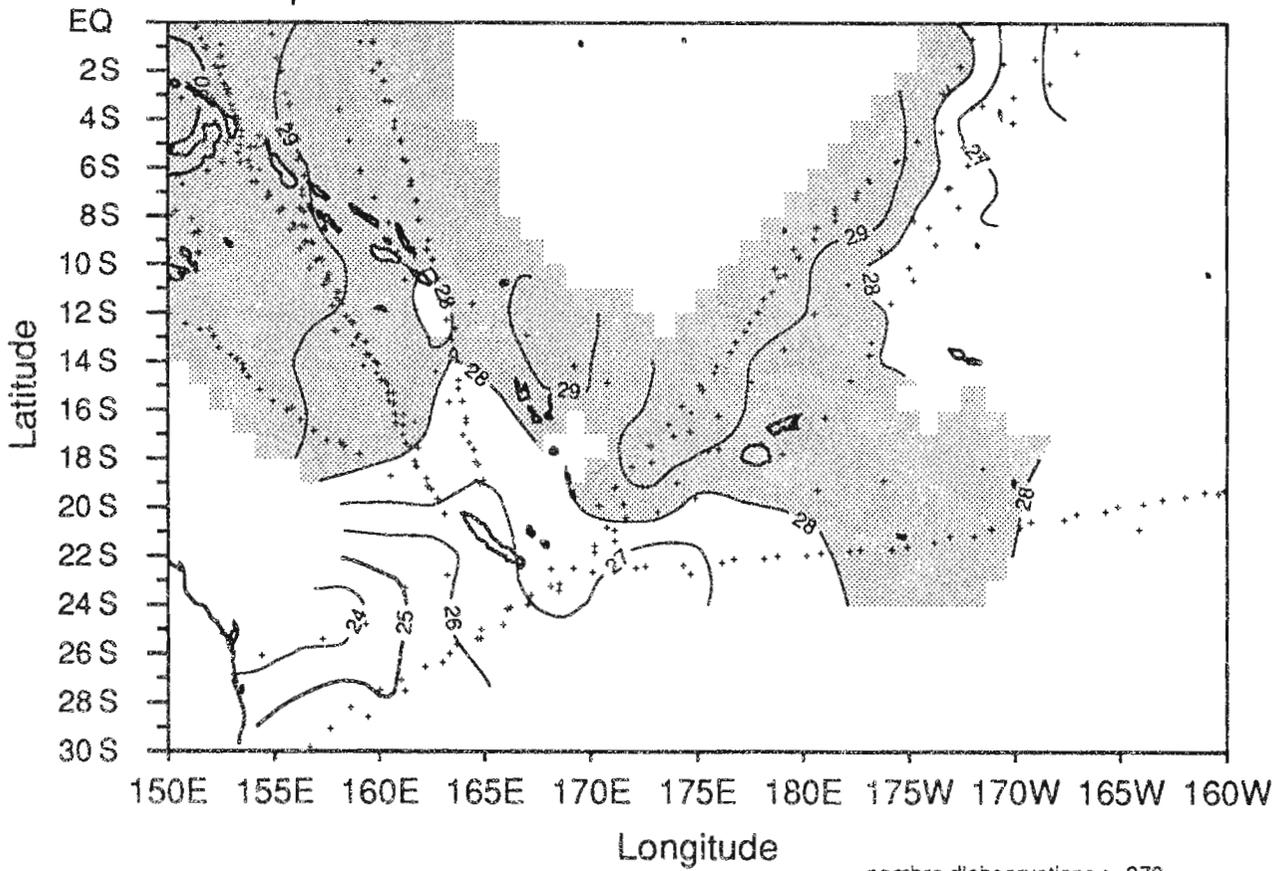
Temperature de surface du 01/11/75 au 31/12/75



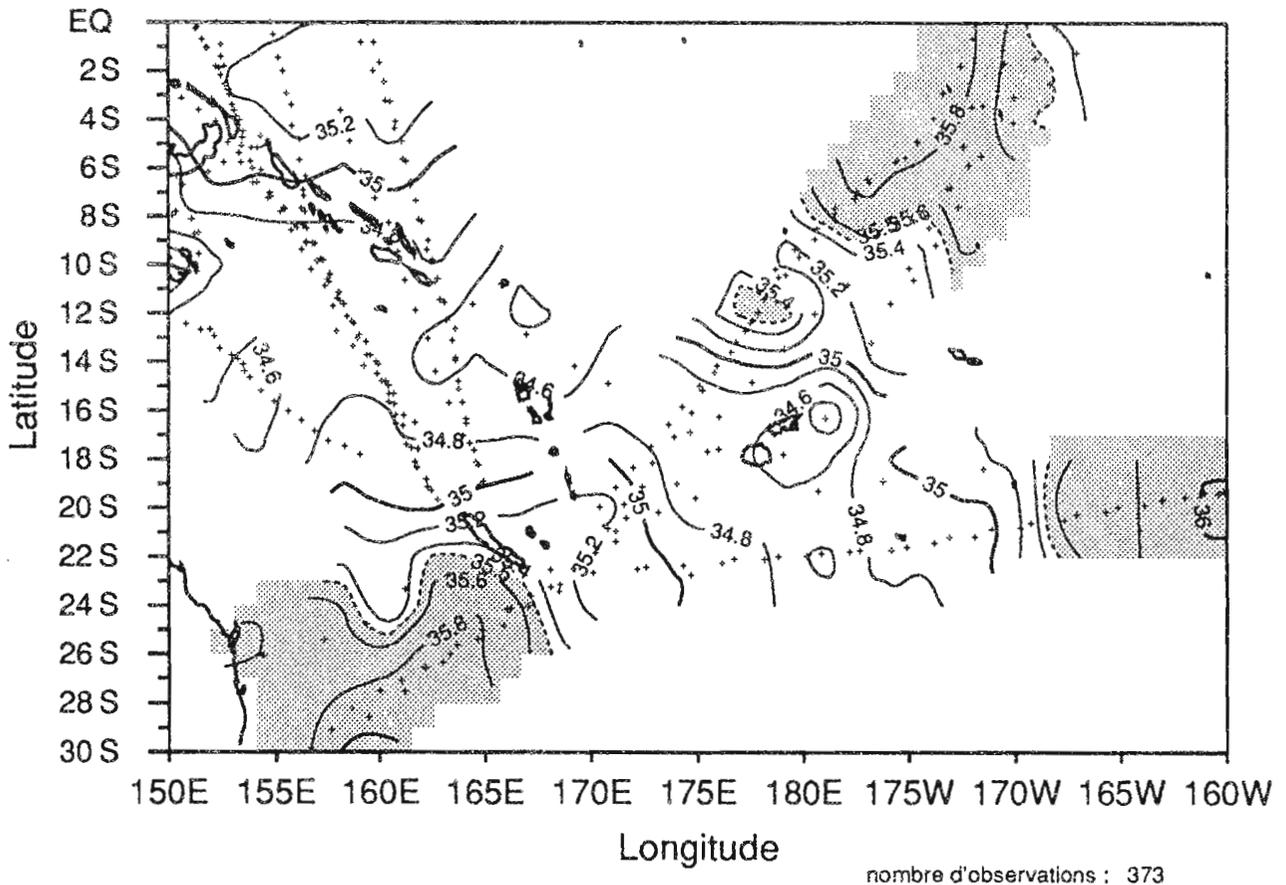
Salinite de surface du 01/11/75 au 31/12/75



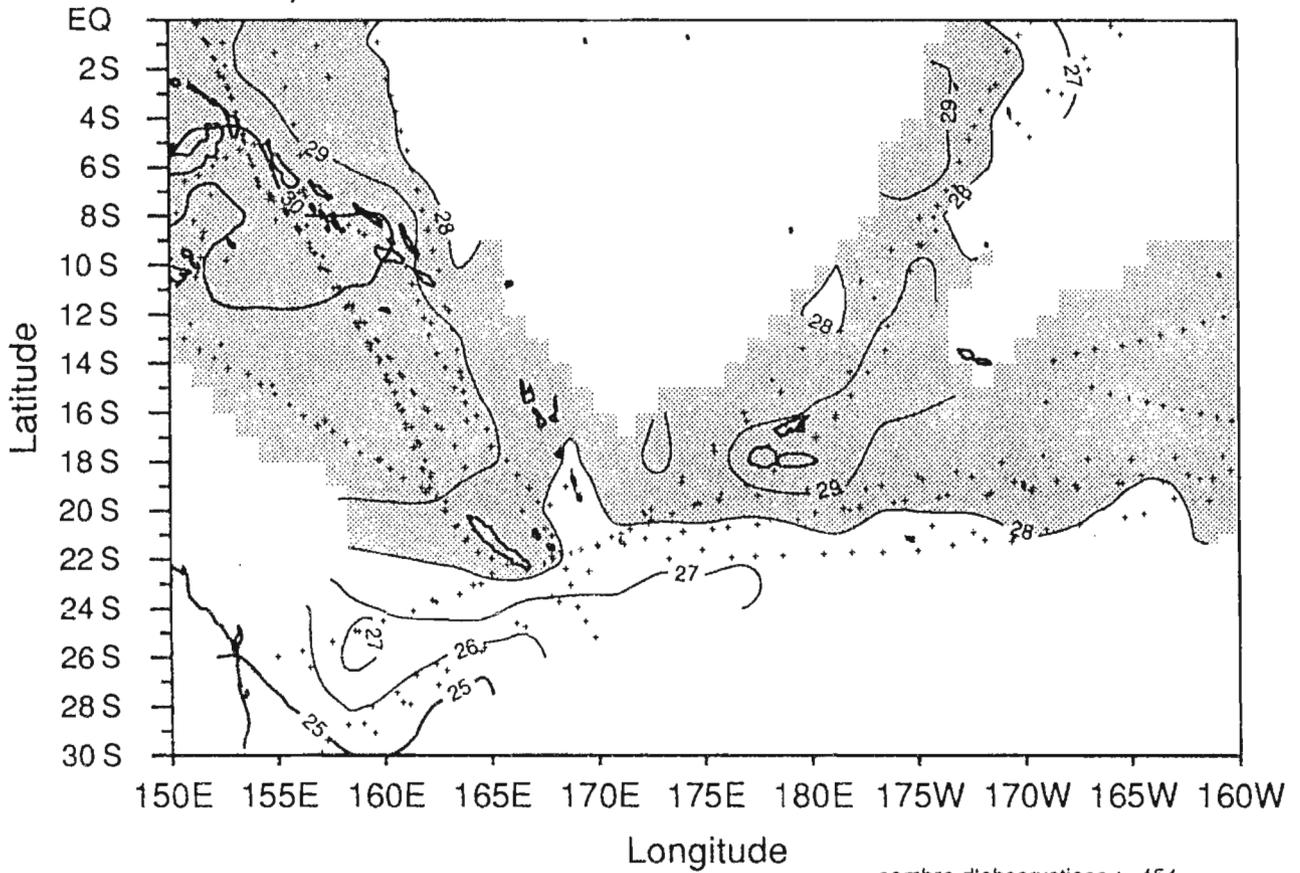
Temperature de surface du 01/01/76 au 29/02/76



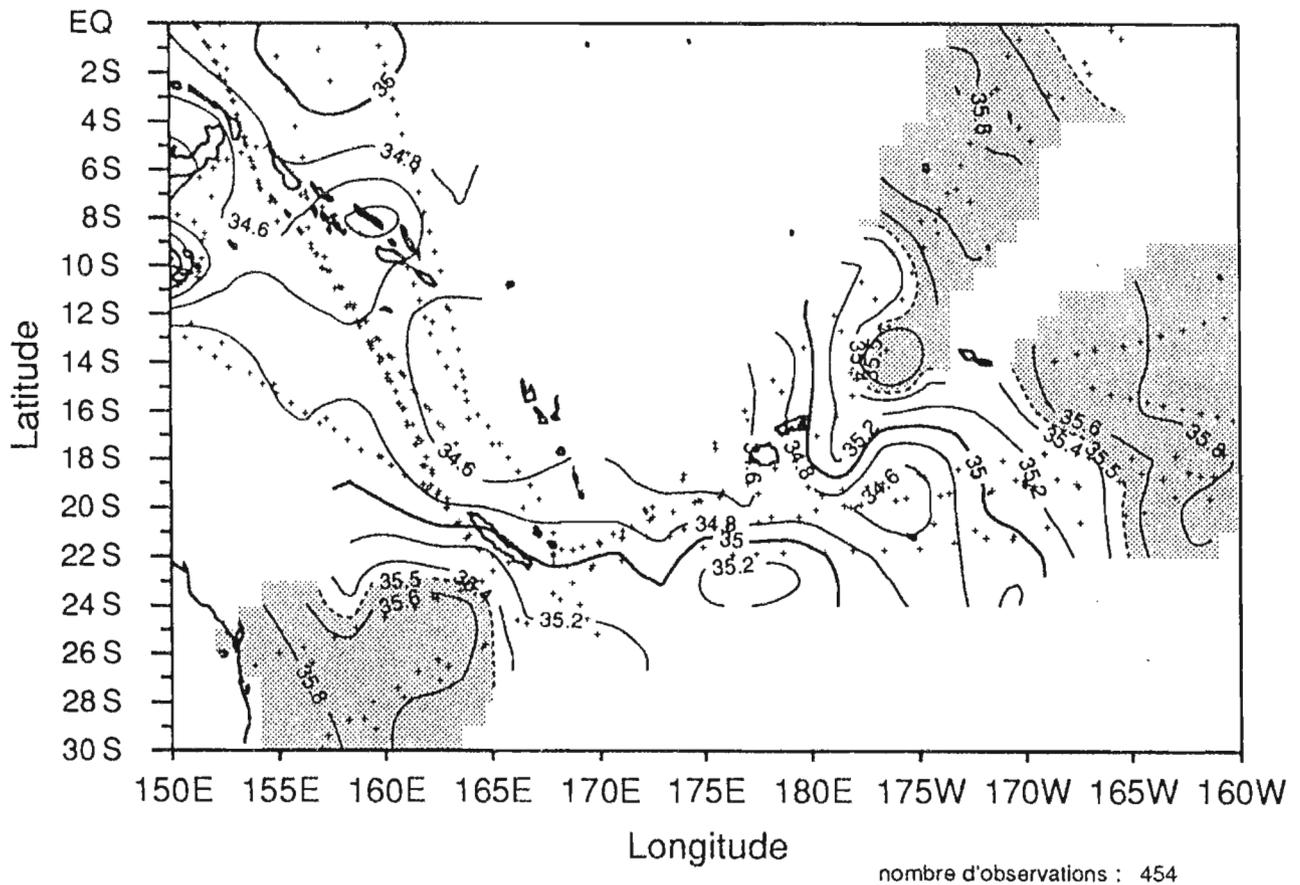
Salinite de surface du 01/01/76 au 29/02/76



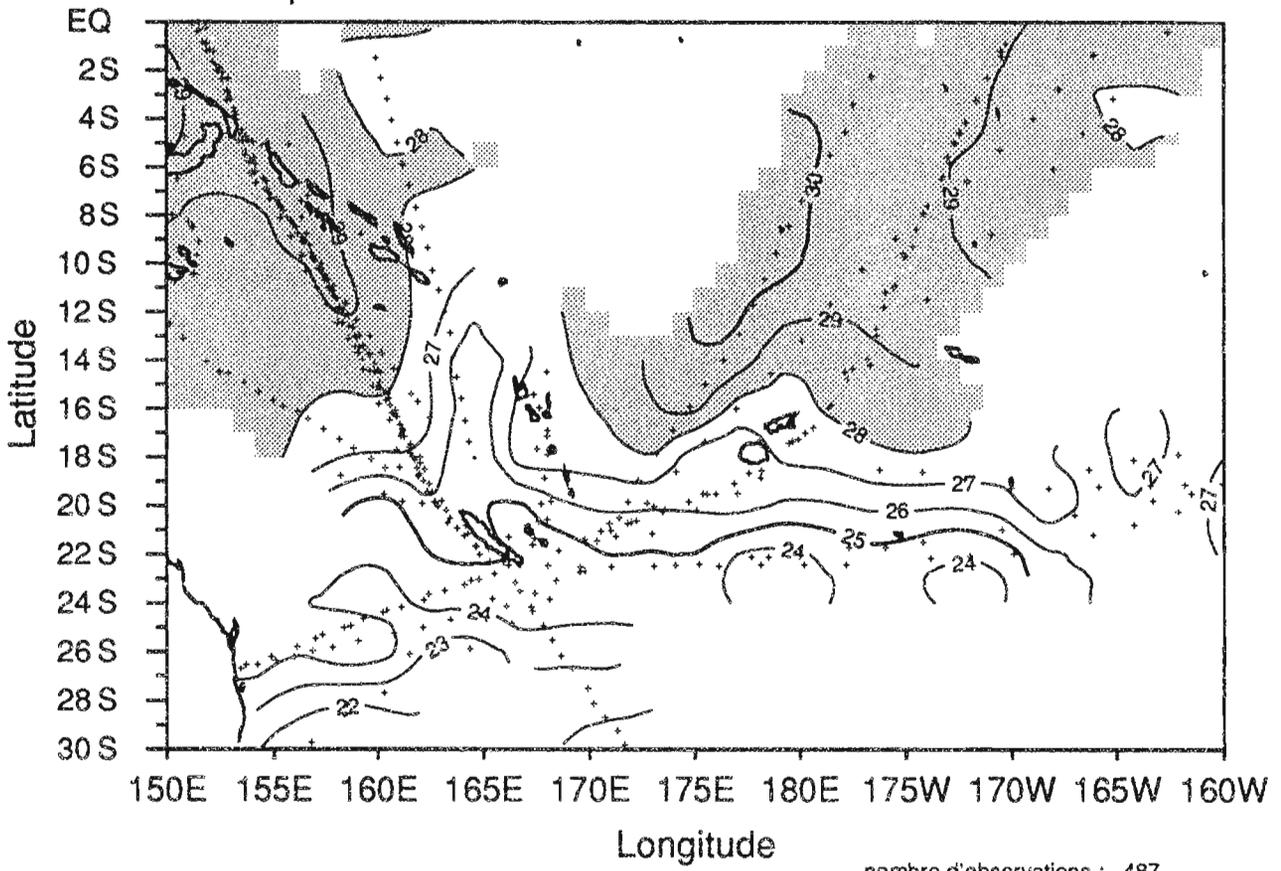
Temperature de surface du 01/03/76 au 30/04/76



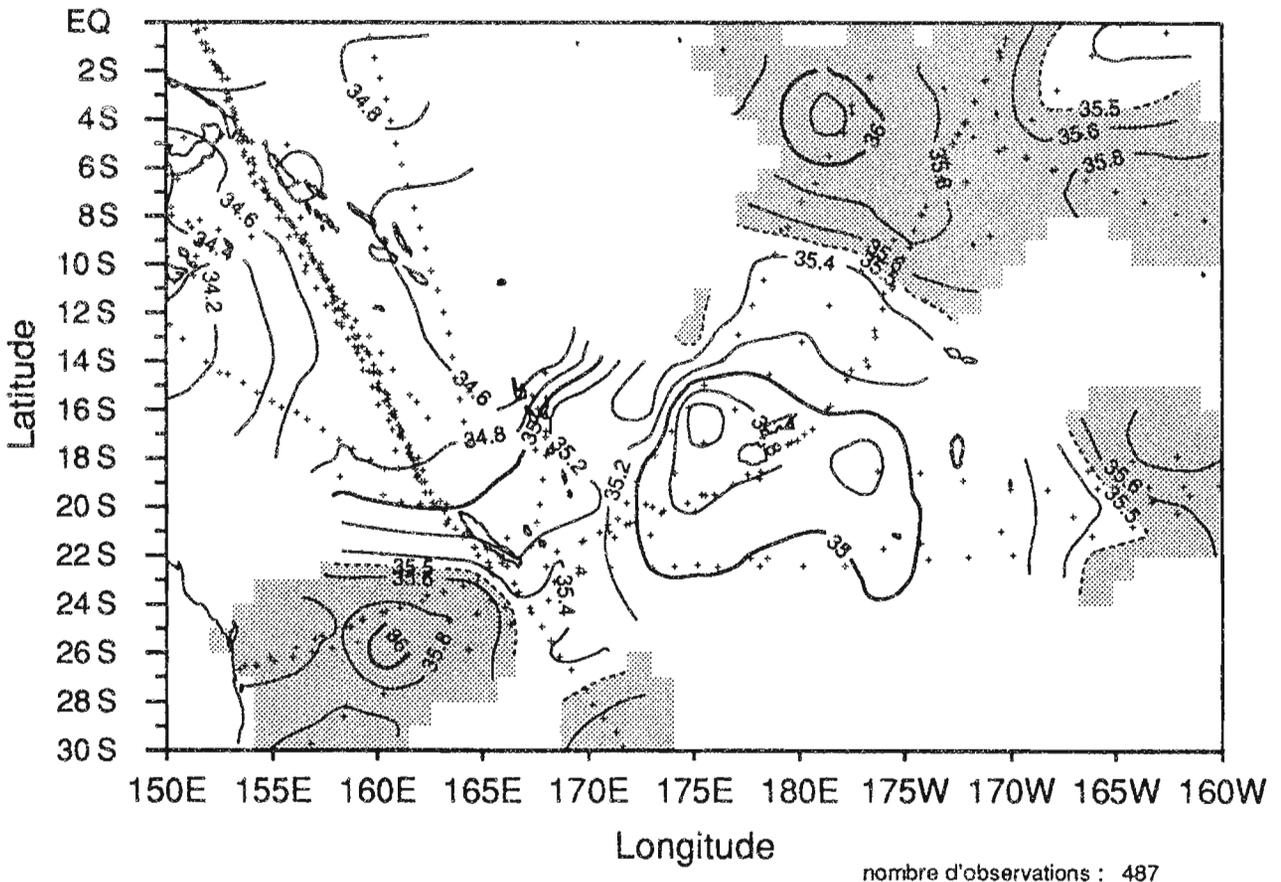
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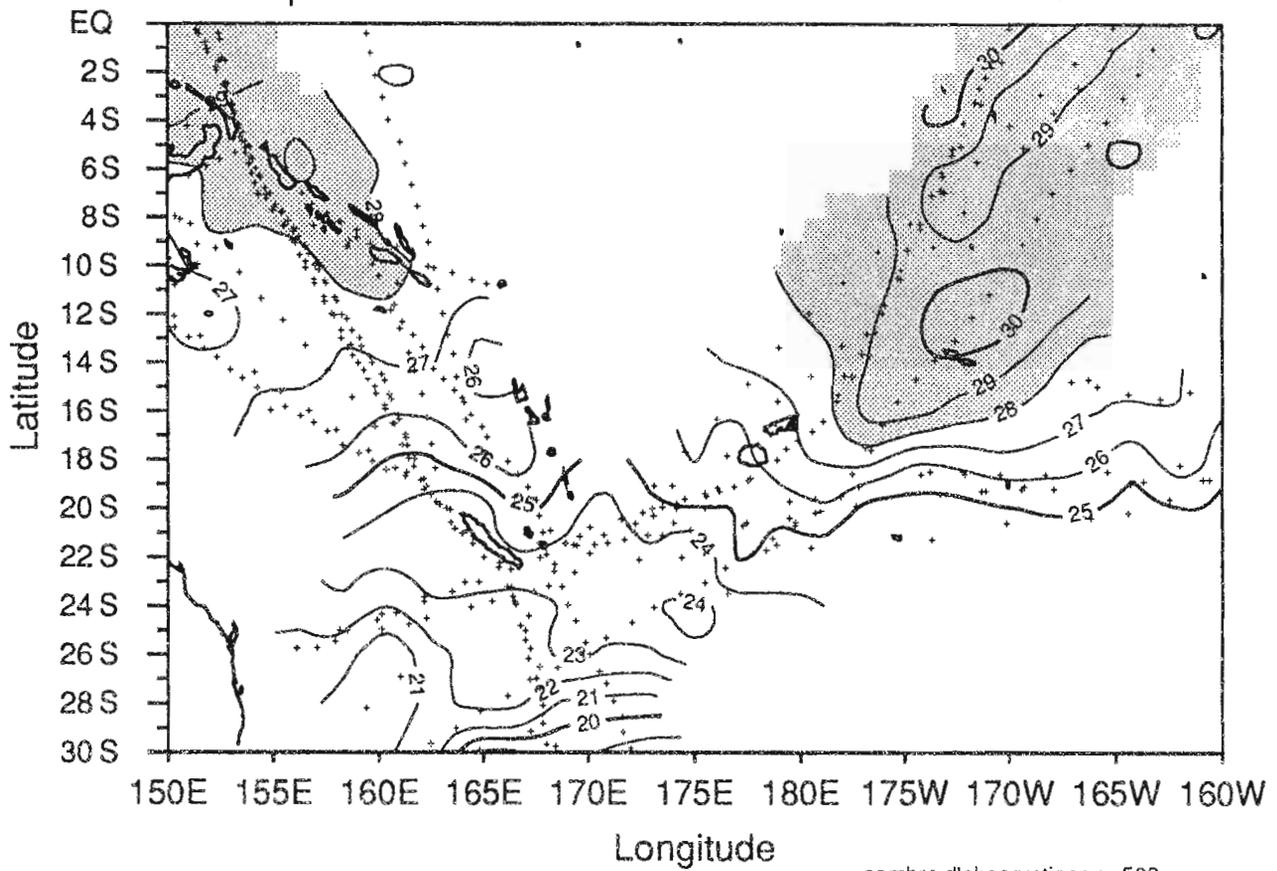
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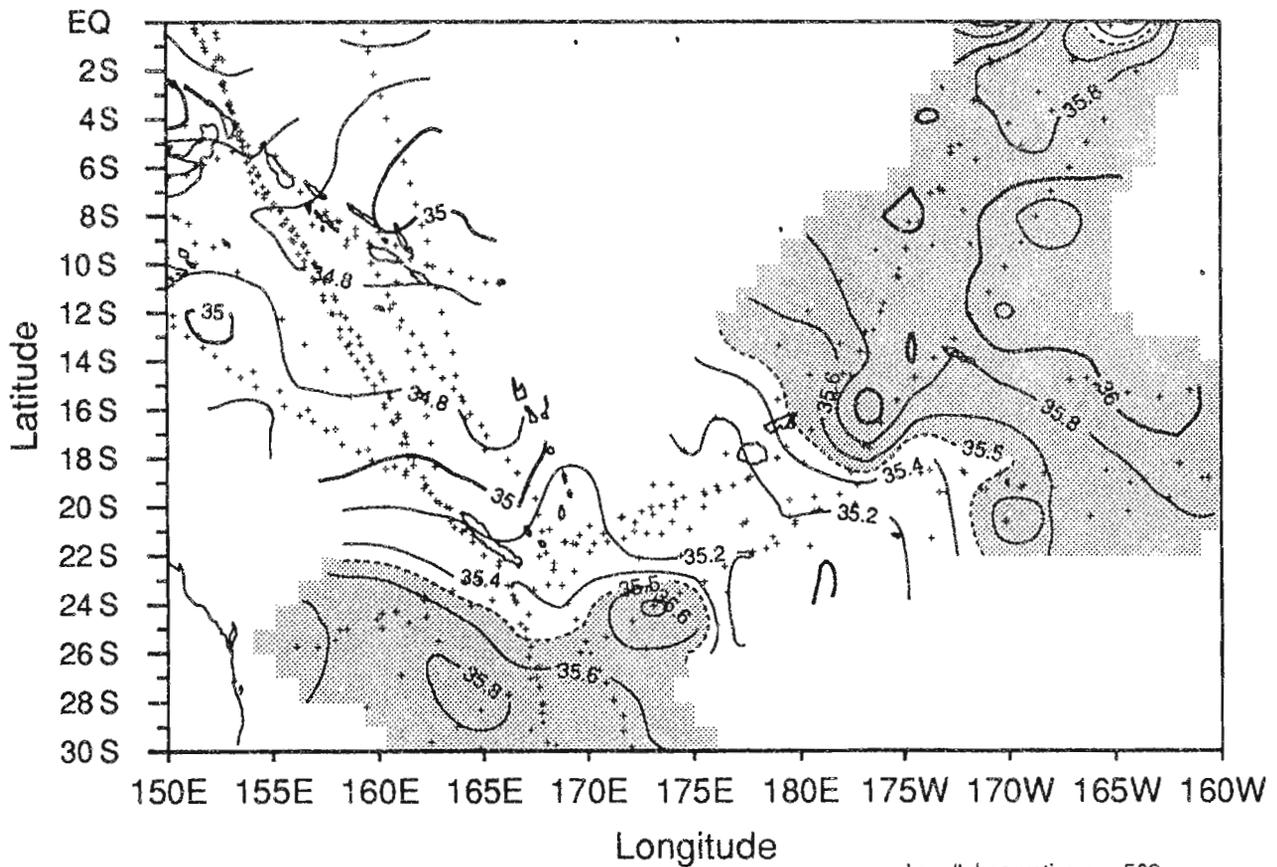
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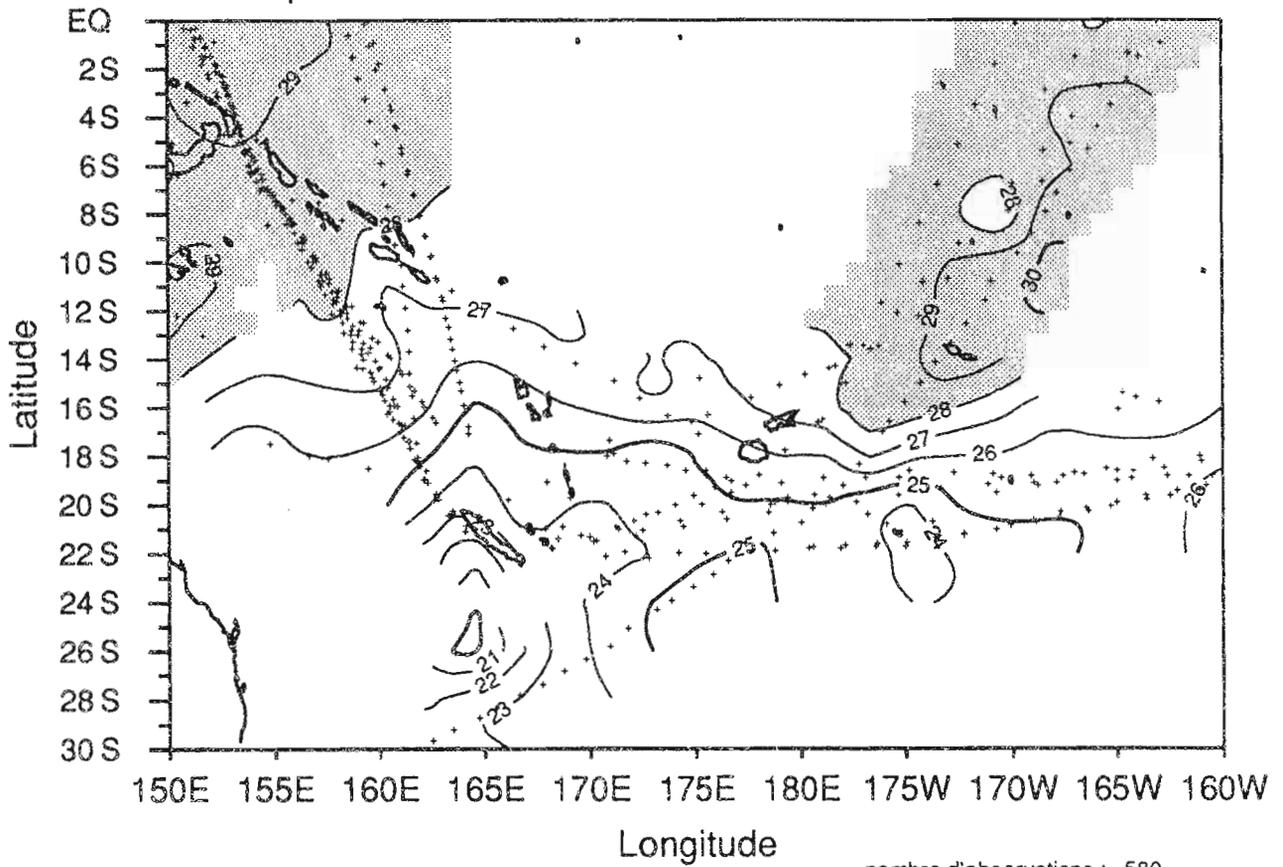
Temperature de surface du 01/07/76 au 31/08/76



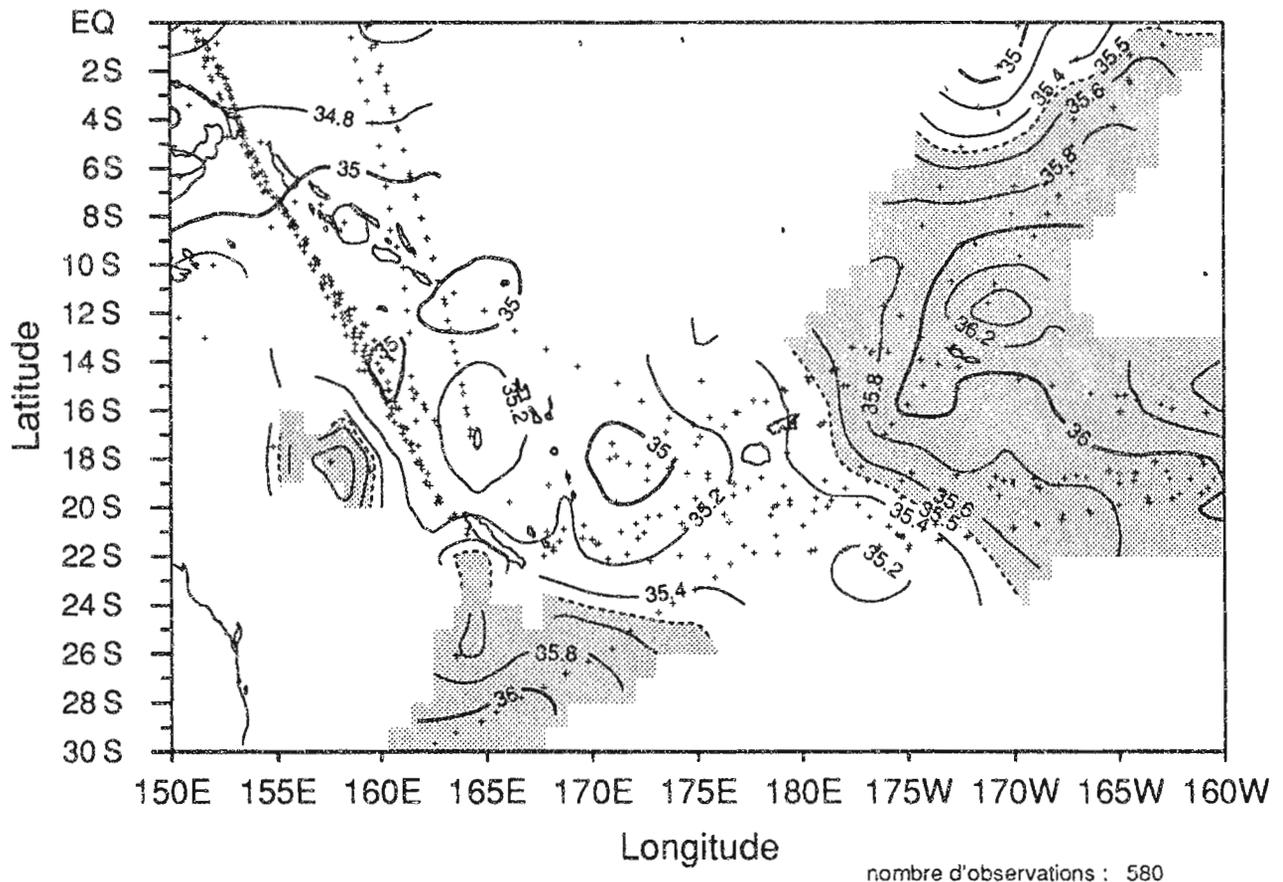
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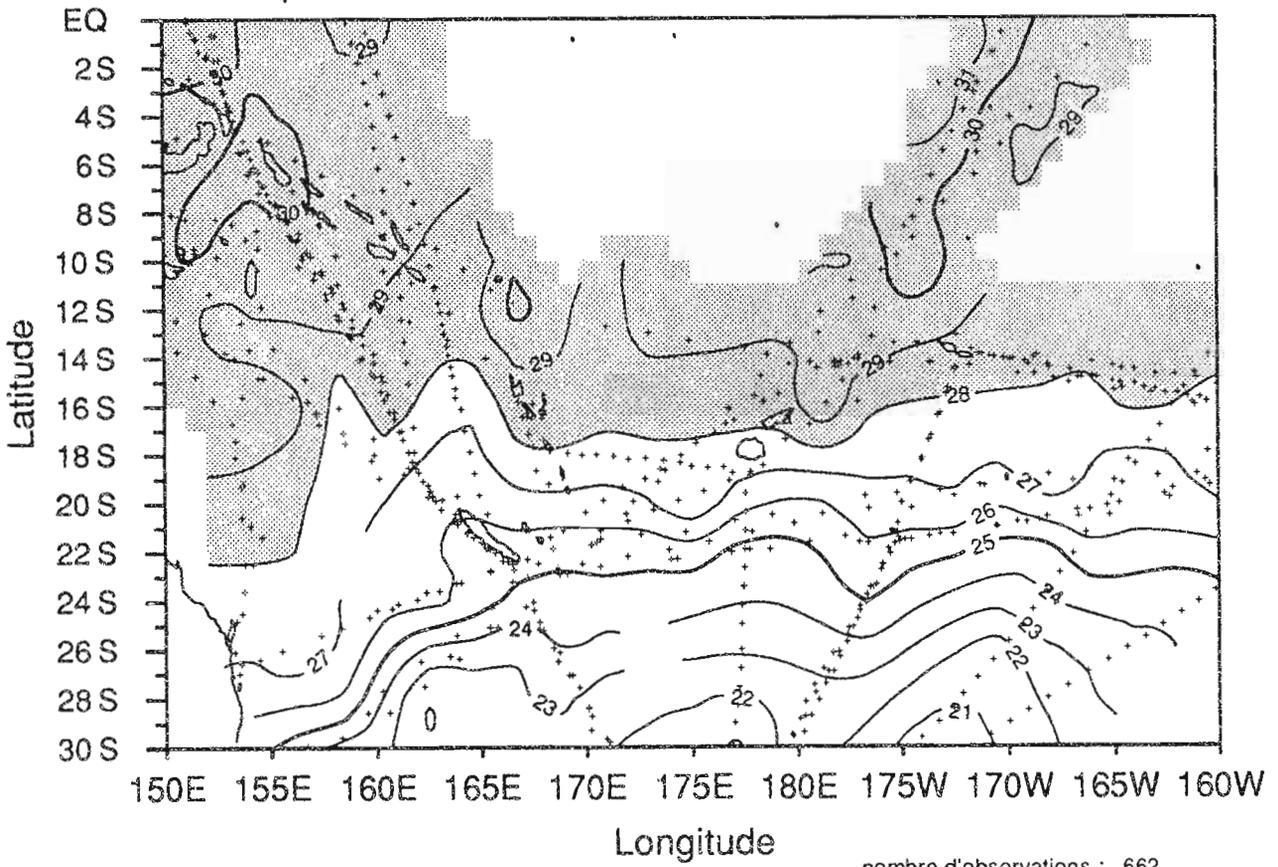
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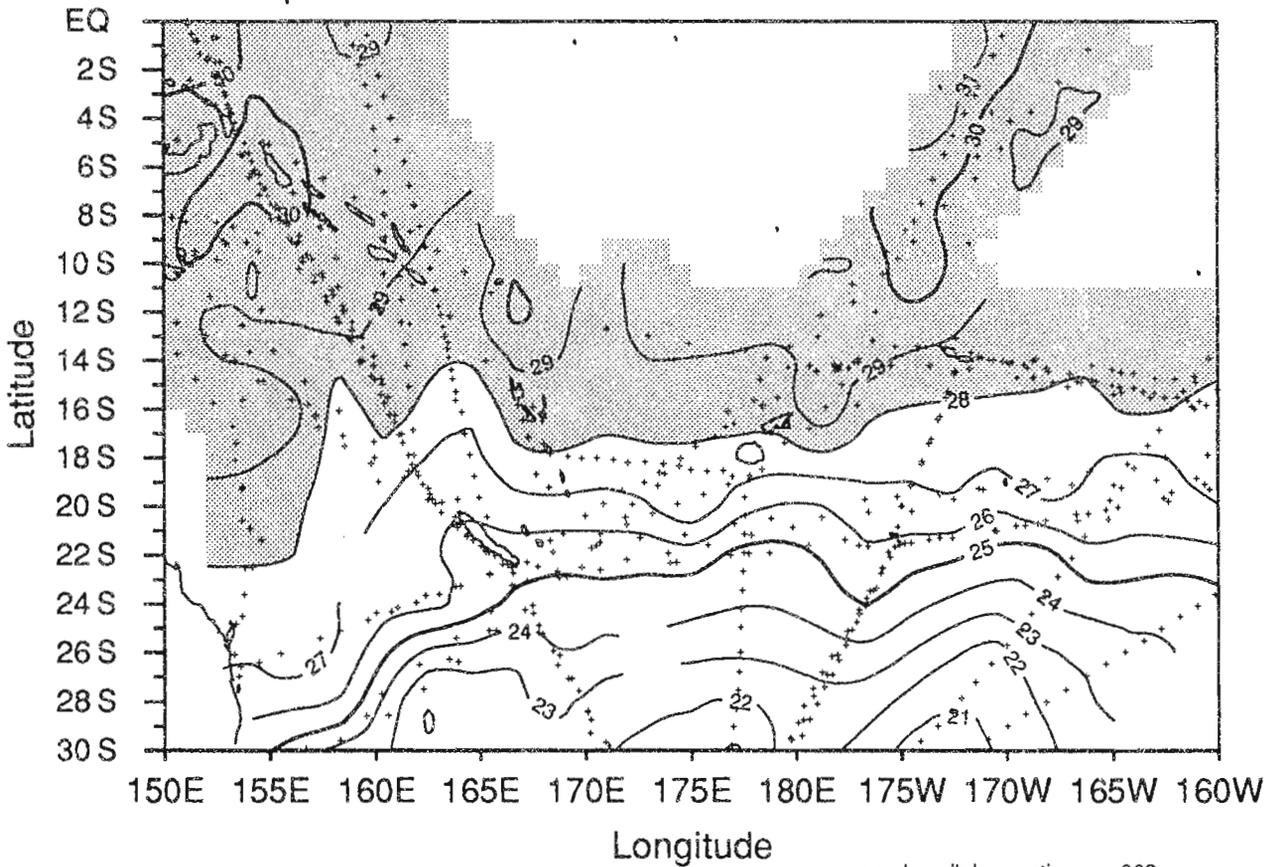
Salinite de surface du 01/09/76 au 31/10/76



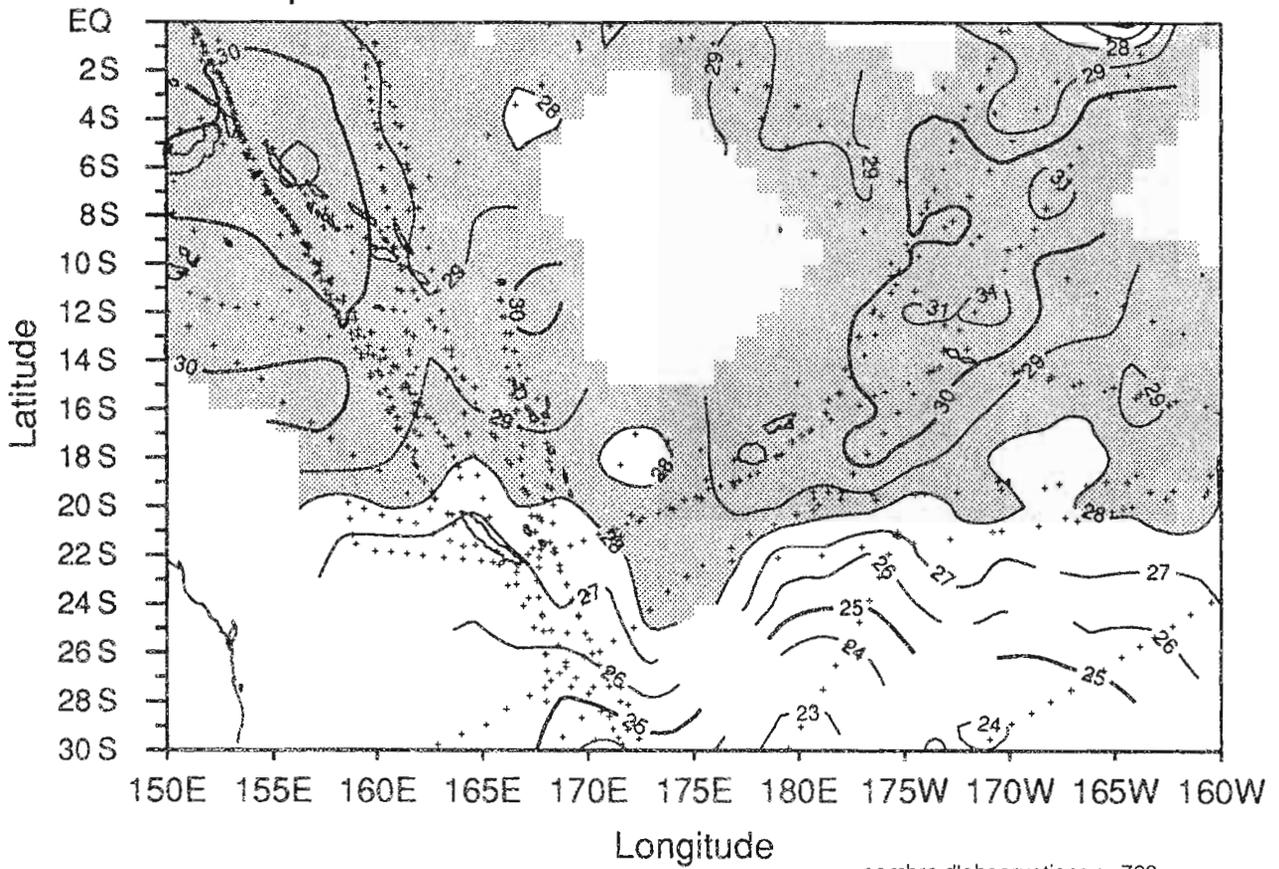
Temperature de surface du 01/11/76 au 31/12/76



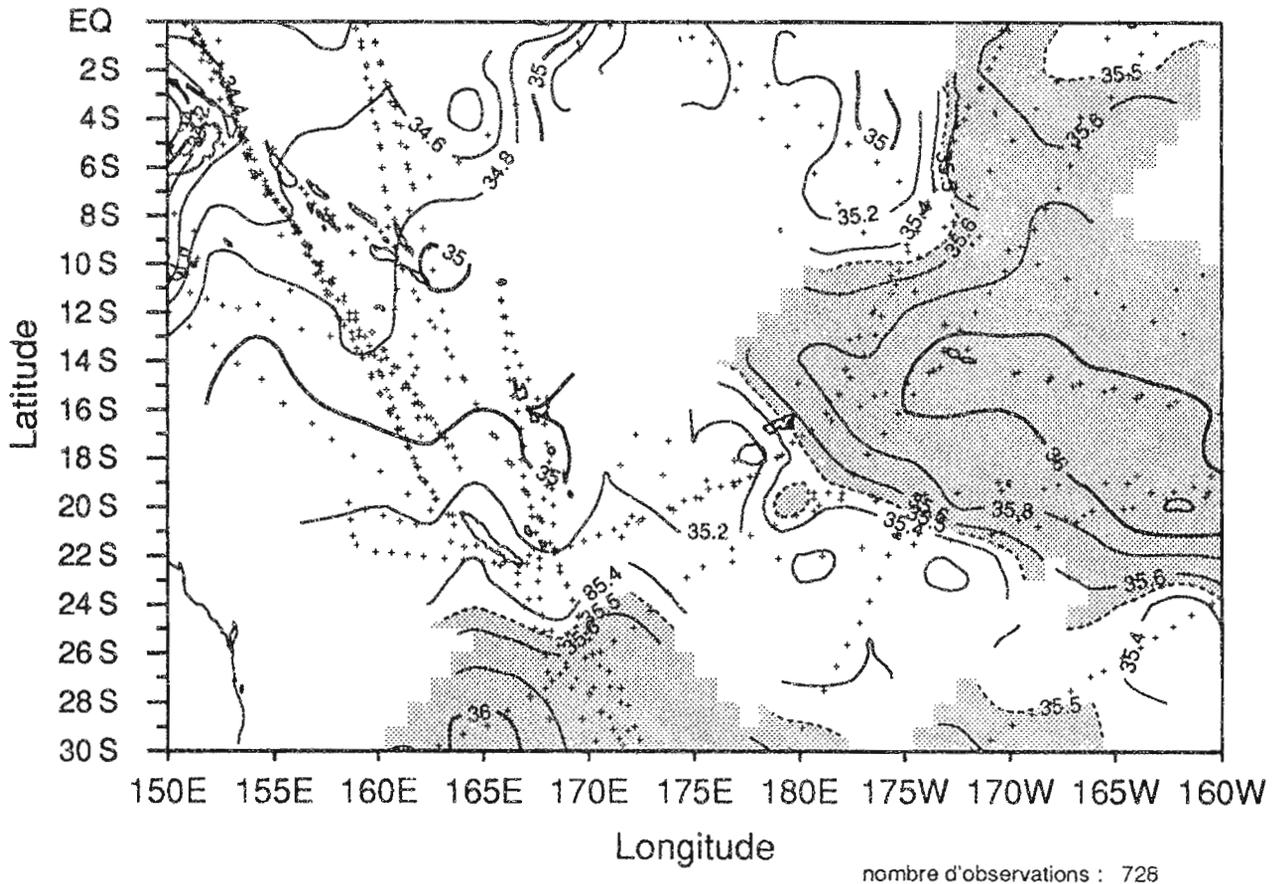
Temperature de surface du 01/11/76 au 31/12/76



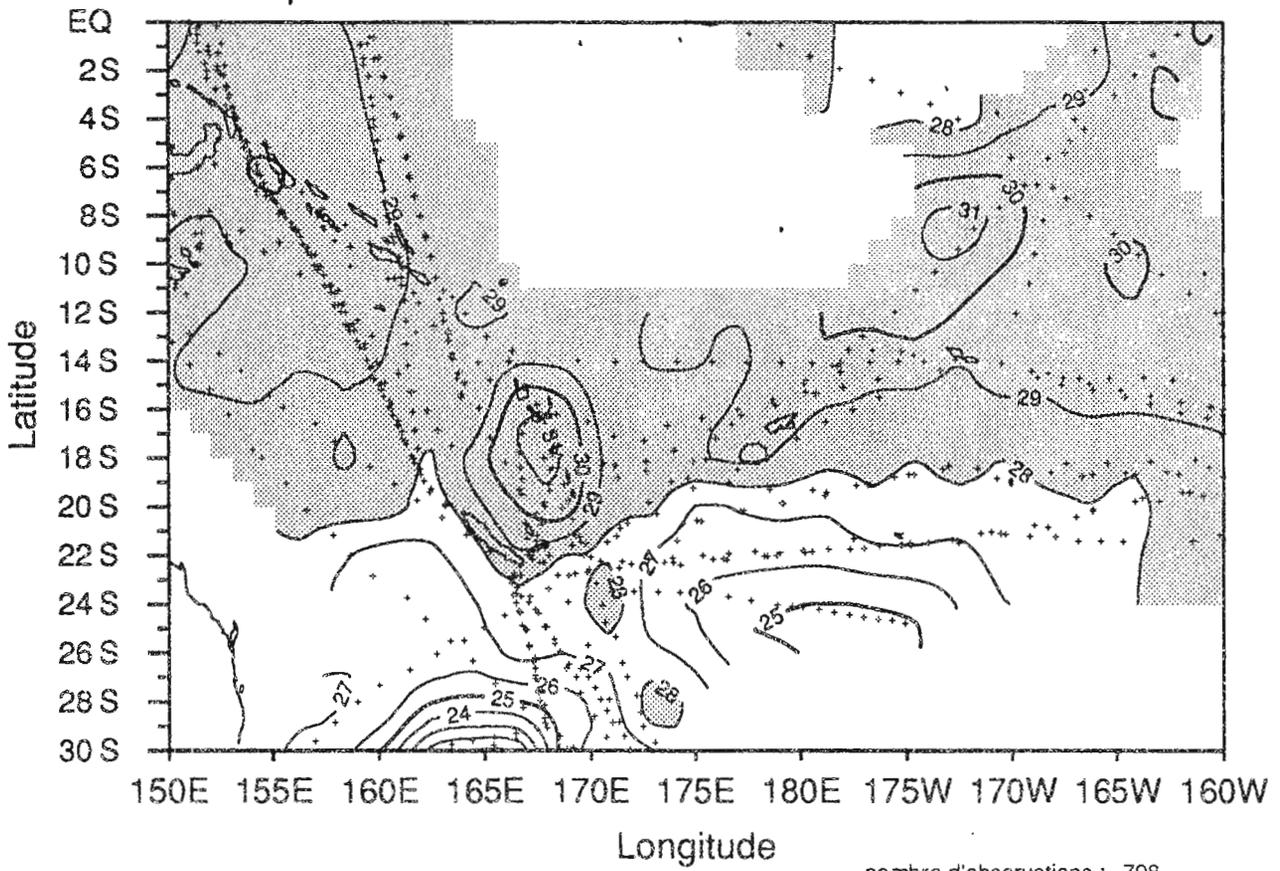
Temperature de surface du 01/01/77 au 28/02/77



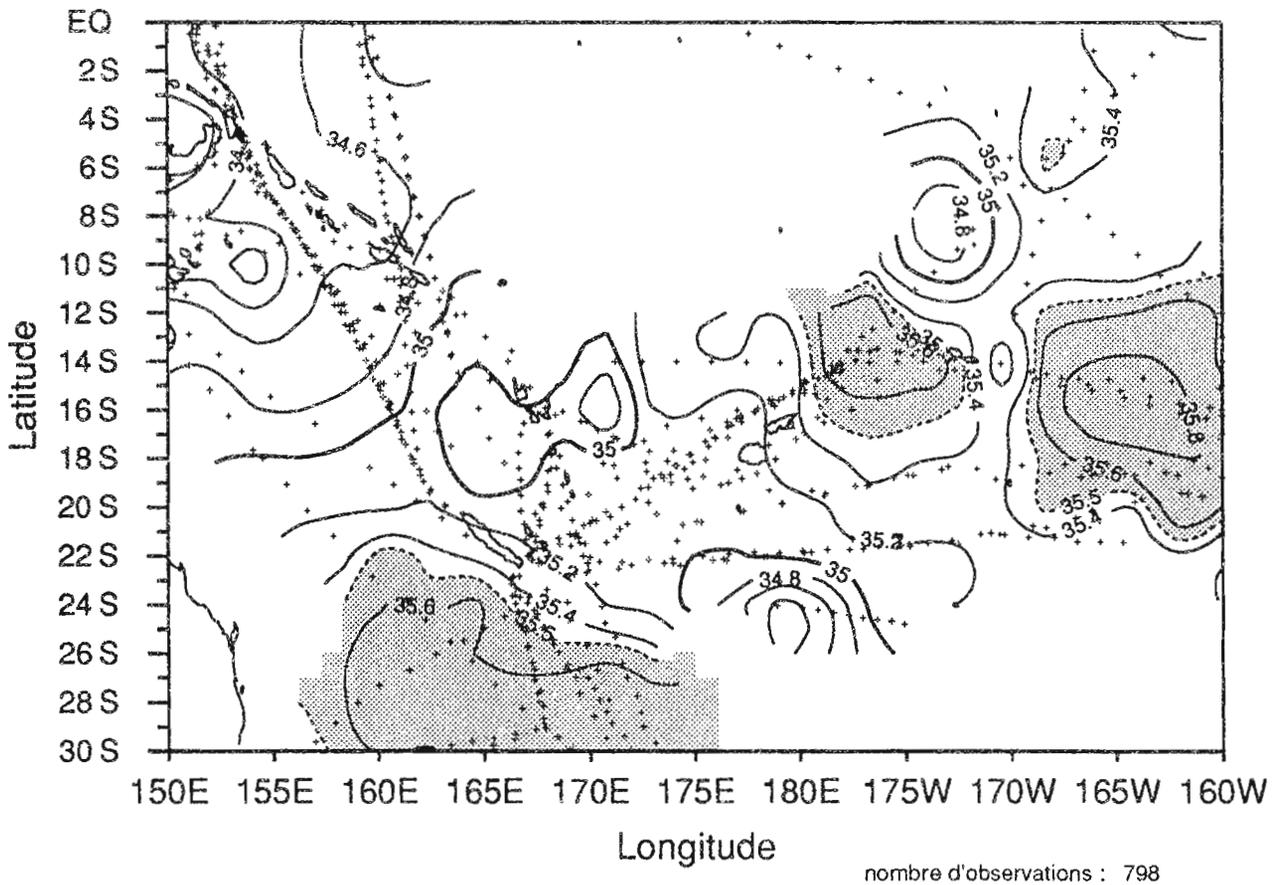
Salinite de surface du 01/01/77 au 28/02/77



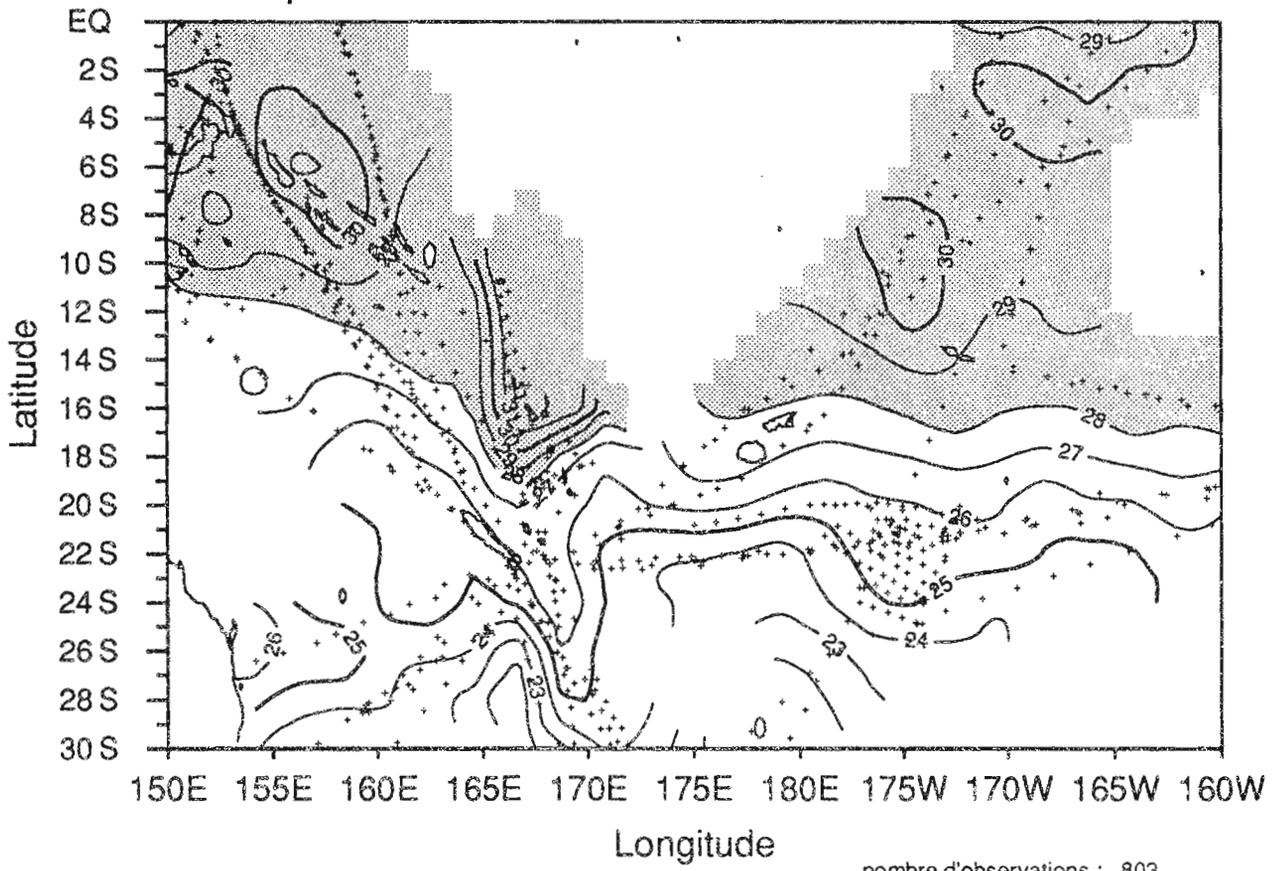
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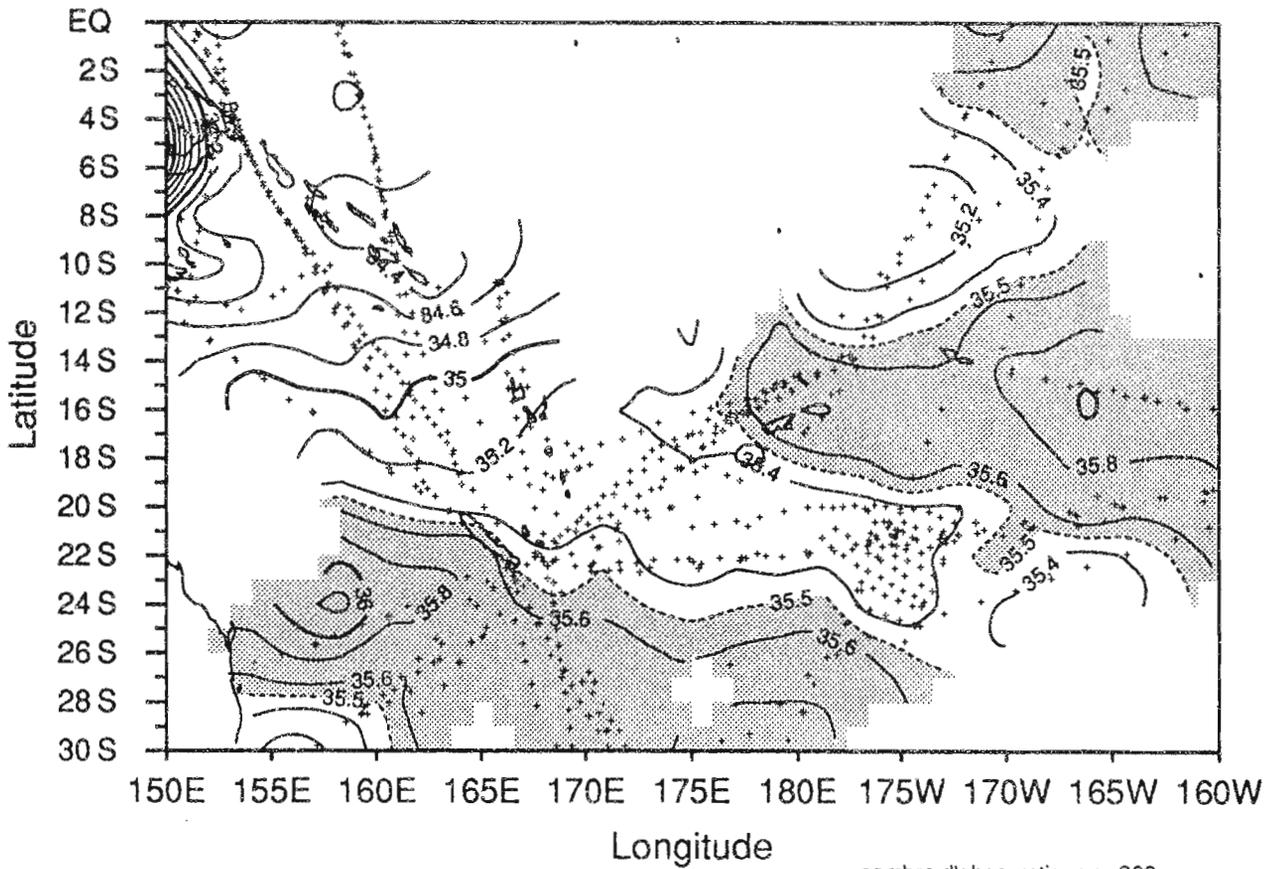
Salinite de surface du 01/03/77 au 30/04/77



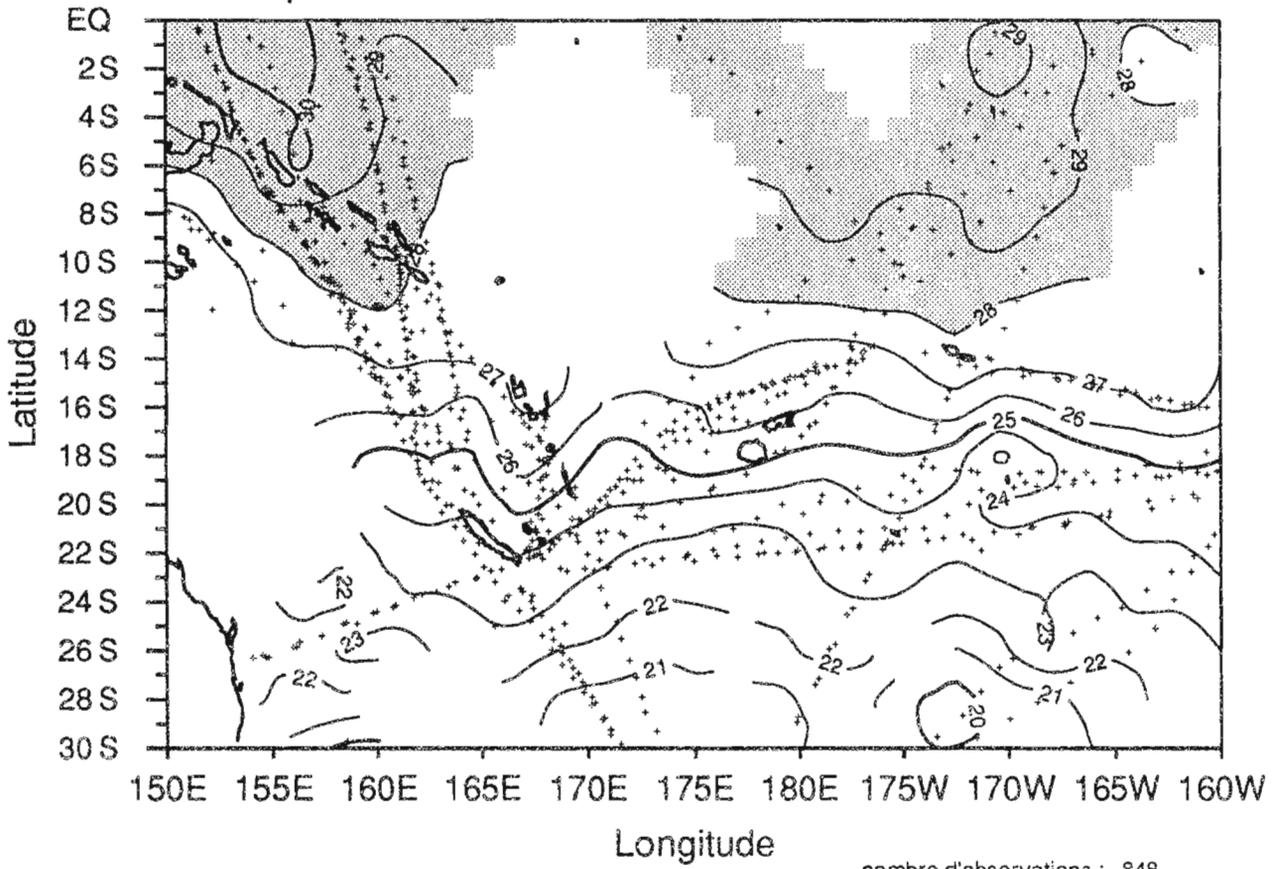
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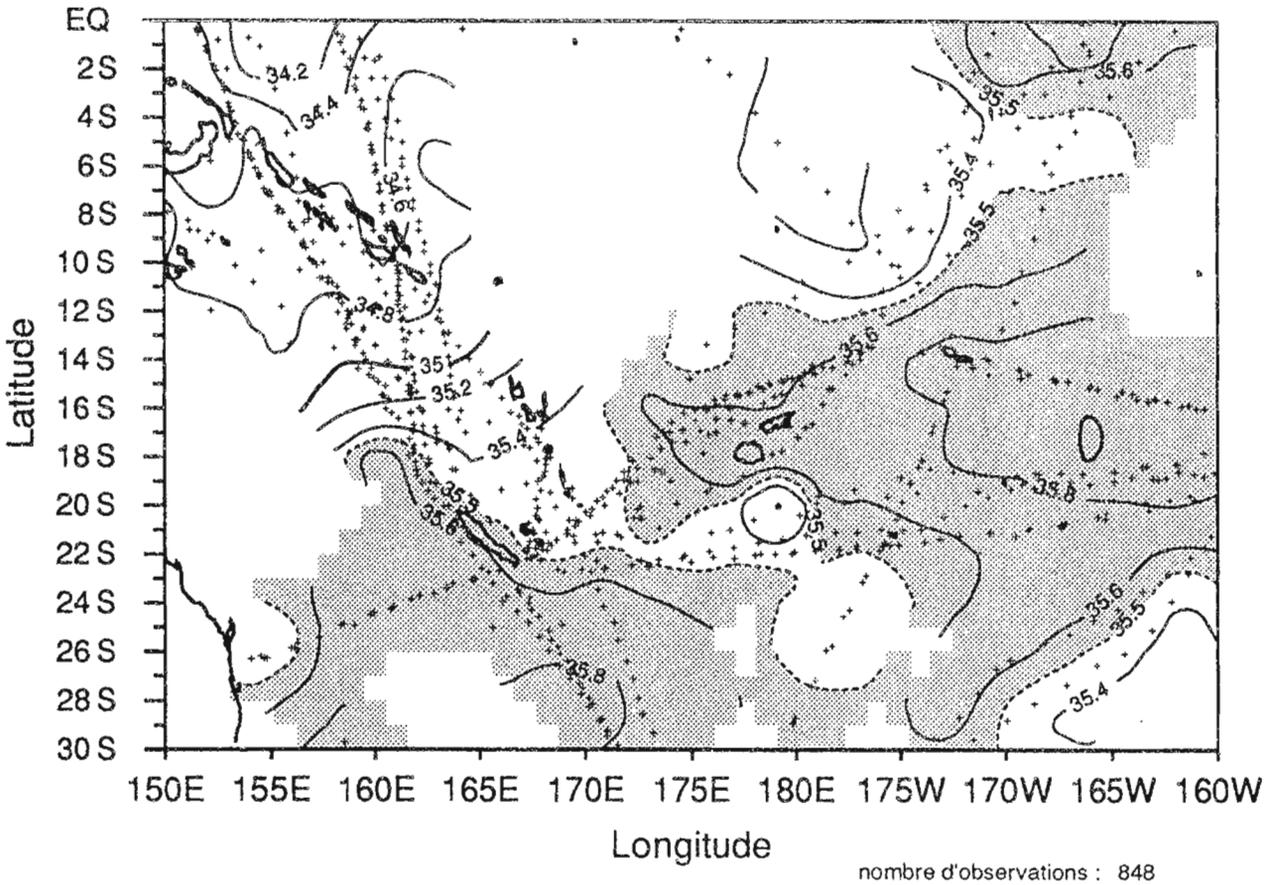
Salinite de surface du 01/05/77 au 30/06/77



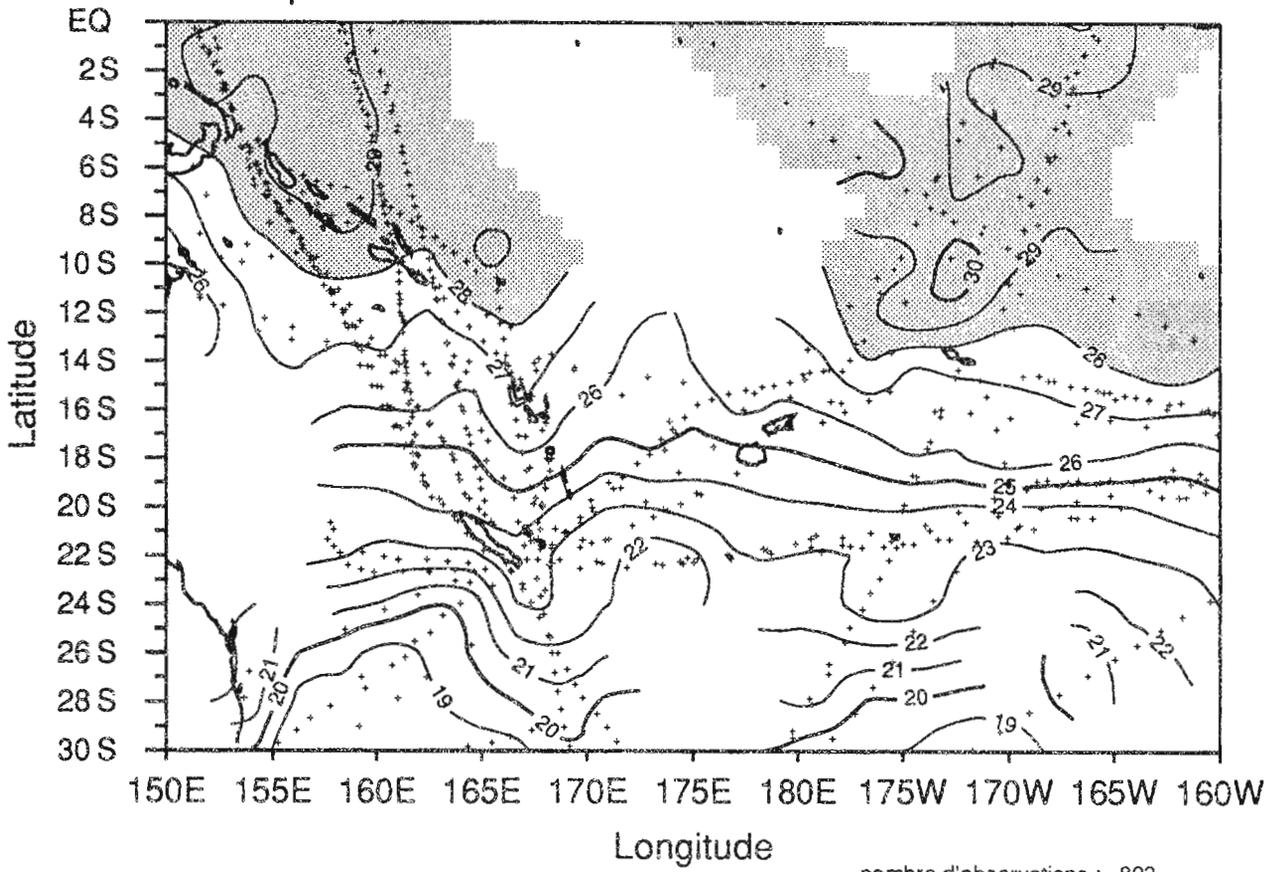
Temperature de surface du 01/07/77 au 31/08/77



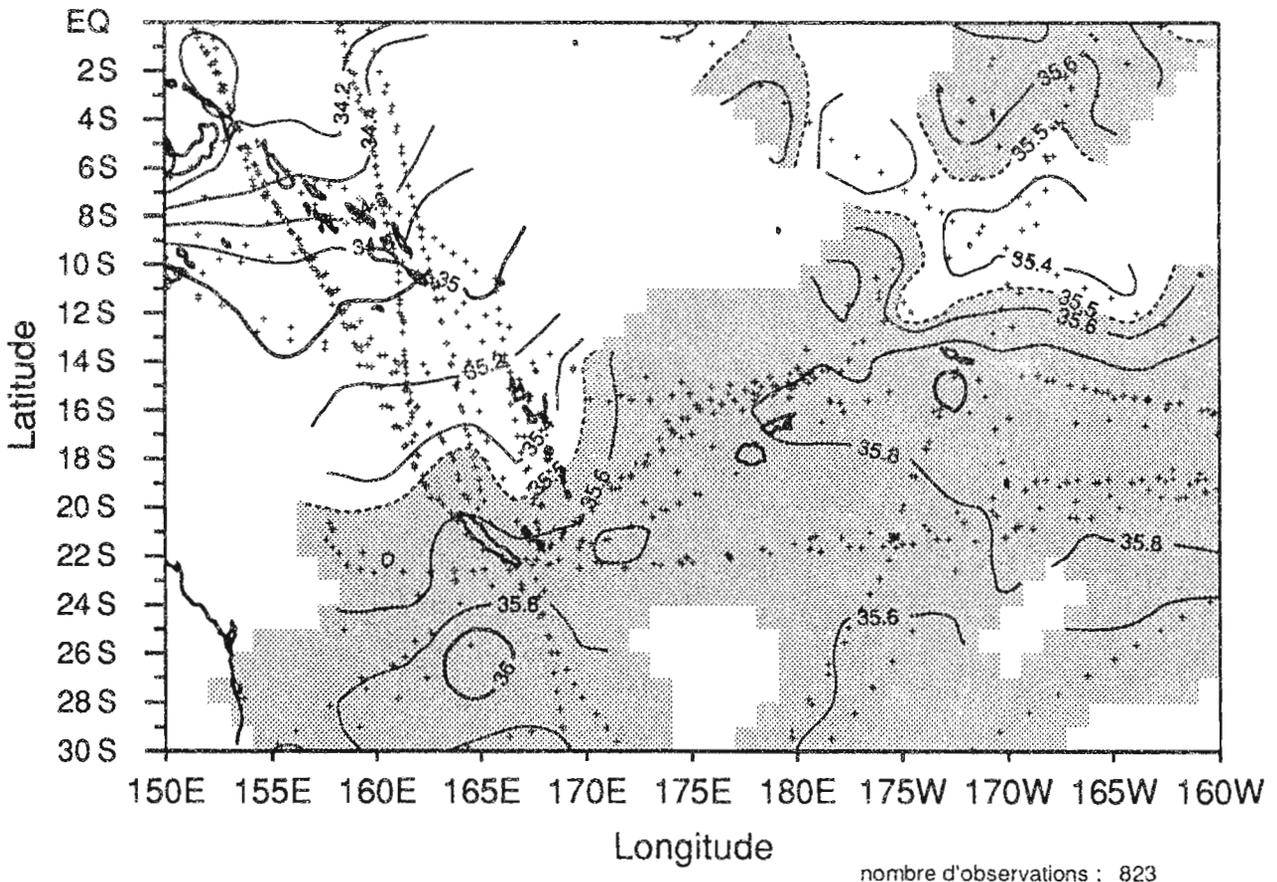
Salinite de surface du 01/07/77 au 31/08/77



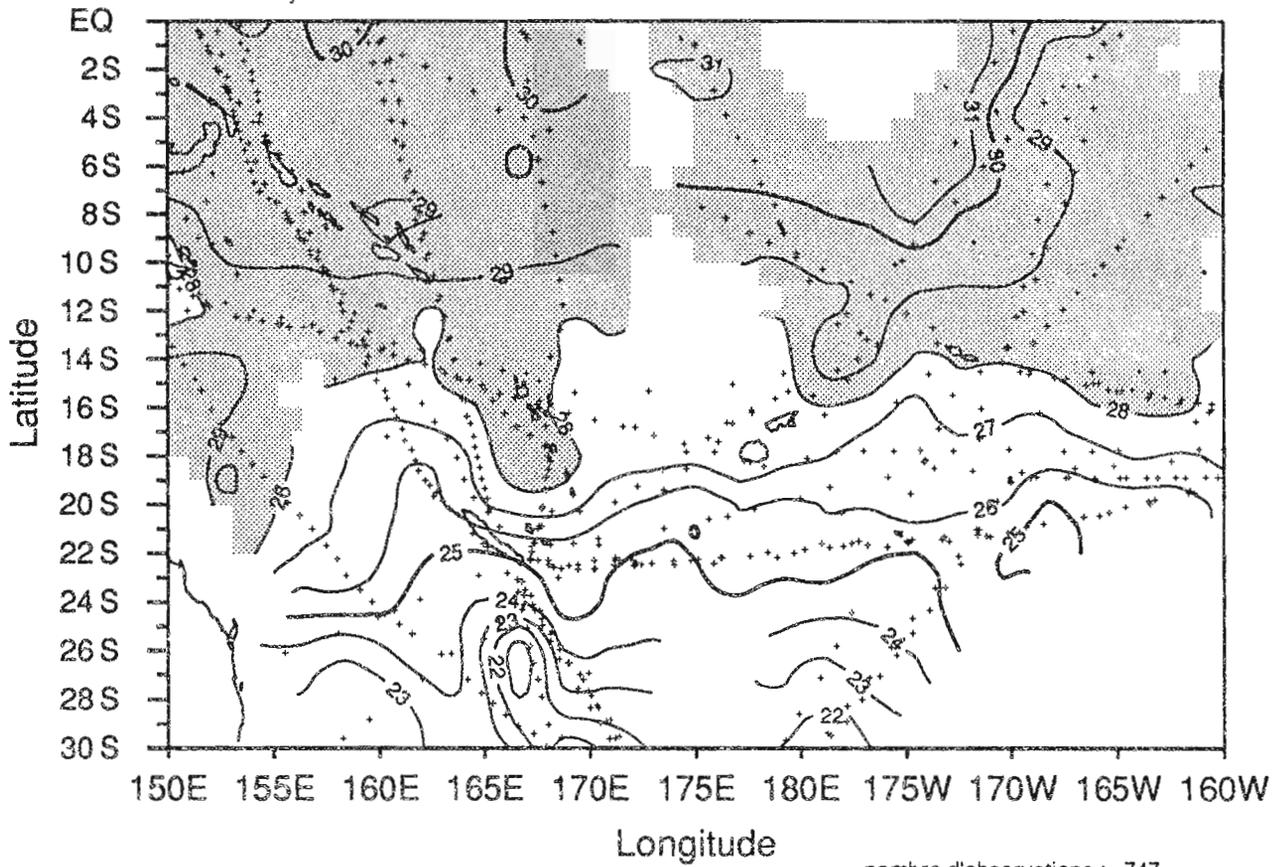
Temperature de surface du 01/09/77 au 31/10/77



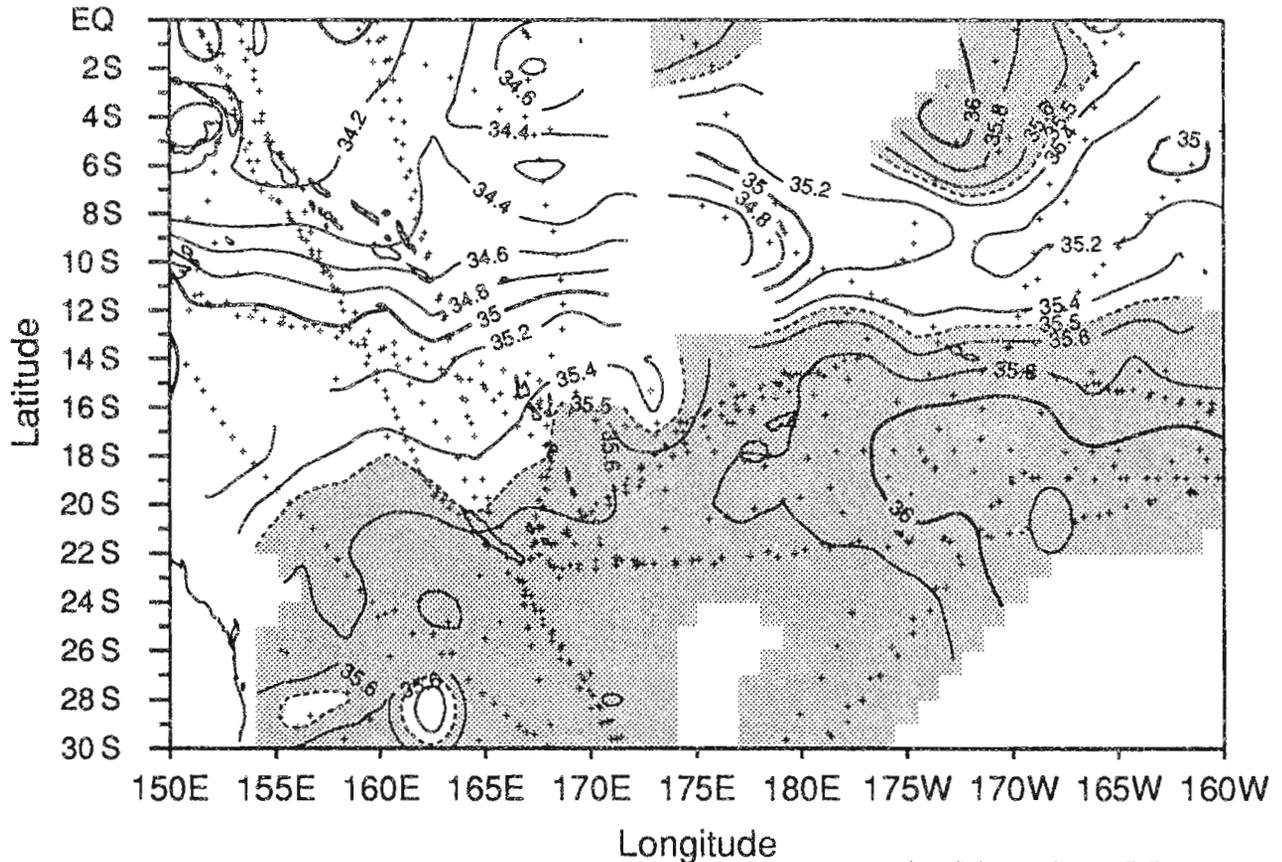
Salinite de surface du 01/09/77 au 31/10/77



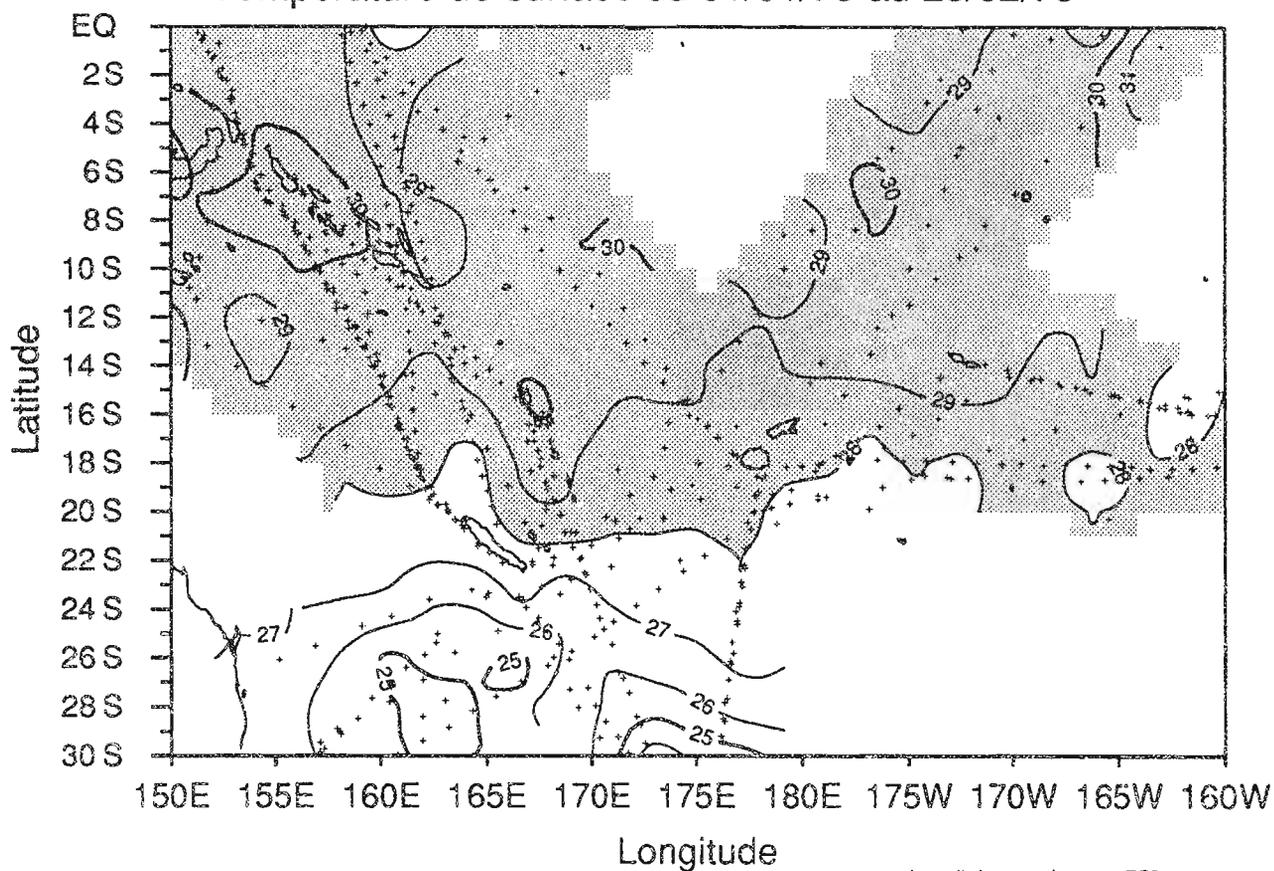
Temperature de surface du 01/11/77 au 31/12/77



Salinite de surface du 01/11/77 au 31/12/77

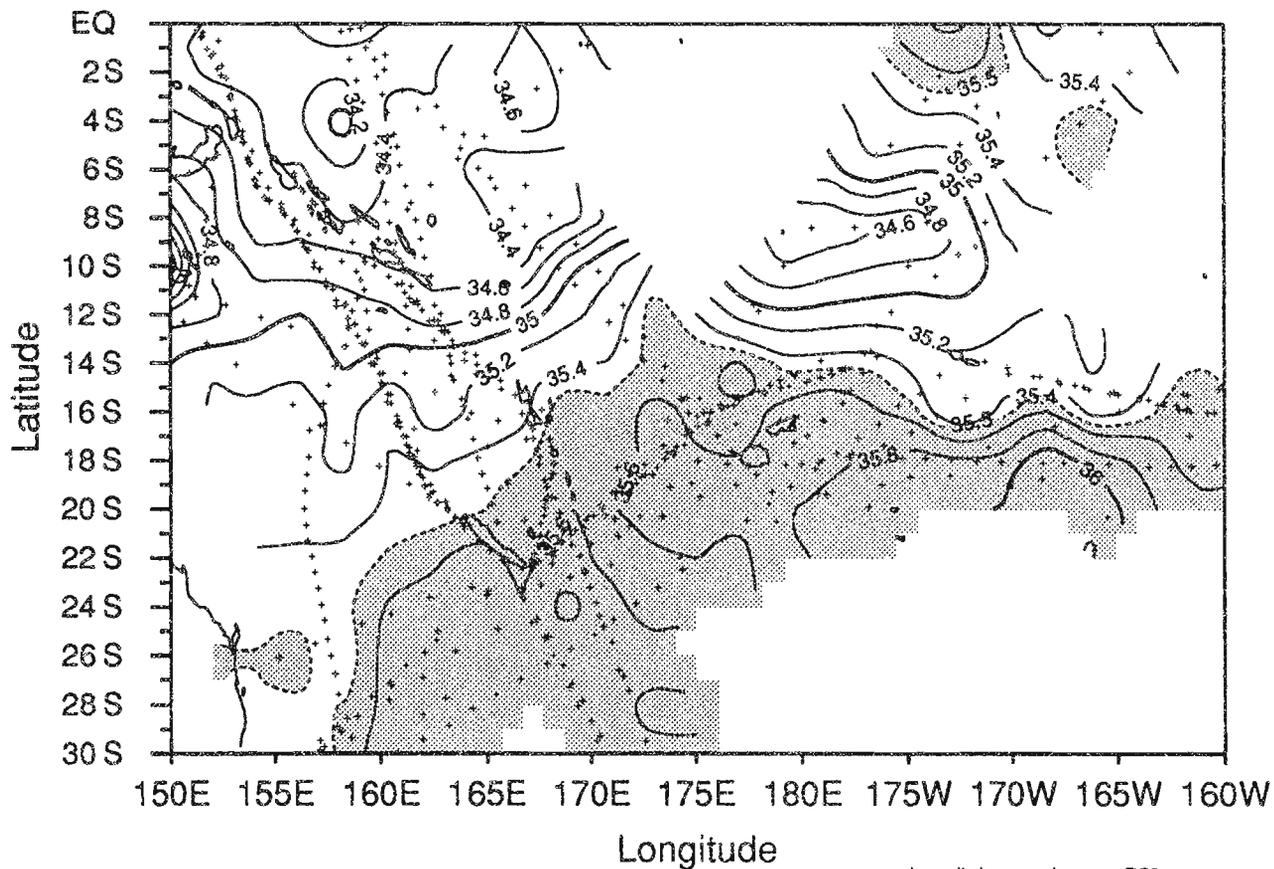


Temperature de surface du 01/01/78 au 28/02/78



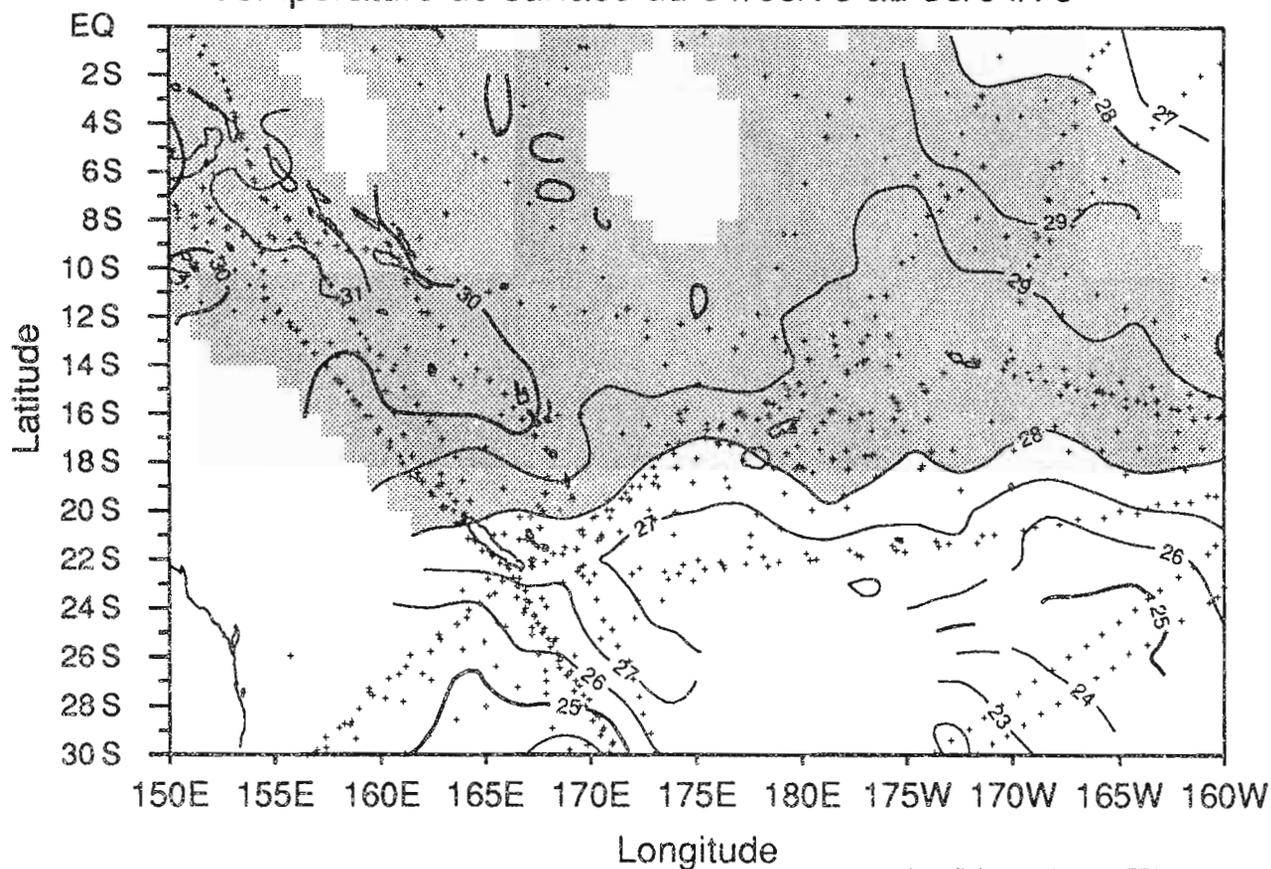
nombre d'observations : 759

Salinite de surface du 01/01/78 au 28/02/78

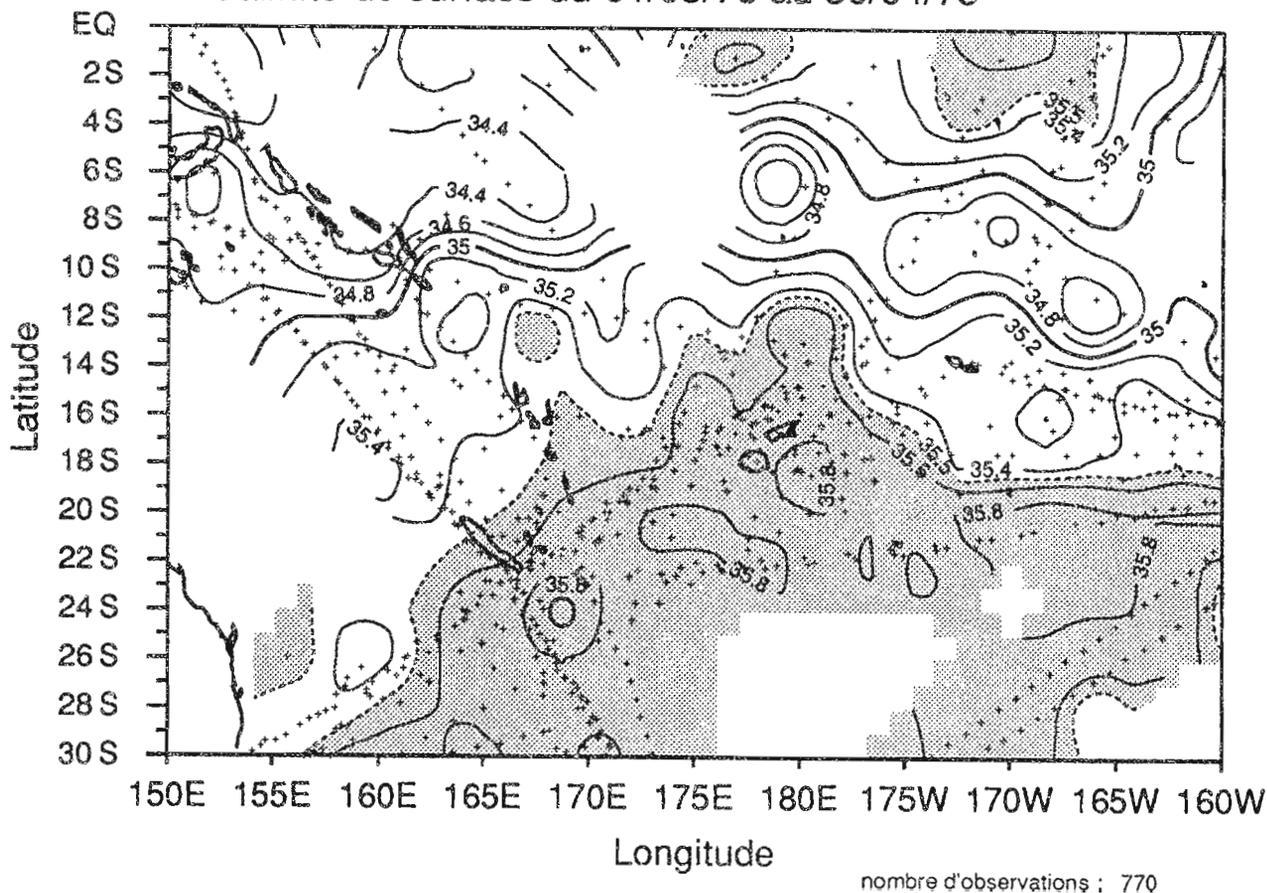


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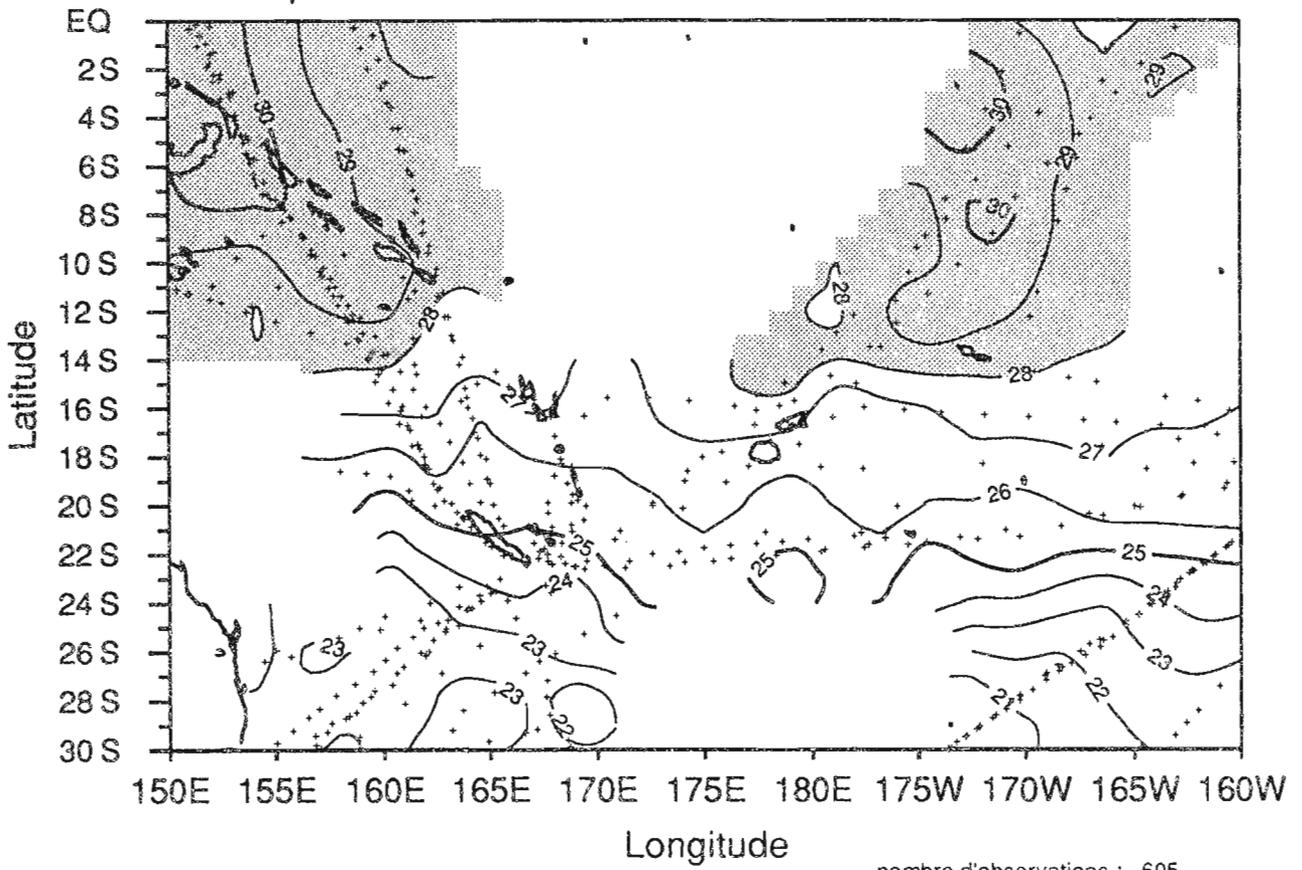
Temperature de surface du 01/03/78 au 30/04/78



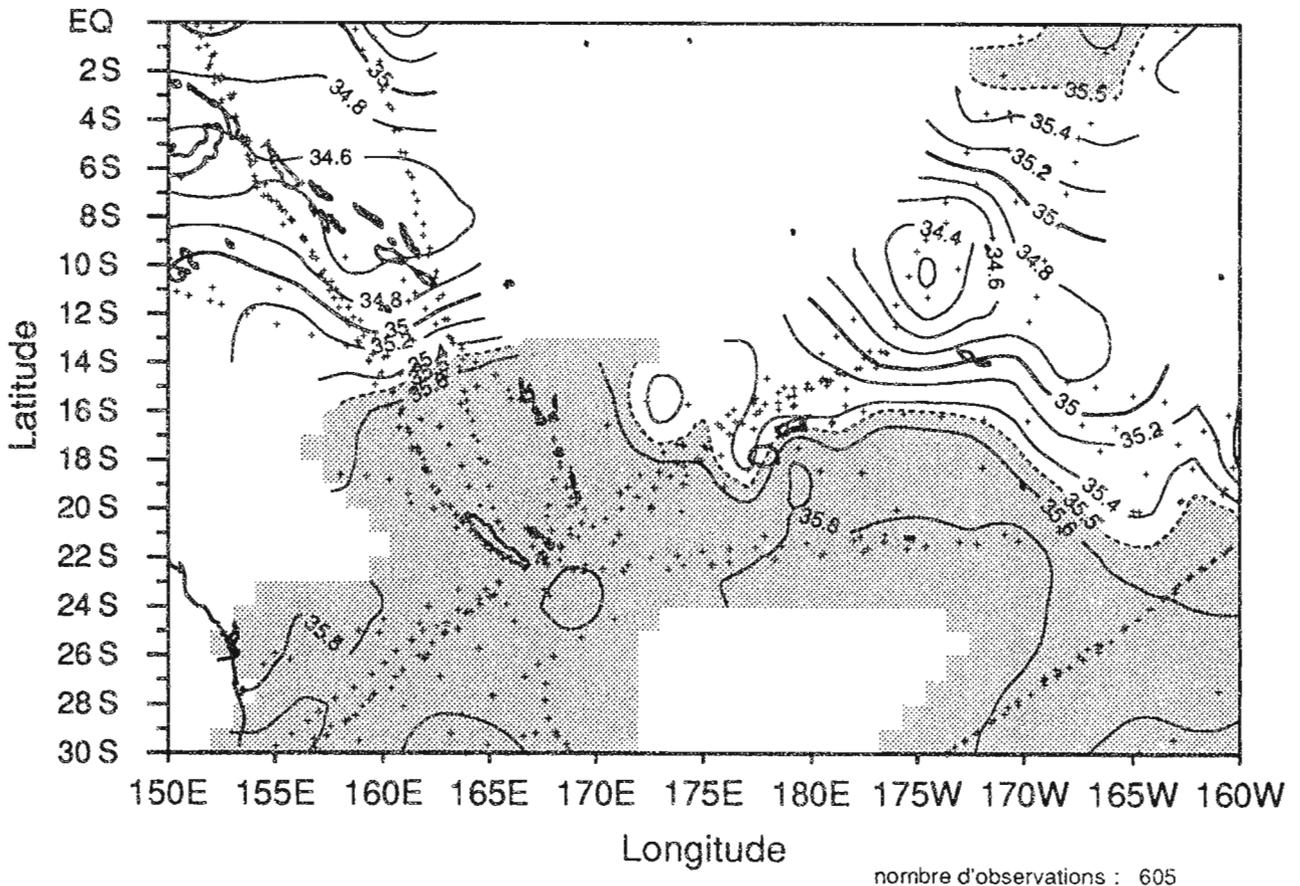
Salinite de surface du 01/03/78 au 30/04/78



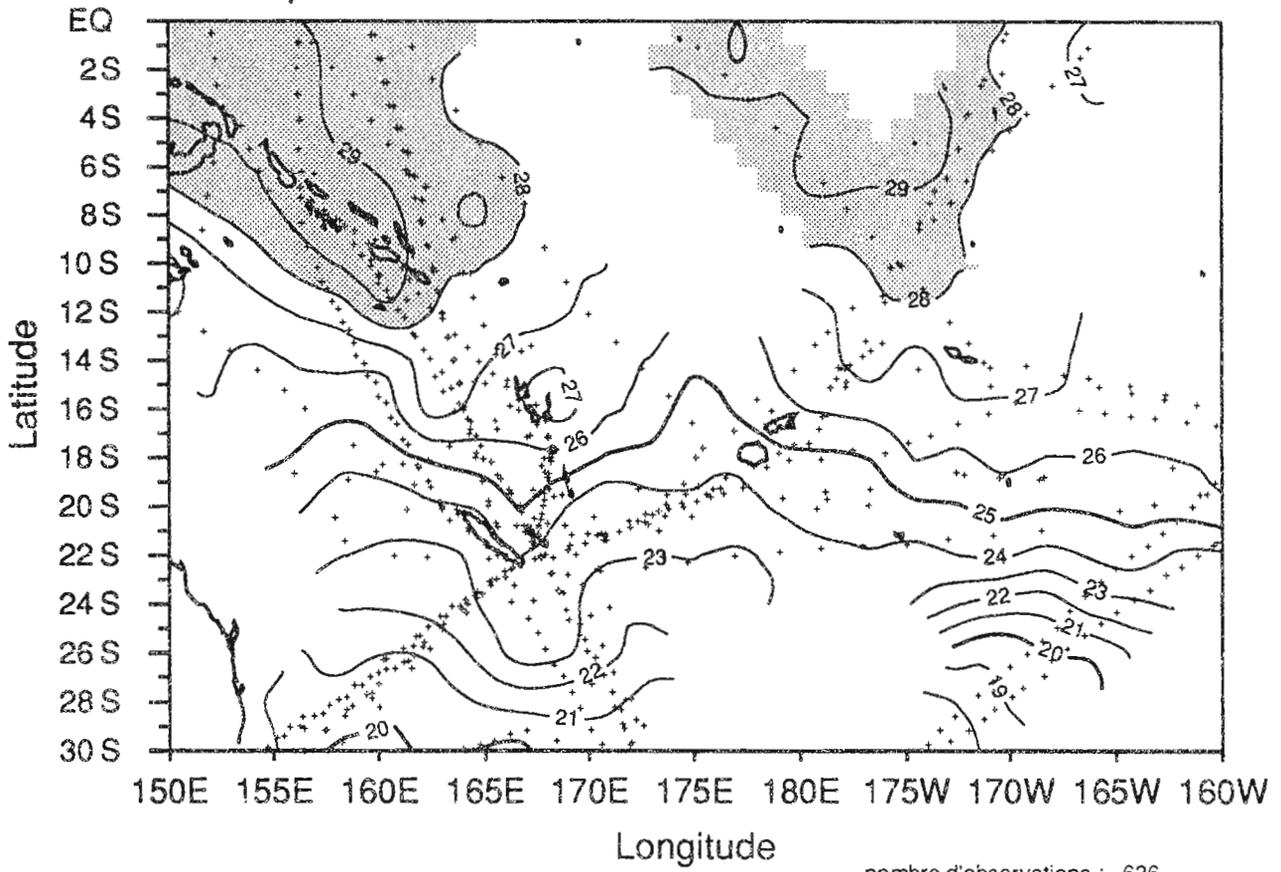
Temperature de surface du 01/05/78 au 30/06/78



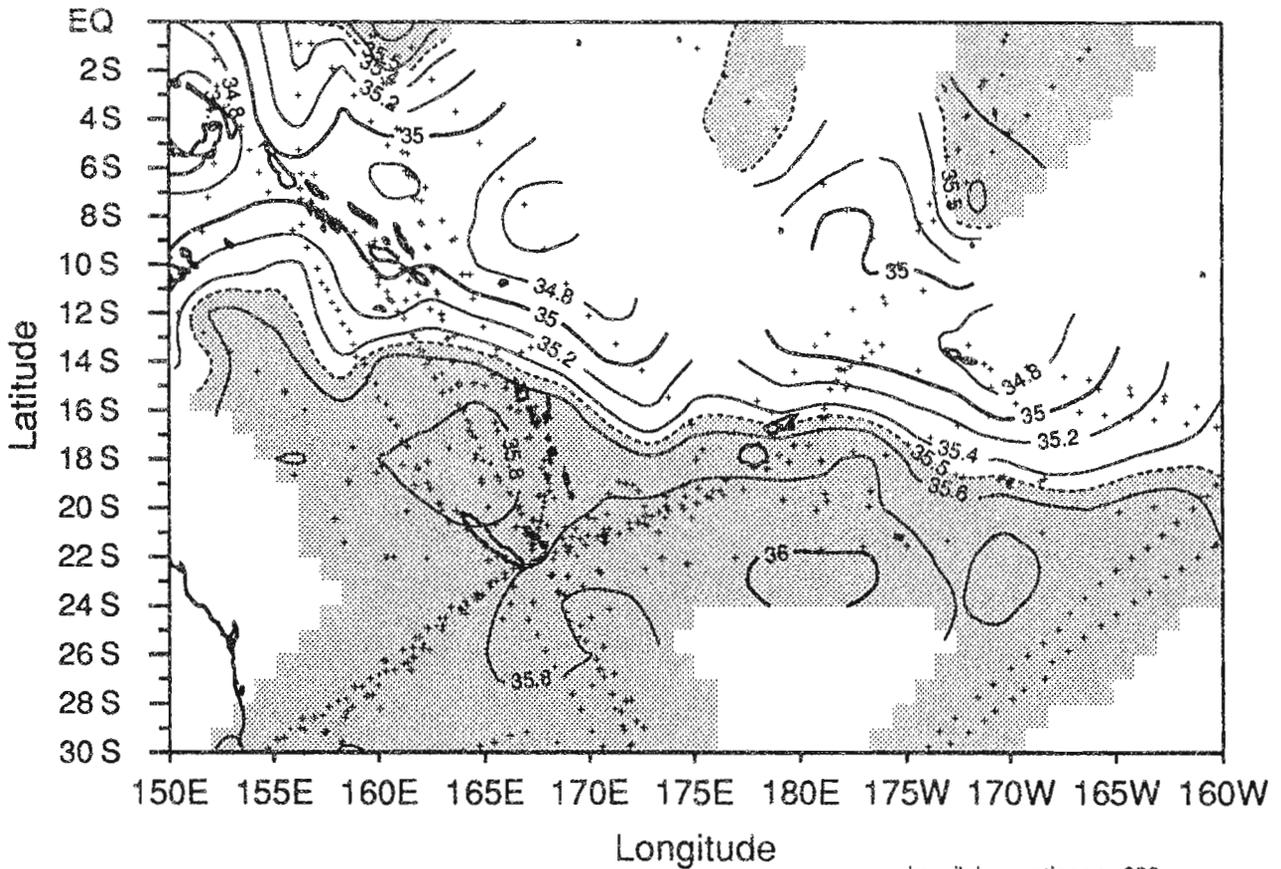
Salinite de surface du 01/05/78 au 30/06/78



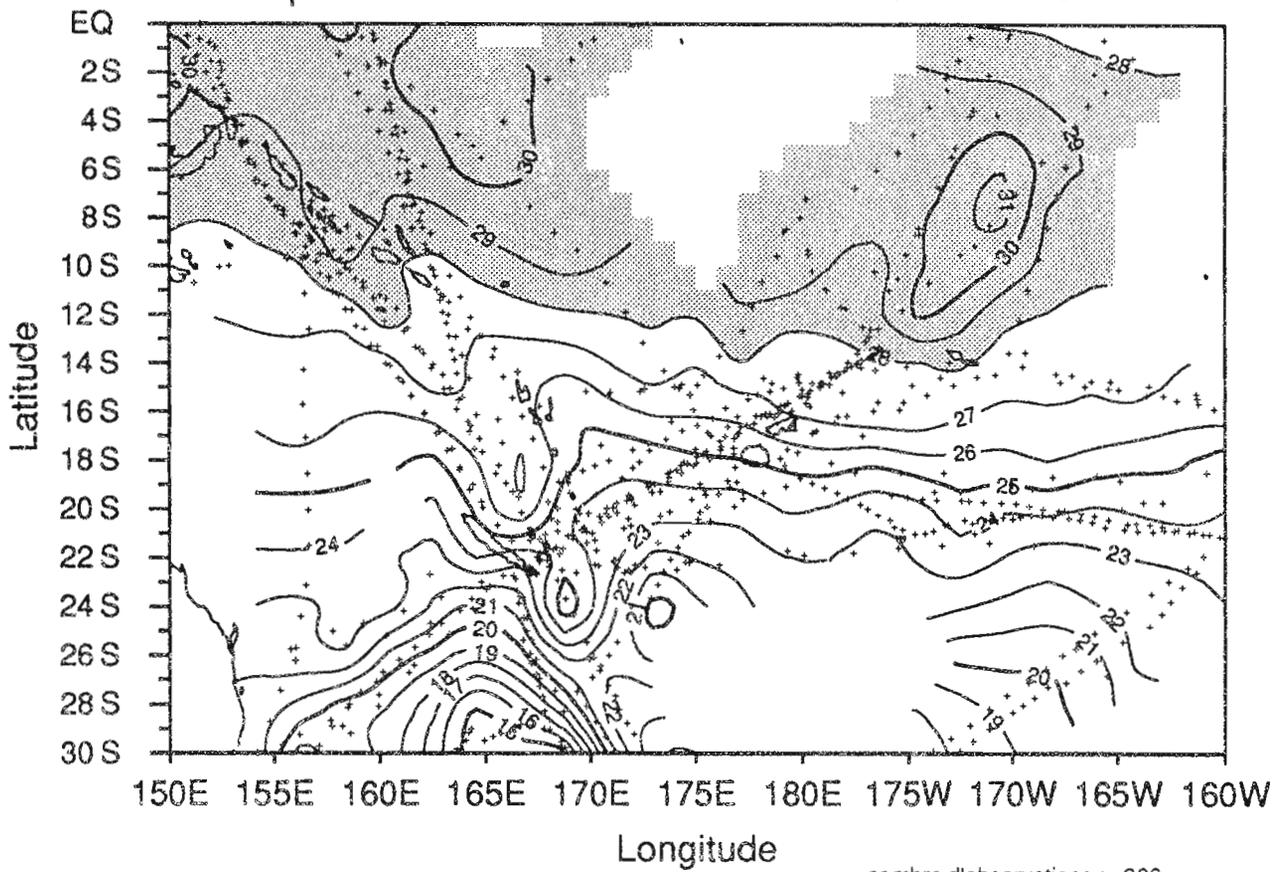
Temperature de surface du 01/07/78 au 31/08/78



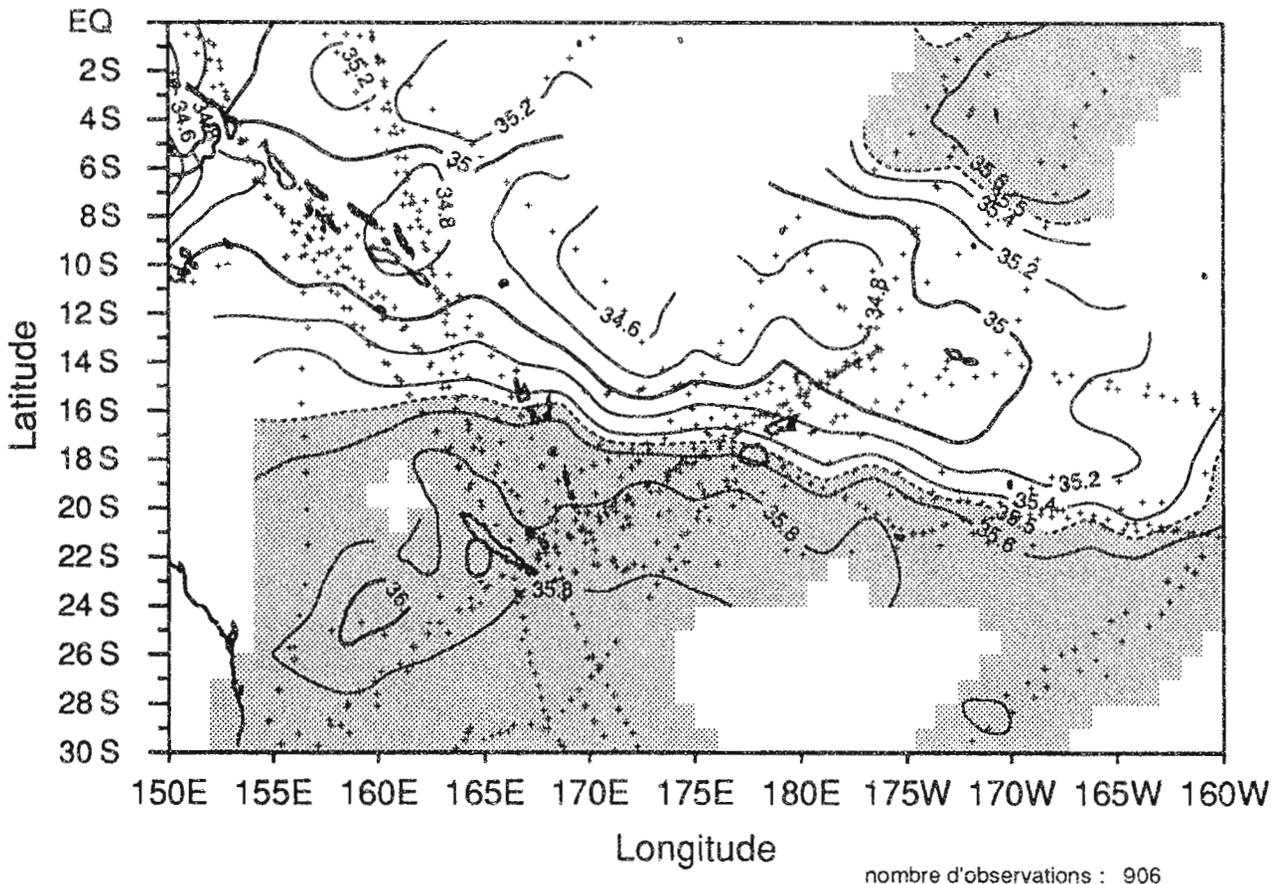
Salinite de surface du 01/07/78 au 31/08/78



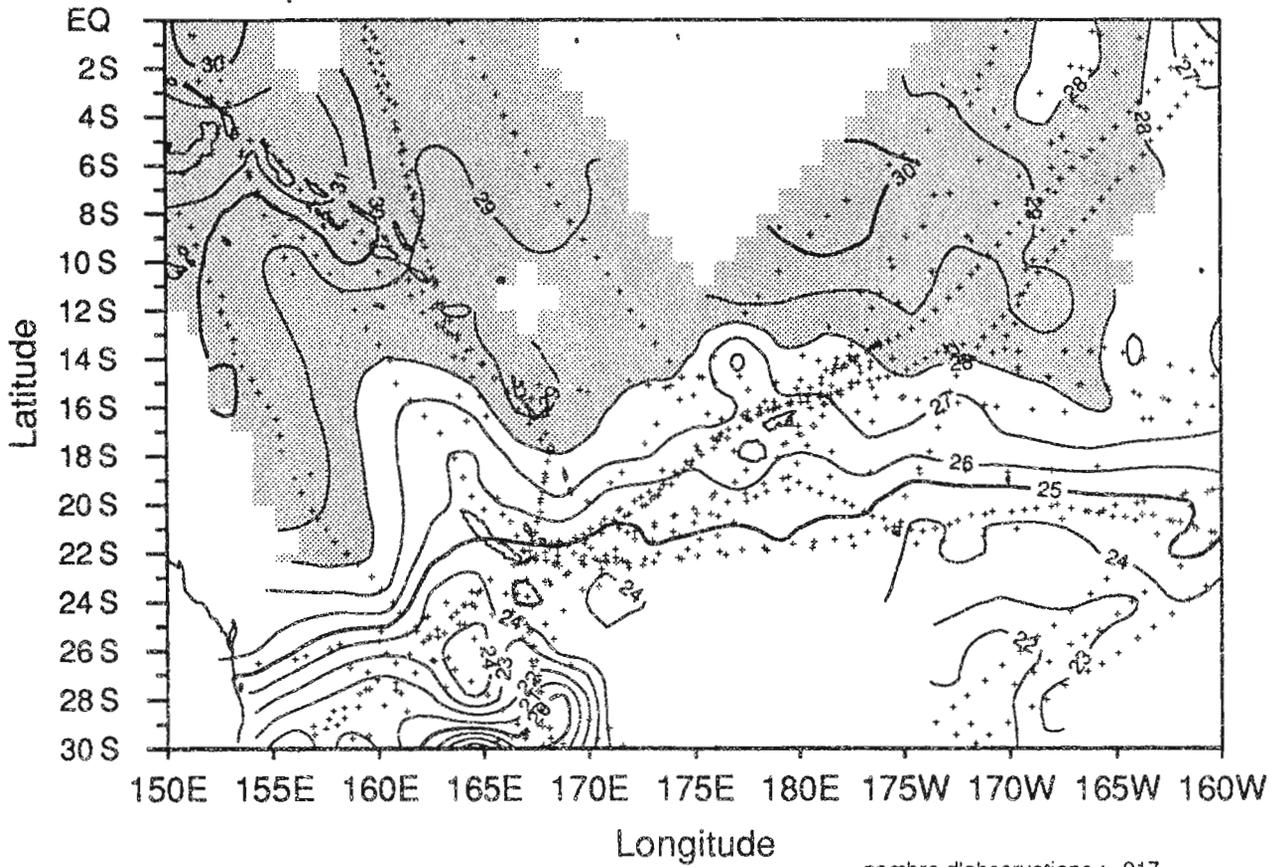
Temperature de surface du 01/09/78 au 31/10/78



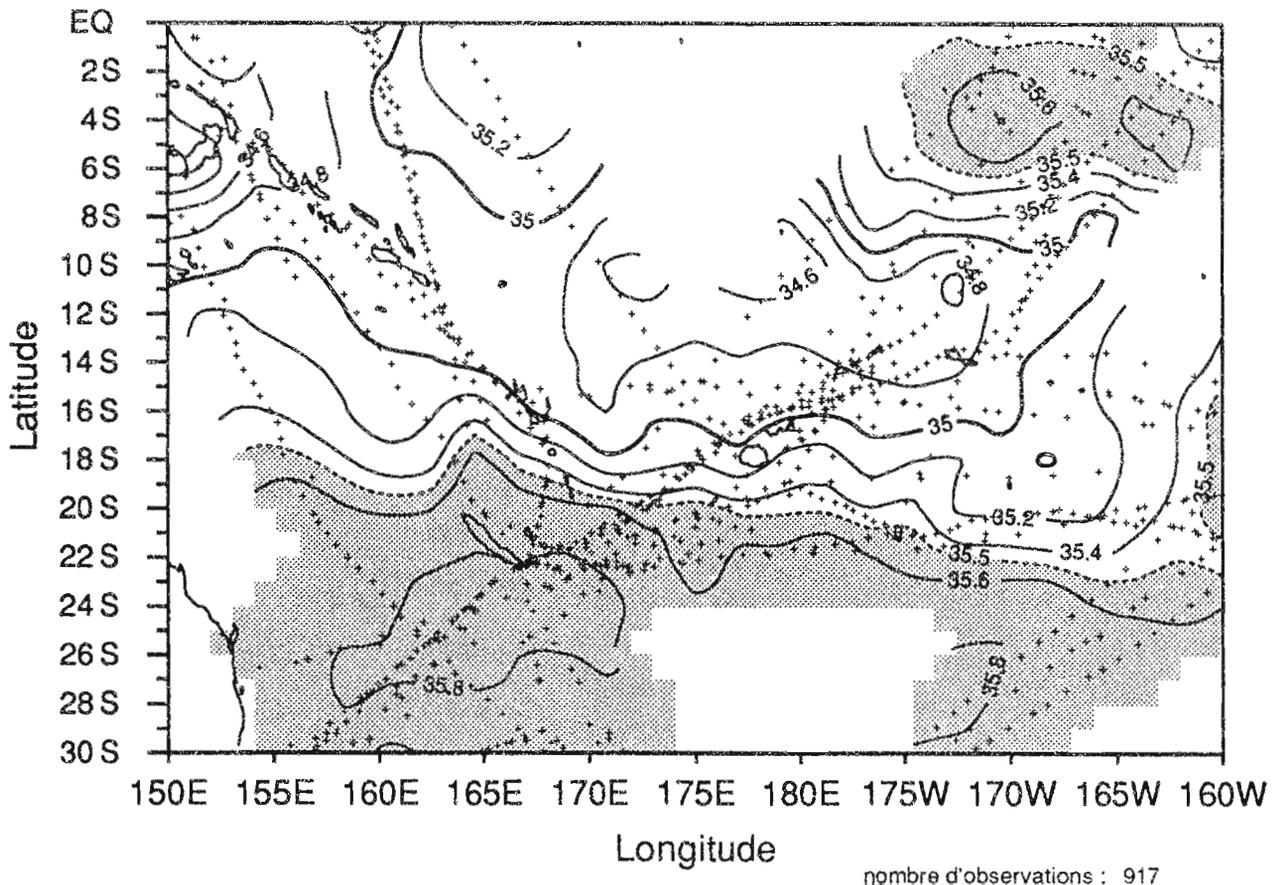
Salinite de surface du 01/09/78 au 31/10/78



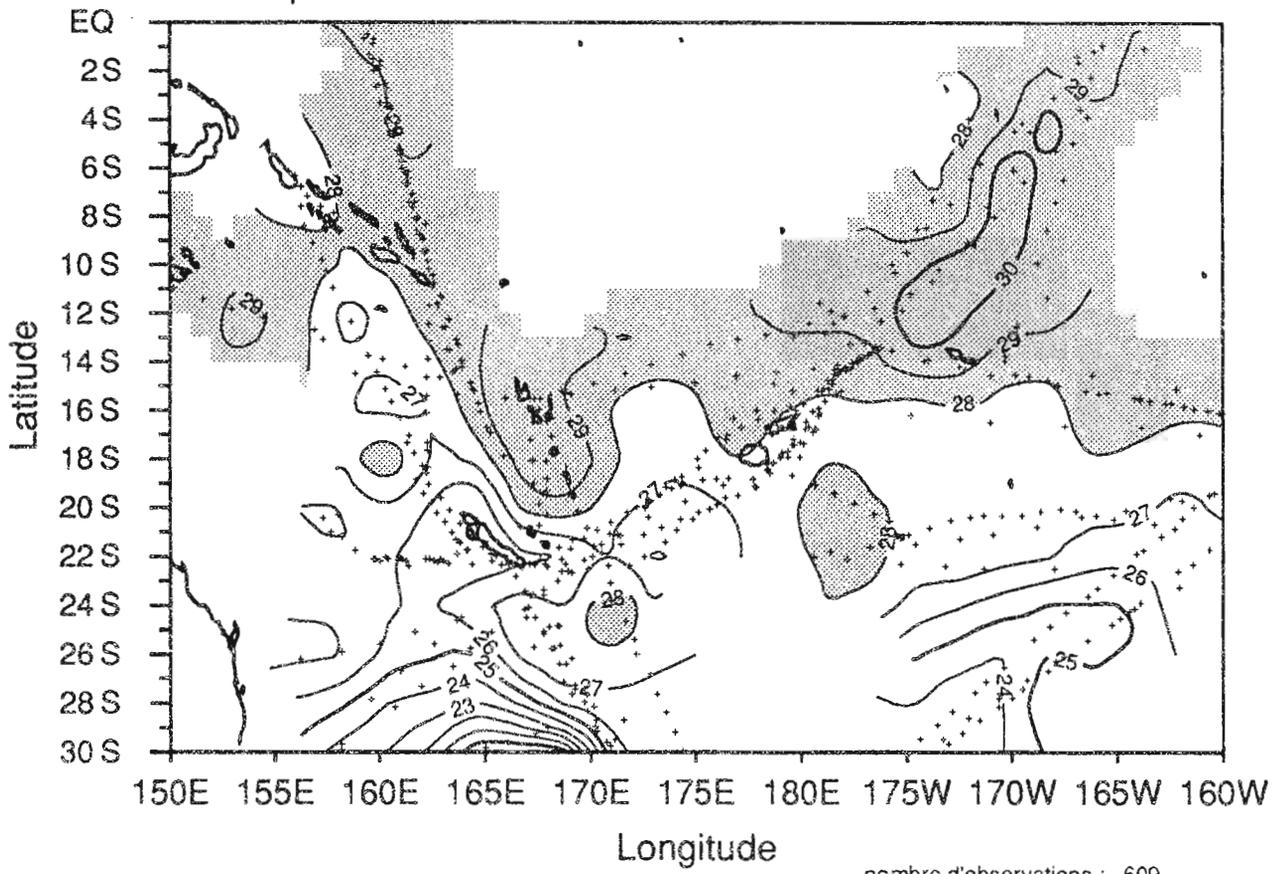
Temperature de surface du 01/11/78 au 31/12/78



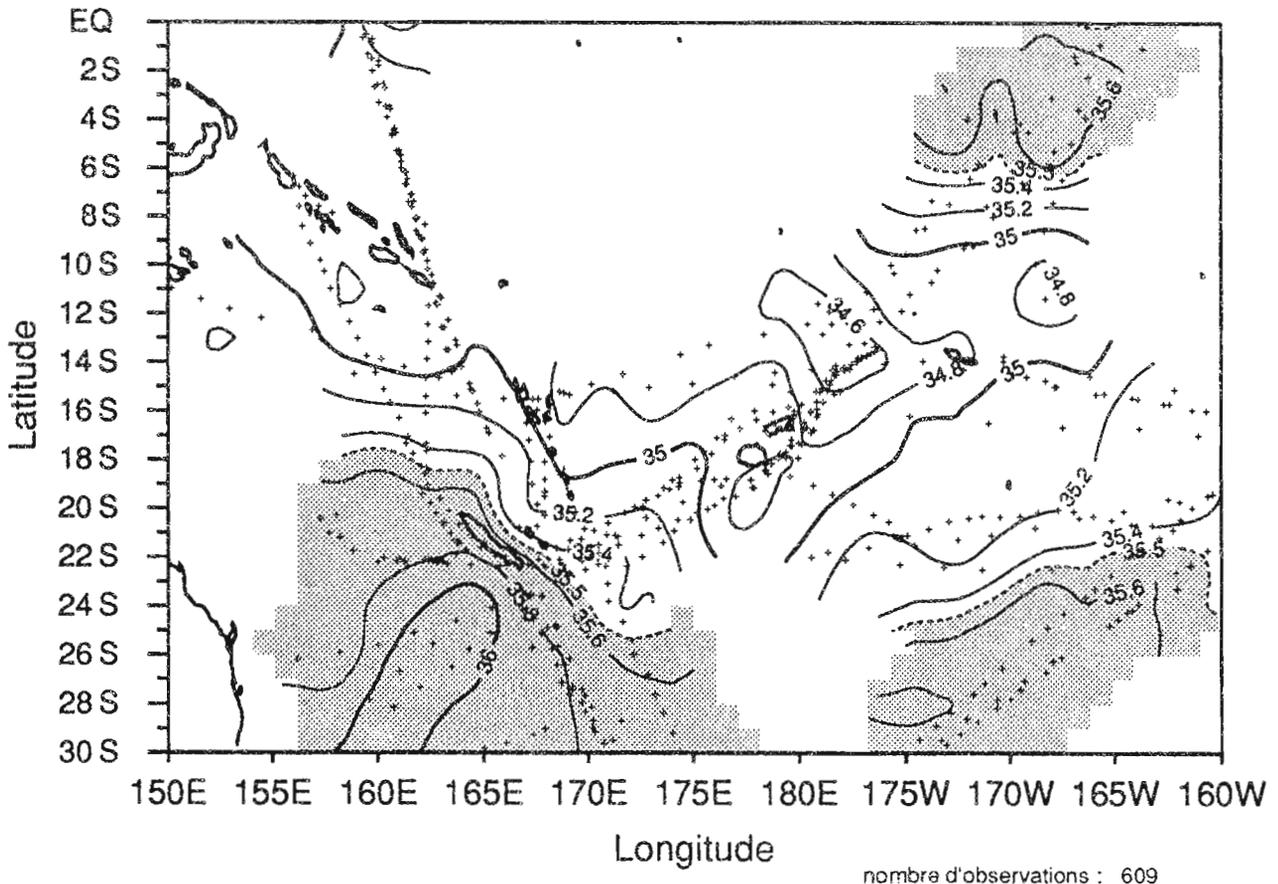
Salinite de surface du 01/11/78 au 31/12/78



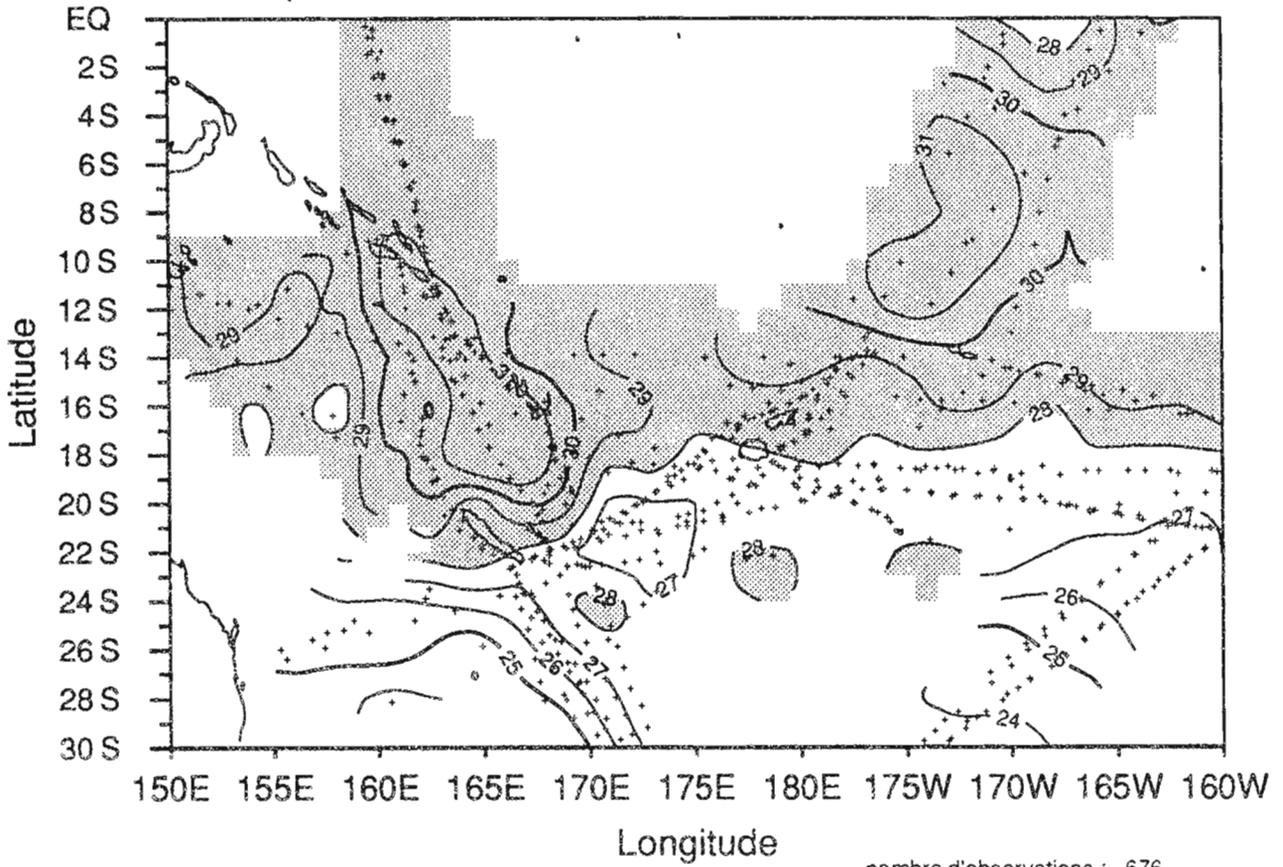
Temperature de surface du 01/01/79 au 28/02/79



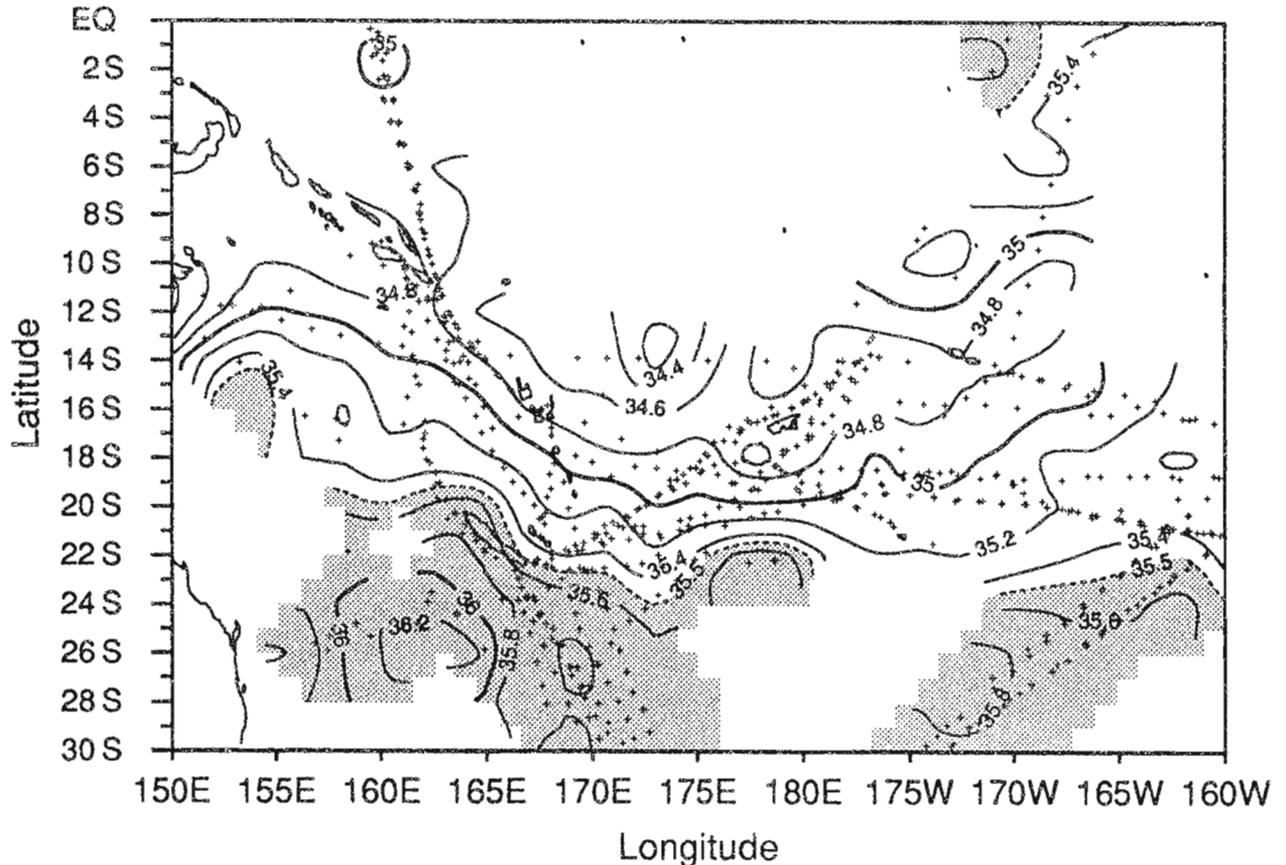
Salinite de surface du 01/01/79 au 28/02/79



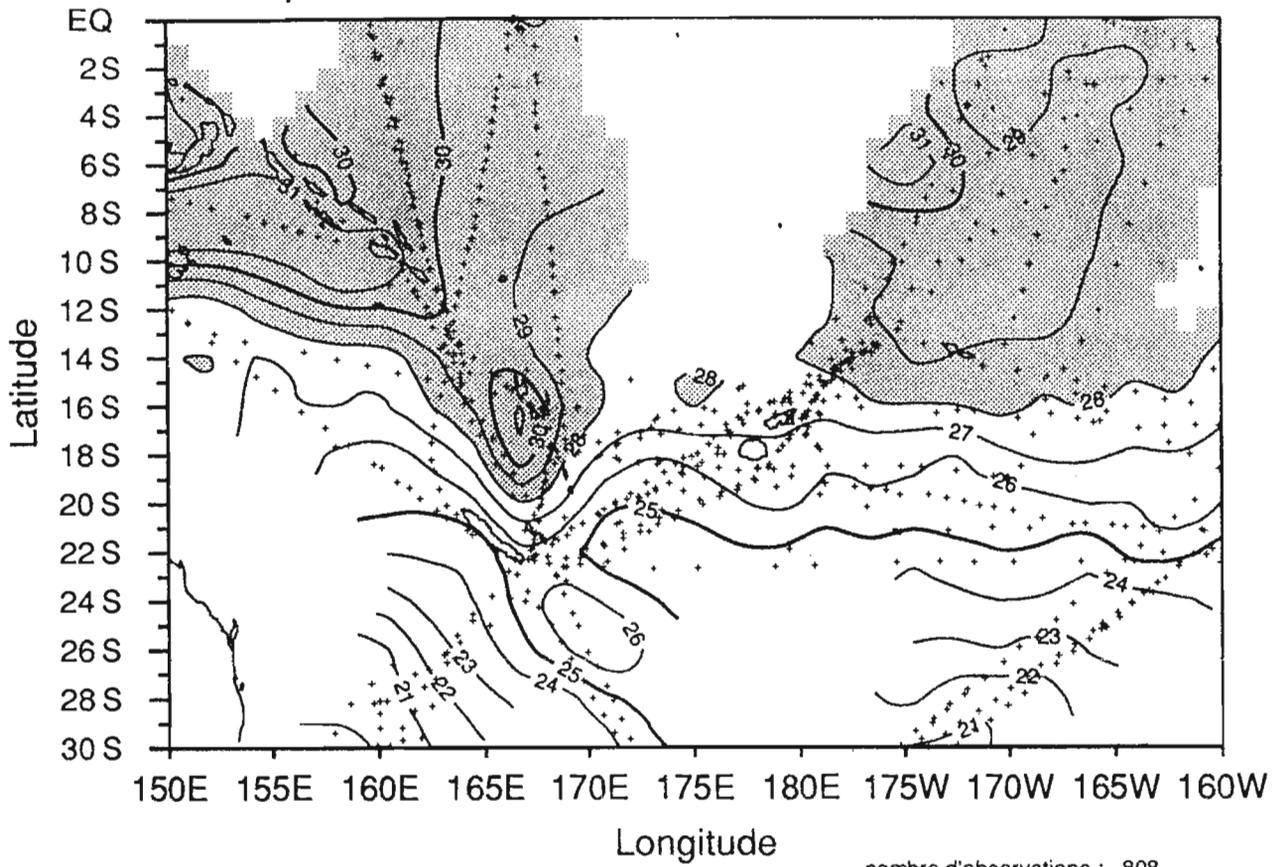
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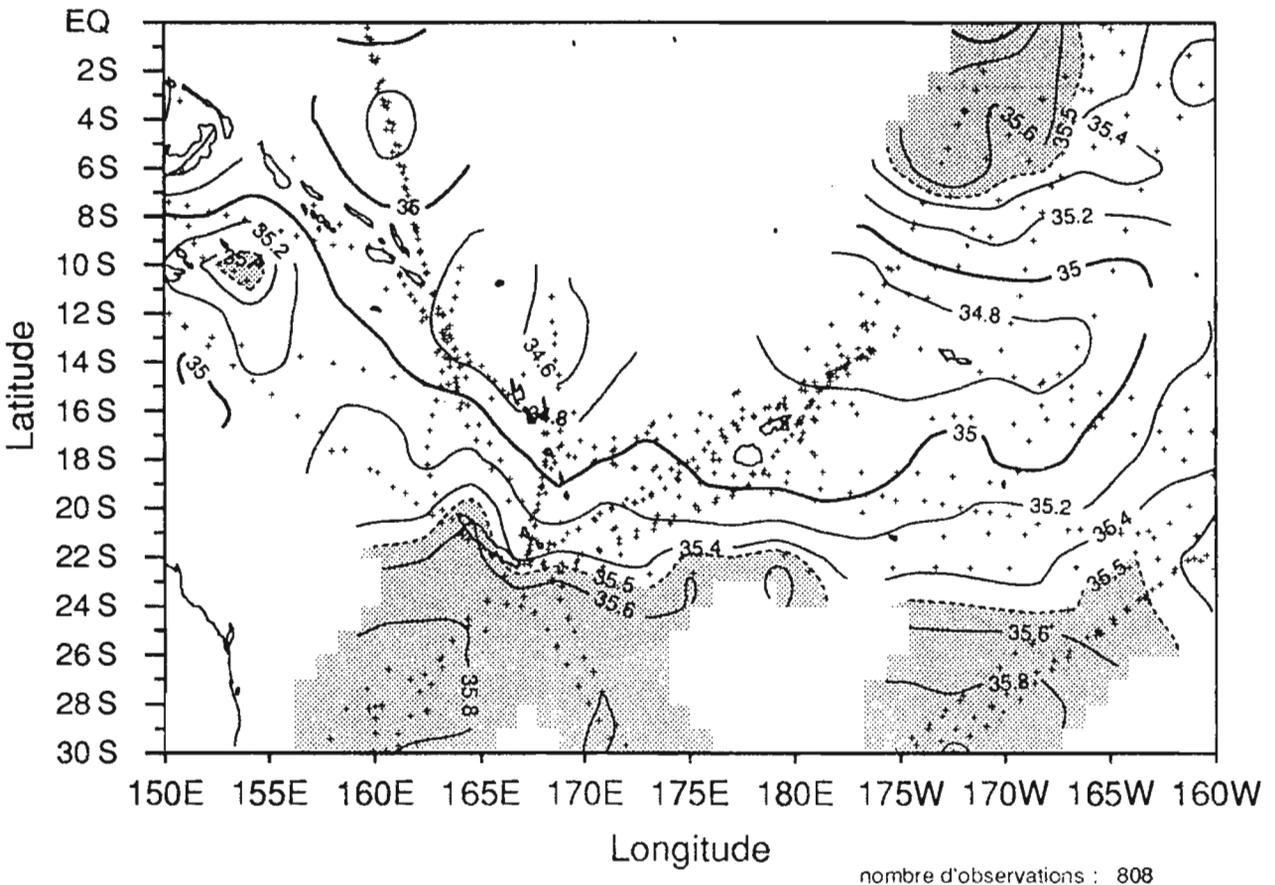
Salinite de surface du 01/03/79 au 30/04/79



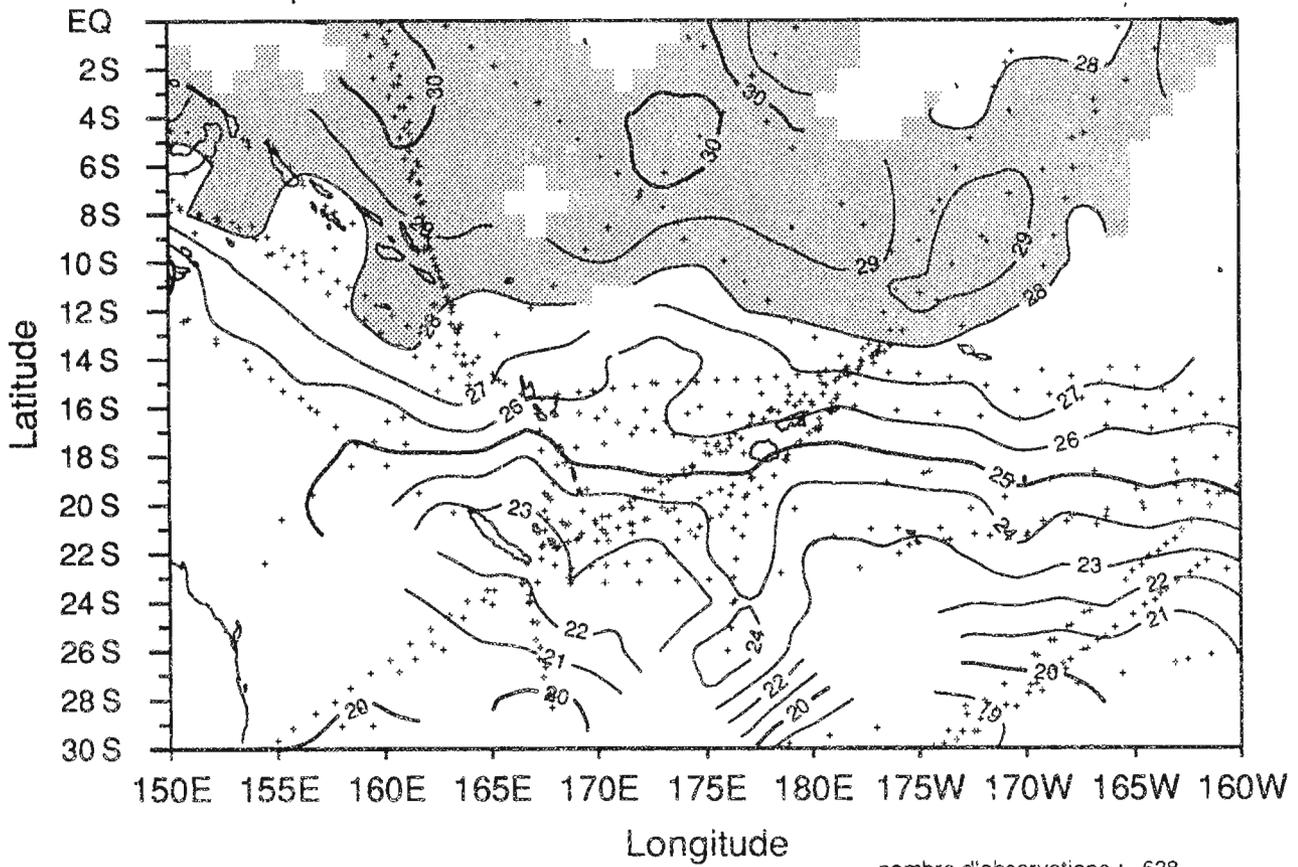
Temperature de surface du 01/05/79 au 30/06/79



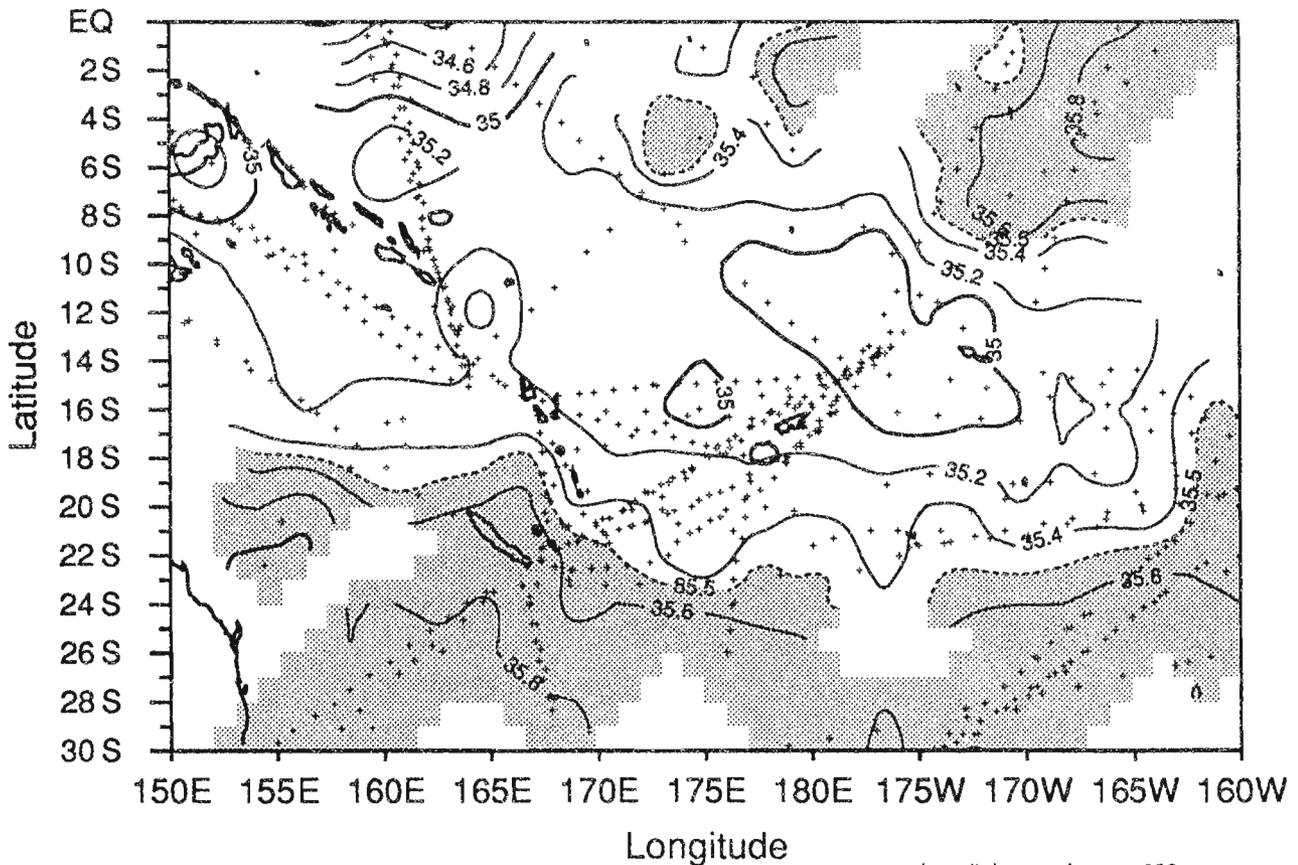
Salinite de surface du 01/05/79 au 30/06/79



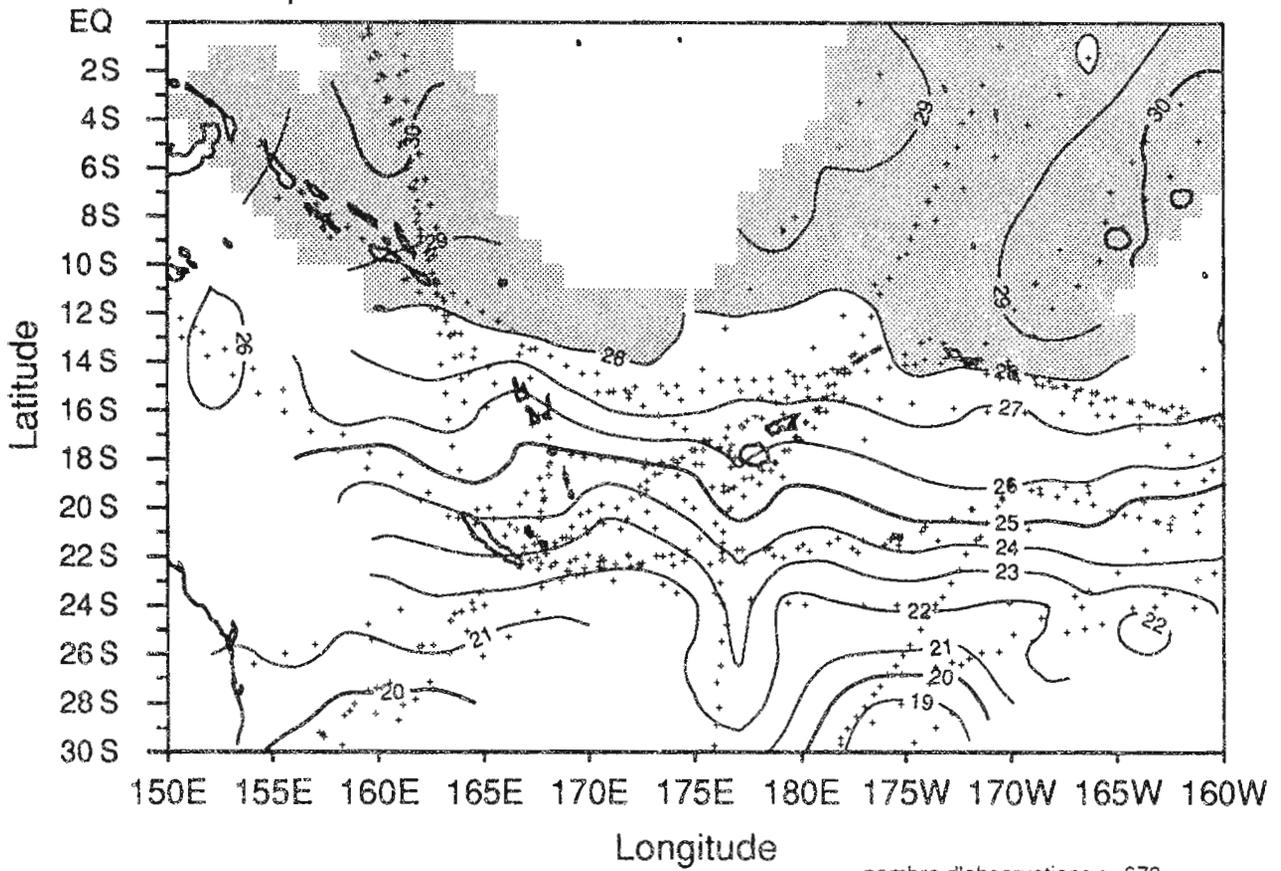
Temperature de surface du 01/07/79 au 31/08/79



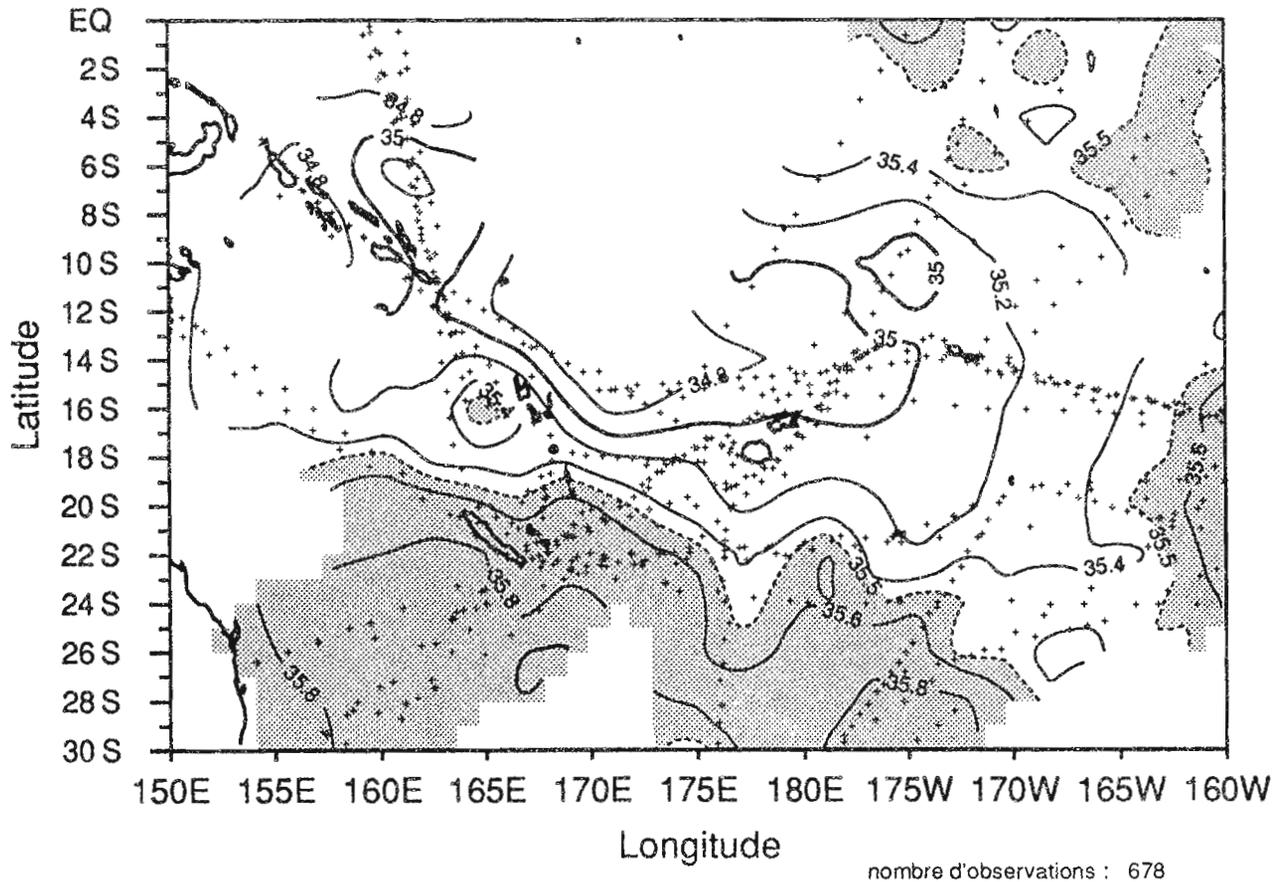
Salinite de surface du 01/07/79 au 31/08/79



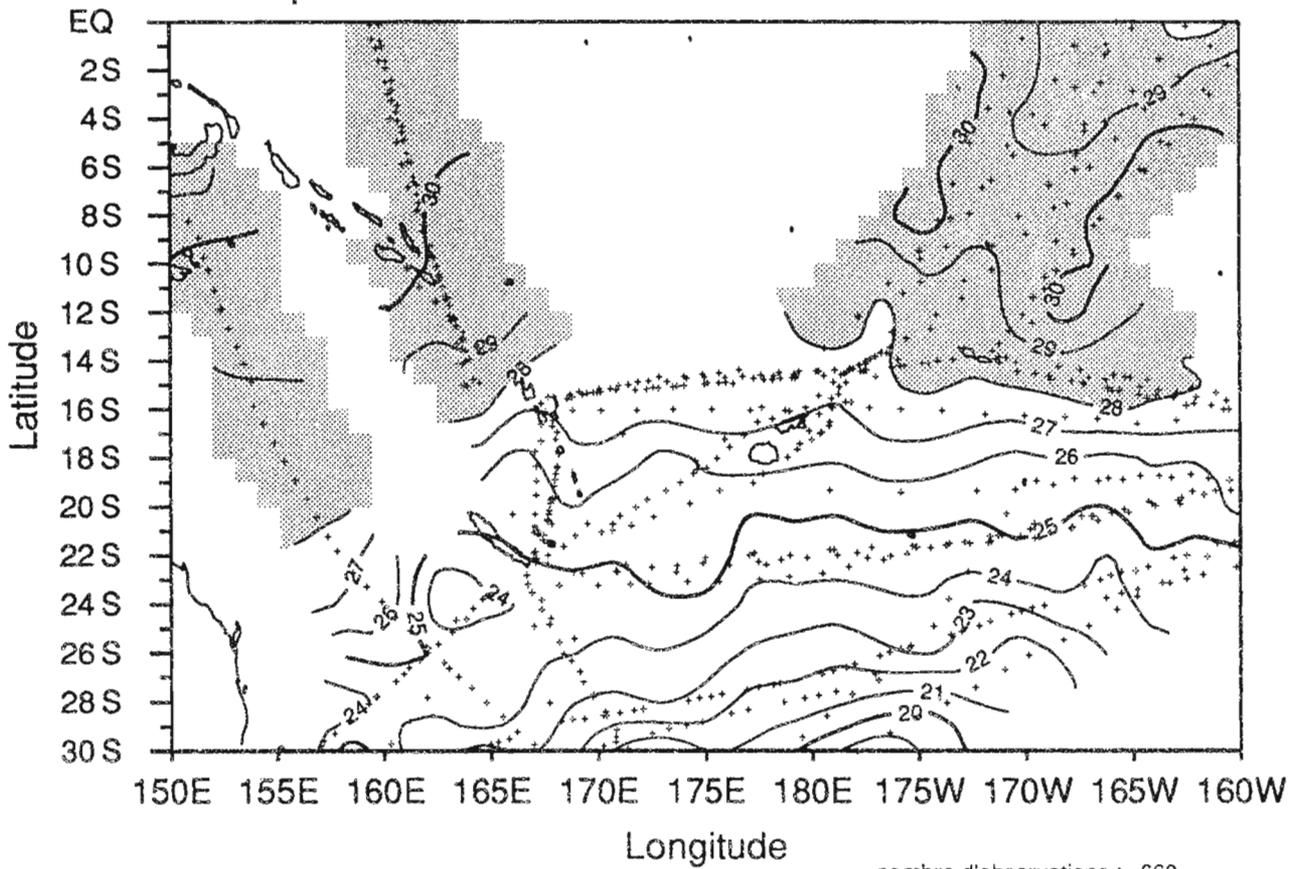
Temperature de surface du 01/09/79 au 31/10/79



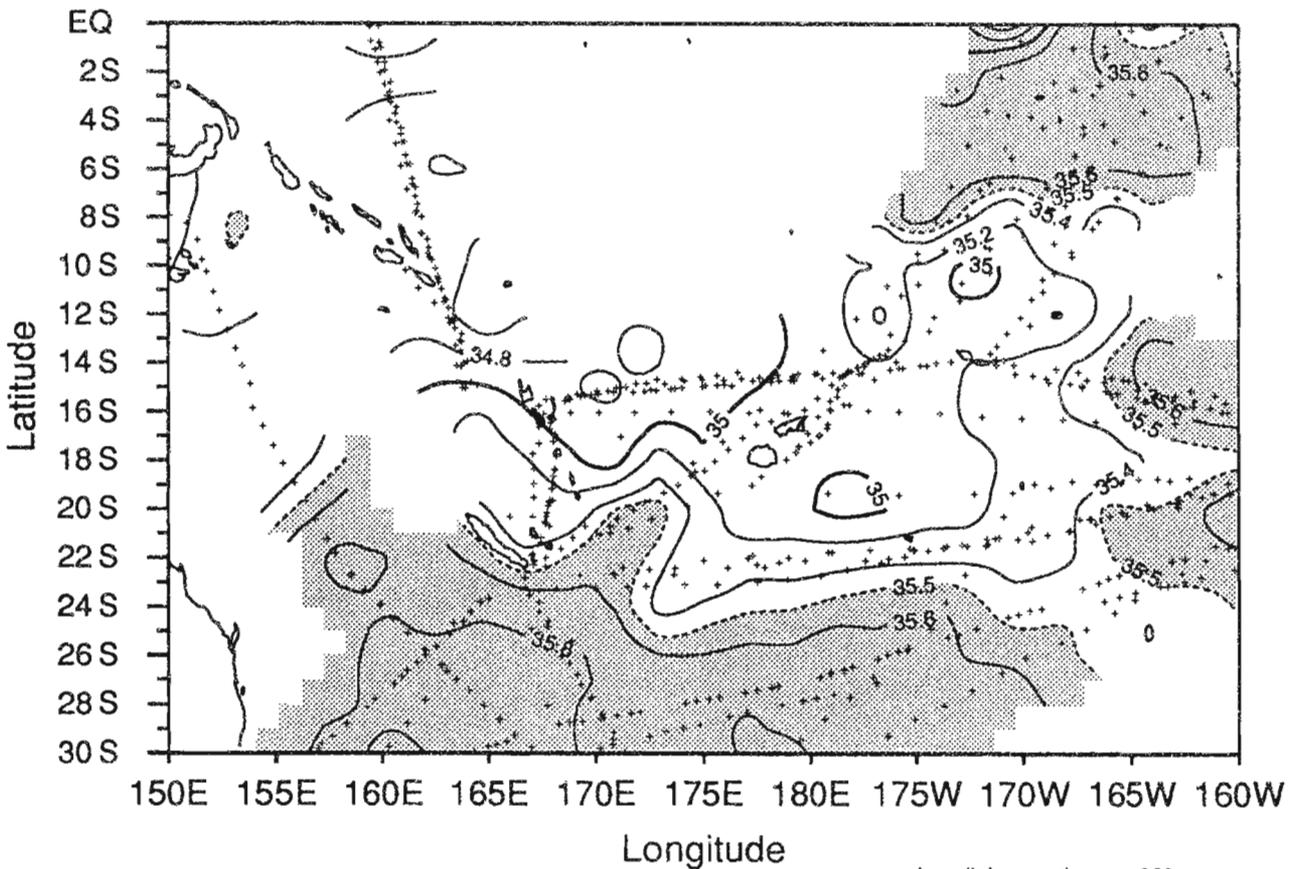
Salinite de surface du 01/09/79 au 31/10/79



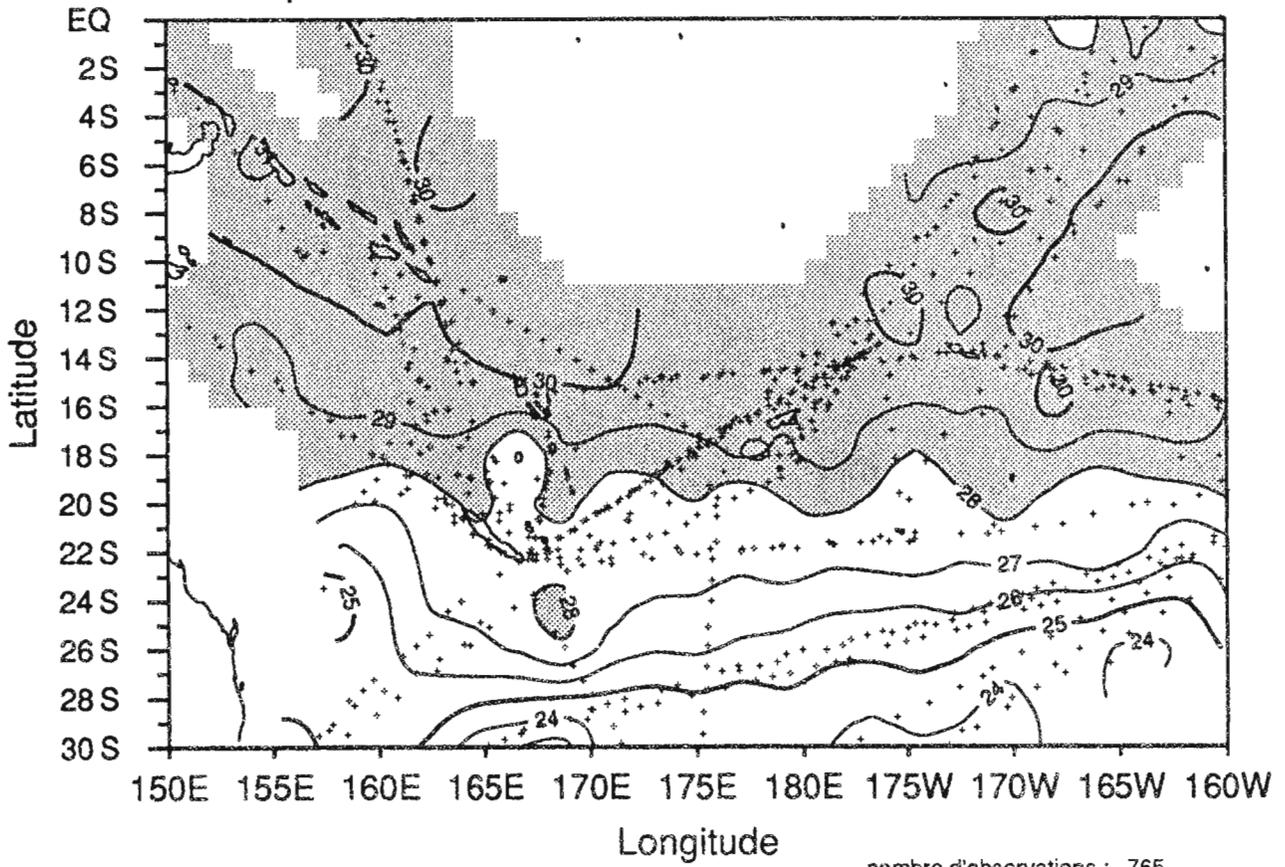
Temperature de surface du 01/11/79 au 31/12/79



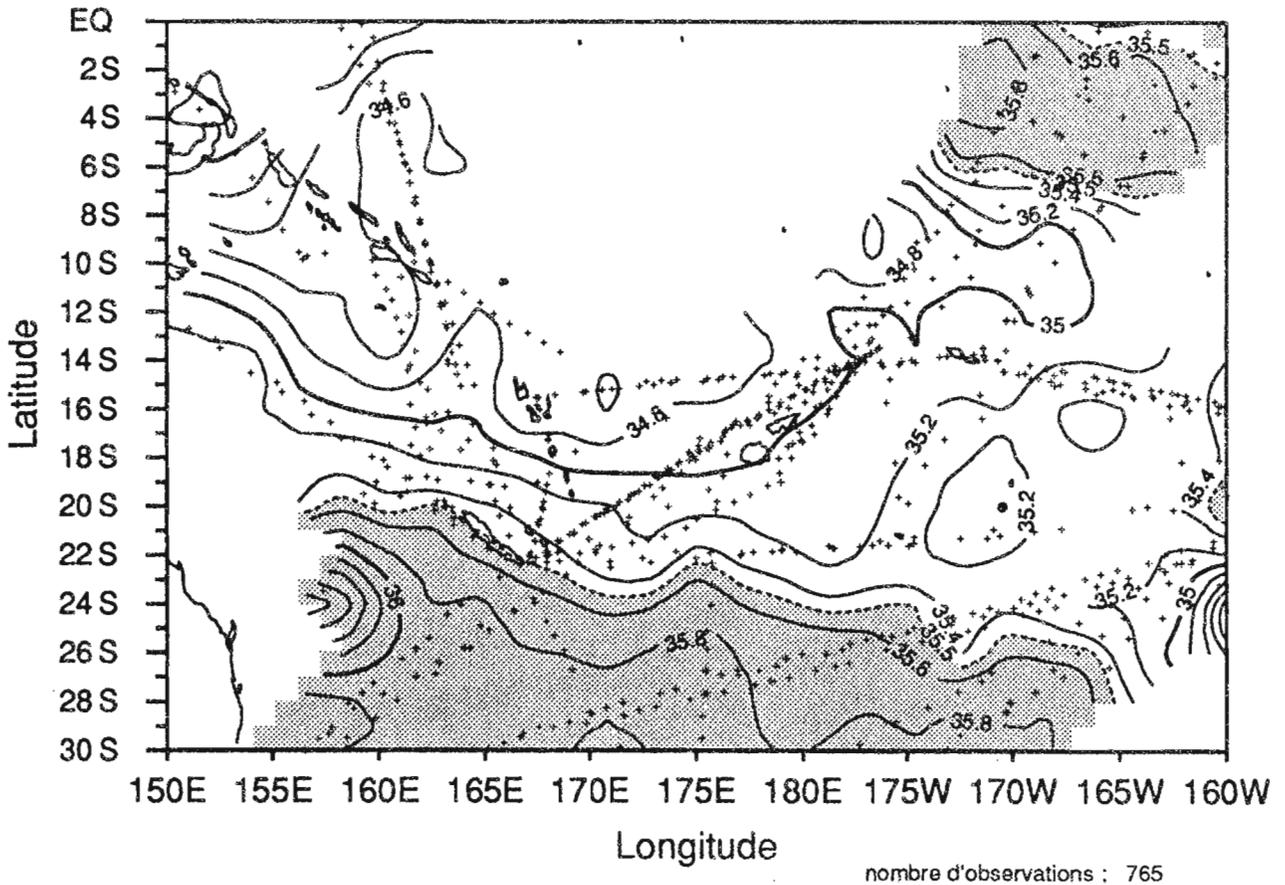
Salinite de surface du 01/11/79 au 31/12/79



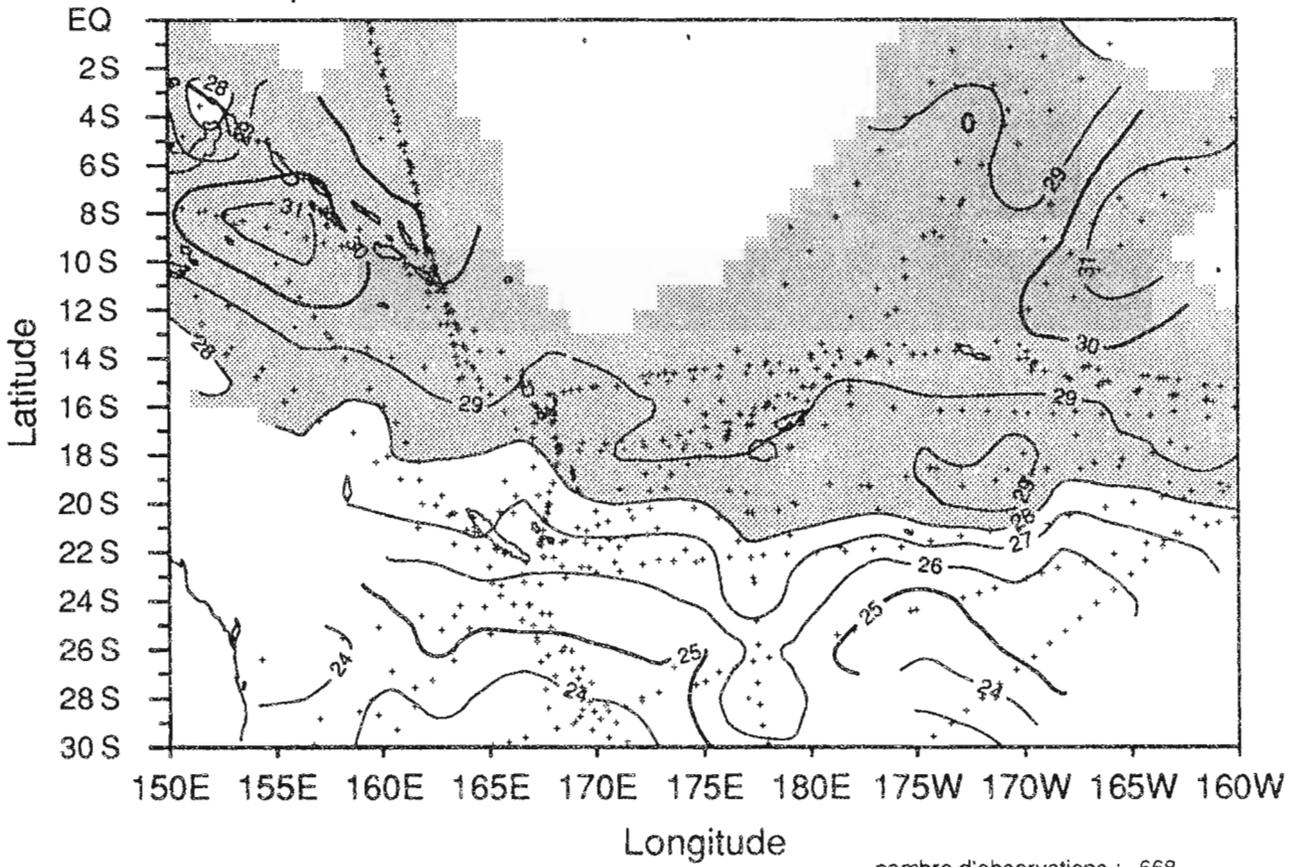
Temperature de surface du 01/01/80 au 29/02/80



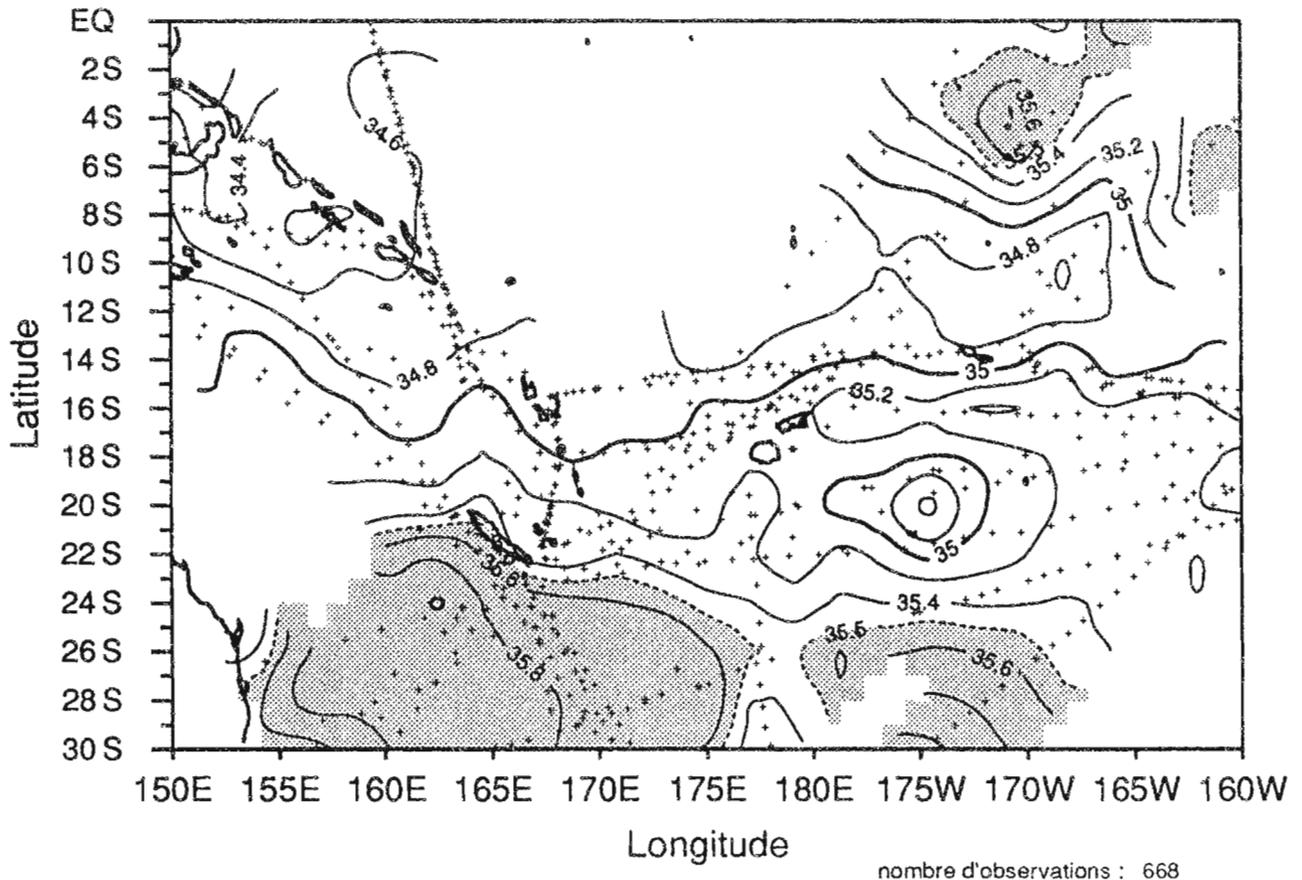
Salinite de surface du 01/01/80 au 29/02/80



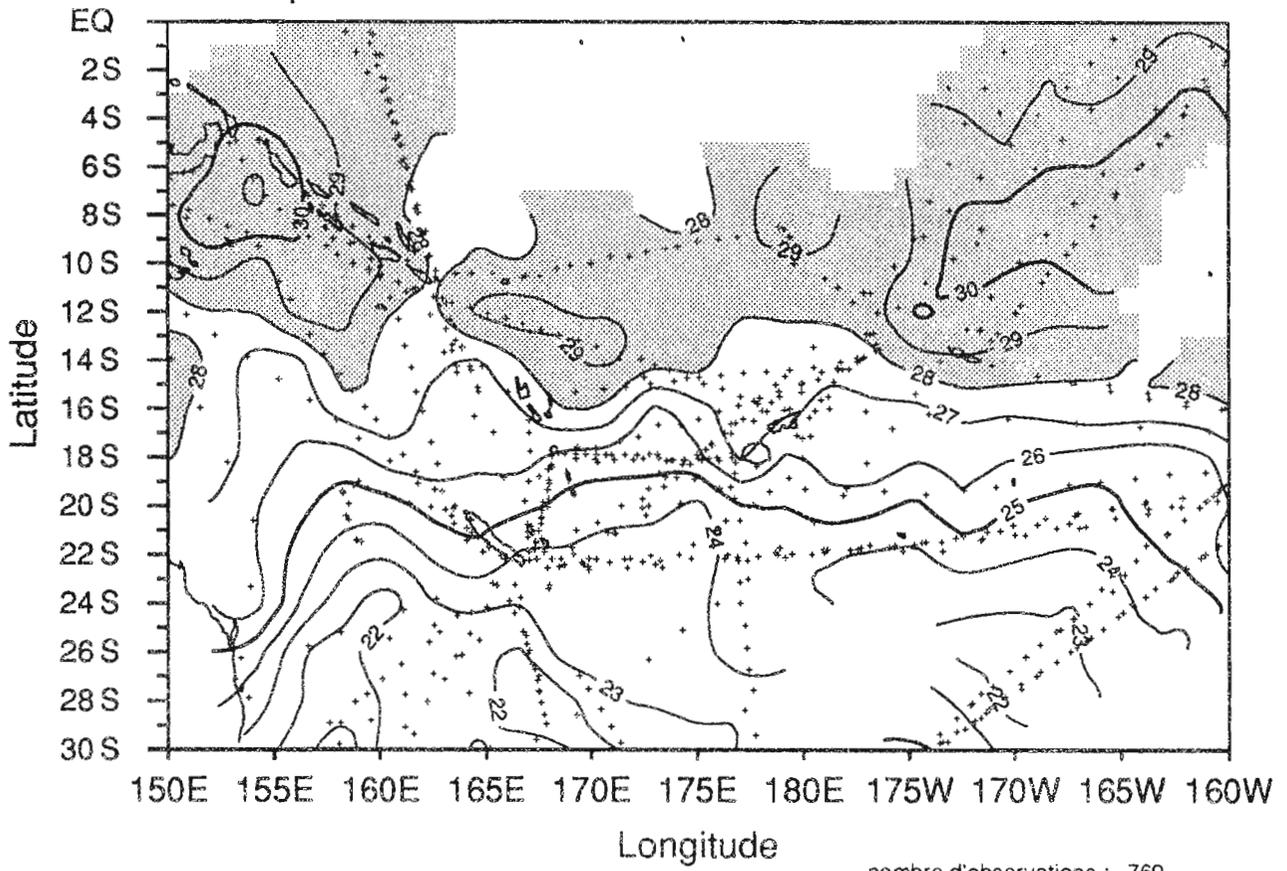
Temperature de surface du 01/03/80 au 30/04/80



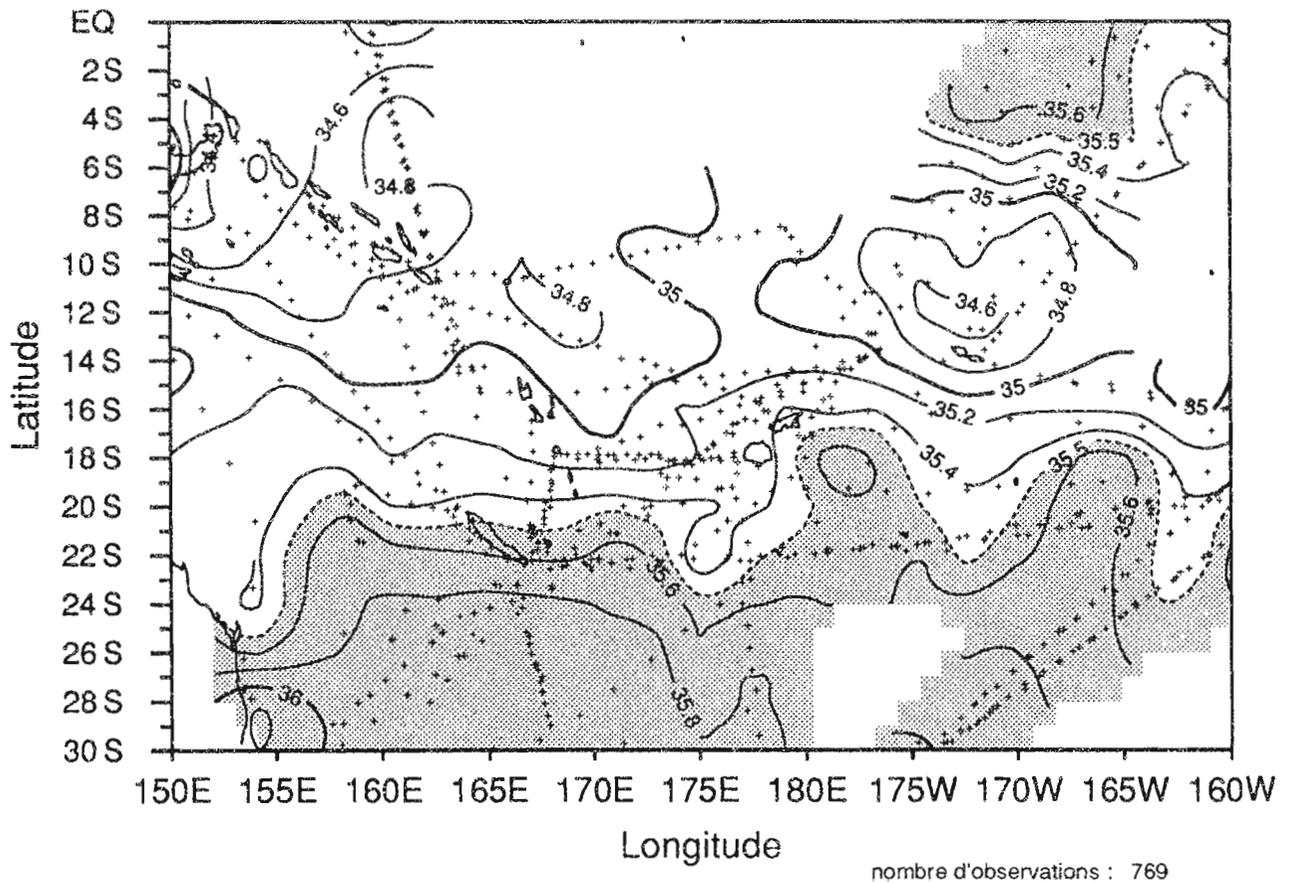
Salinite de surface du 01/03/80 au 30/04/80



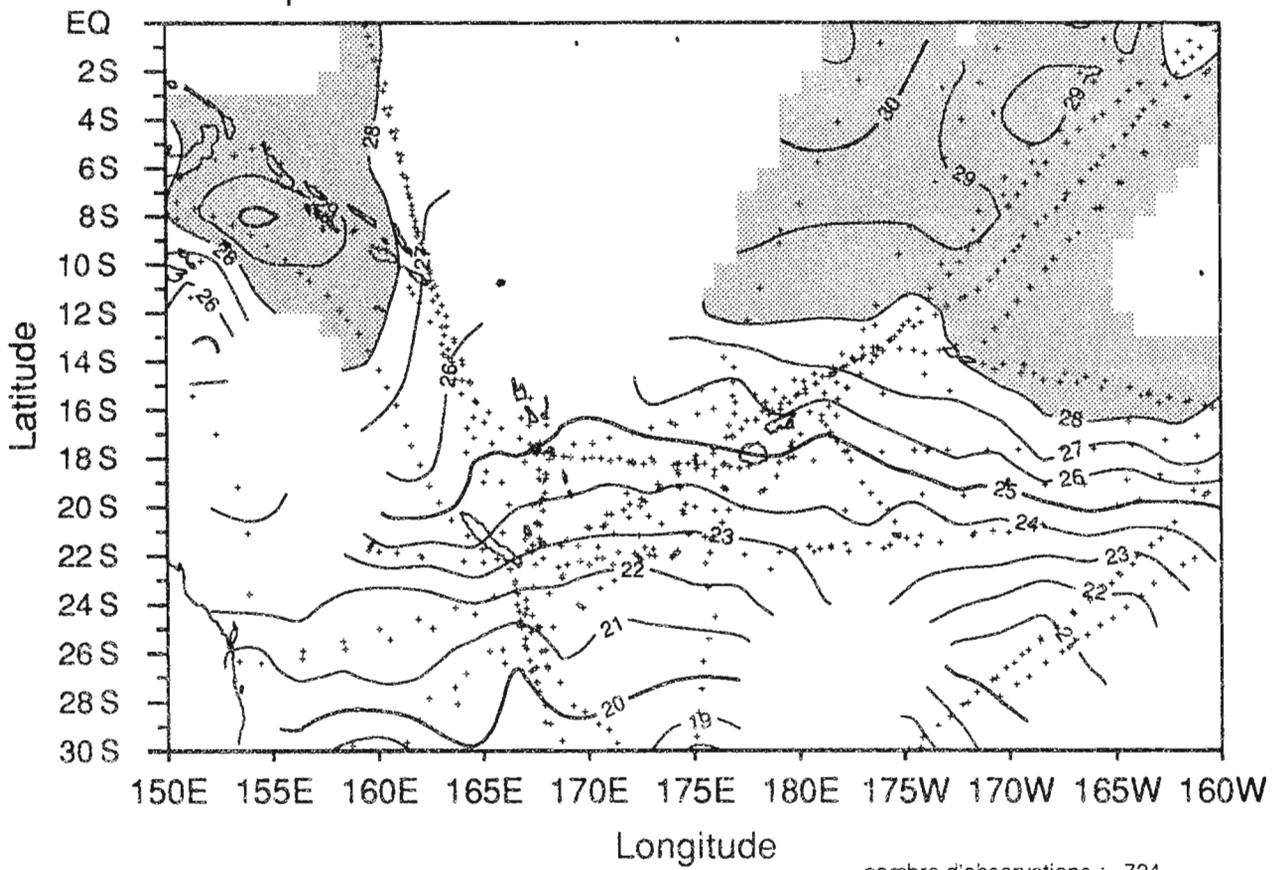
Temperature de surface du 01/05/80 au 30/06/80



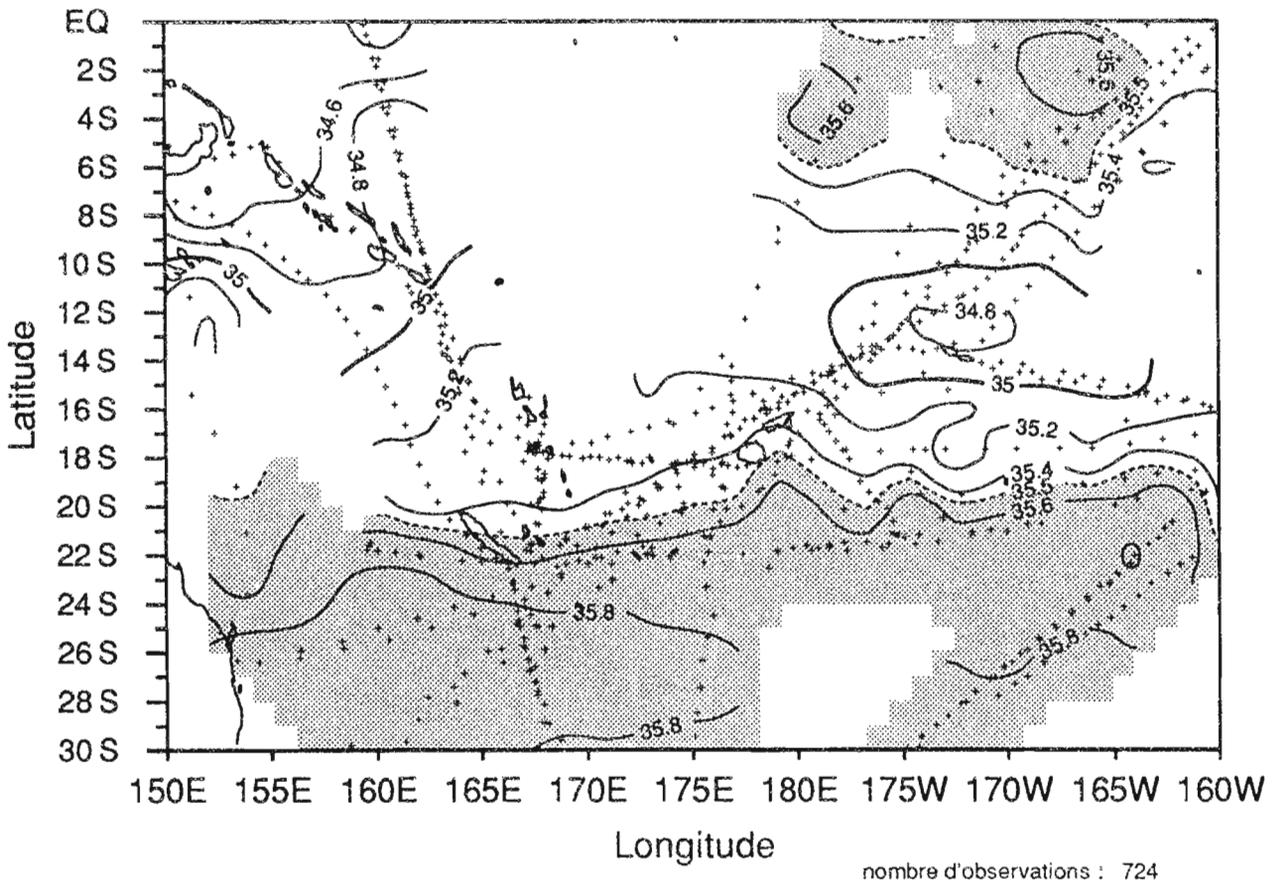
Salinite de surface du 01/05/80 au 30/06/80



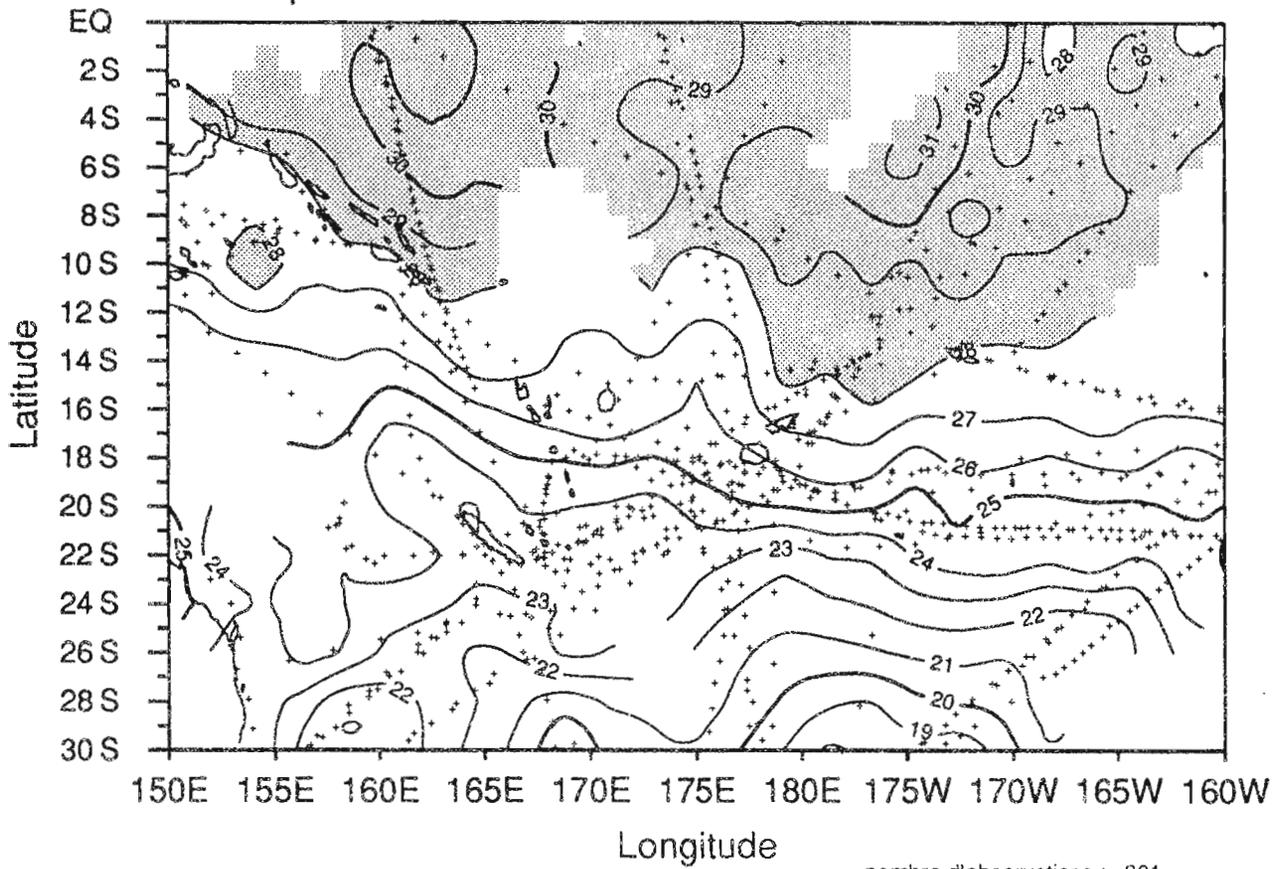
Temperature de surface du 01/07/80 au 31/08/80



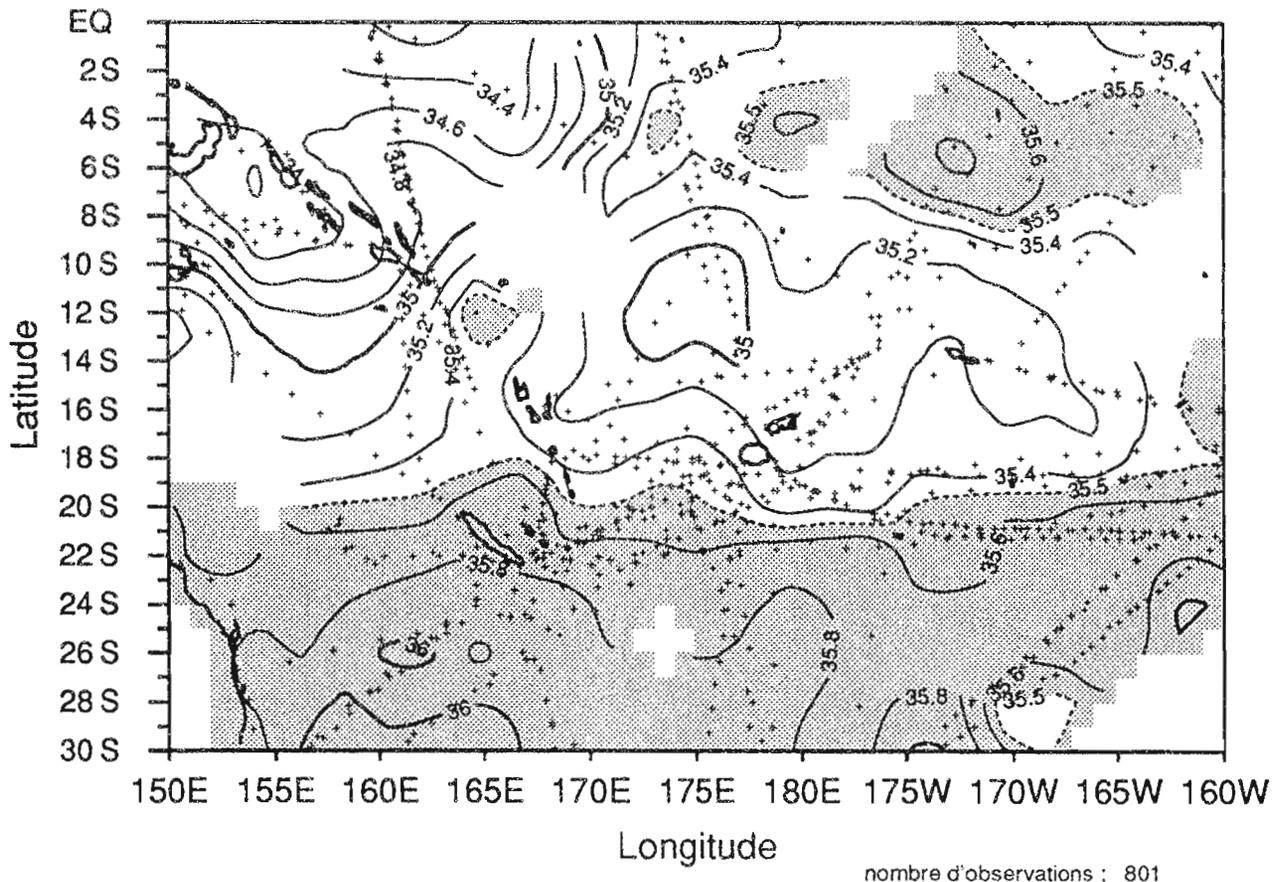
Salinite de surface du 01/07/80 au 31/08/80



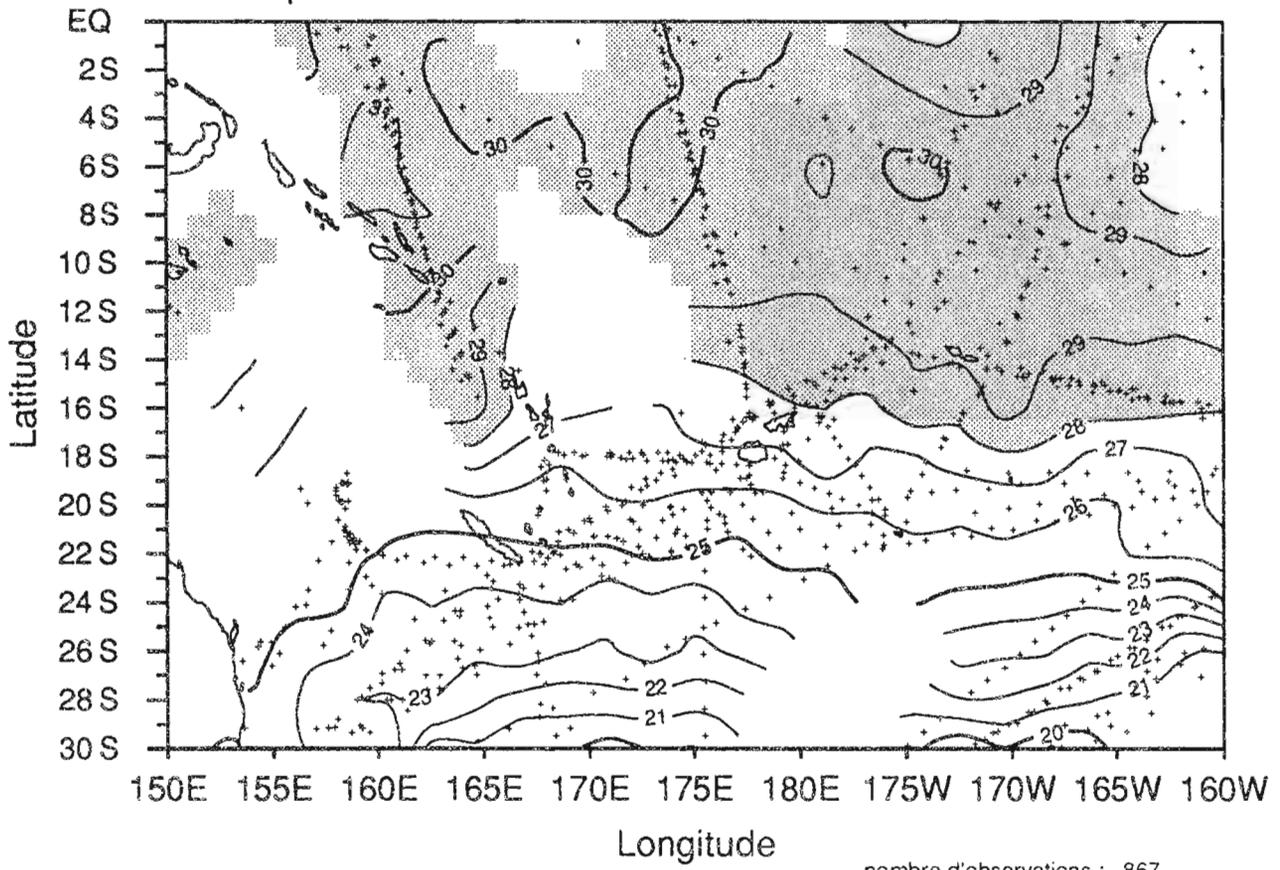
Temperature de surface du 01/09/80 au 31/10/80



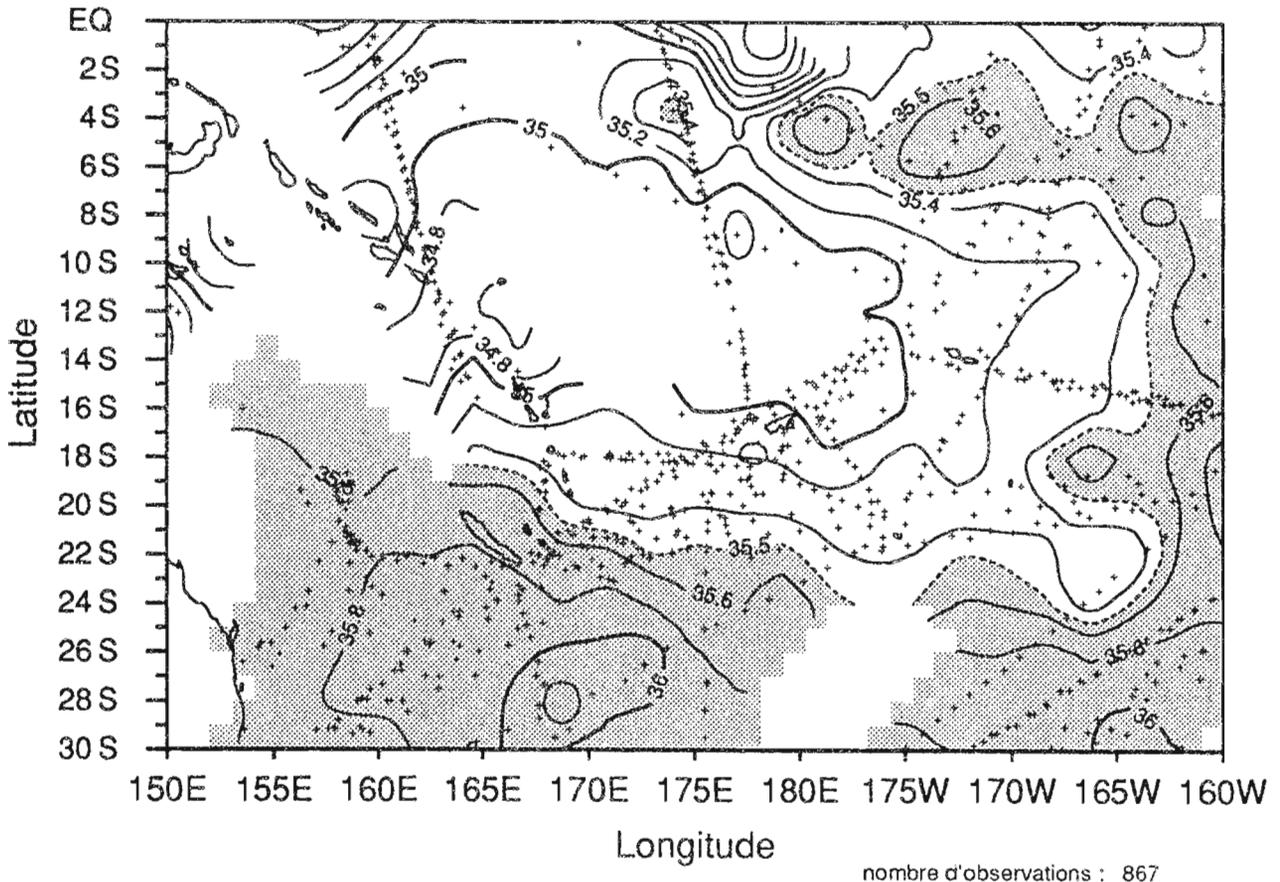
Salinite de surface du 01/09/80 au 31/10/80



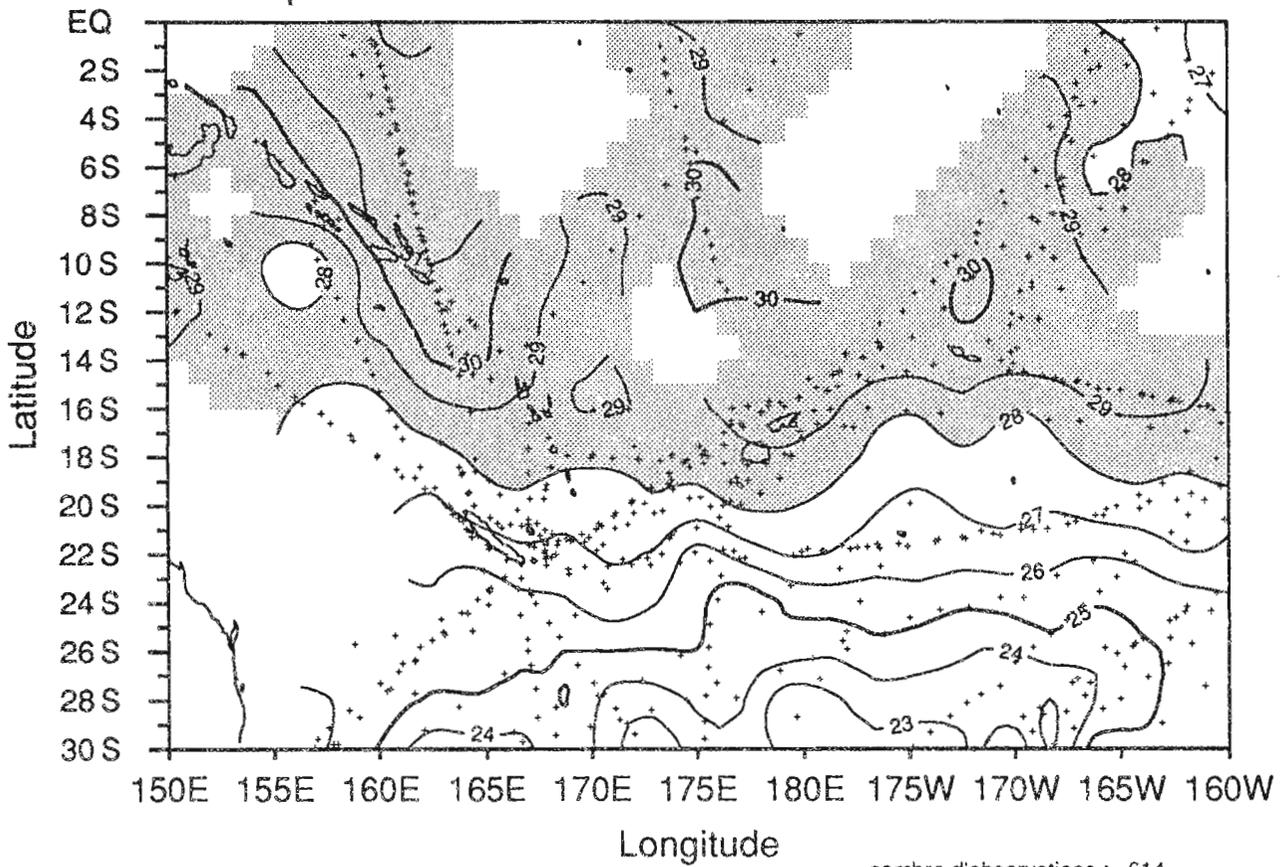
Temperature de surface du 01/11/80 au 31/12/80



Salinite de surface du 01/11/80 au 31/12/80

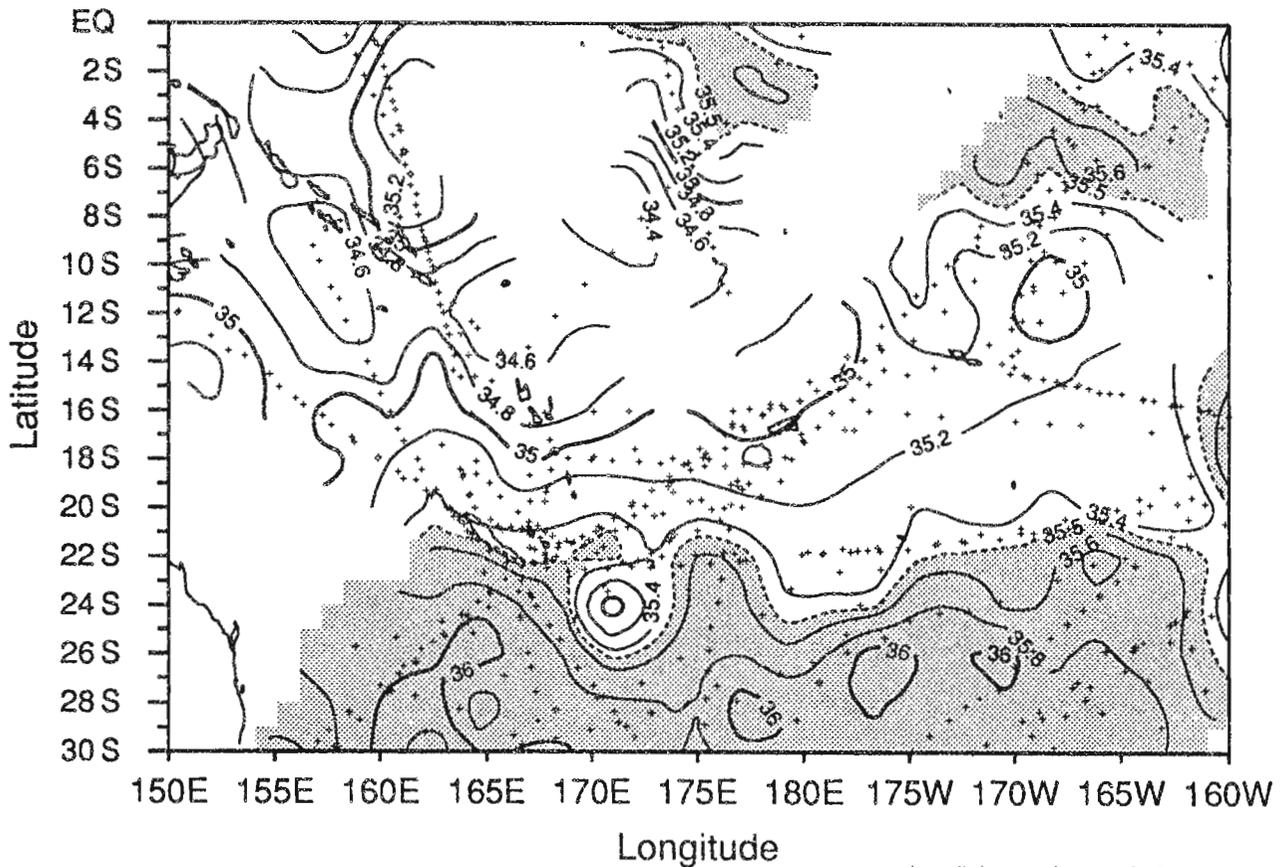


Temperature de surface du 01/01/81 au 28/02/81



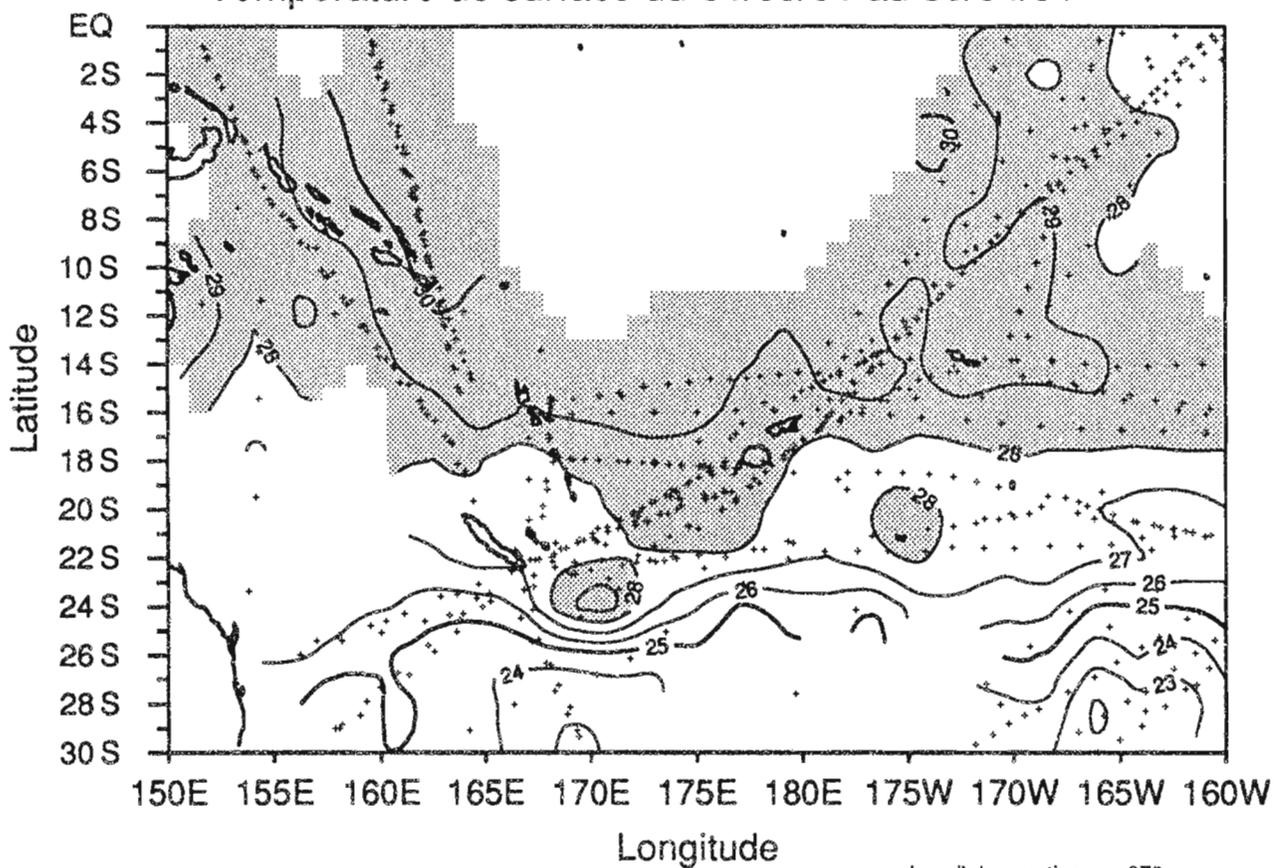
nombre d'observations : 614

Salinite de surface du 01/01/81 au 28/02/81

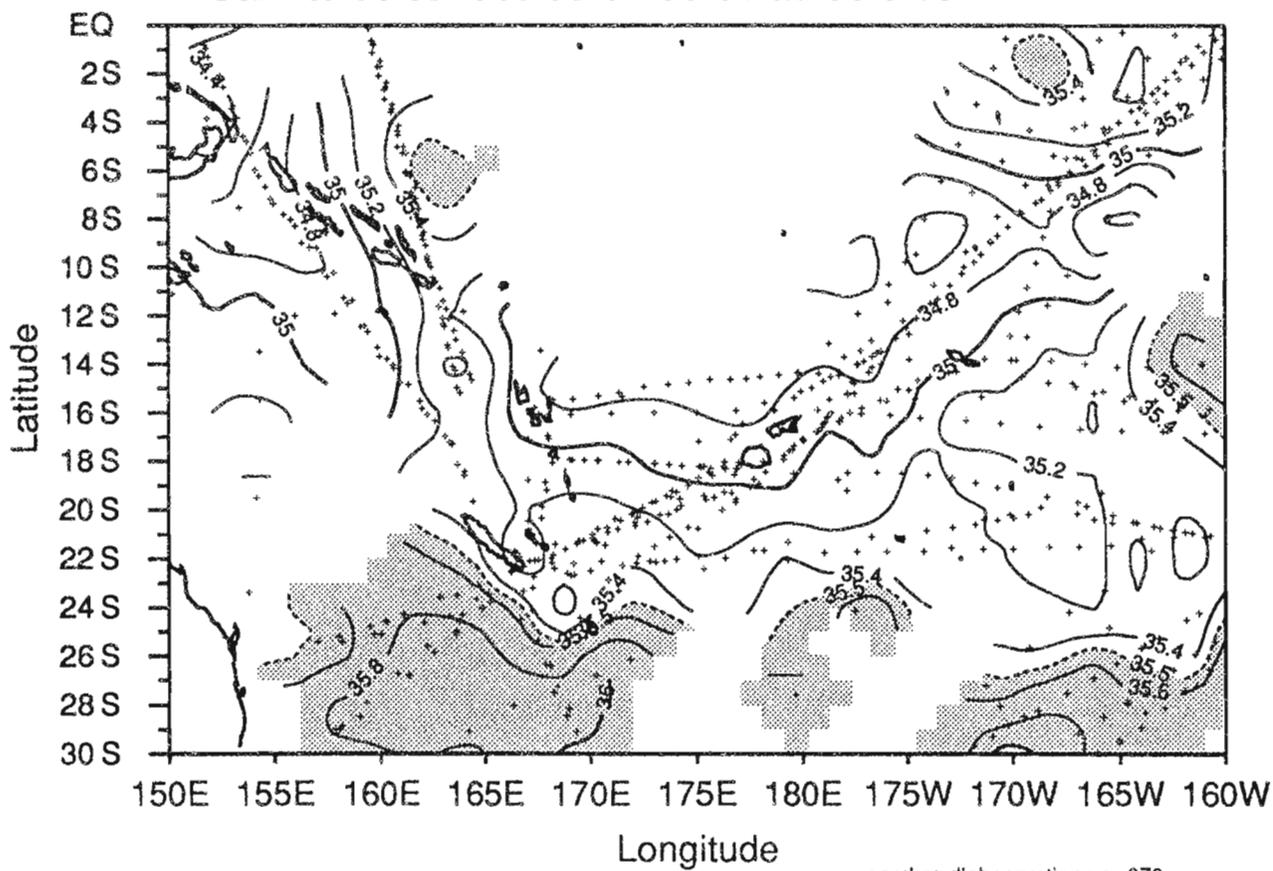


nombre d'observations : 614

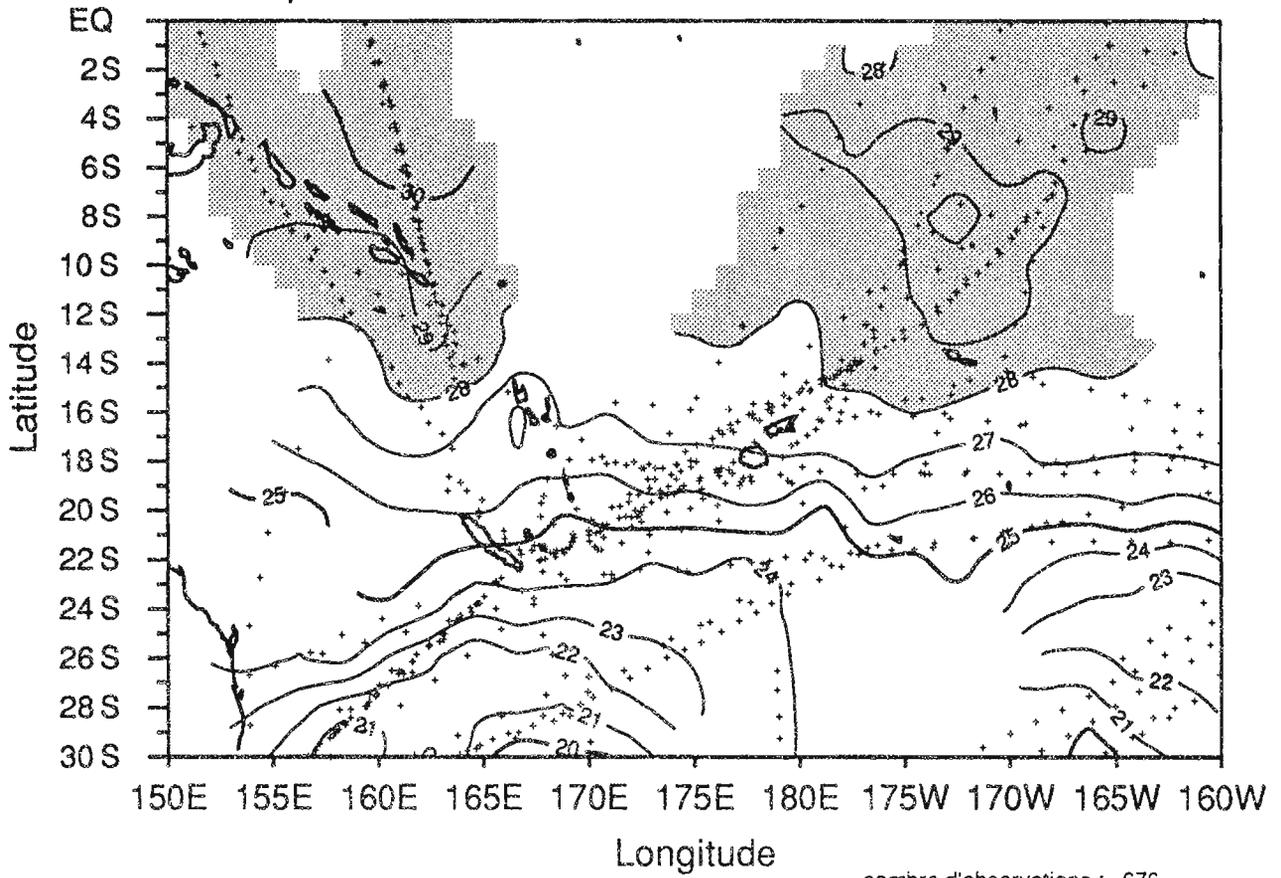
Temperature de surface du 01/03/81 au 30/04/81



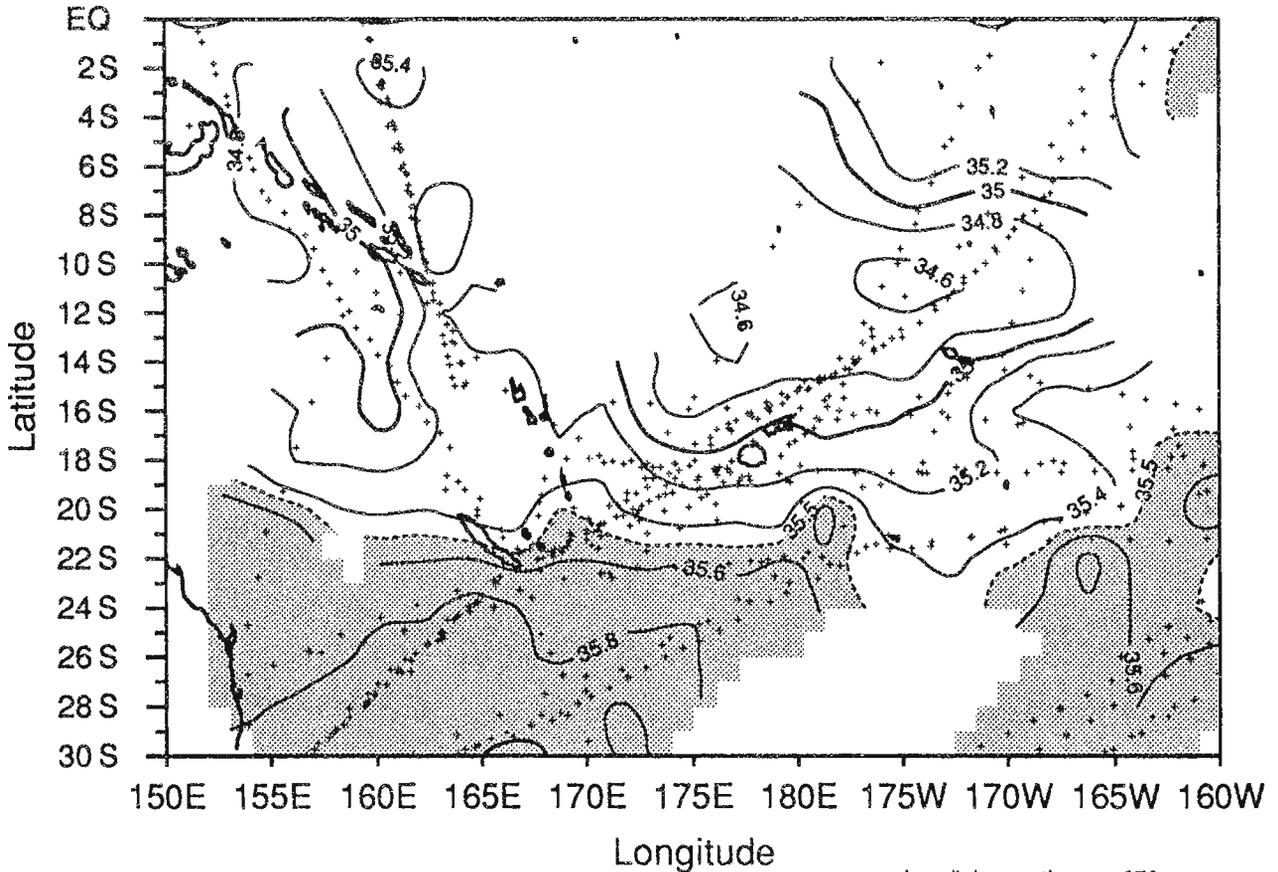
Salinite de surface du 01/03/81 au 30/04/81



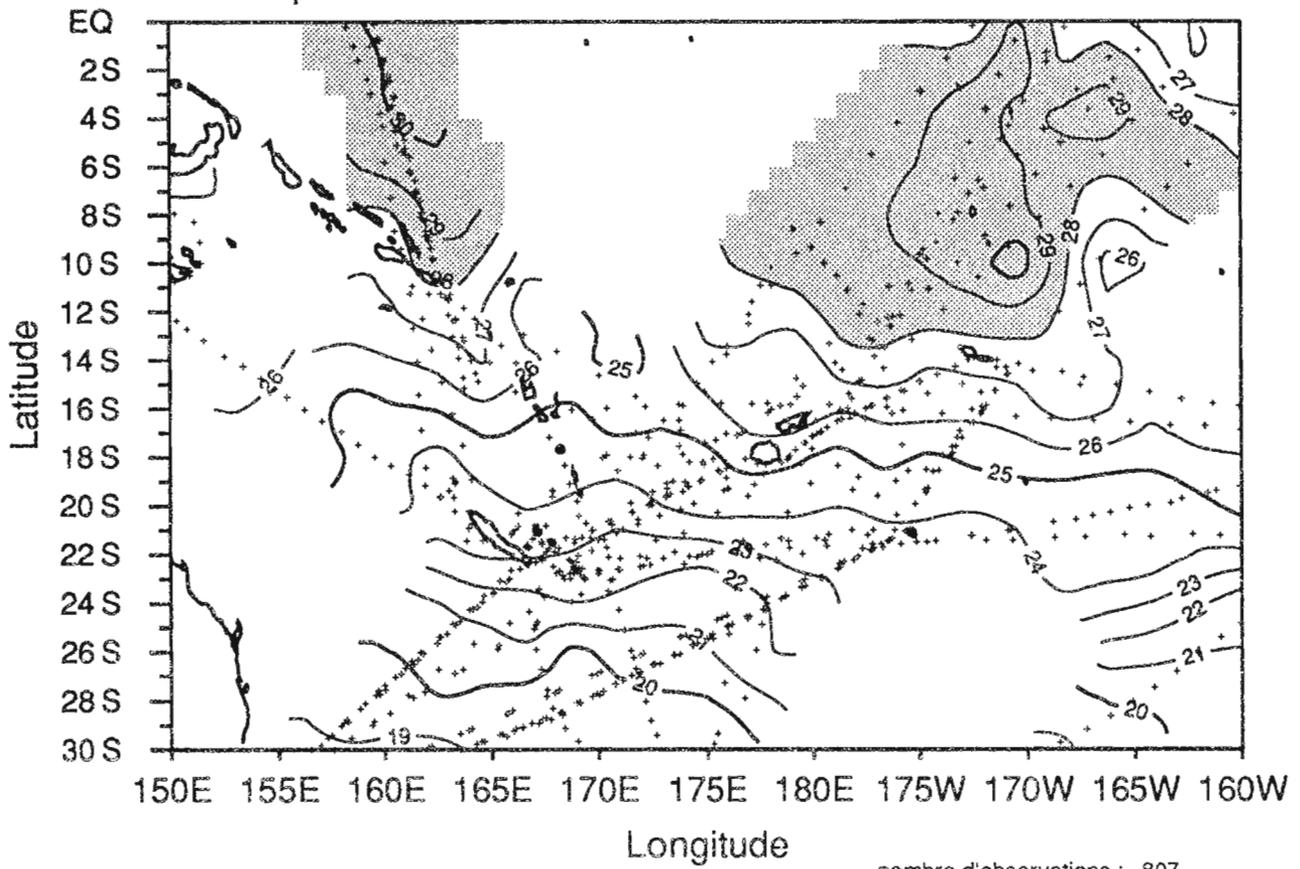
Temperature de surface du 01/05/81 au 30/06/81



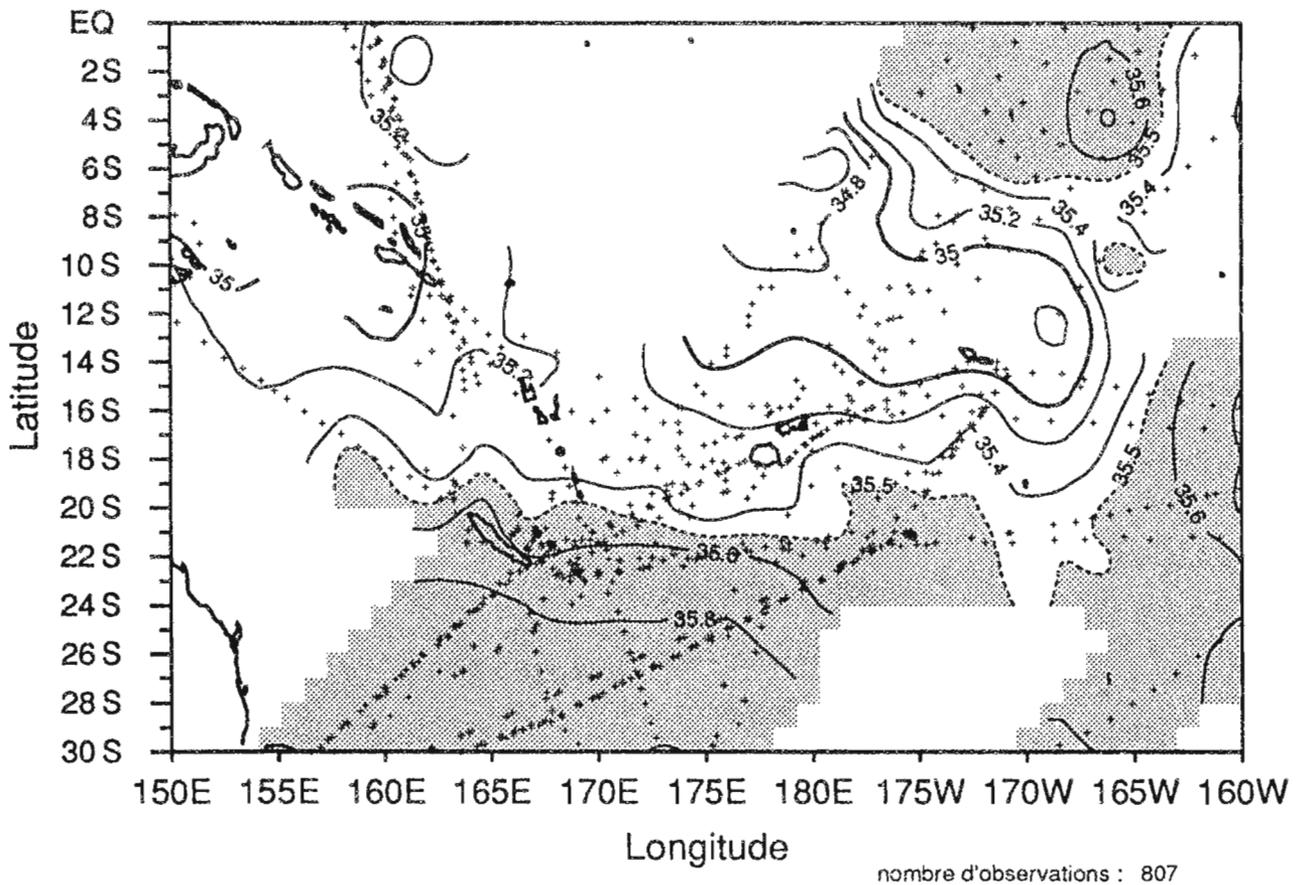
Salinite de surface du 01/05/81 au 30/06/81



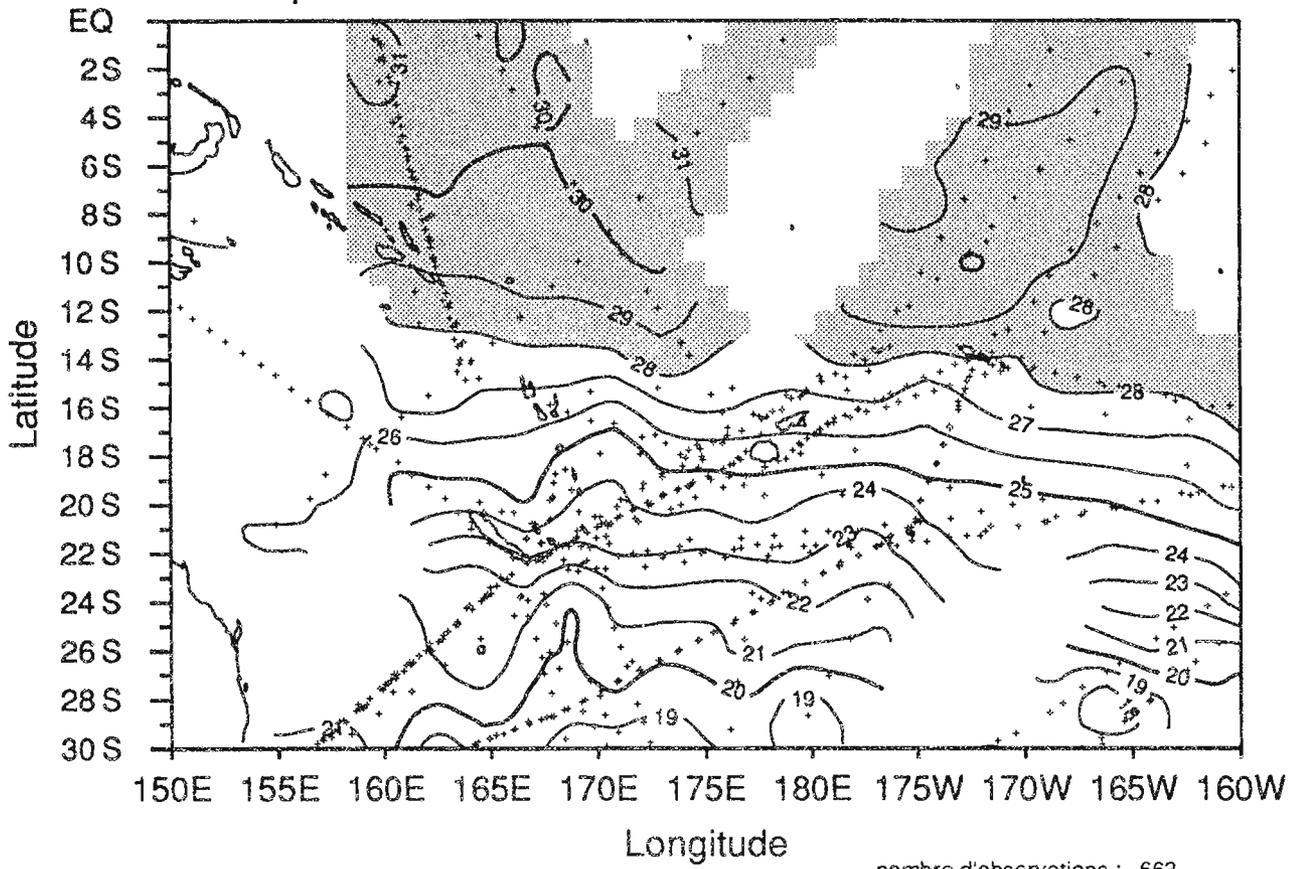
Temperature de surface du 01/07/81 au 31/08/81



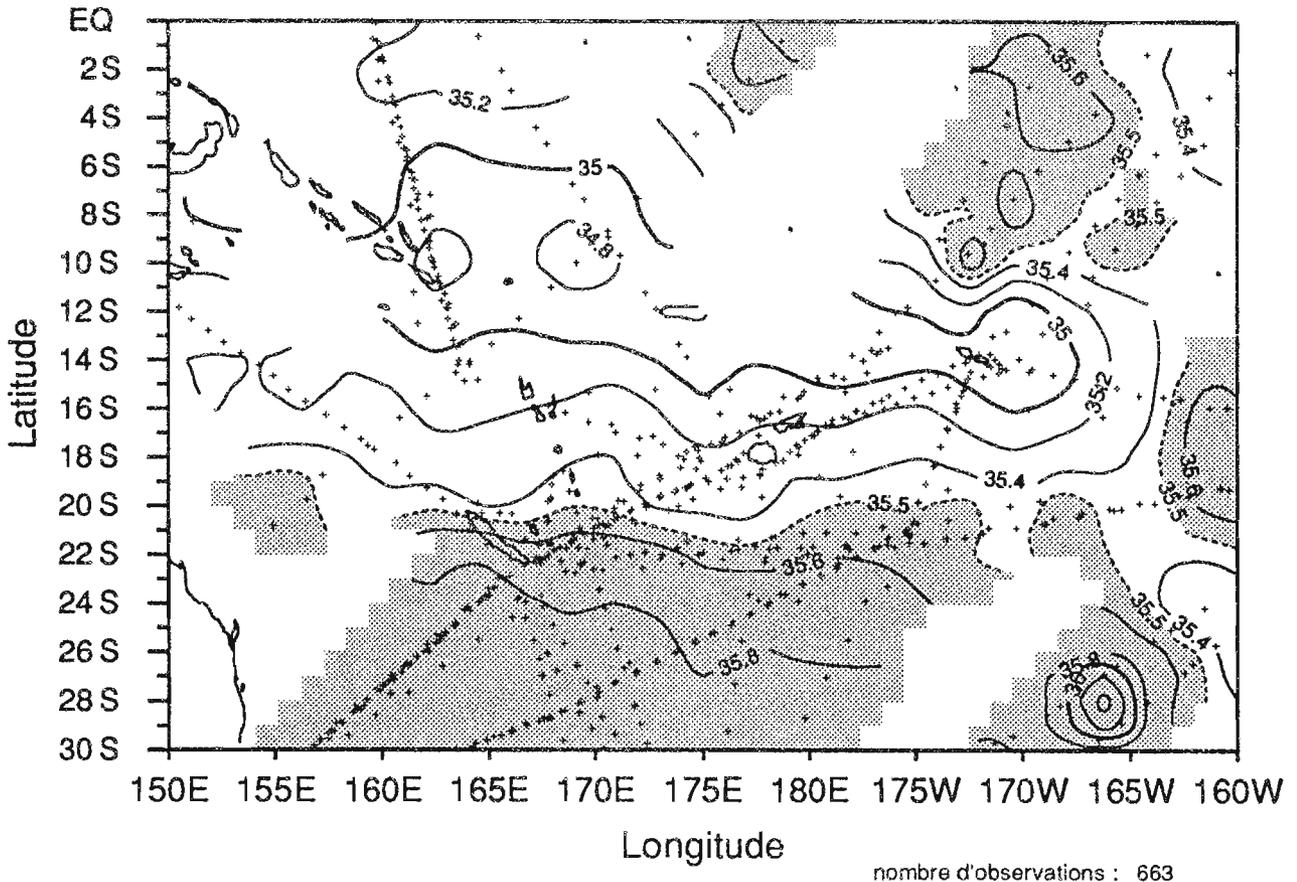
Salinite de surface du 01/07/81 au 31/08/81



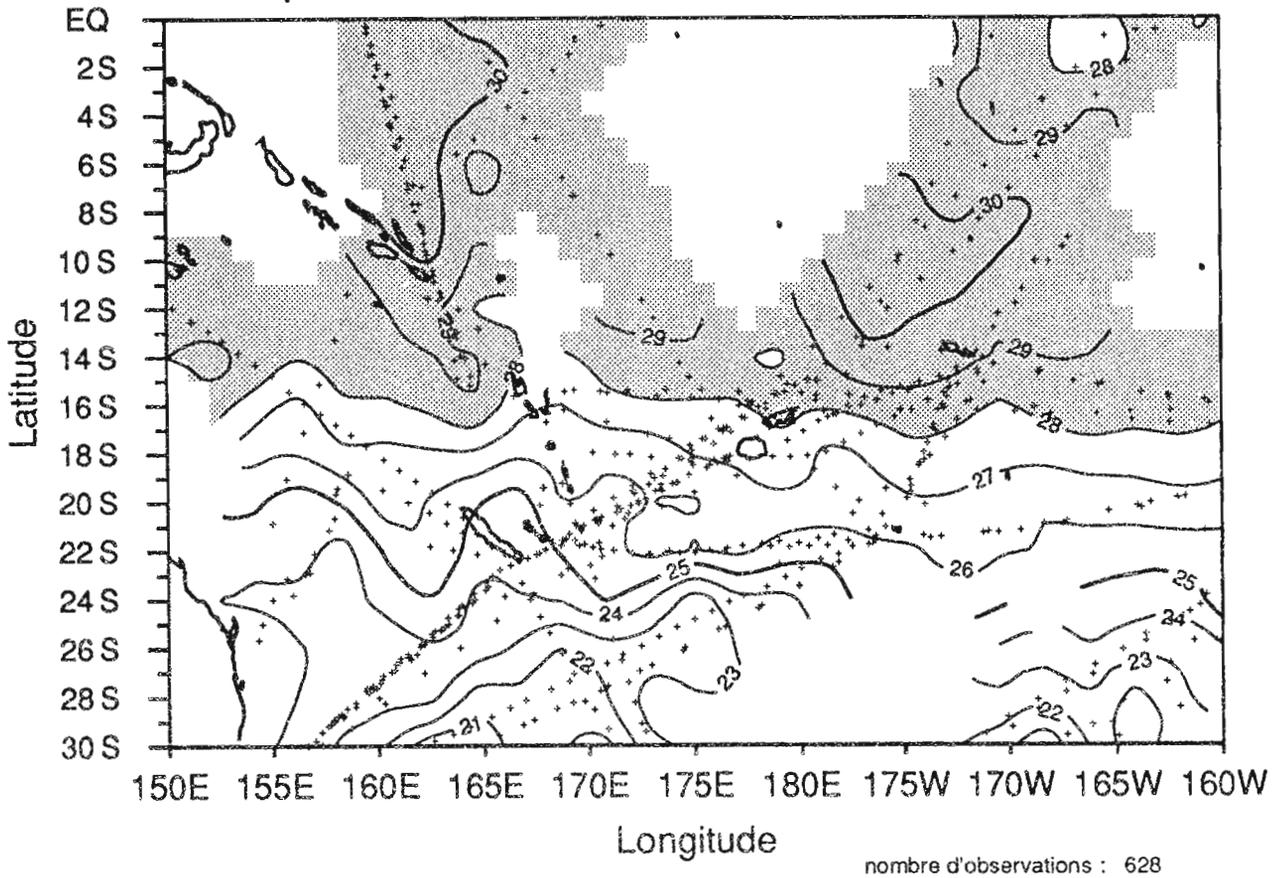
Temperature de surface du 01/09/81 au 31/10/81



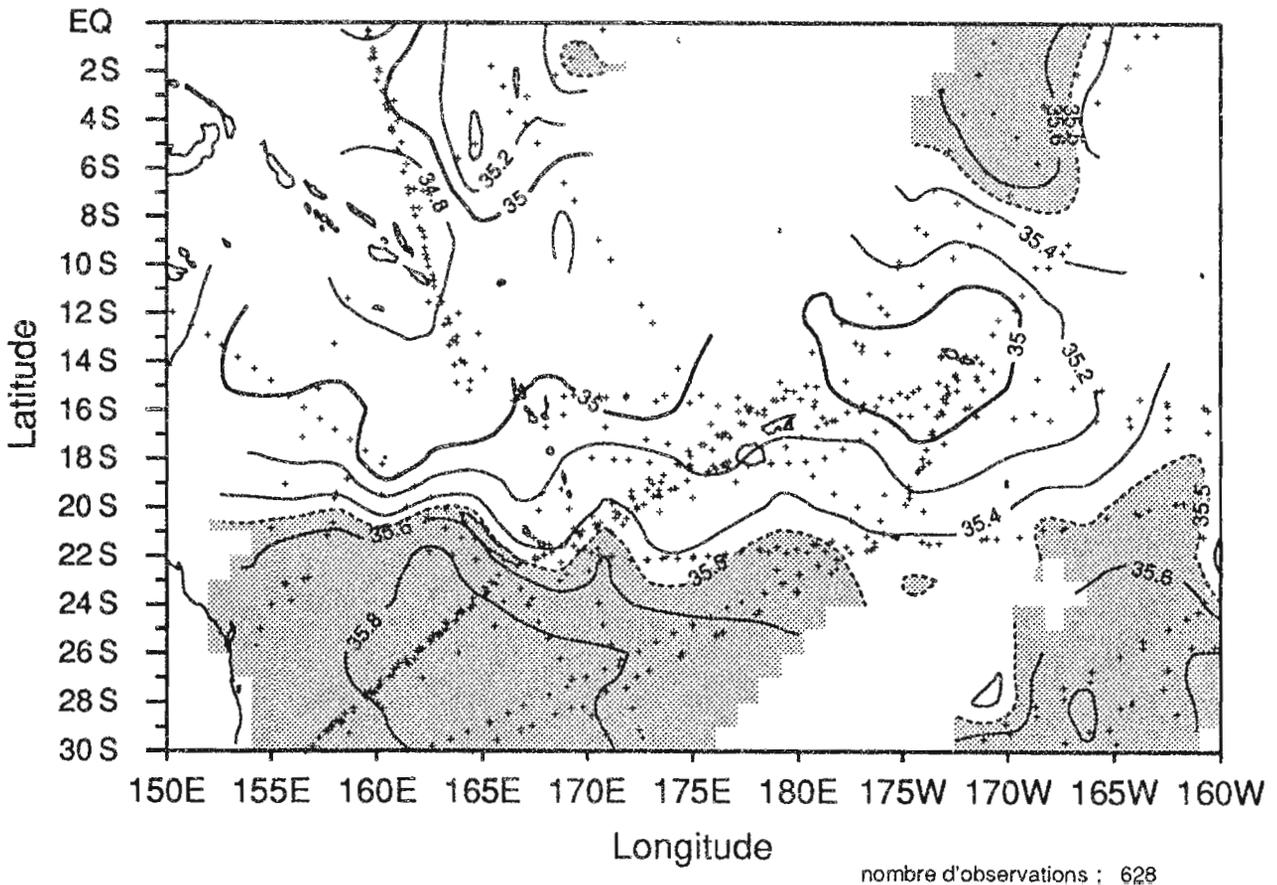
Salinite de surface du 01/09/81 au 31/10/81



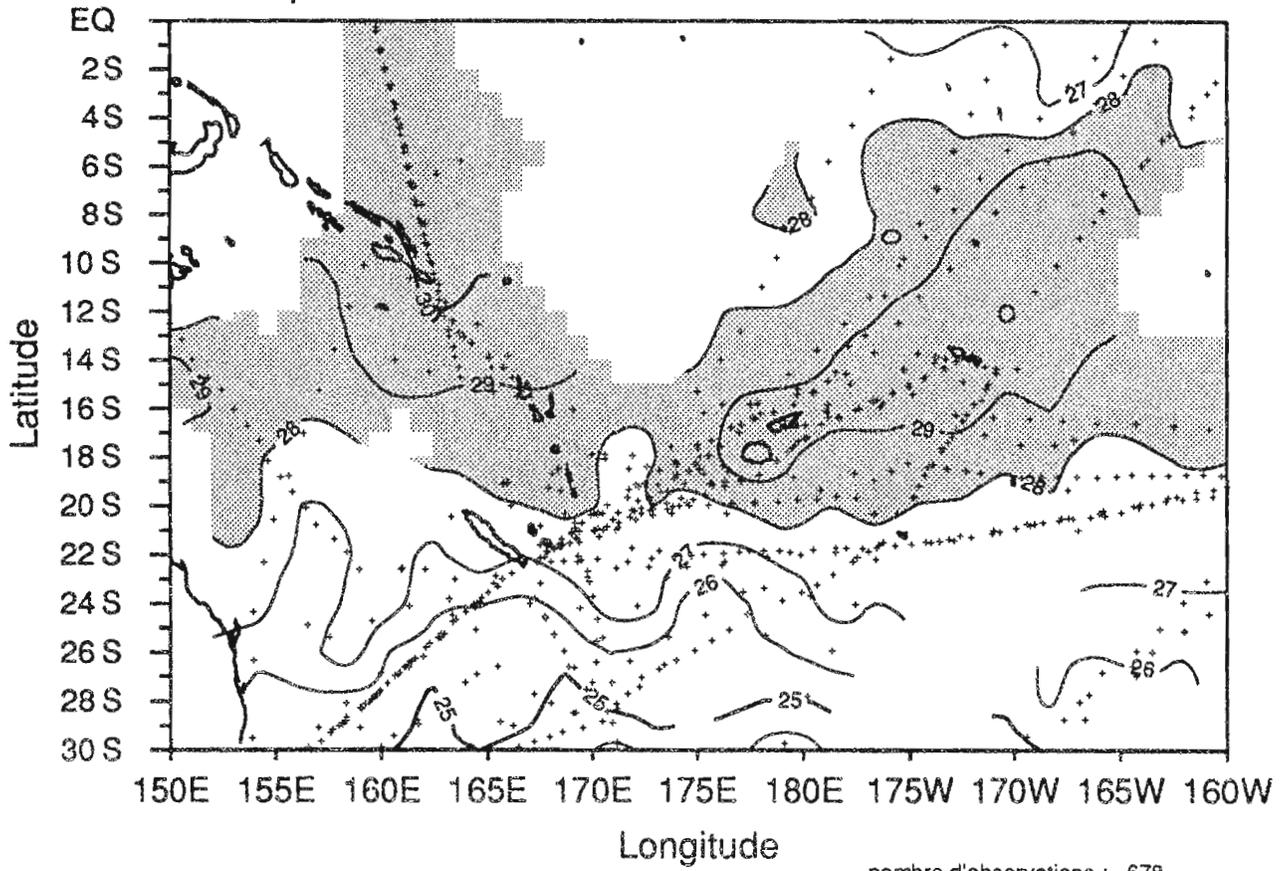
Temperature de surface du 01/11/81 au 31/12/81



Salinite de surface du 01/11/81 au 31/12/81

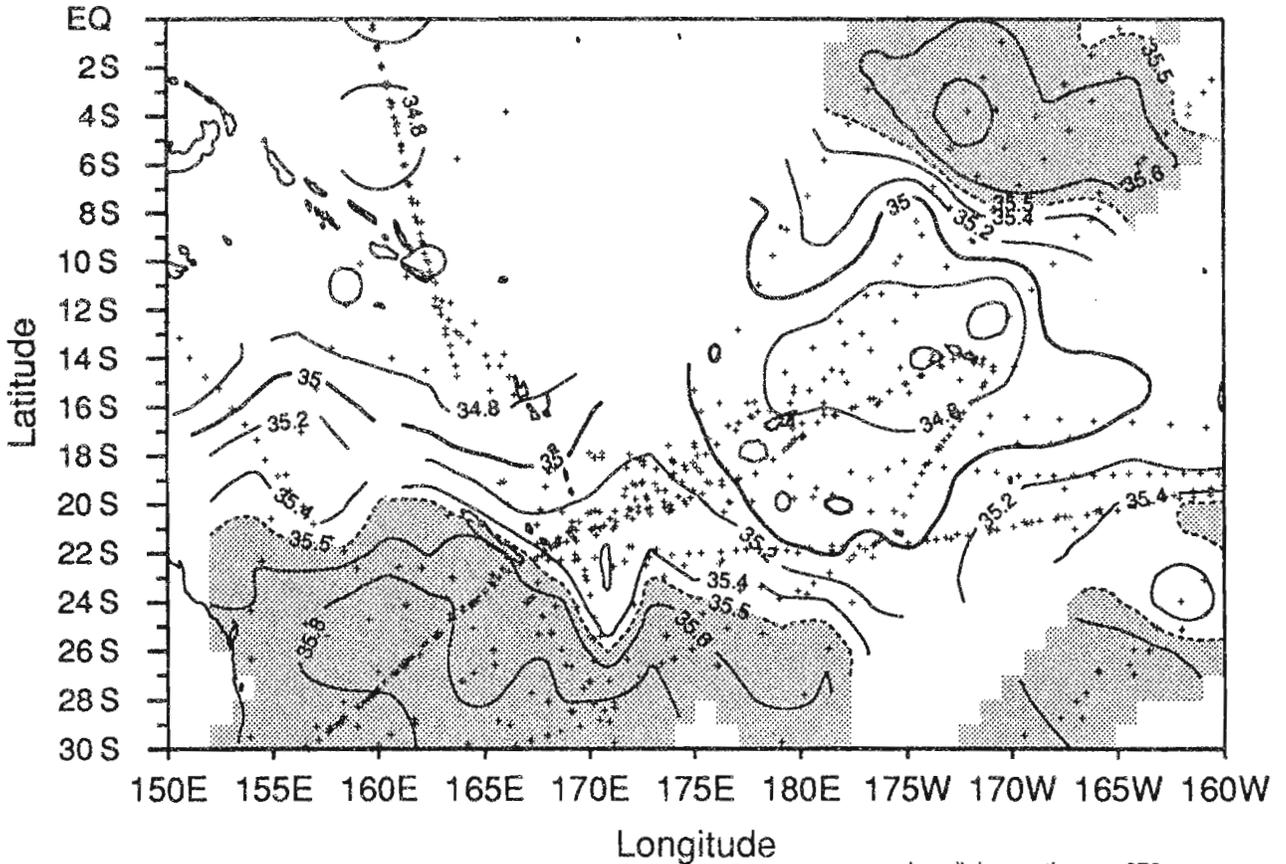


Temperature de surface du 01/01/82 au 28/02/82



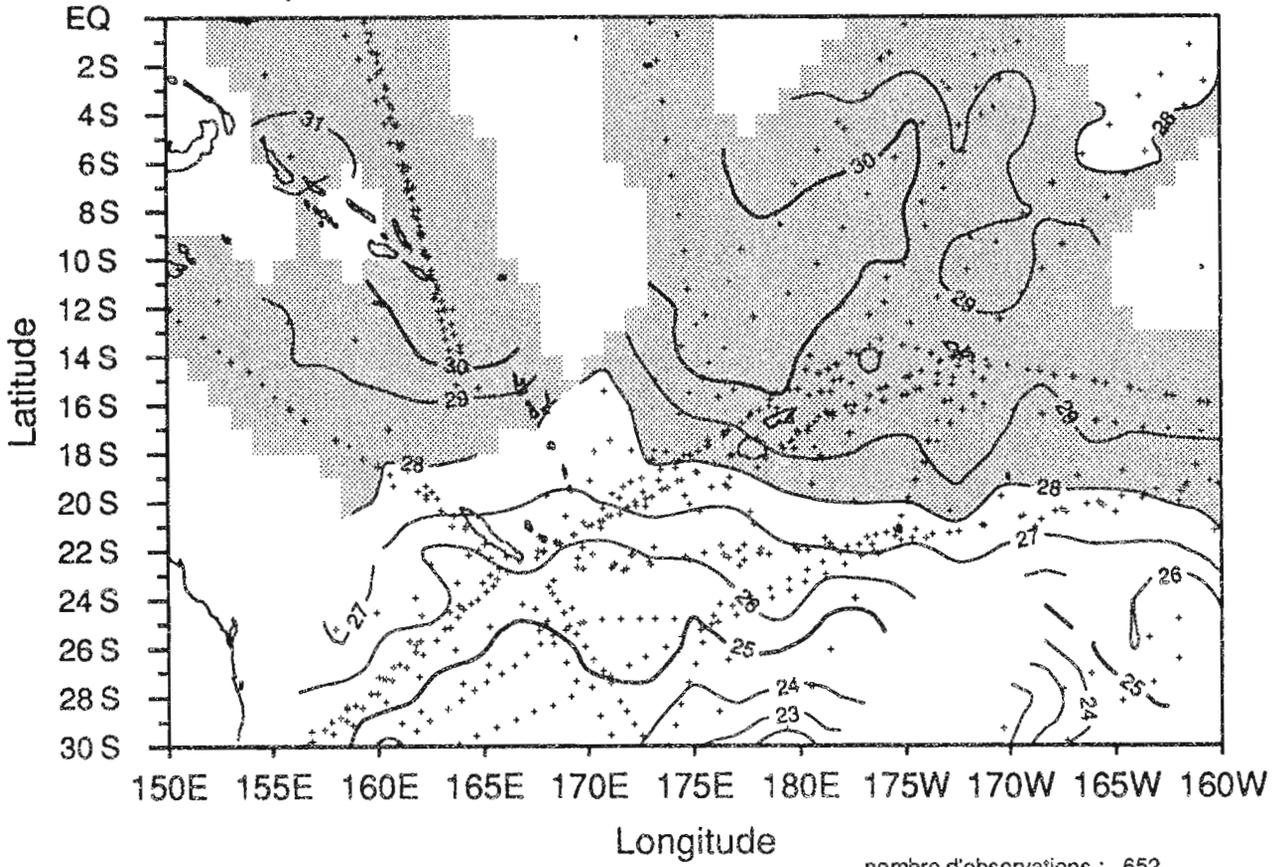
nombre d'observations : 678

Salinite de surface du 01/01/82 au 28/02/82

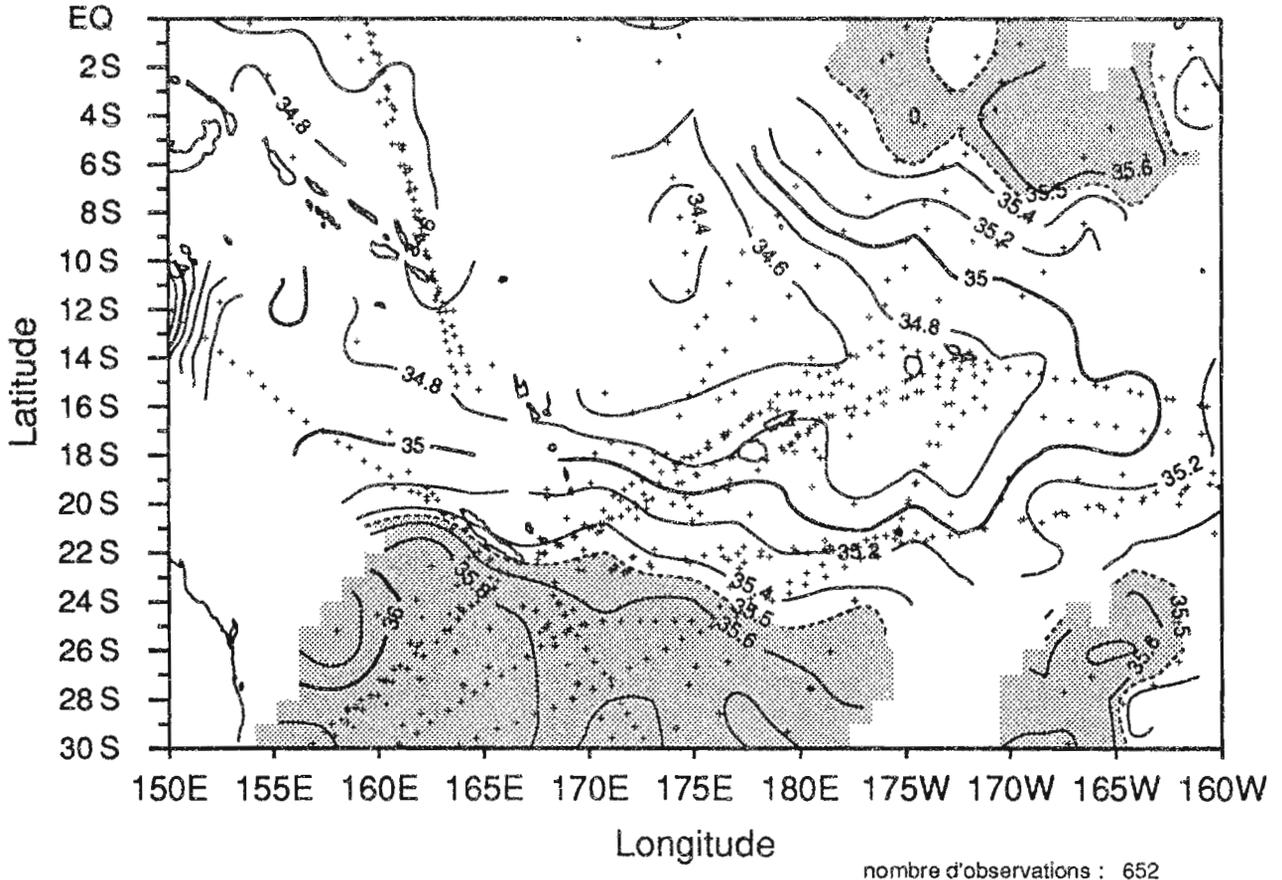


nombre d'observations : 678

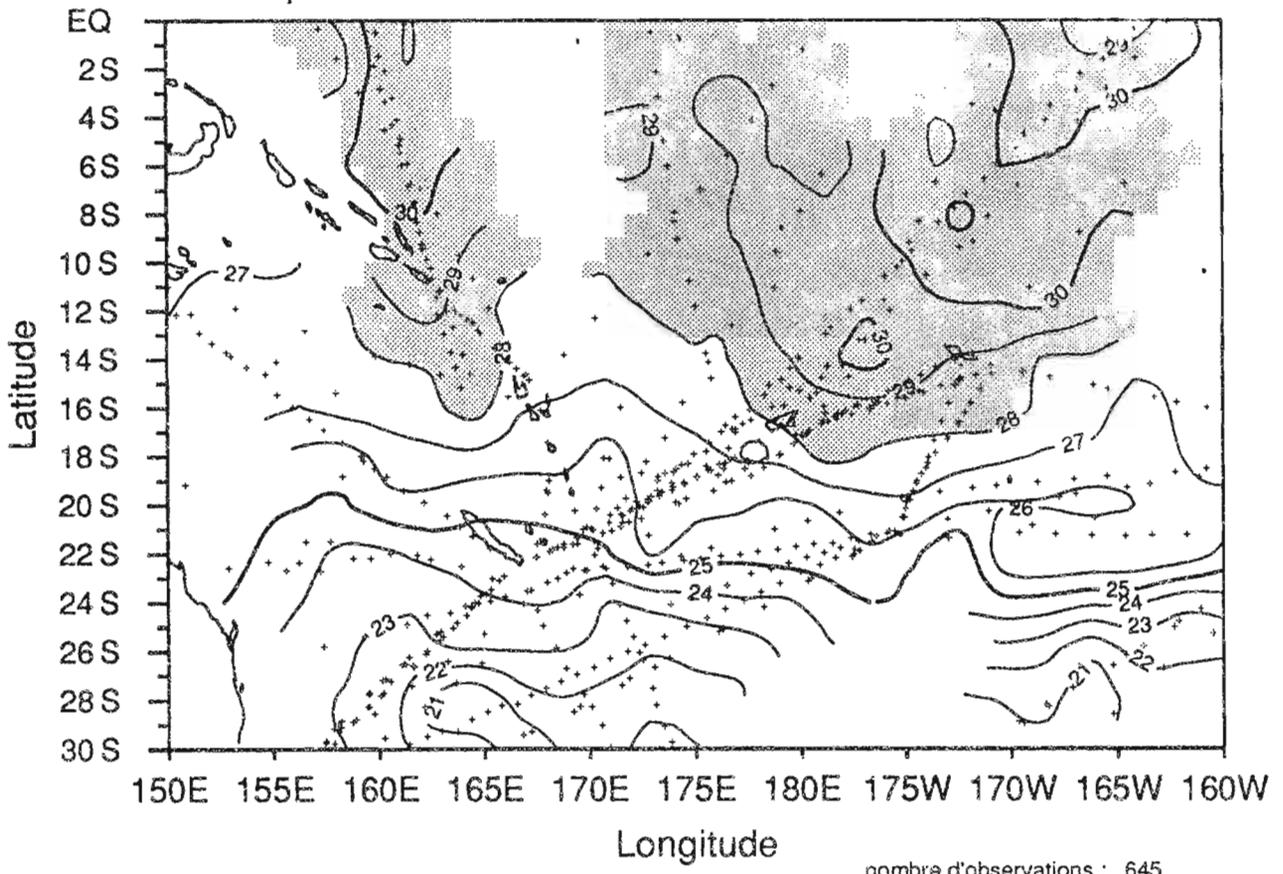
Temperature de surface du 01/03/82 au 30/04/82



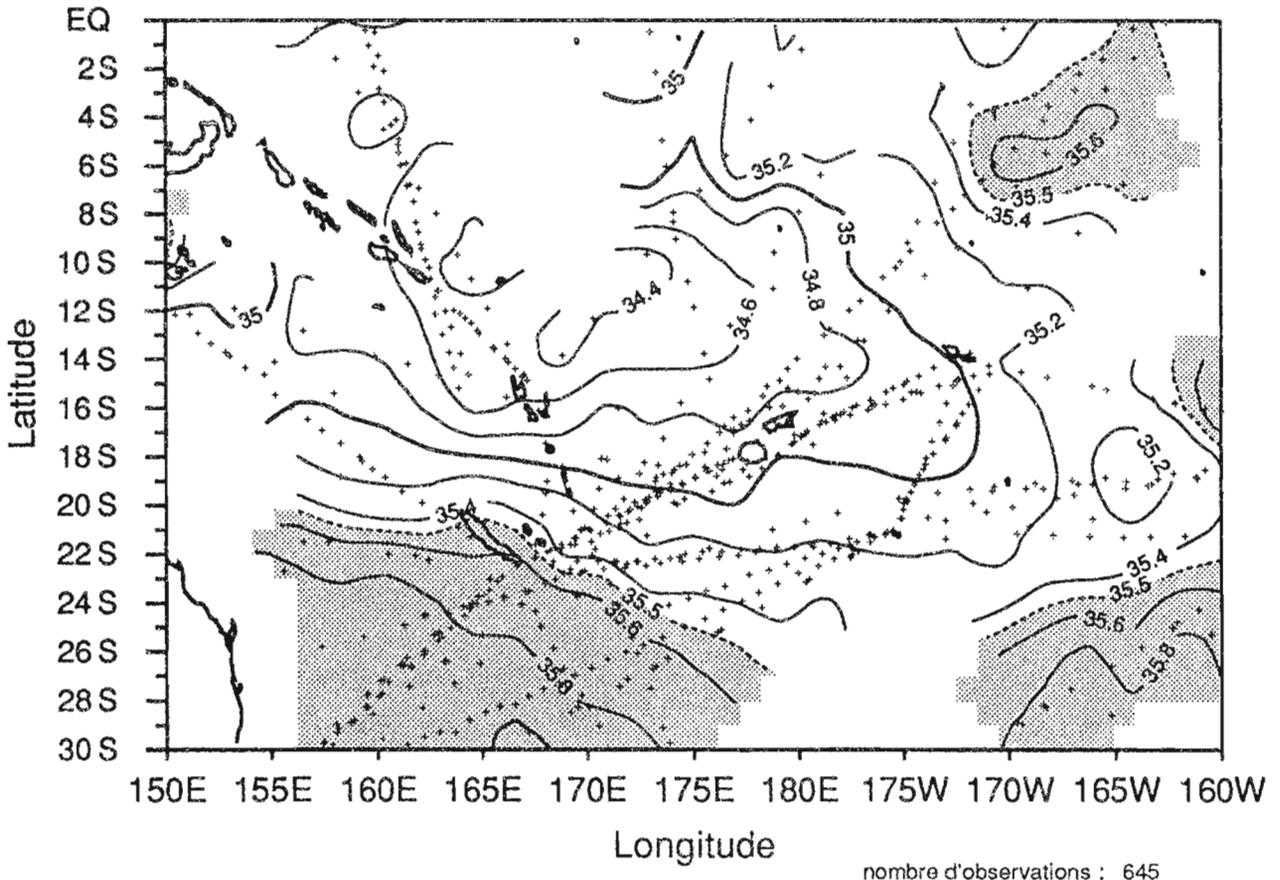
Salinite de surface du 01/03/82 au 30/04/82



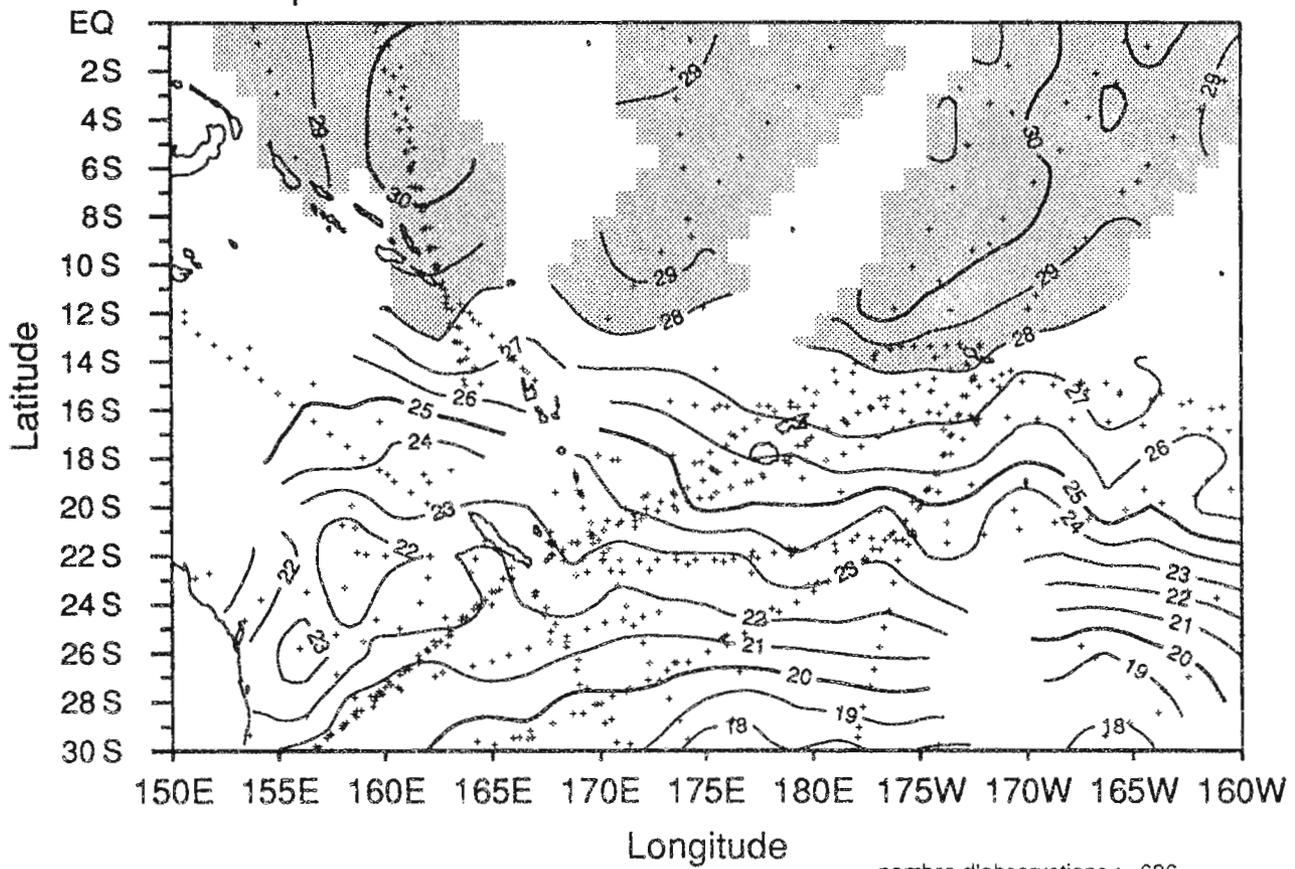
Temperature de surface du 01/05/82 au 30/06/82



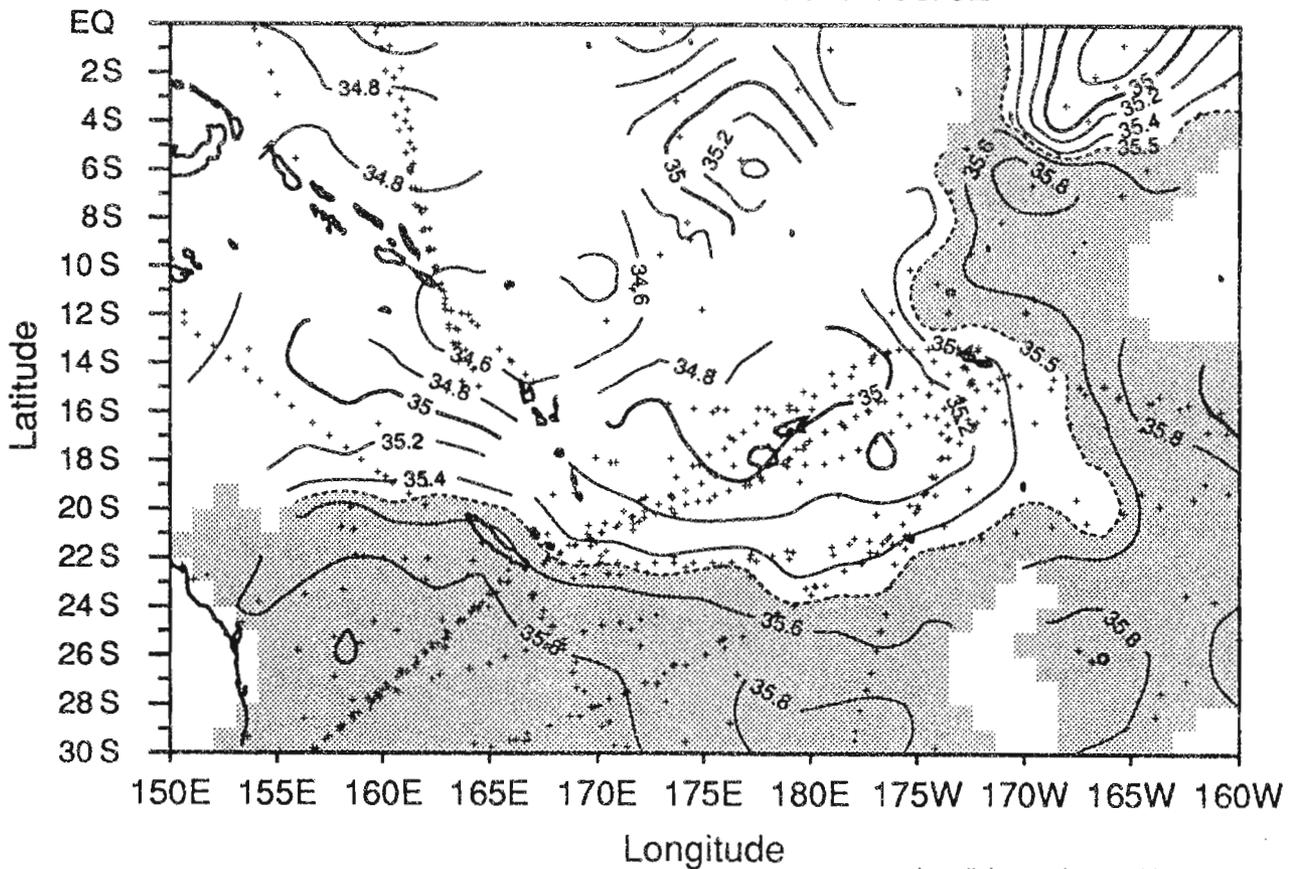
Salinite de surface du 01/05/82 au 30/06/82



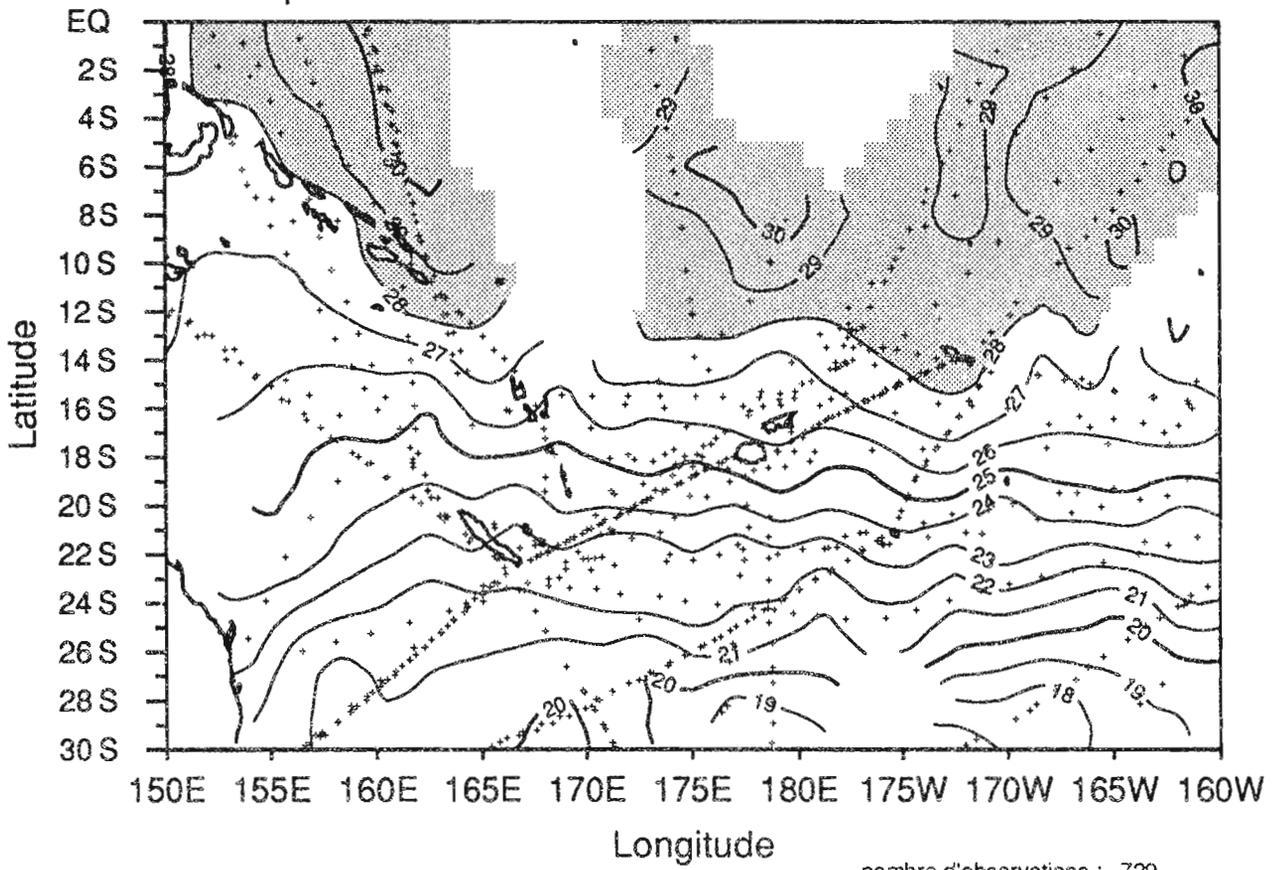
Temperature de surface du 01/07/82 au 31/08/82



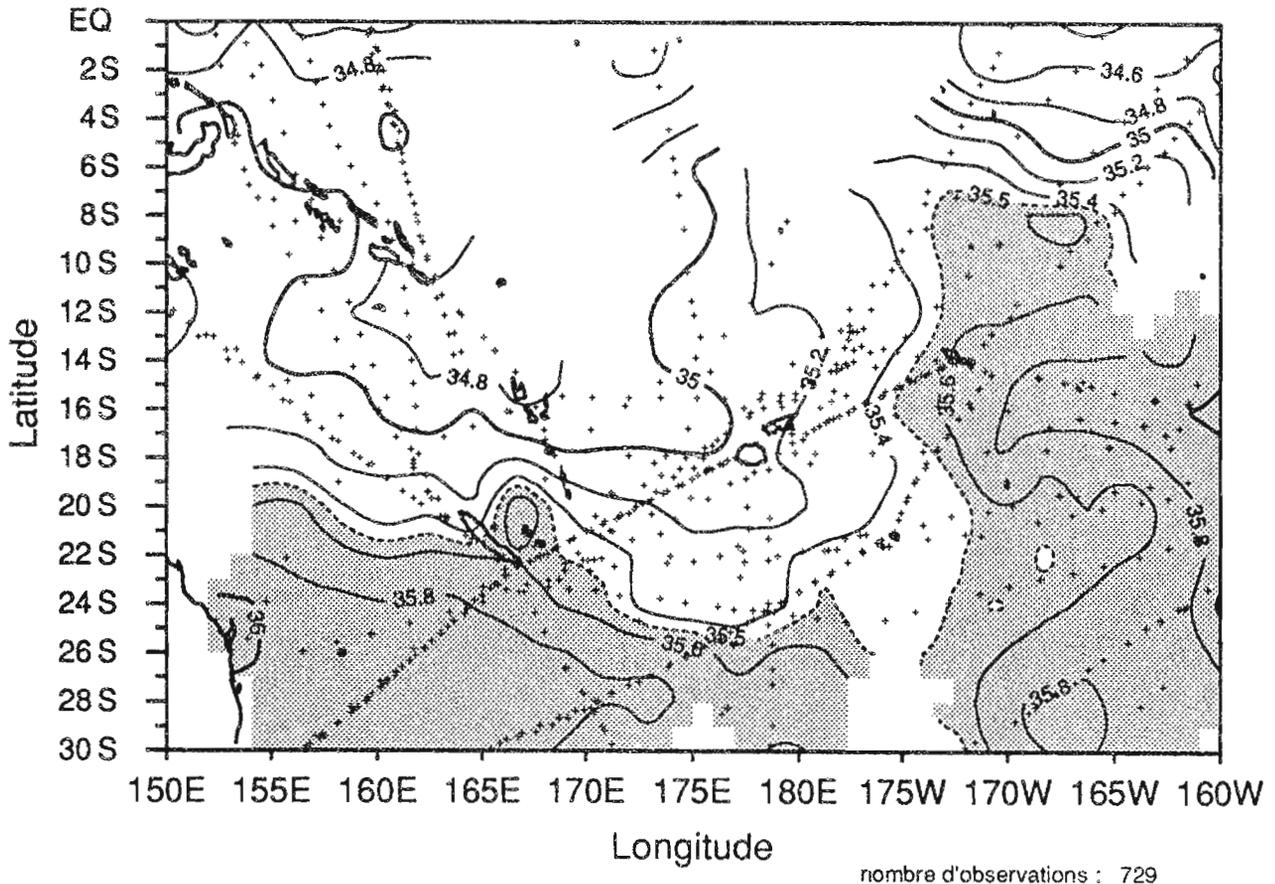
Salinite de surface du 01/07/82 au 31/08/82



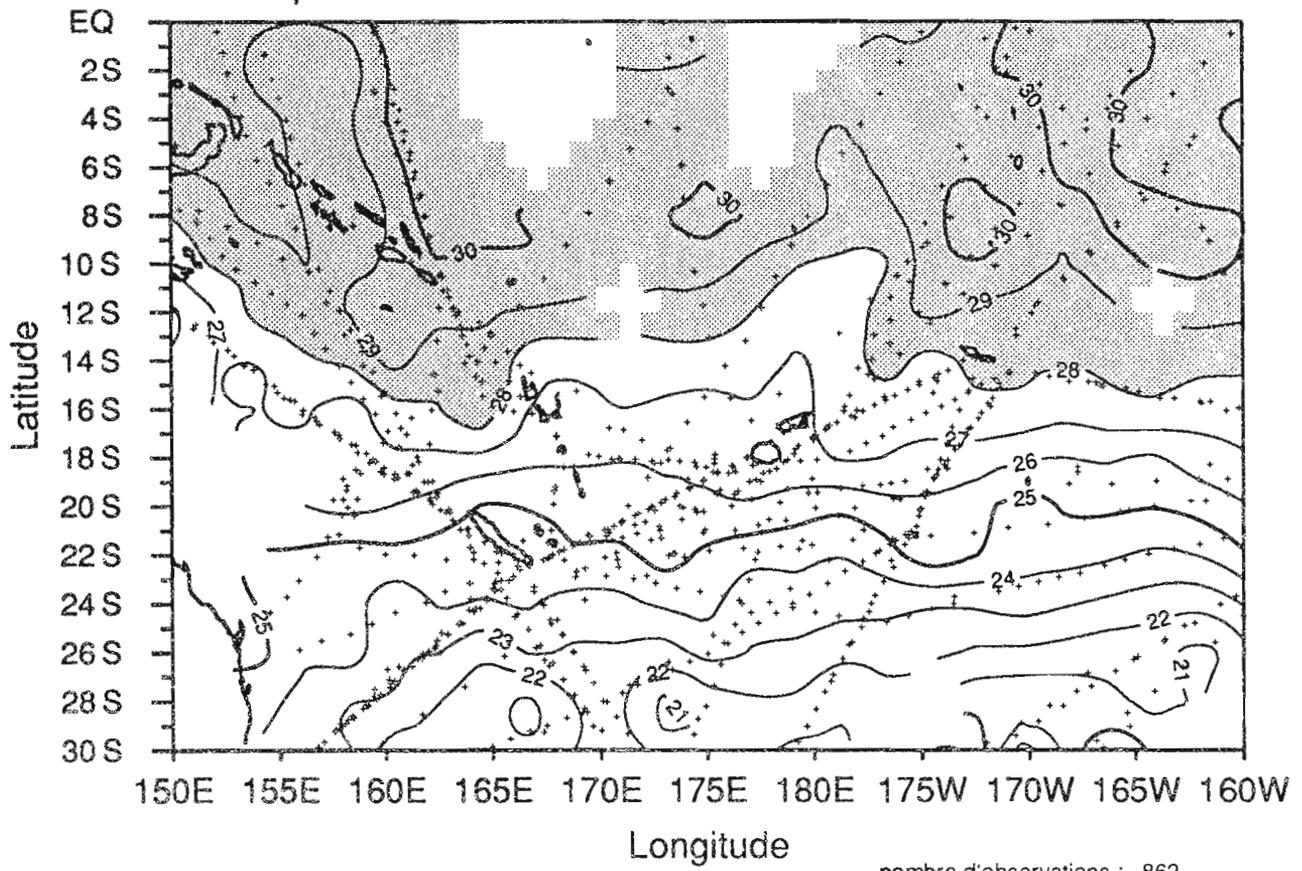
Temperature de surface du 01/09/82 au 31/10/82



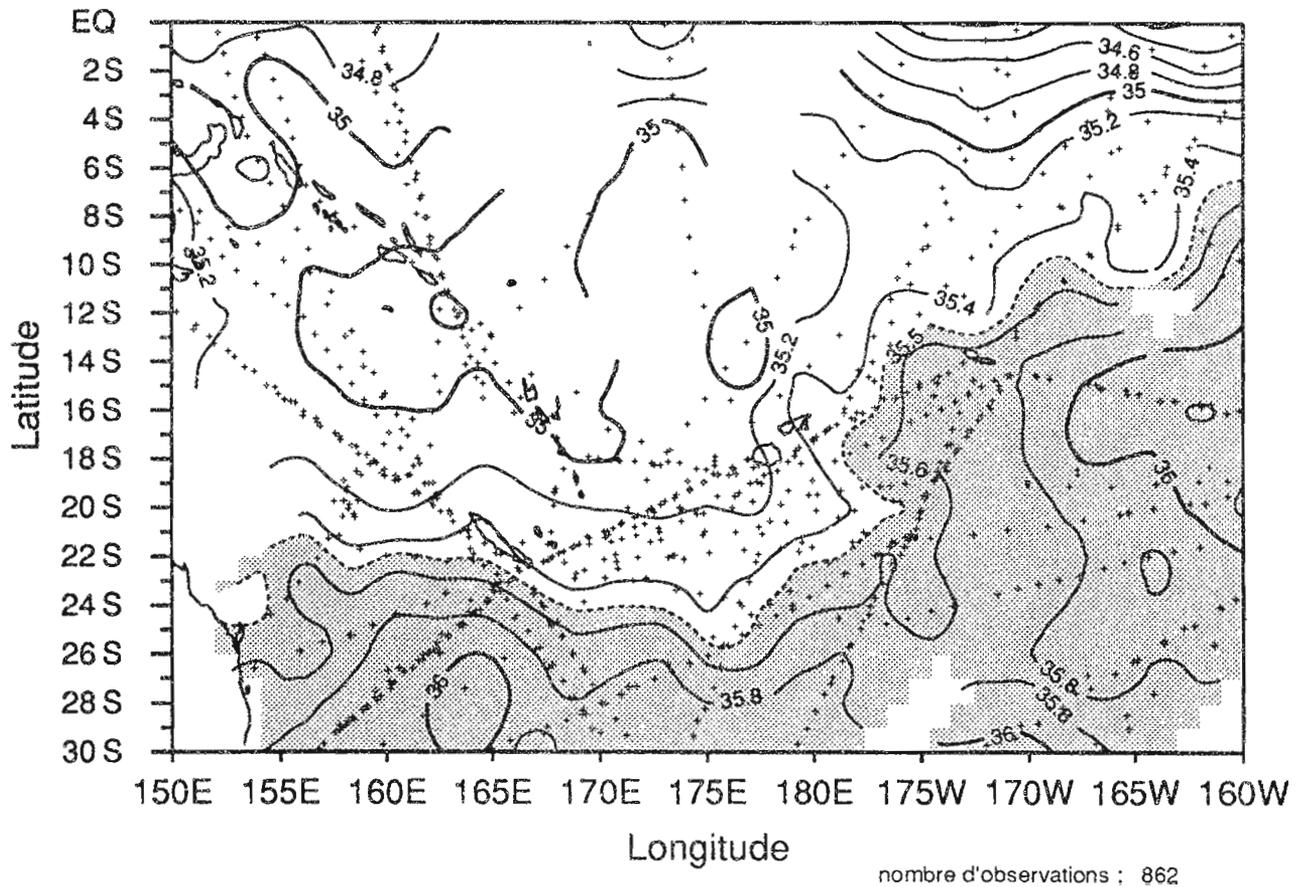
Salinite de surface du 01/09/82 au 31/10/82



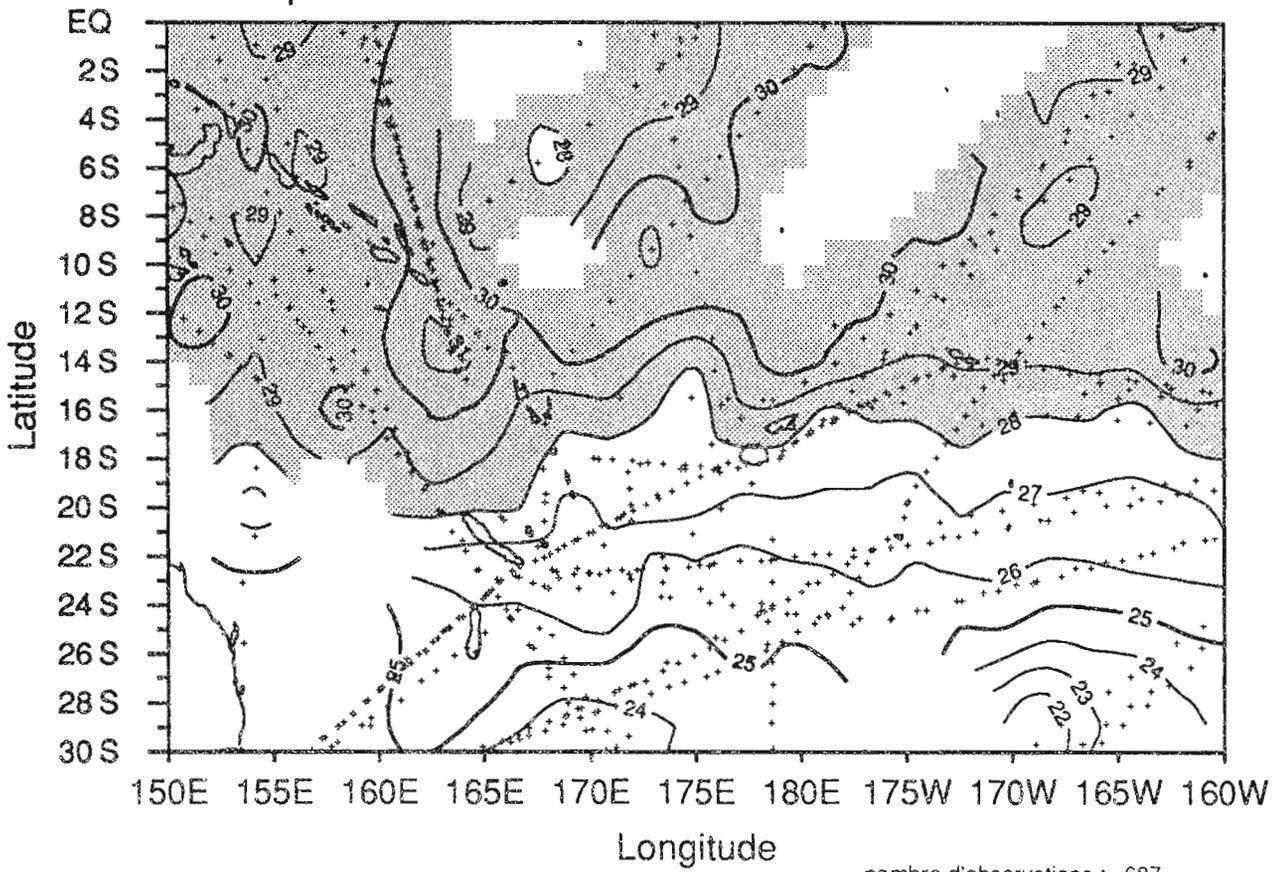
Temperature de surface du 01/11/82 au 31/12/82



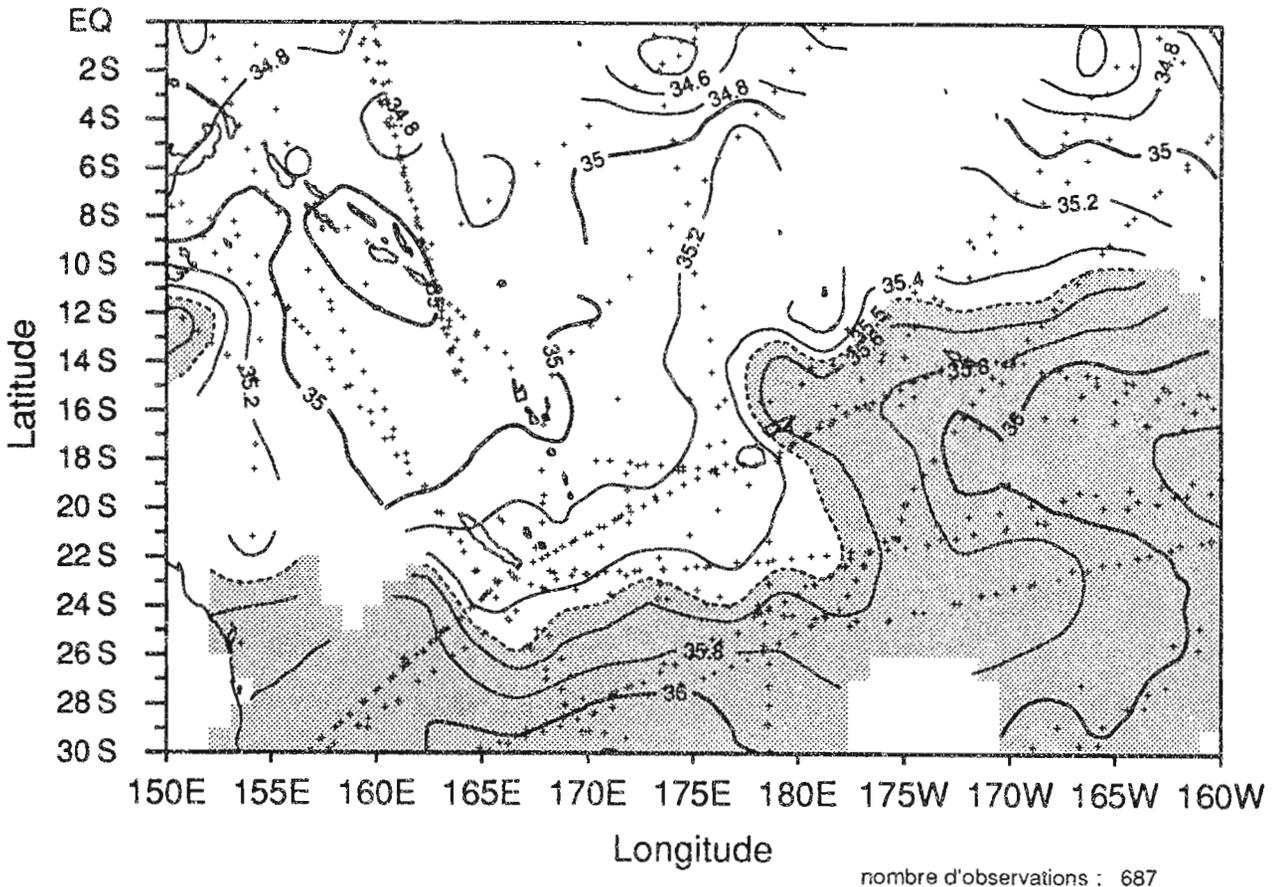
Salinite de surface du 01/11/82 au 31/12/82



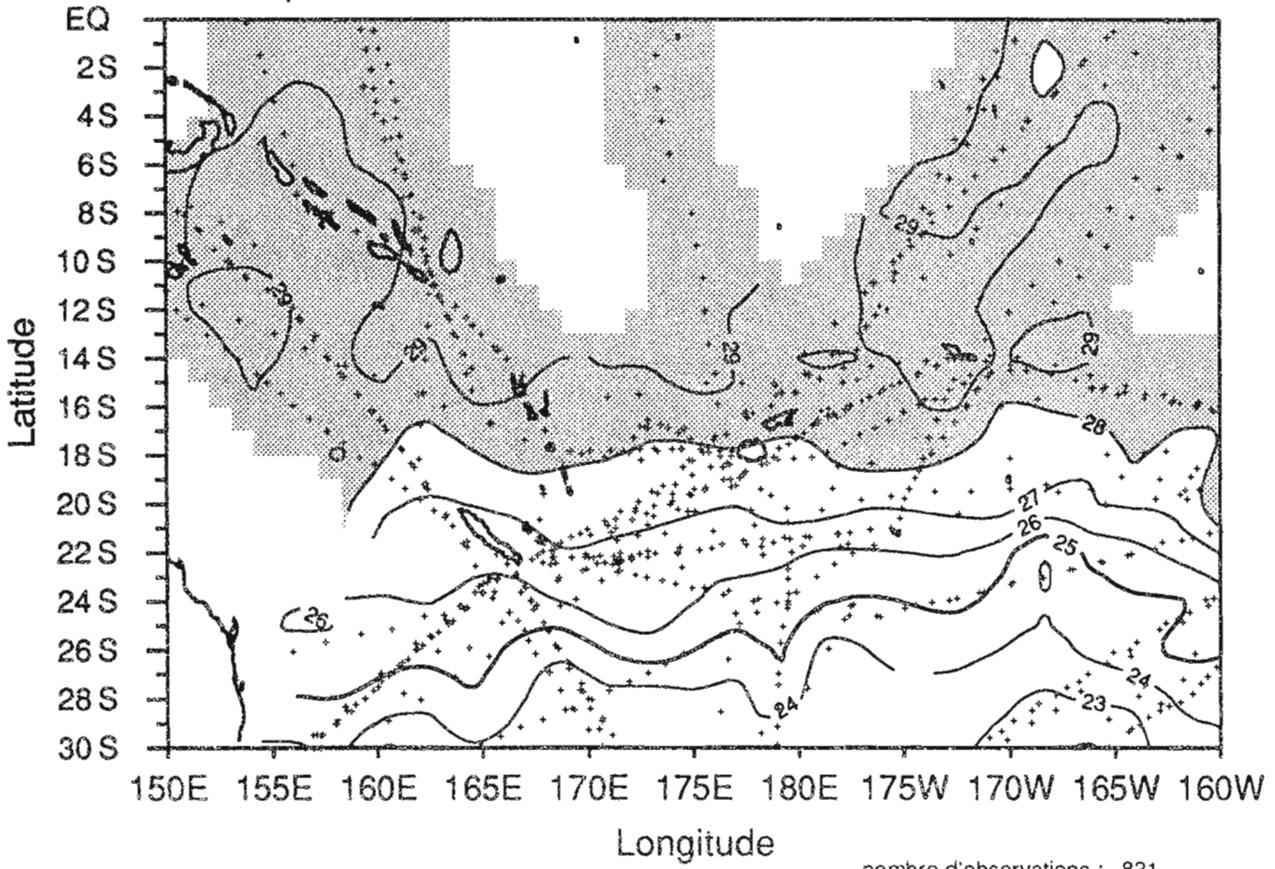
Temperature de surface du 01/01/83 au 28/02/83



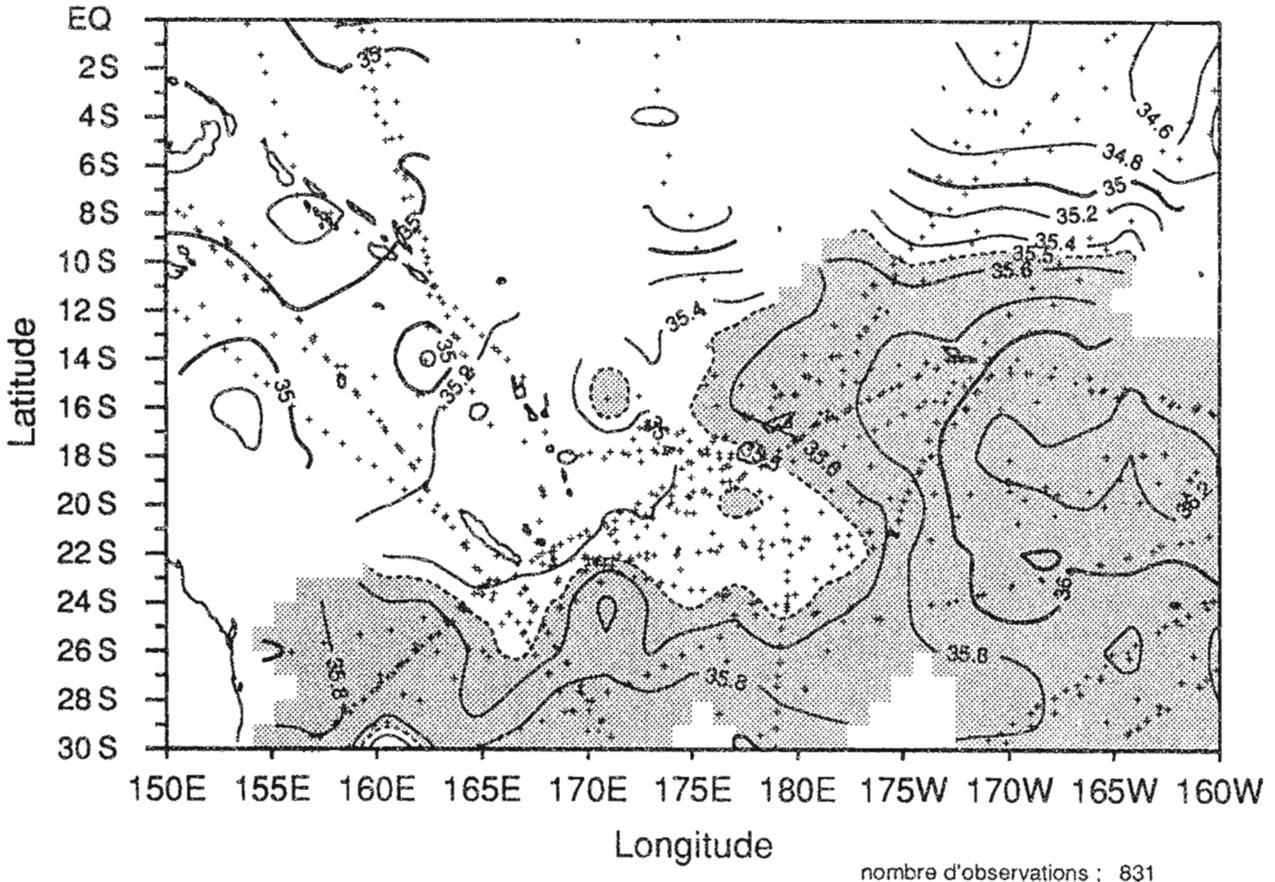
Salinite de surface du 01/01/83 au 28/02/83



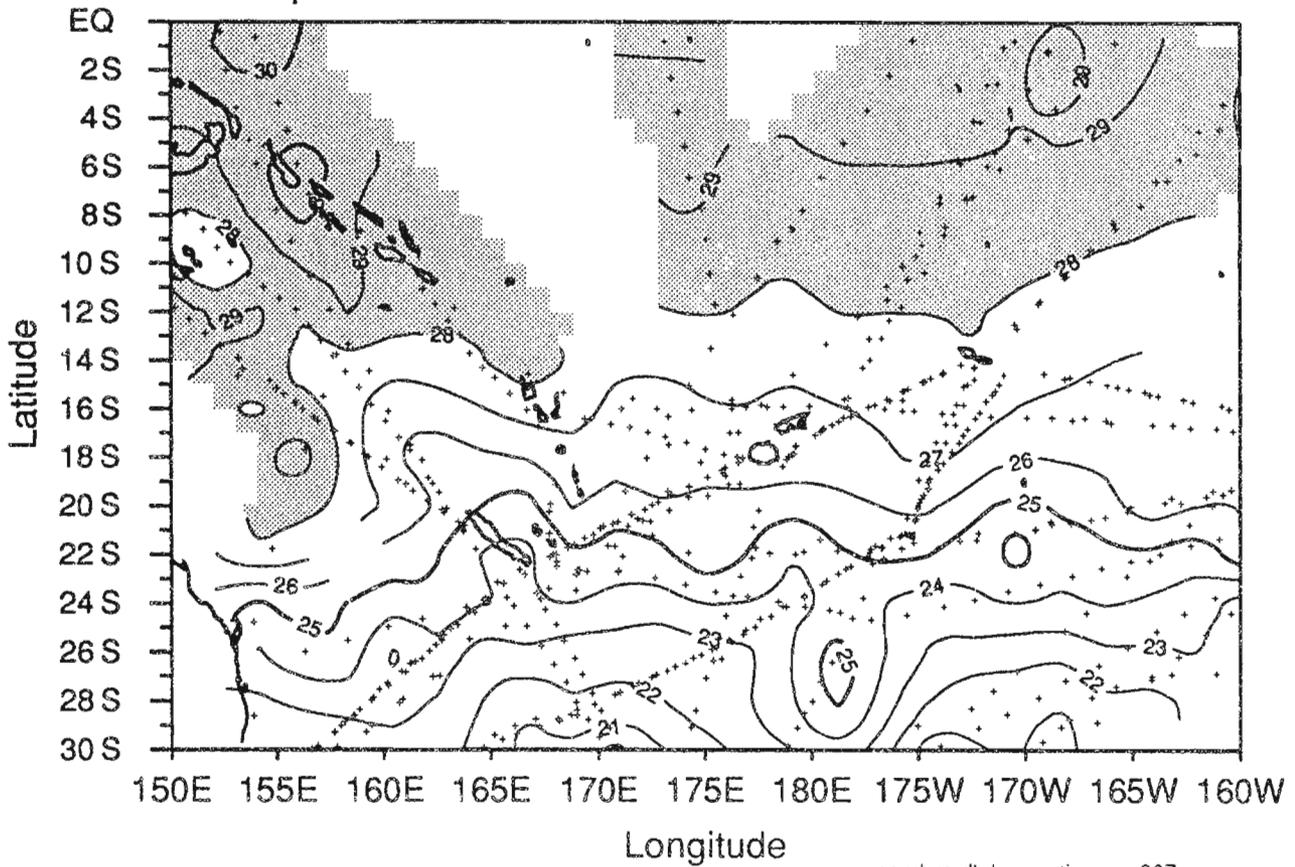
Temperature de surface du 01/03/83 au 30/04/83



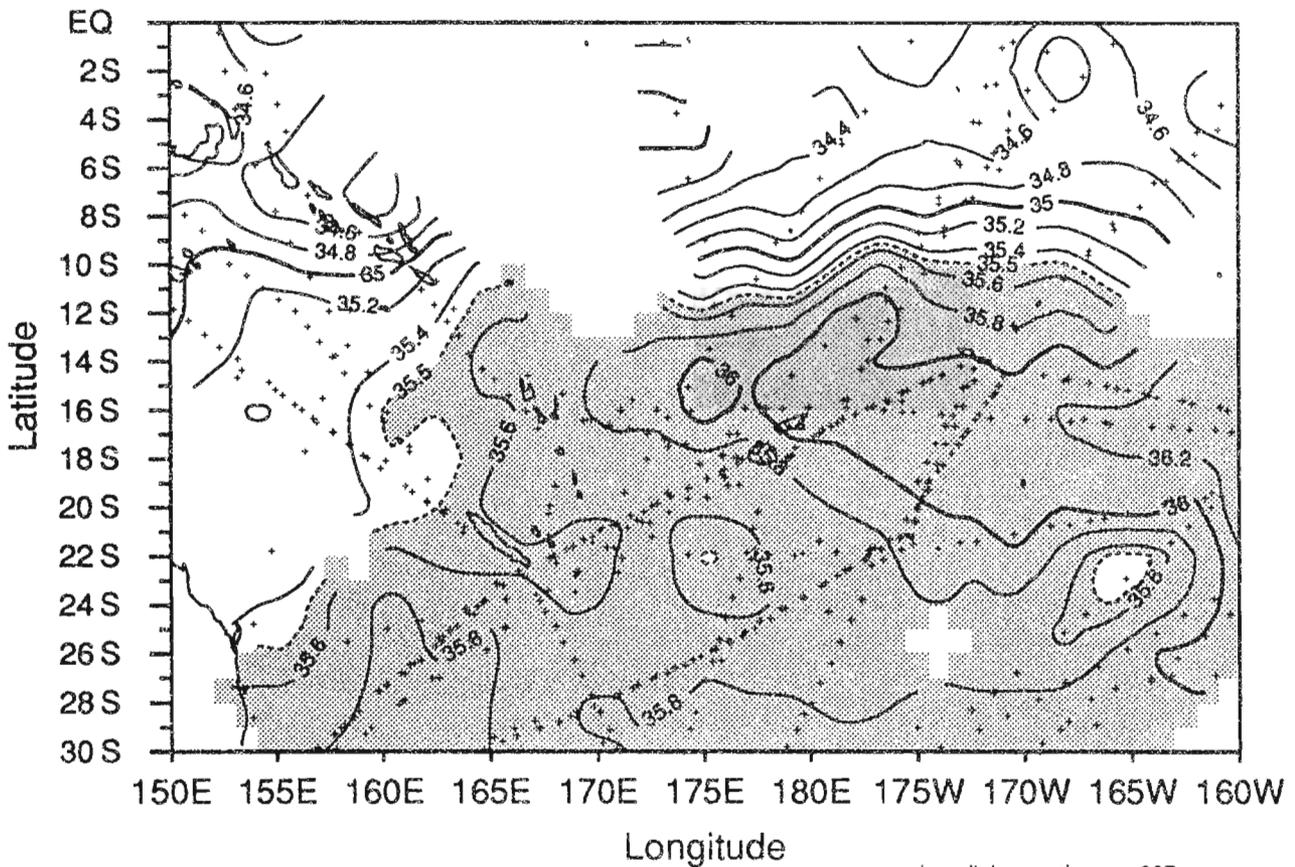
Salinite de surface du 01/03/83 au 30/04/83



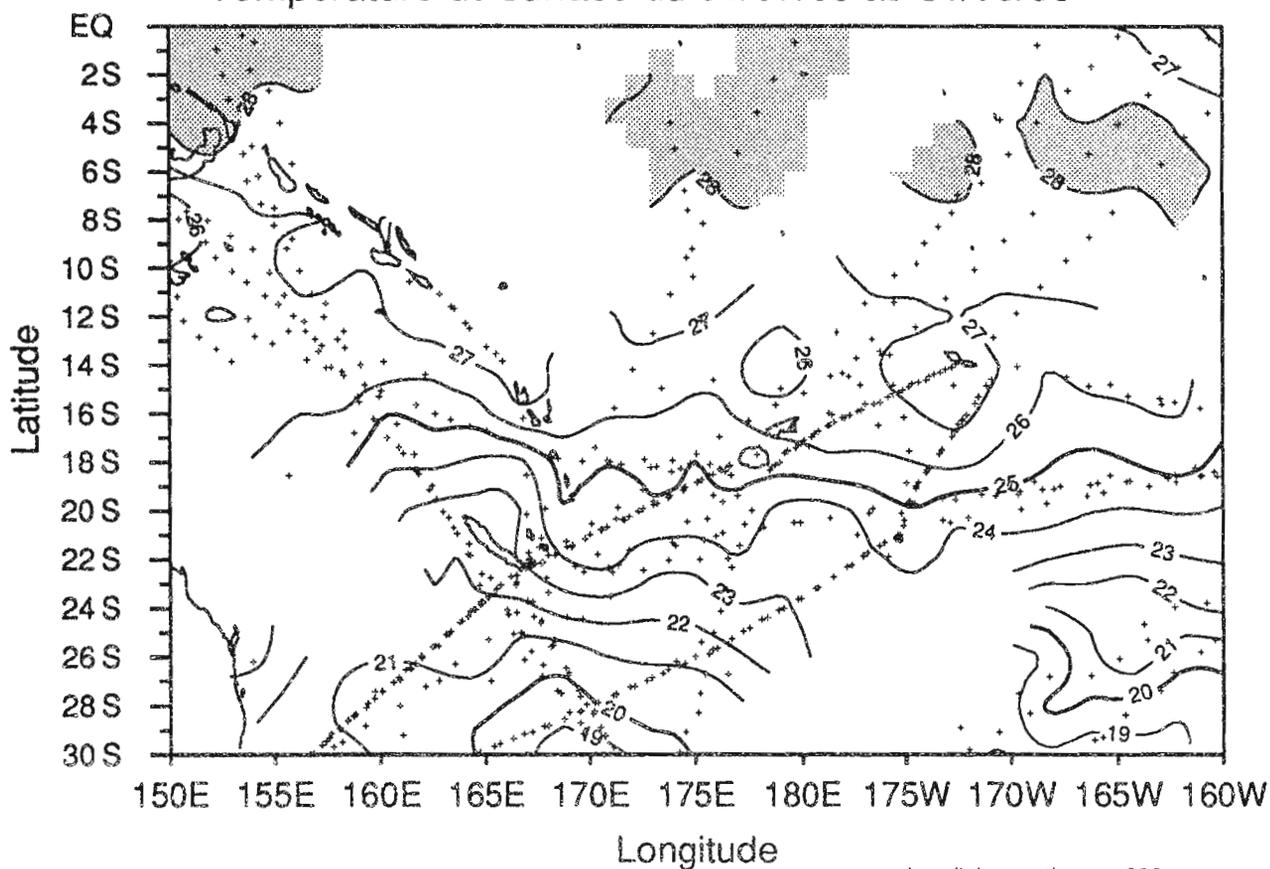
Temperature de surface du 01/05/83 au 30/06/83



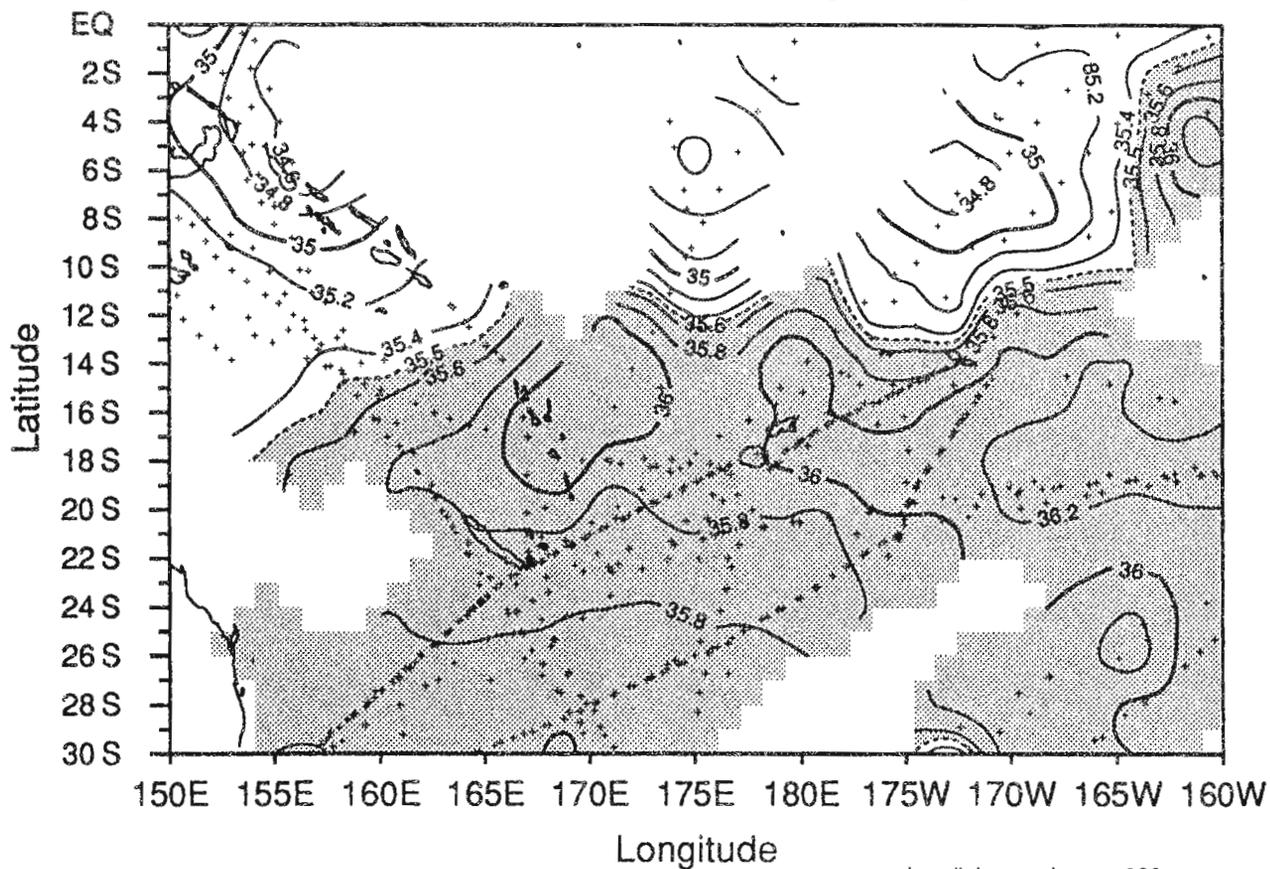
Salinite de surface du 01/05/83 au 30/06/83



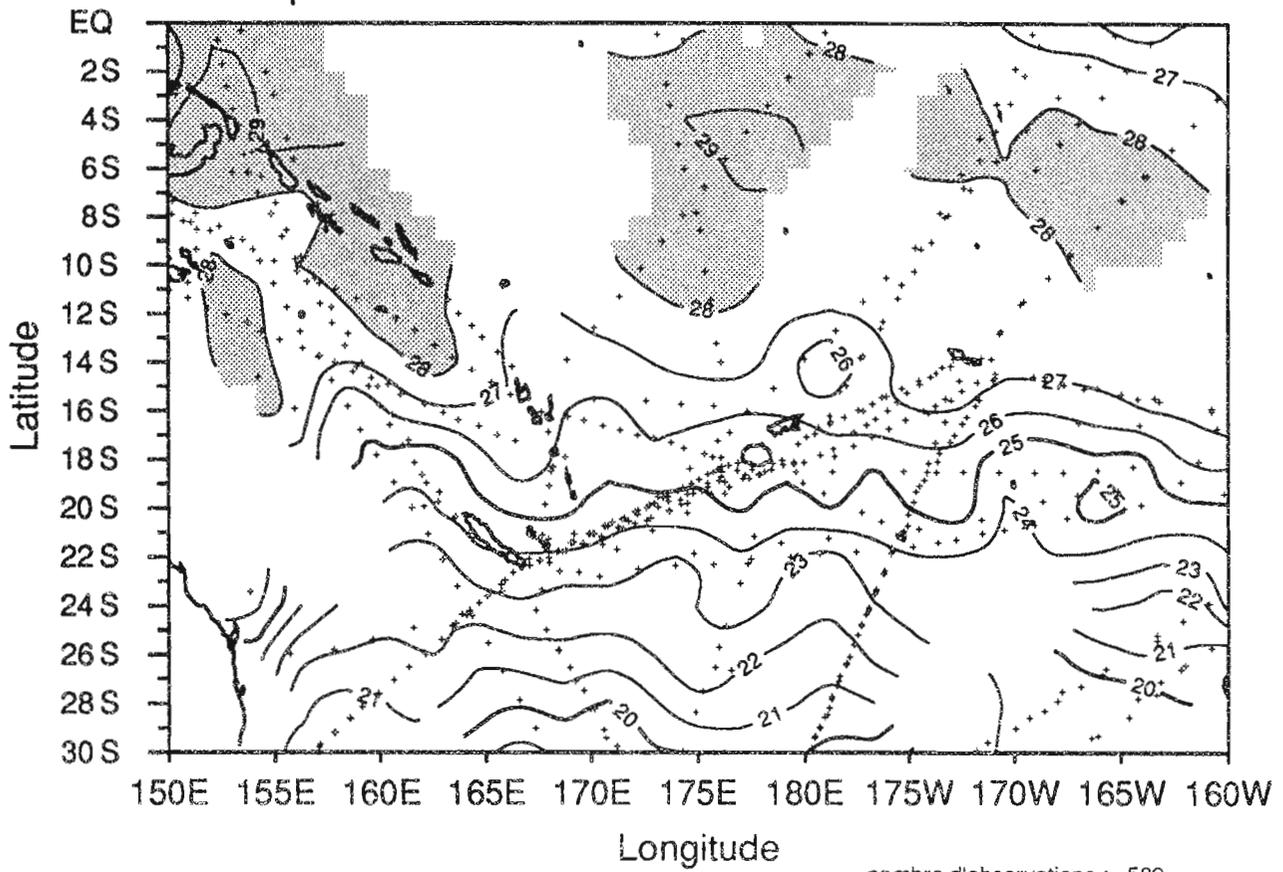
Temperature de surface du 01/07/83 au 31/08/83



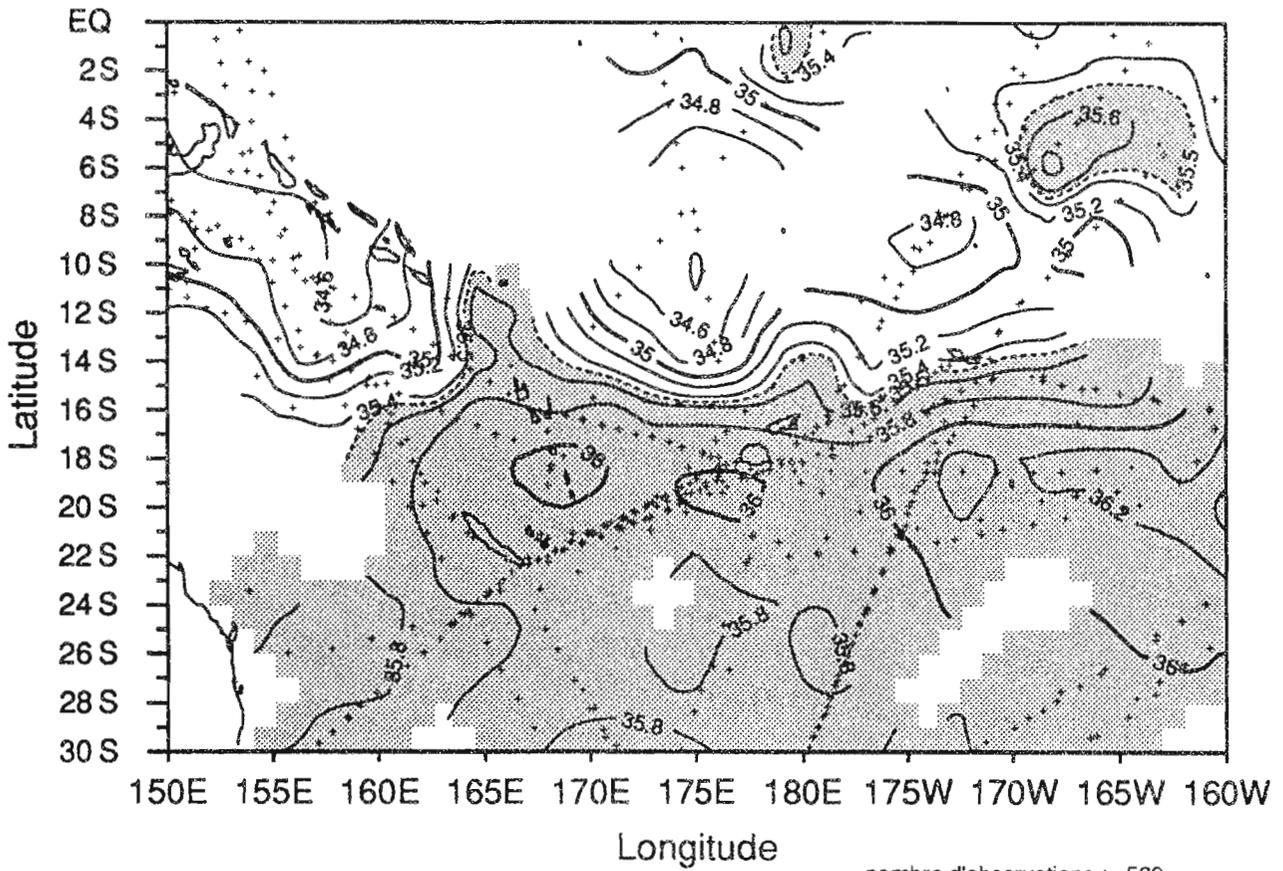
Salinite de surface du 01/07/83 au 31/08/83



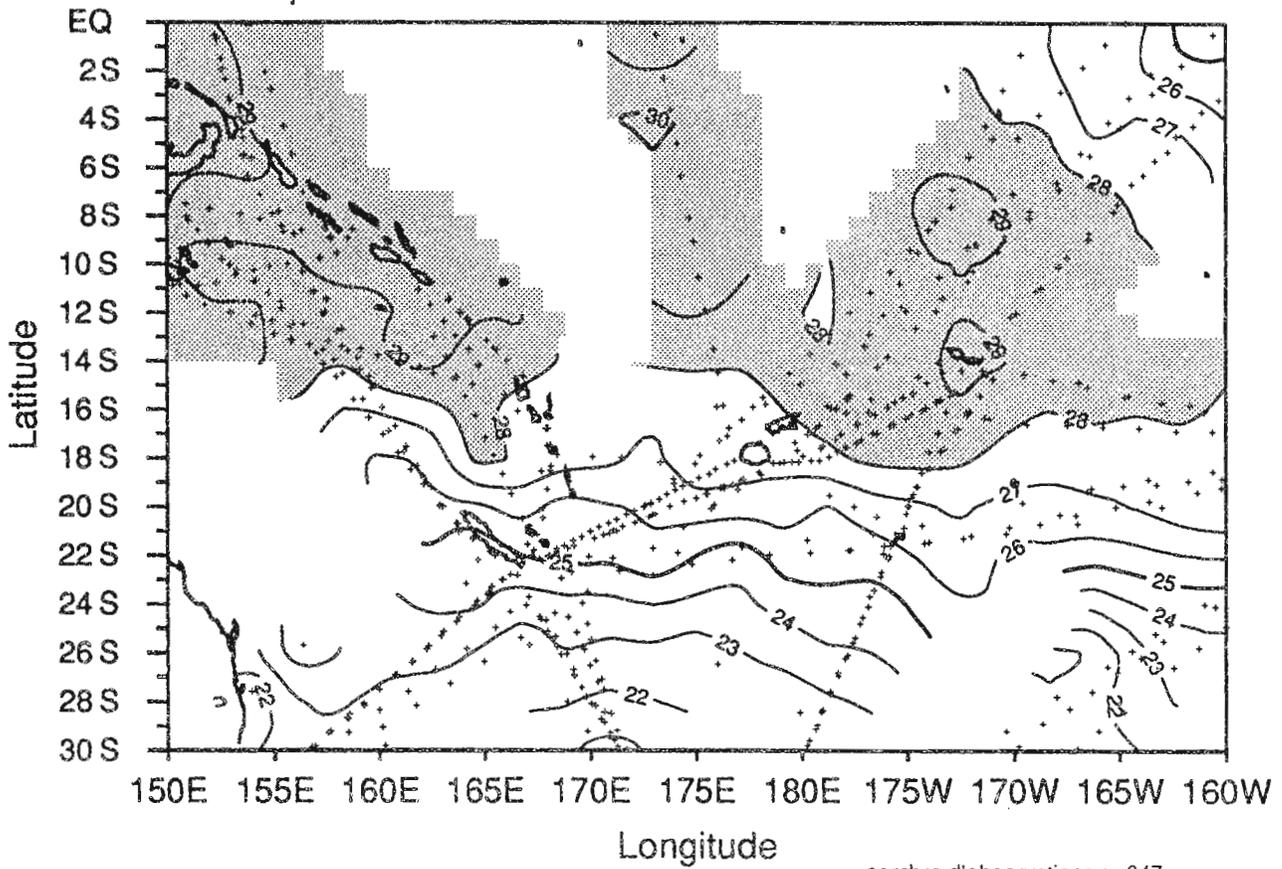
Temperature de surface du 01/09/83 au 31/10/83



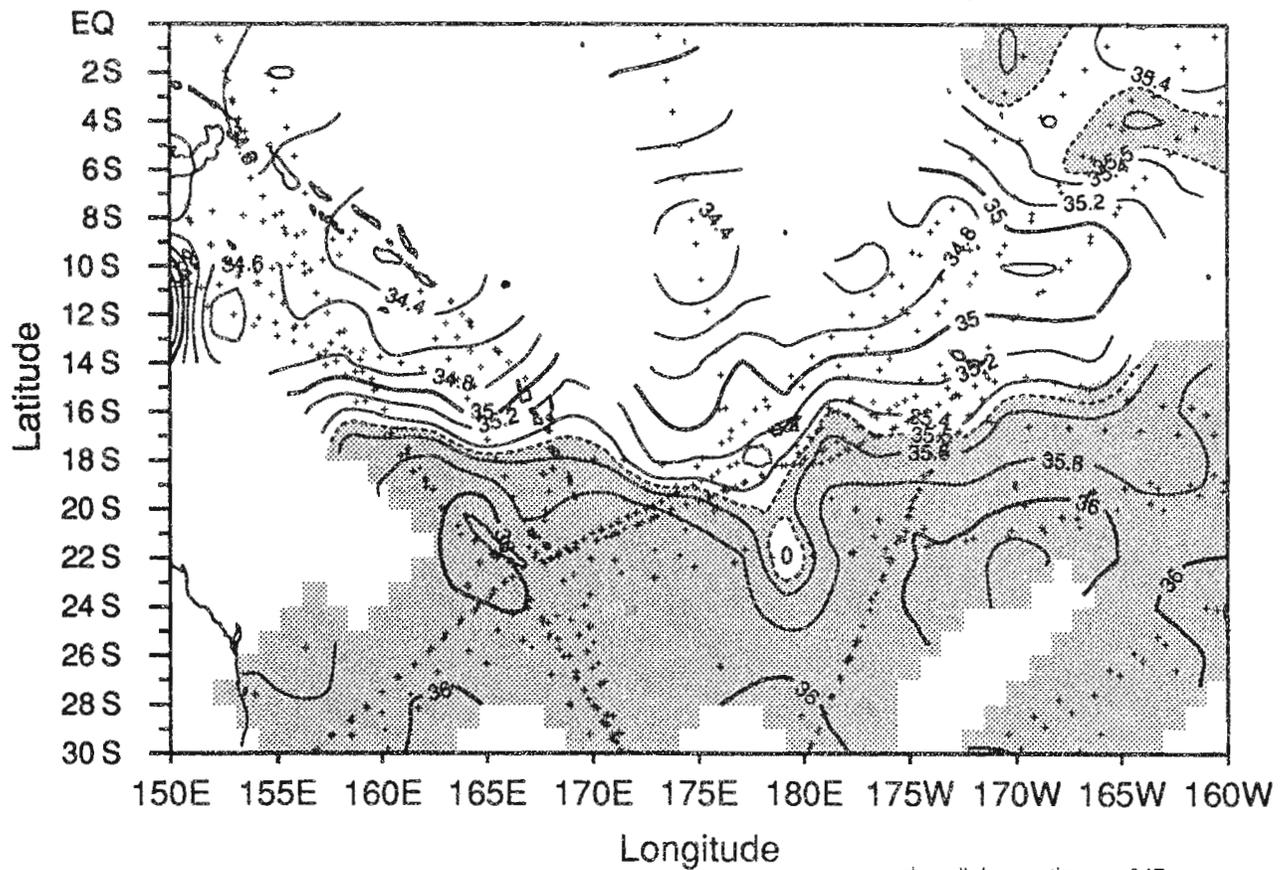
Salinite de surface du 01/09/83 au 31/10/83



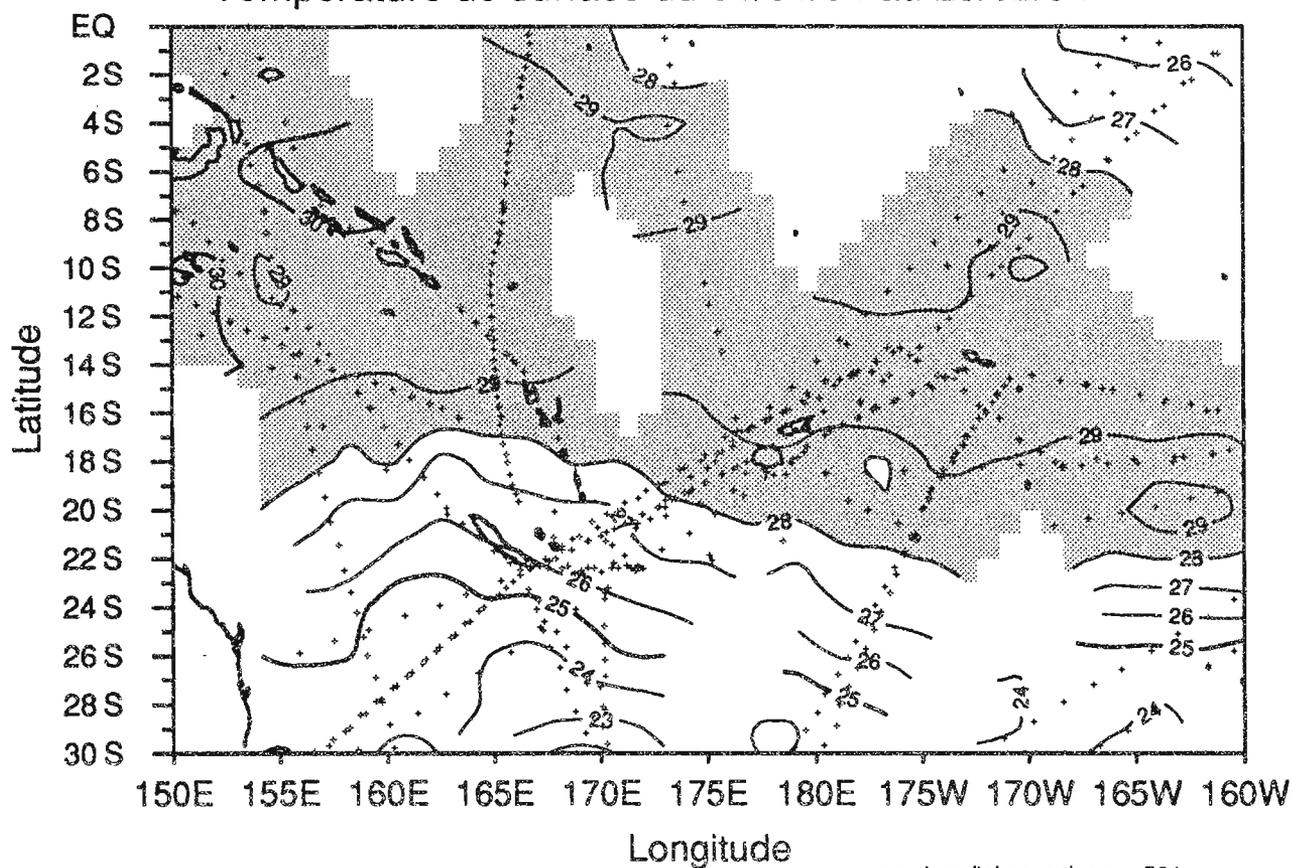
Temperature de surface du 01/11/83 au 31/12/83



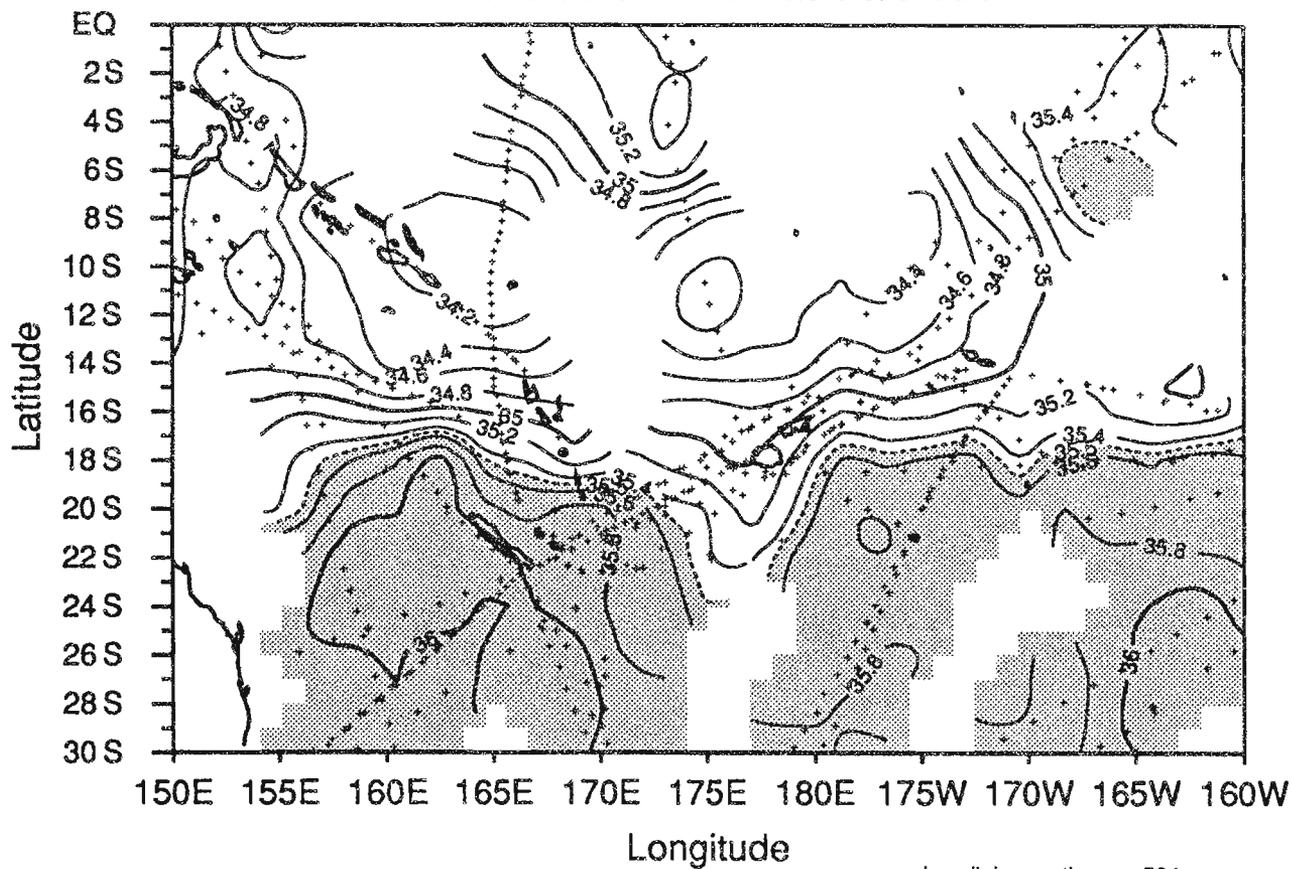
Salinite de surface du 01/11/83 au 31/12/83



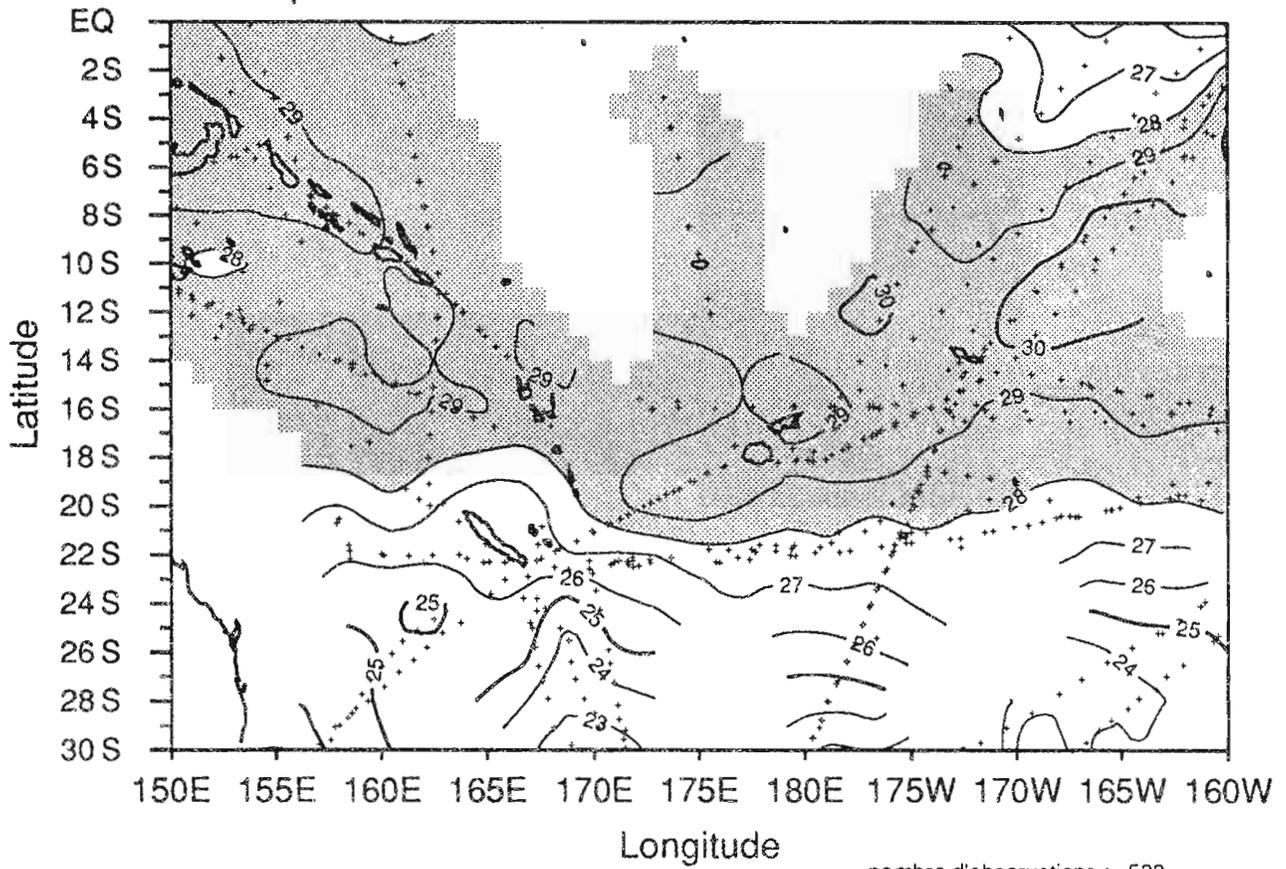
Temperature de surface du 01/01/84 au 29/02/84



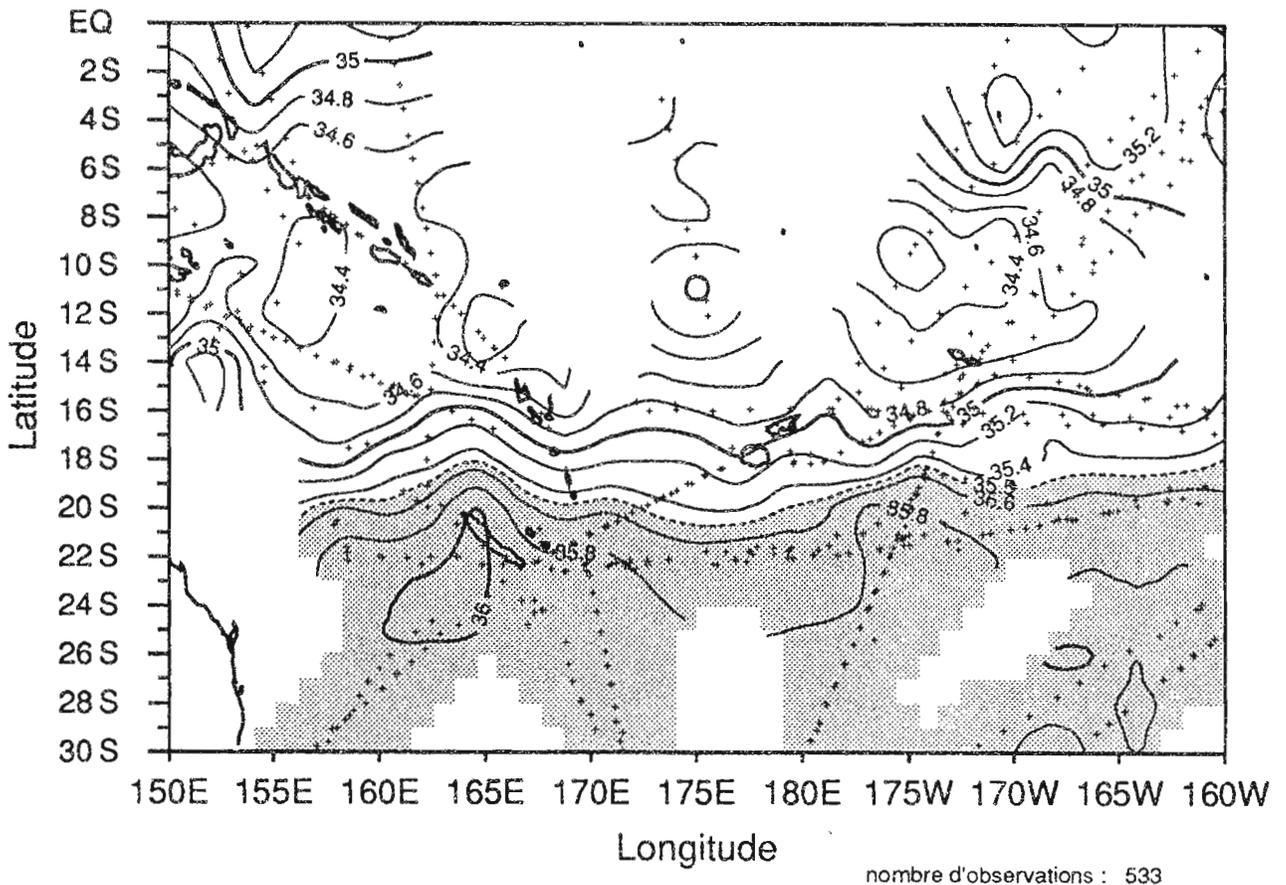
Salinite de surface du 01/01/84 au 29/02/84



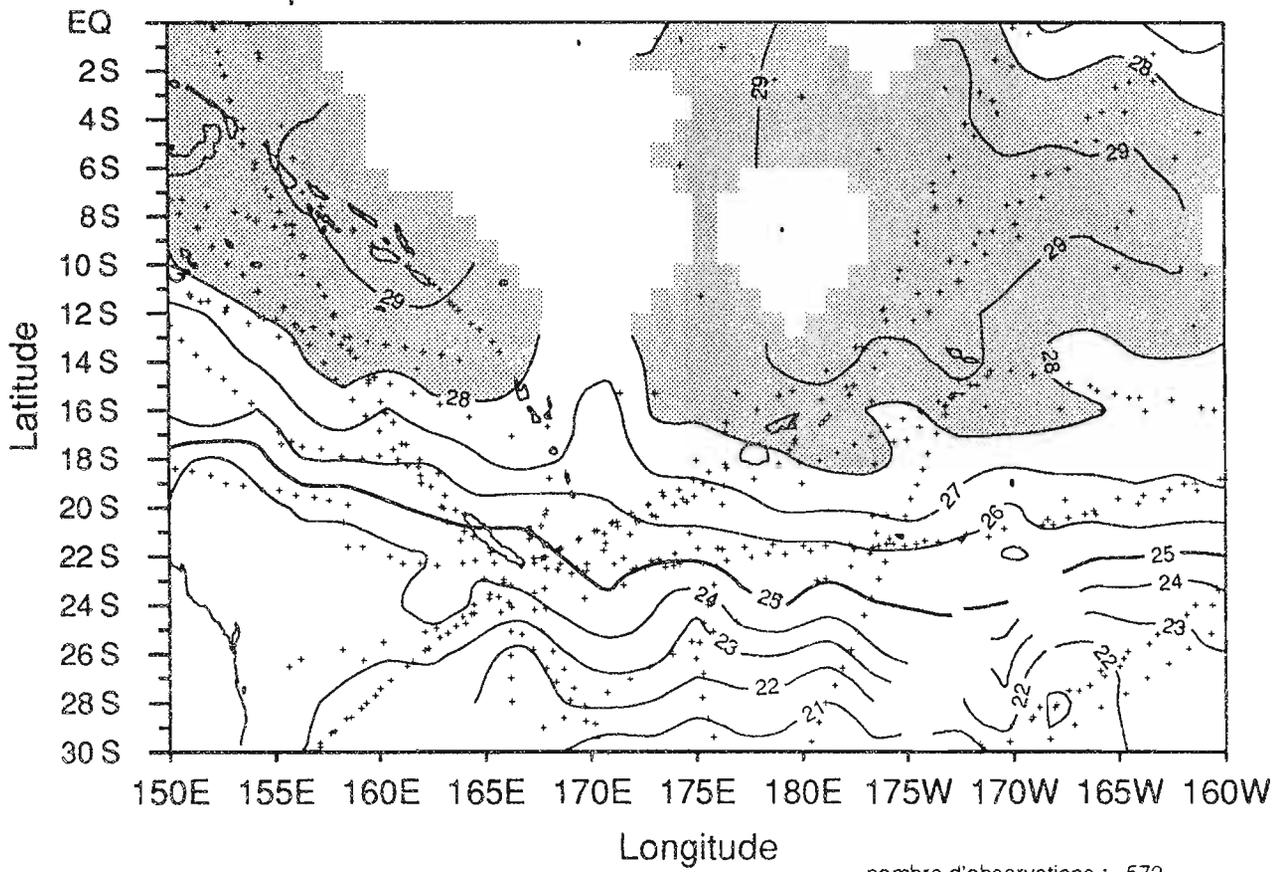
Temperature de surface du 01/03/84 au 30/04/84



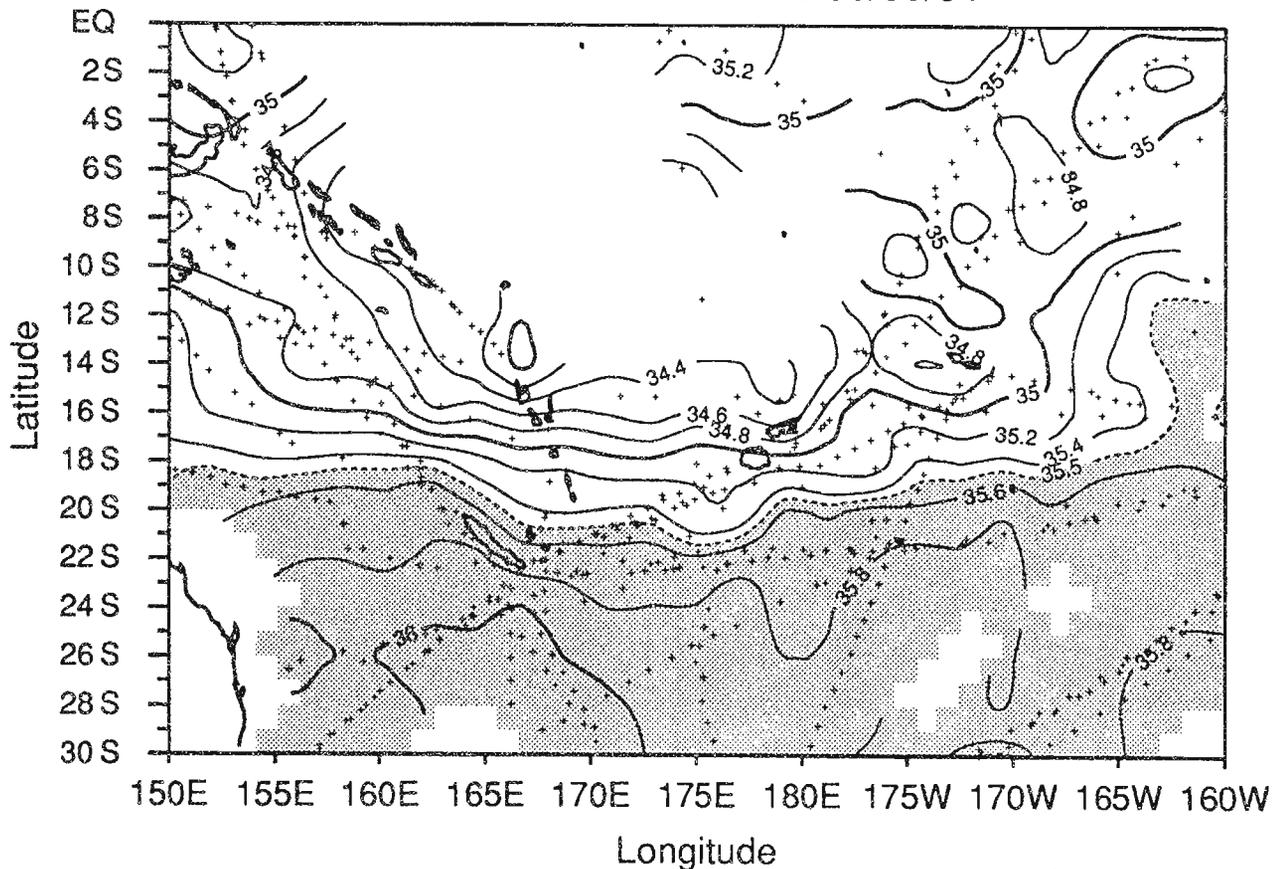
Salinite de surface du 01/03/84 au 30/04/84



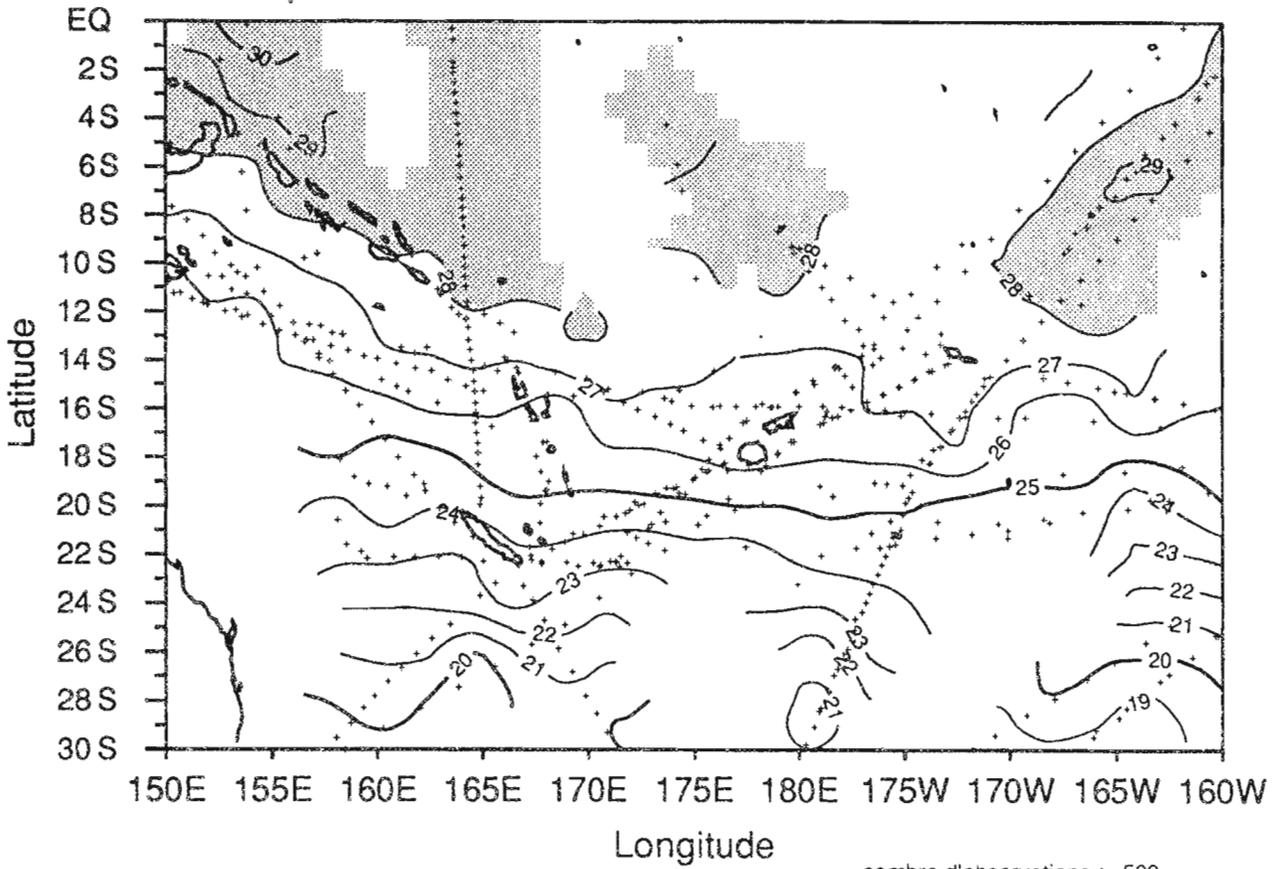
Temperature de surface du 01/05/84 au 30/06/84



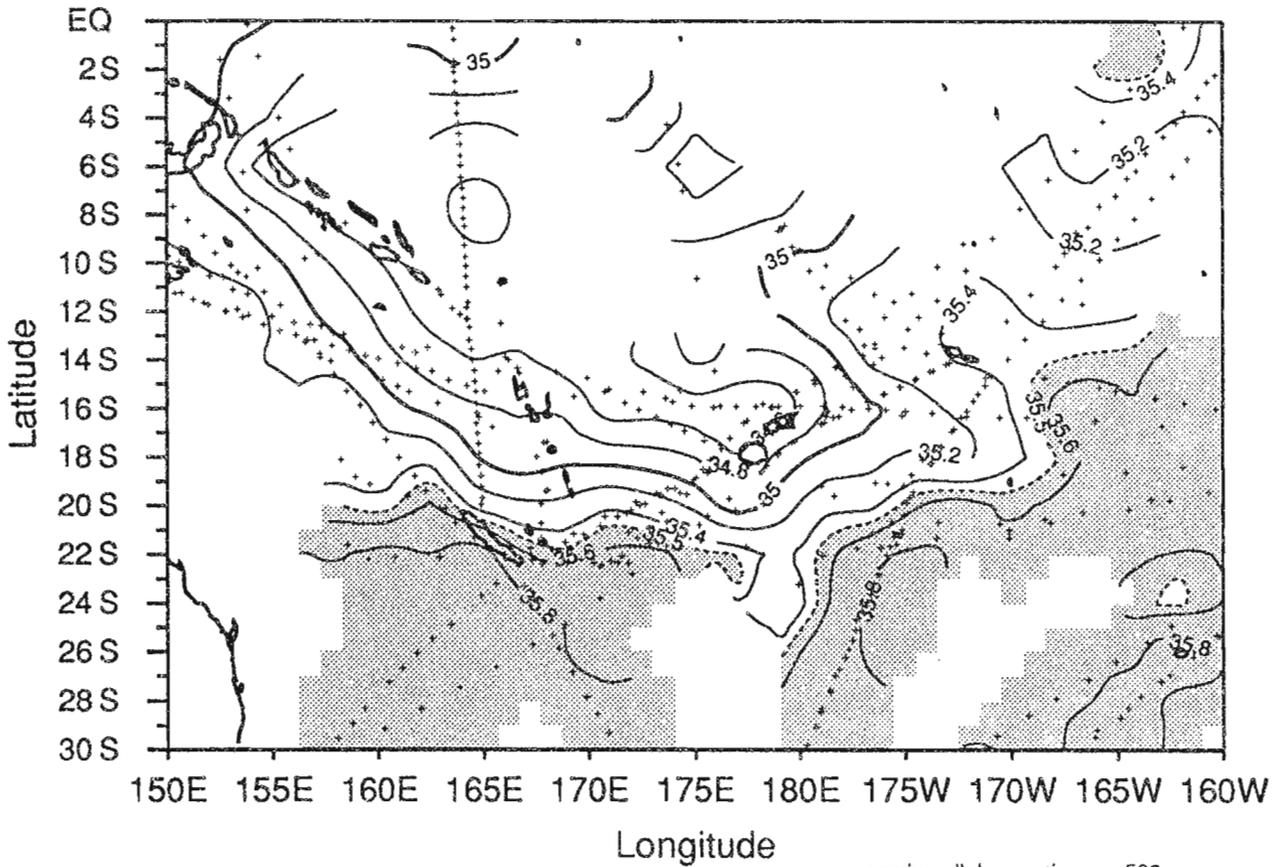
Salinite de surface du 01/05/84 au 30/06/84



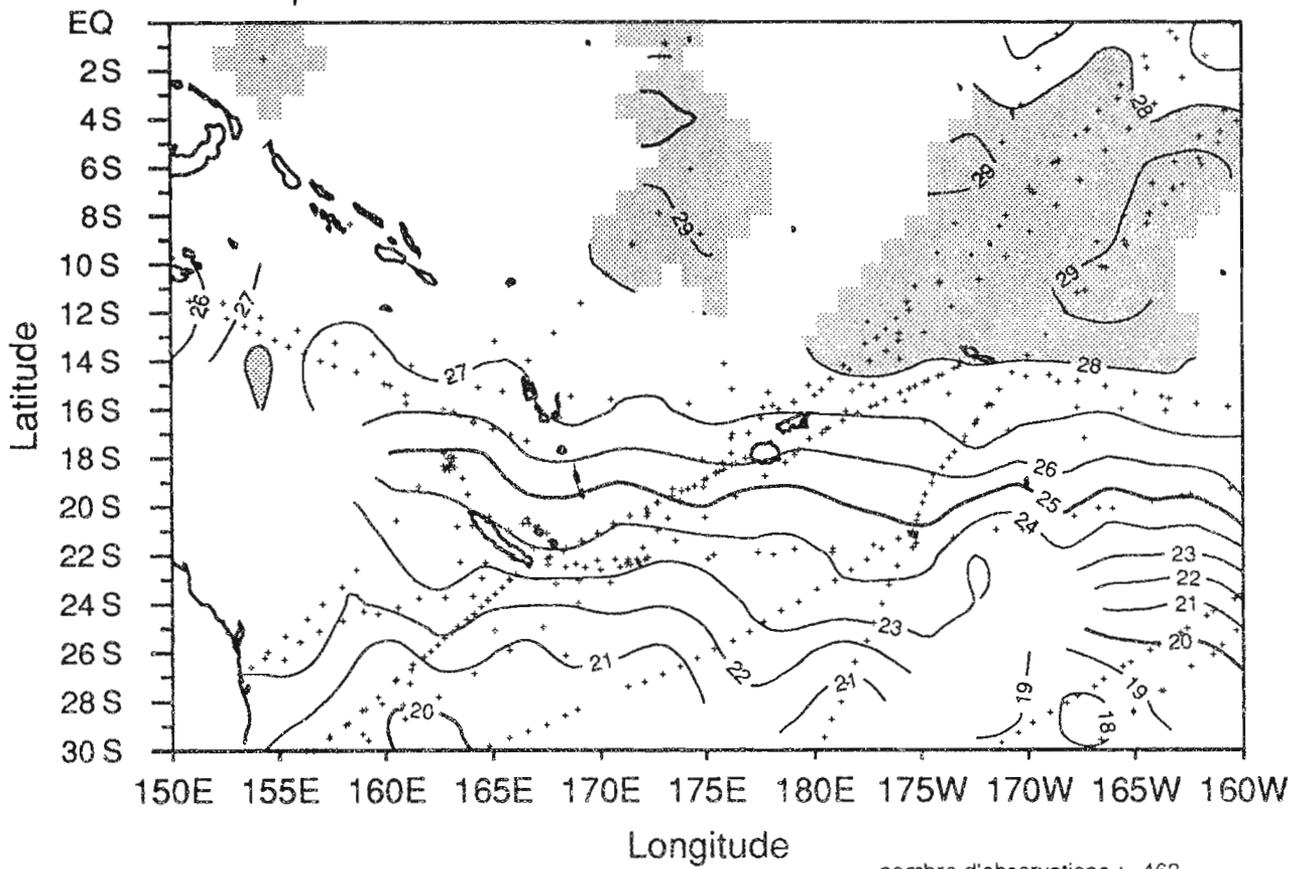
Temperature de surface du 01/07/84 au 31/08/84



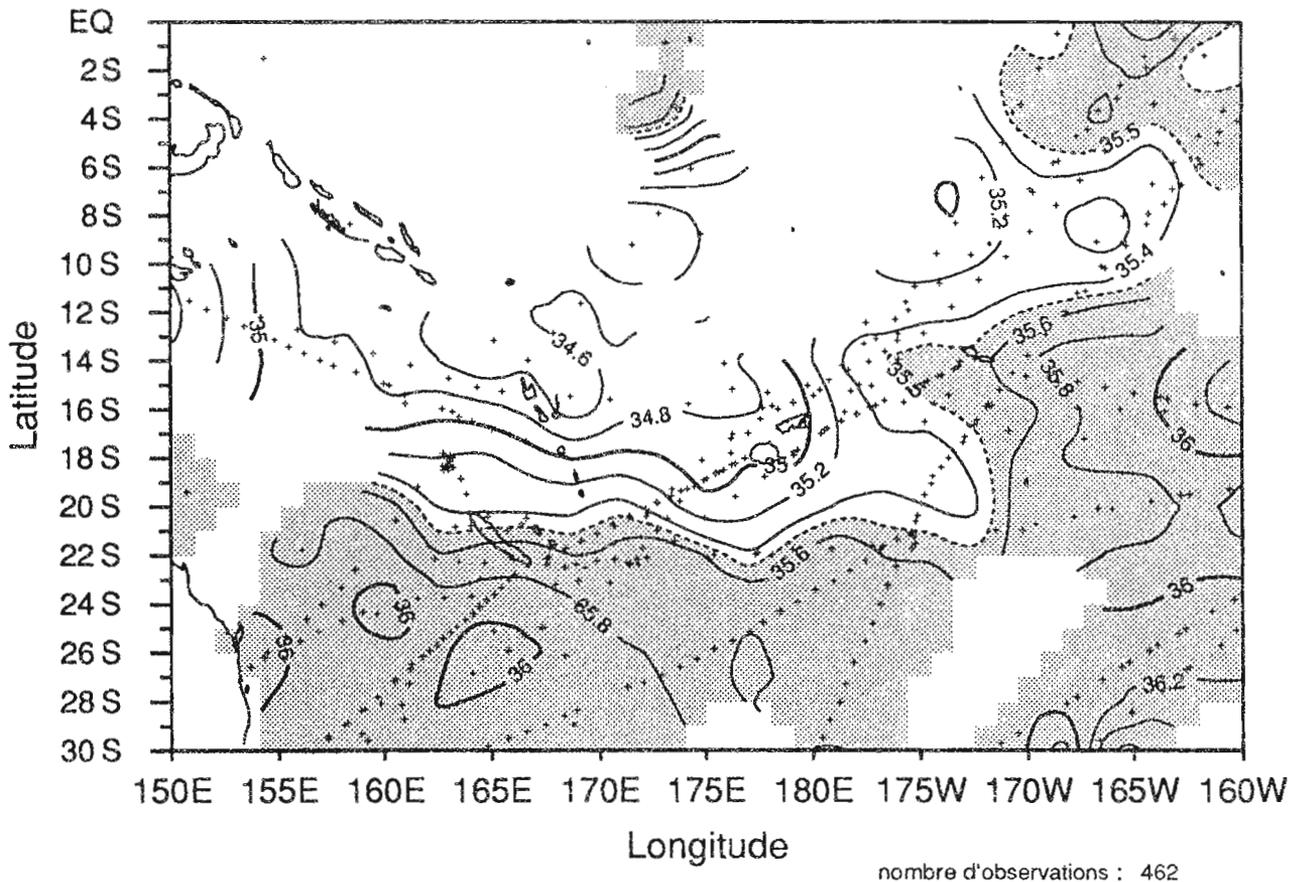
Salinite de surface du 01/07/84 au 31/08/84



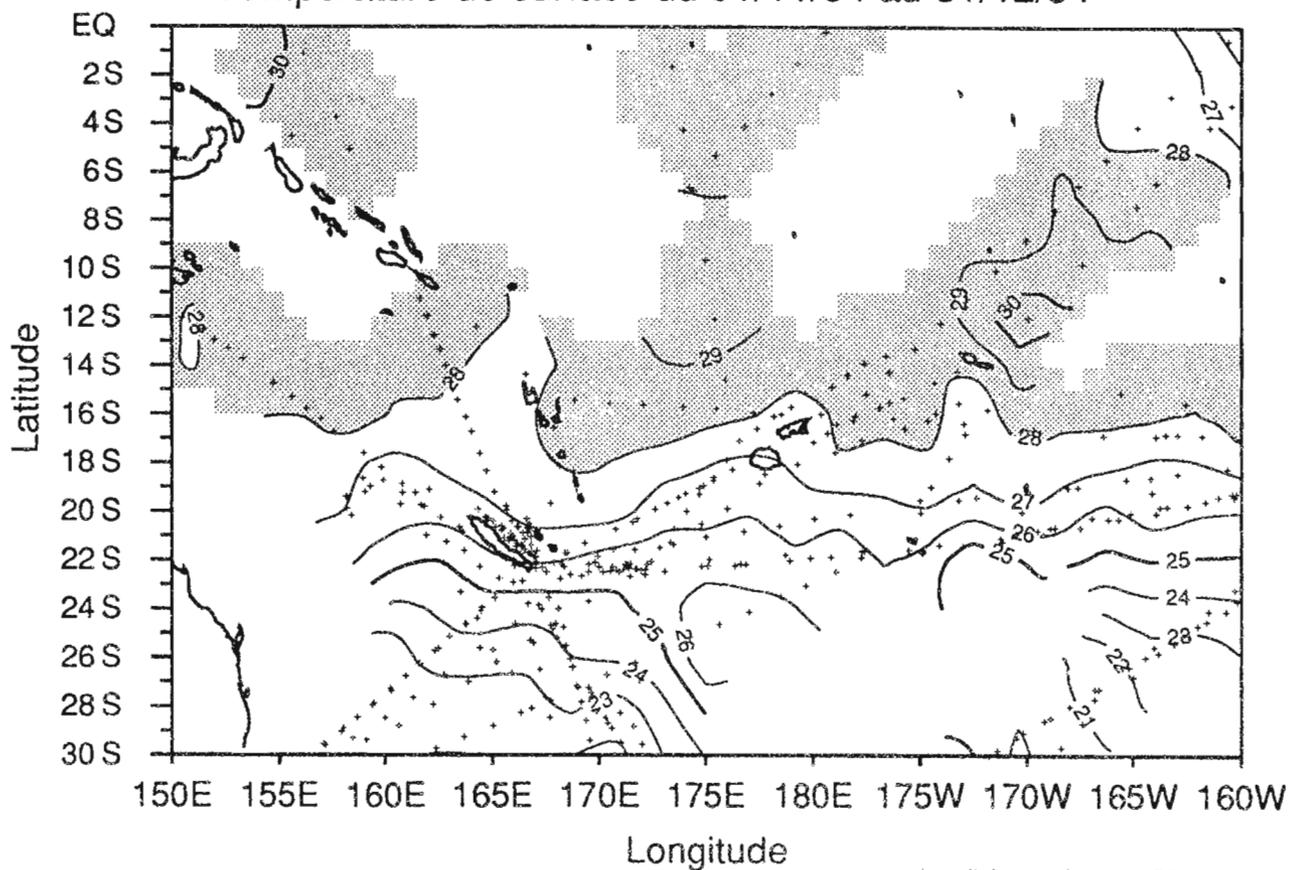
Temperature de surface du 01/09/84 au 31/10/84



Salinite de surface du 01/09/84 au 31/10/84

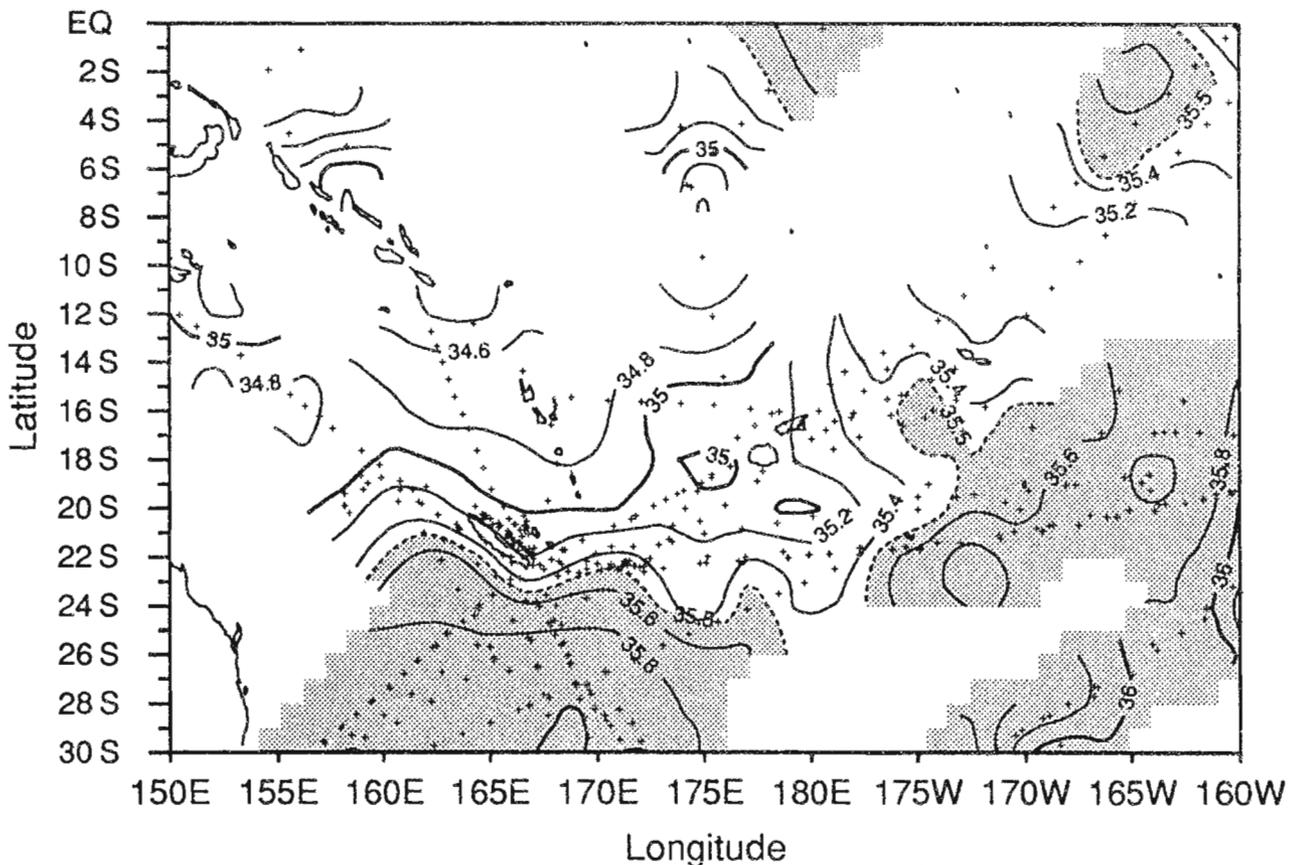


Temperature de surface du 01/11/84 au 31/12/84



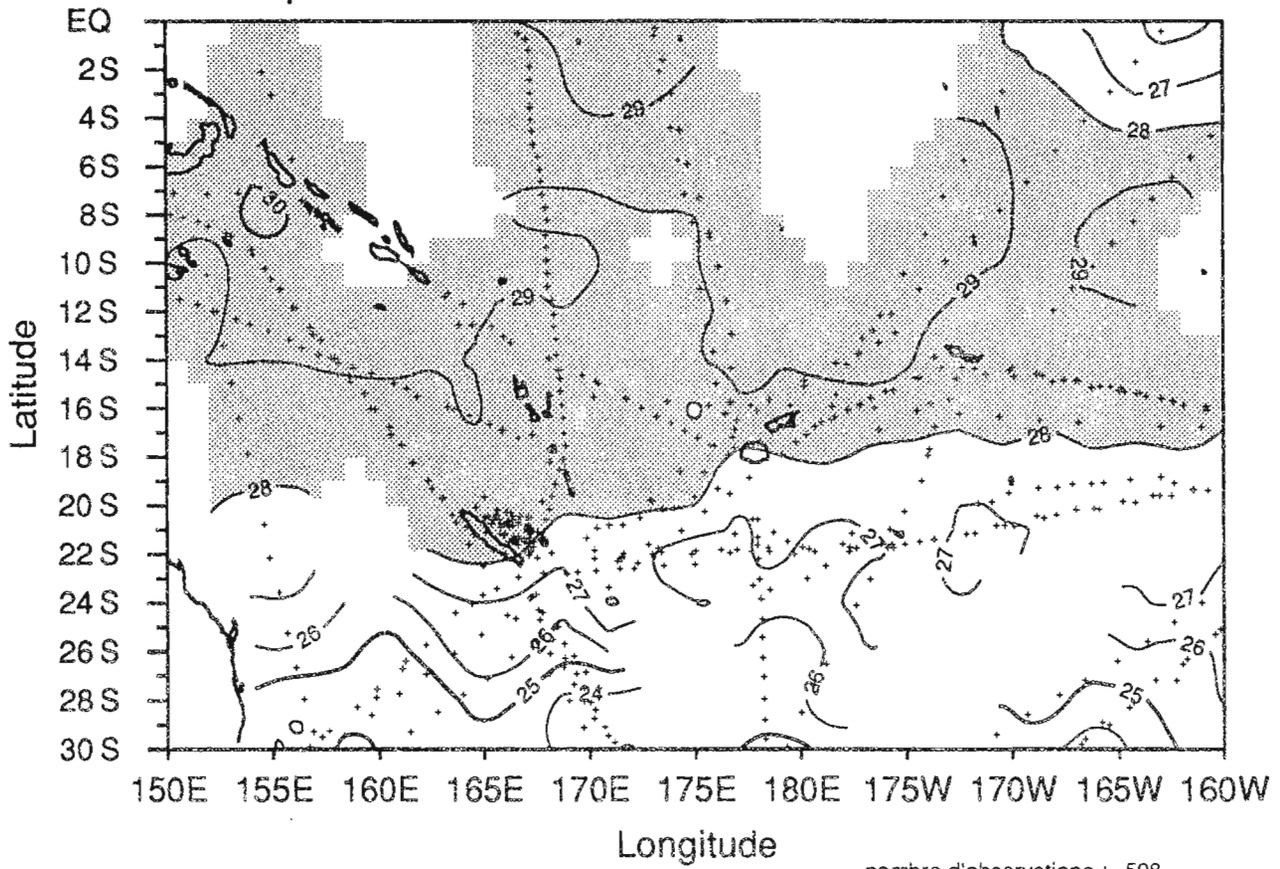
nombre d'observations : 452

Salinite de surface du 01/11/84 au 31/12/84

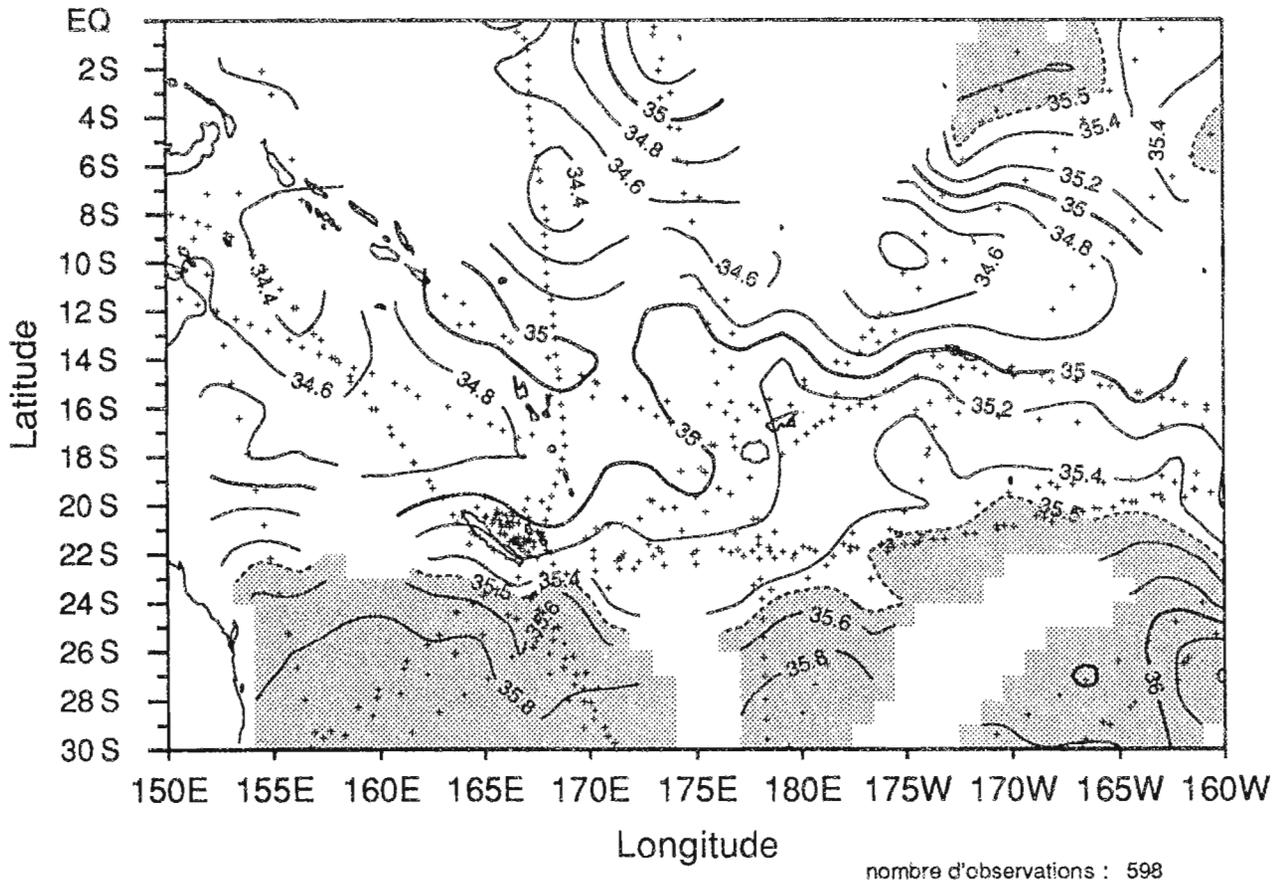


nombre d'observations : 452

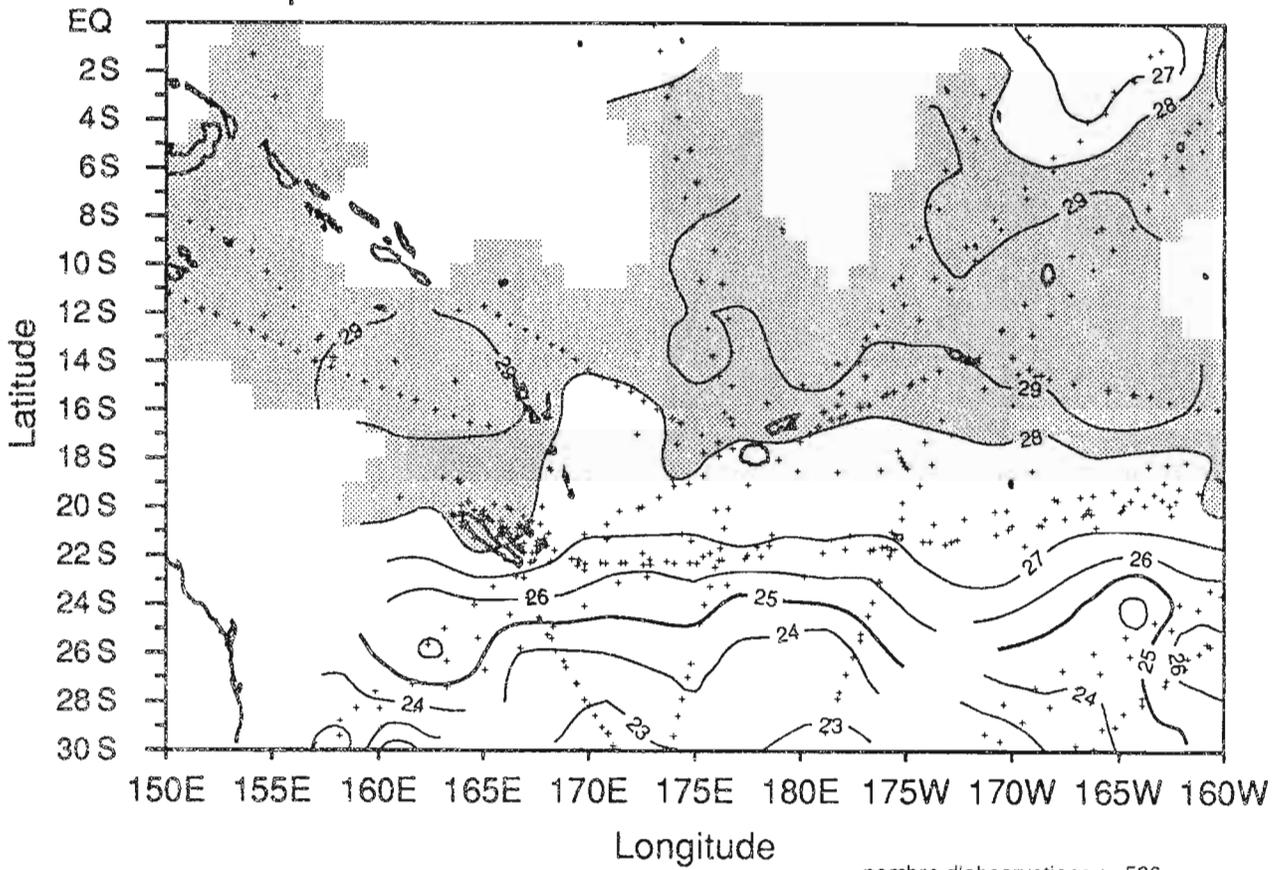
Temperature de surface du 01/01/85 au 28/02/85



Salinite de surface du 01/01/85 au 28/02/85

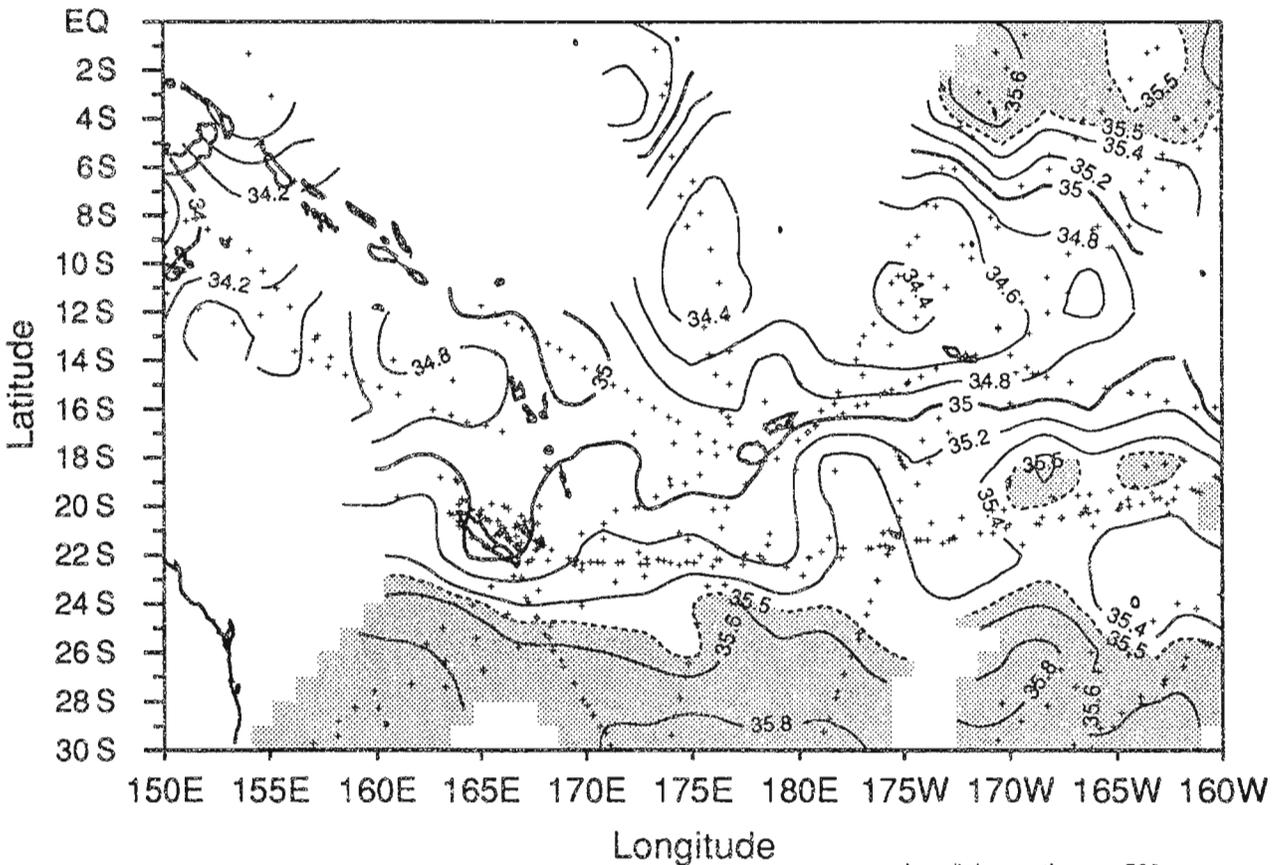


Temperature de surface du 01/03/85 au 30/04/85



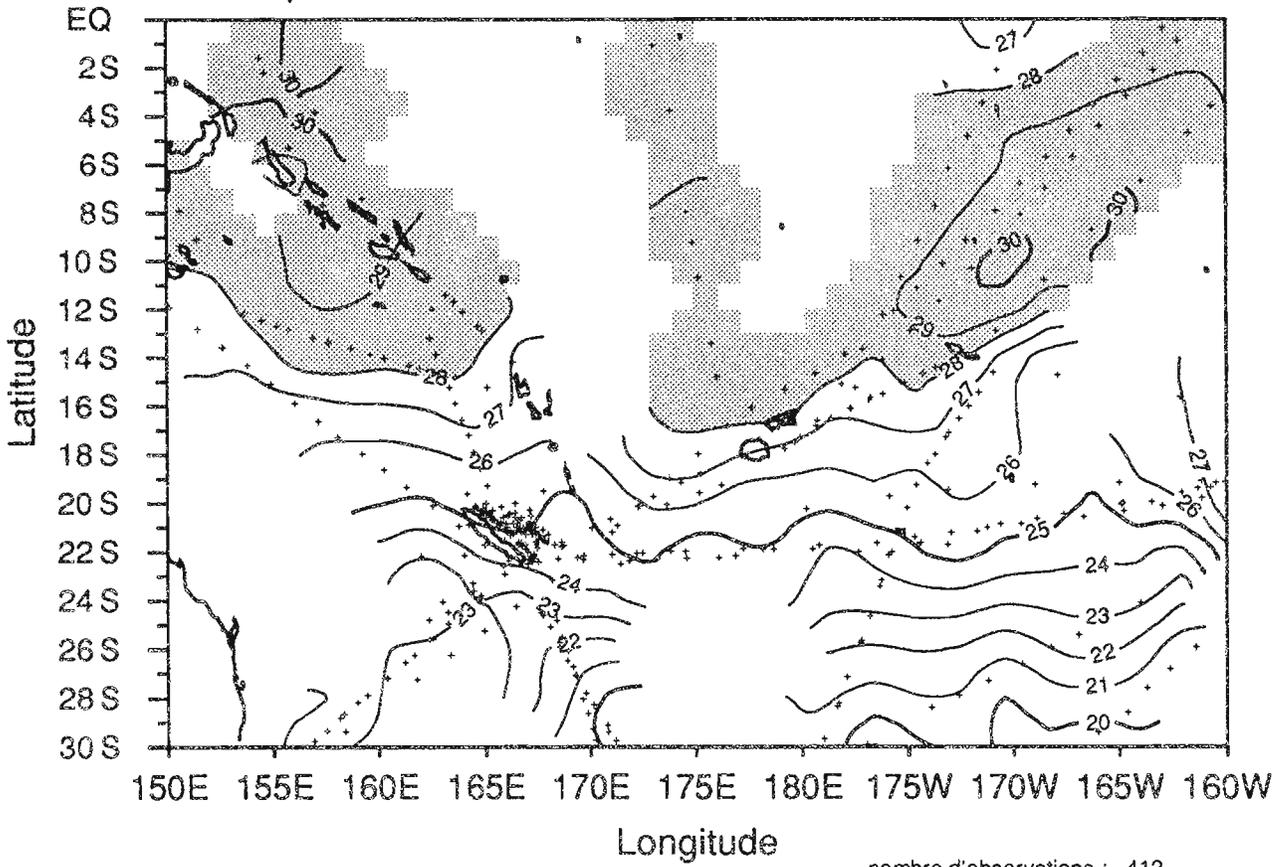
nombre d'observations : 536

Salinite de surface du 01/03/85 au 30/04/85

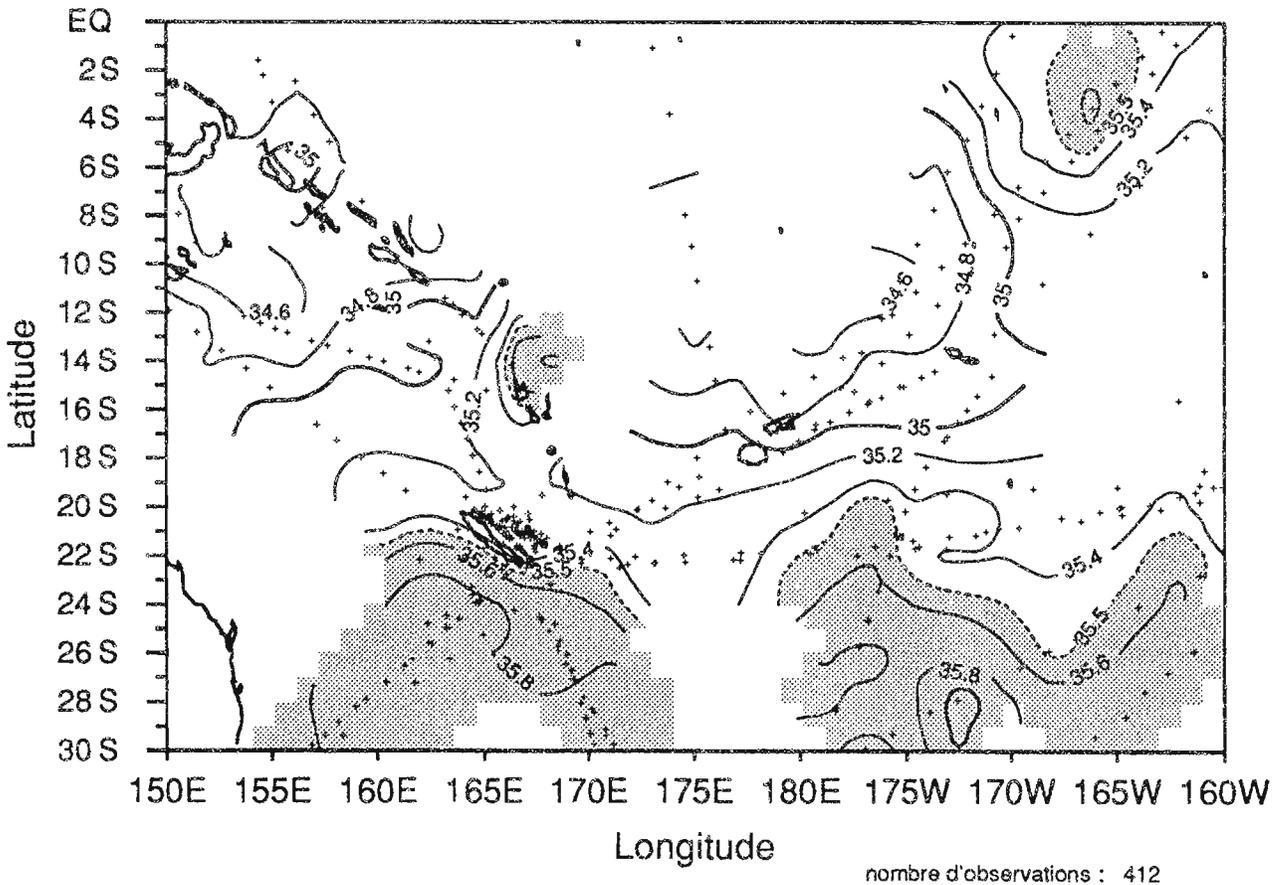


nombre d'observations : 536

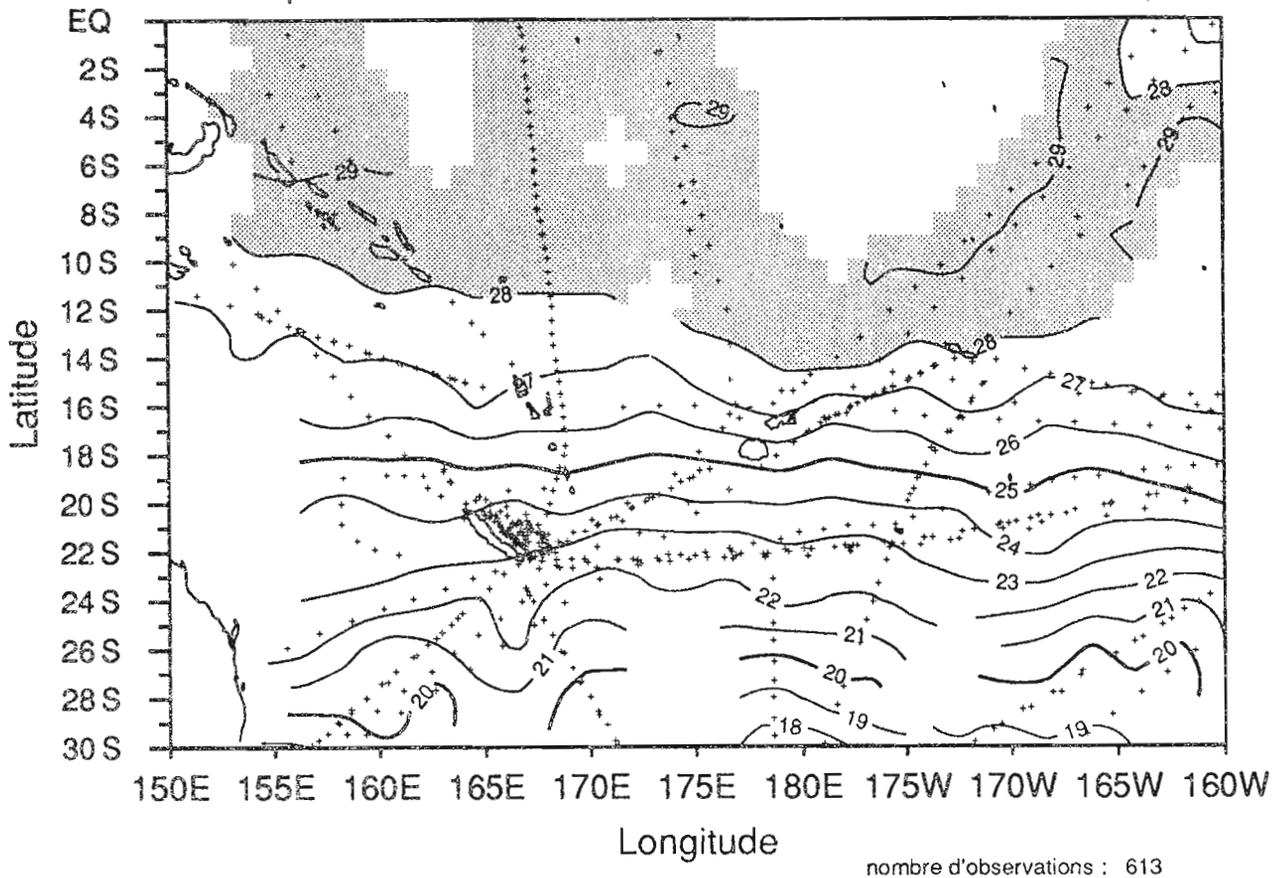
Temperature de surface du 01/05/85 au 30/06/85



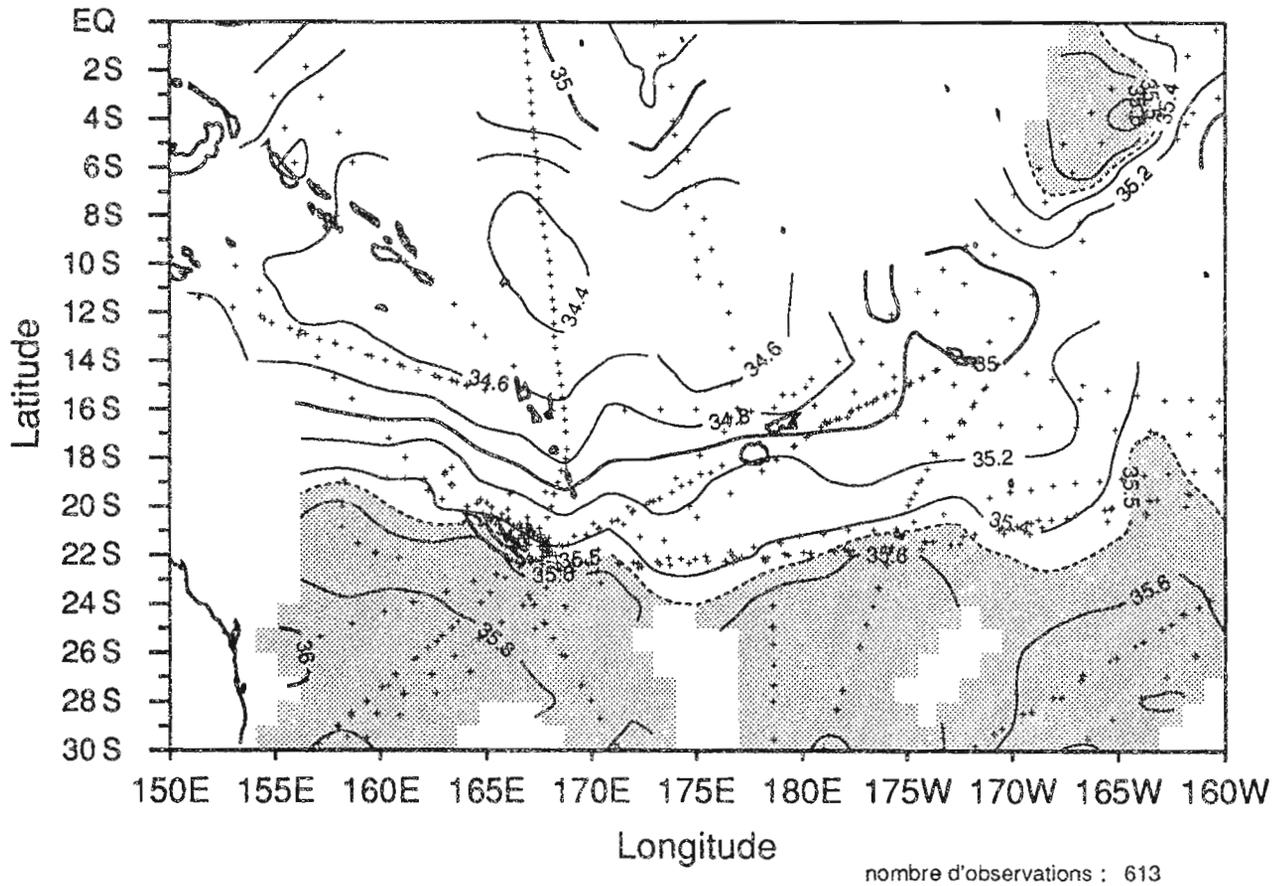
Salinite de surface du 01/05/85 au 30/06/85



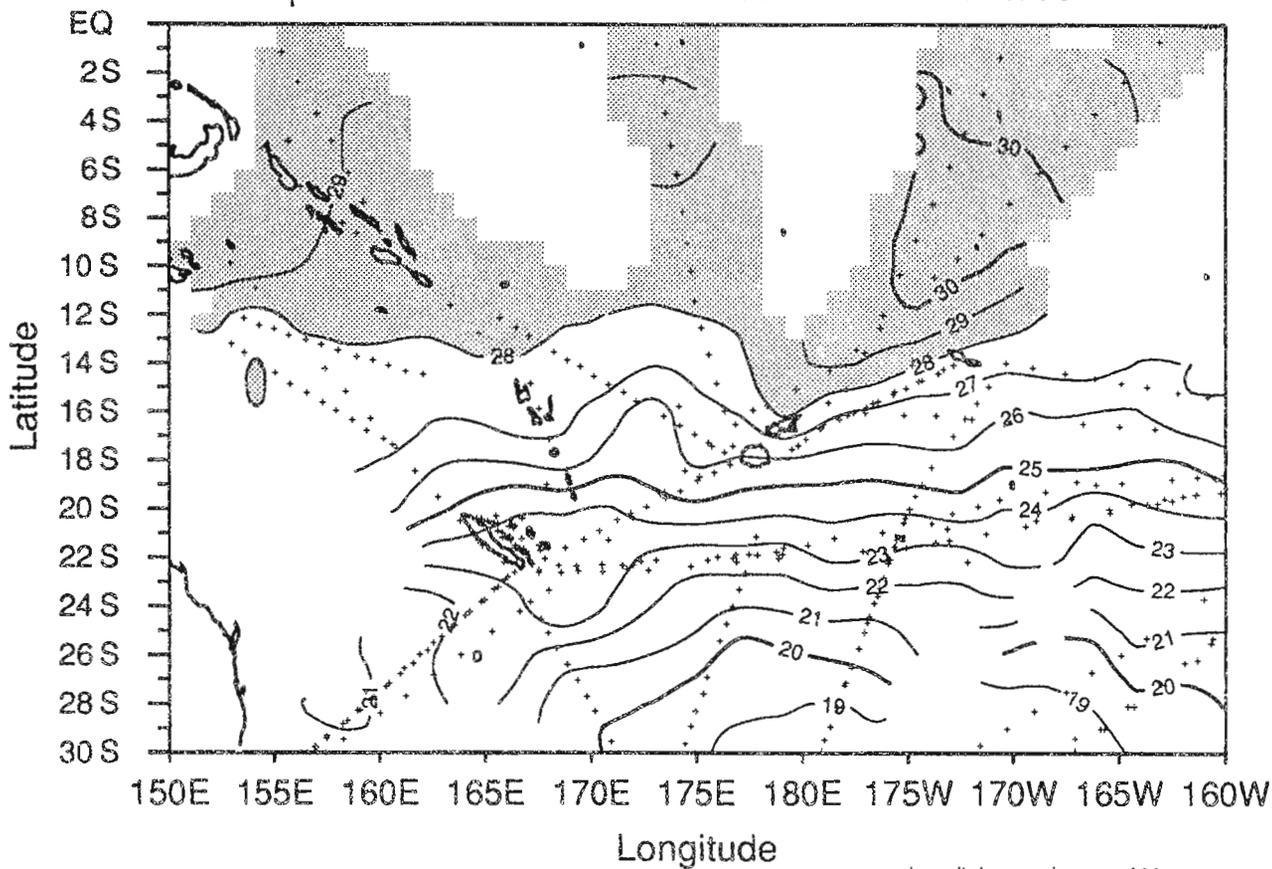
Temperature de surface du 01/07/85 au 31/08/85



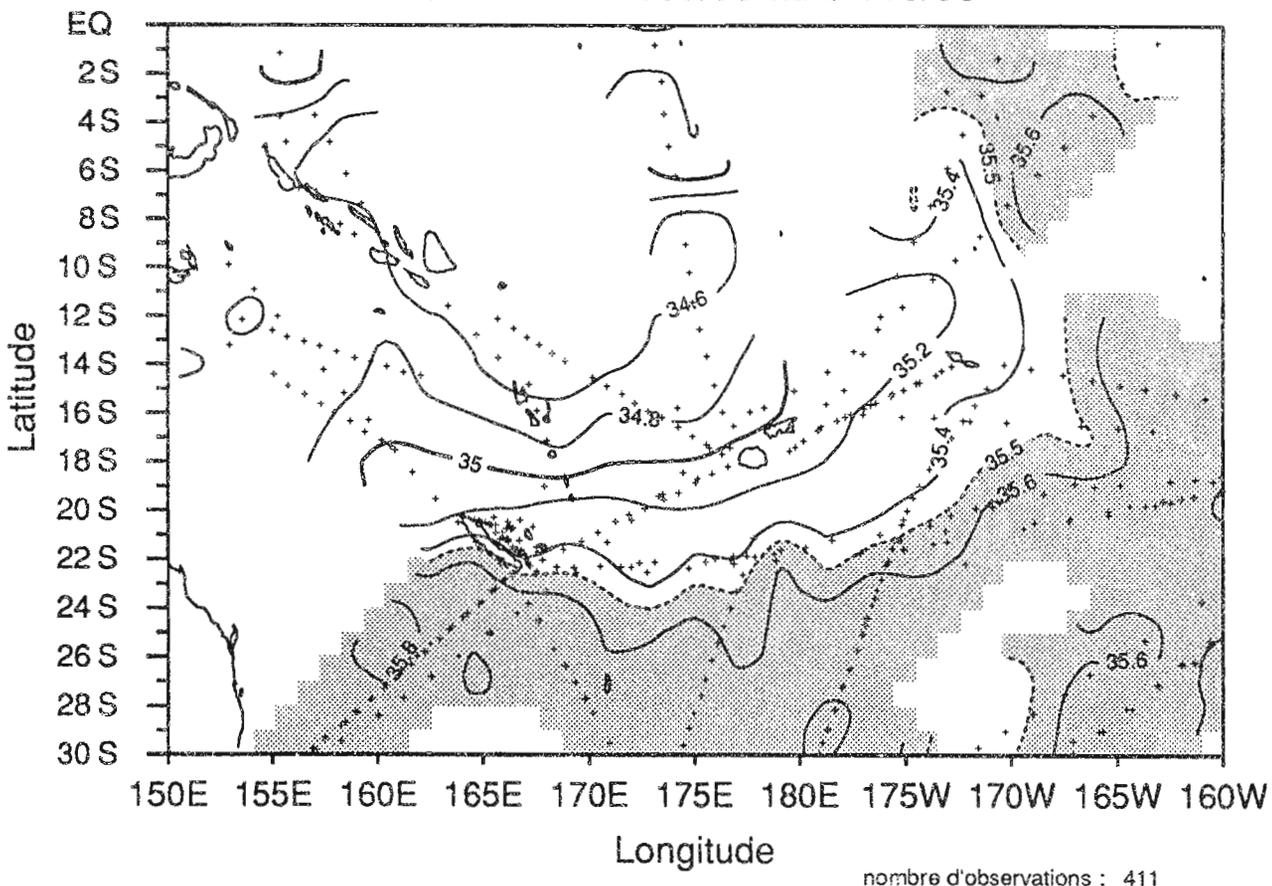
Salinite de surface du 01/07/85 au 31/08/85



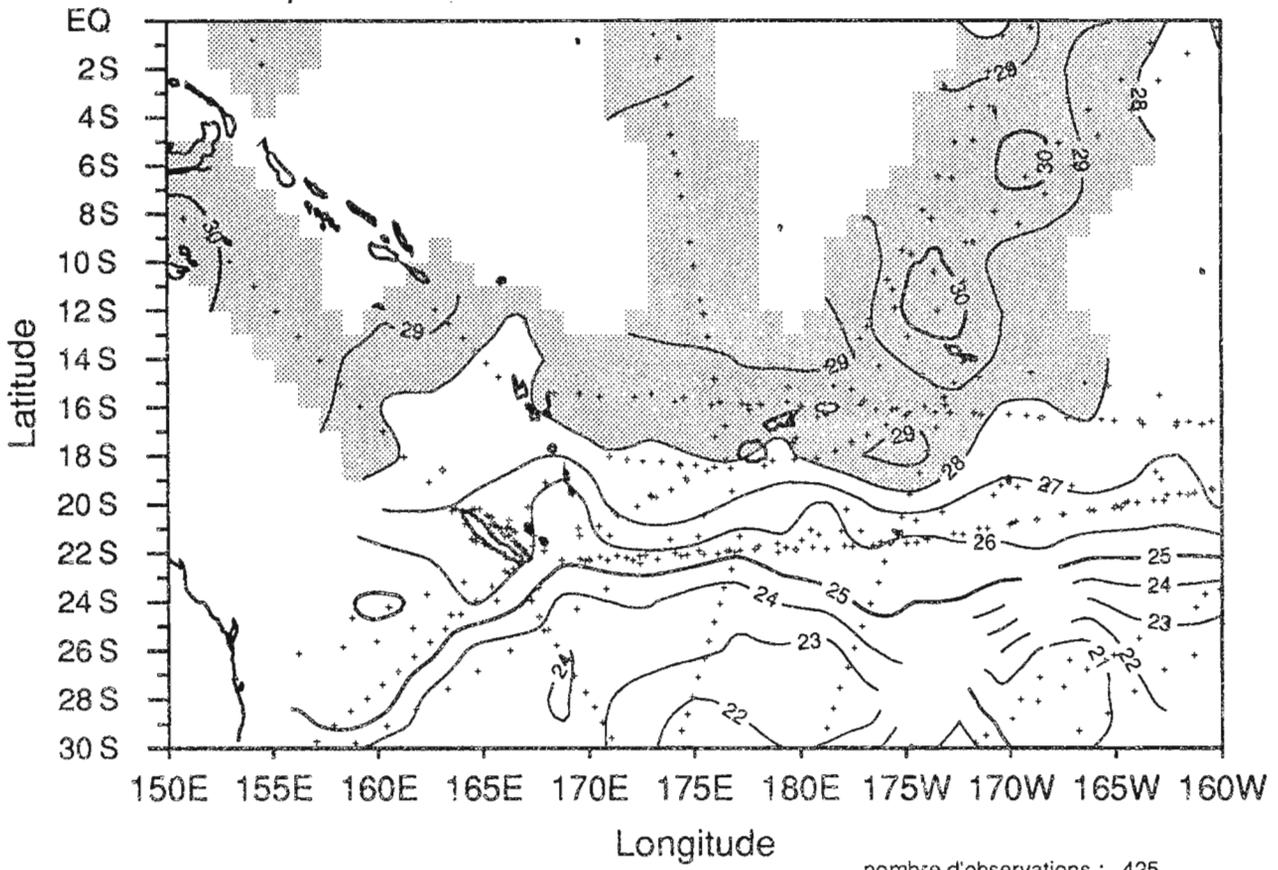
Temperature de surface du 01/09/85 au 31/10/85



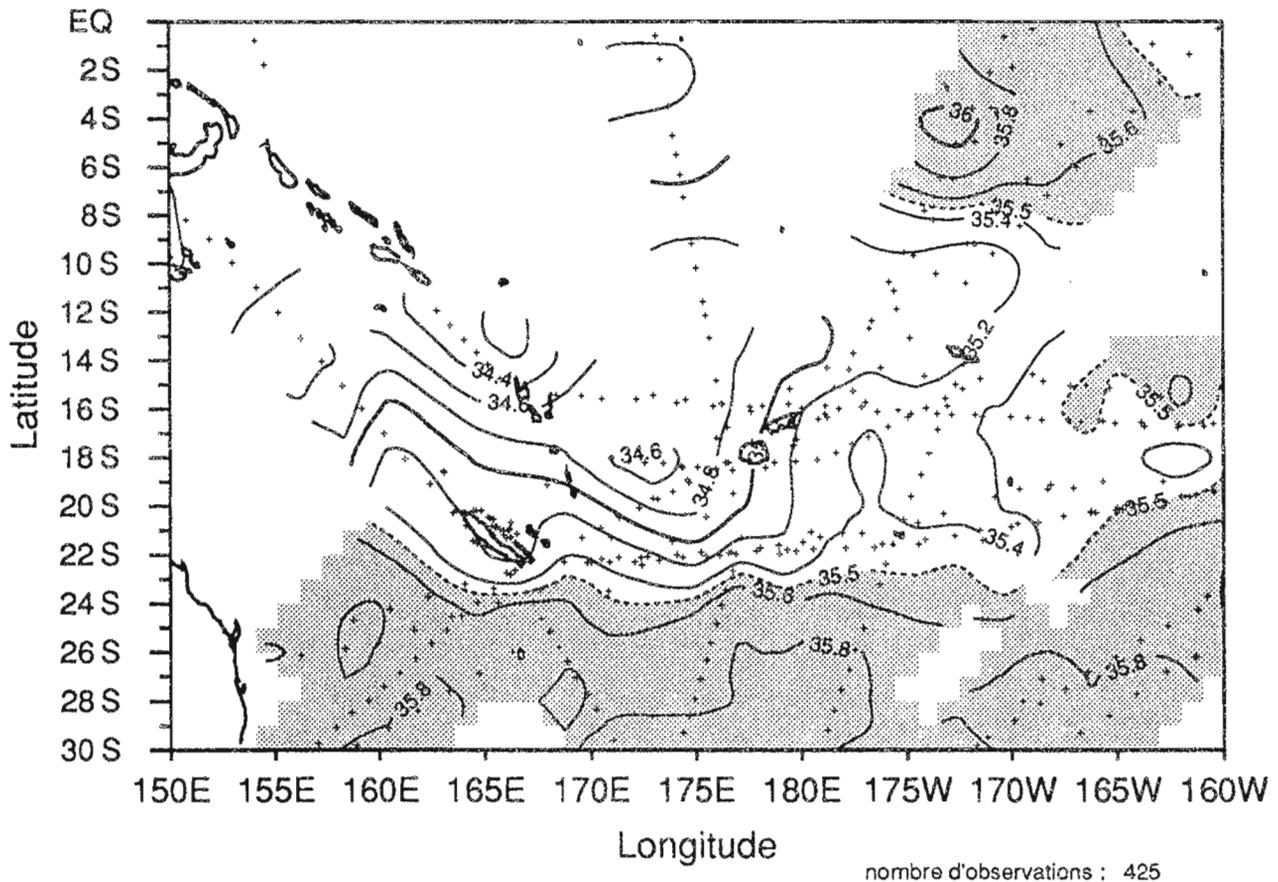
Salinite de surface du 01/09/85 au 31/10/85



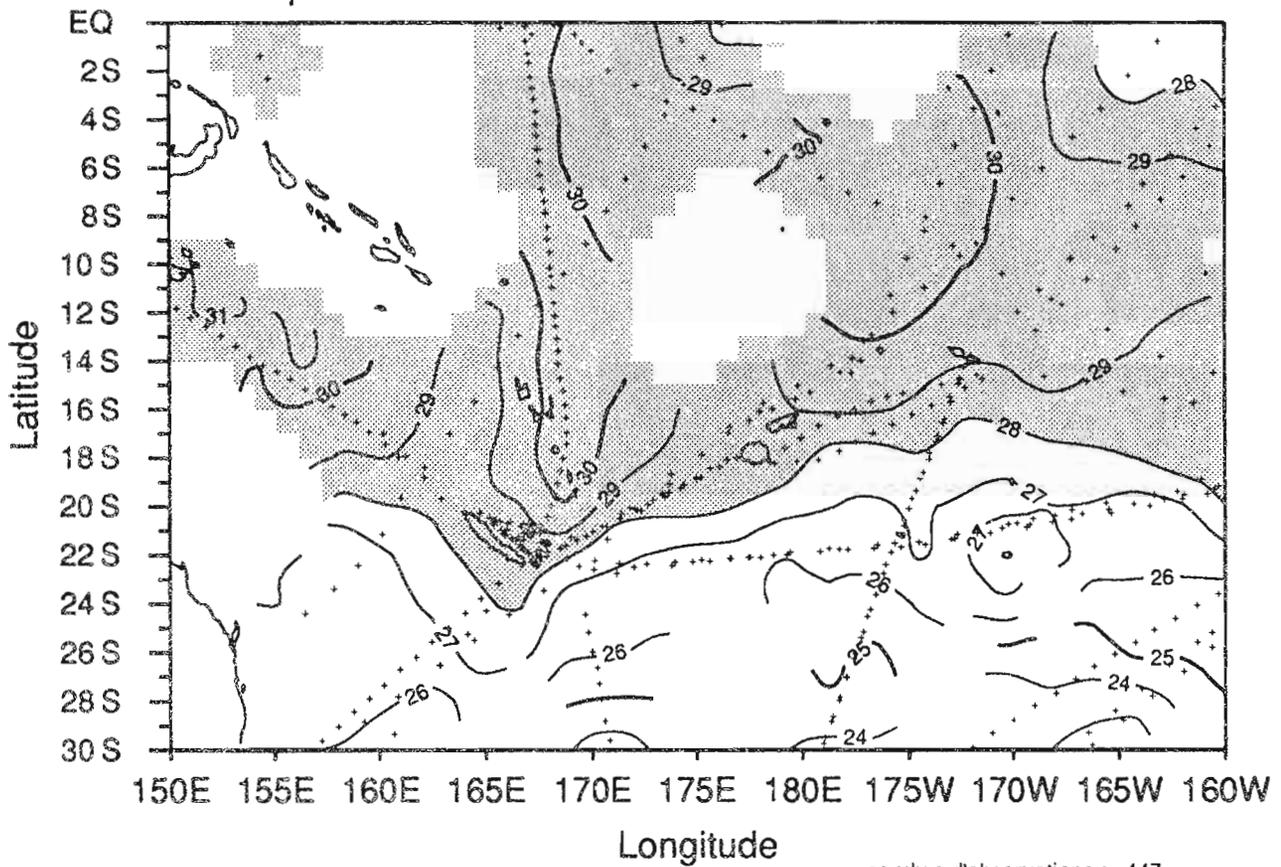
Temperature de surface du 01/11/85 au 31/12/85



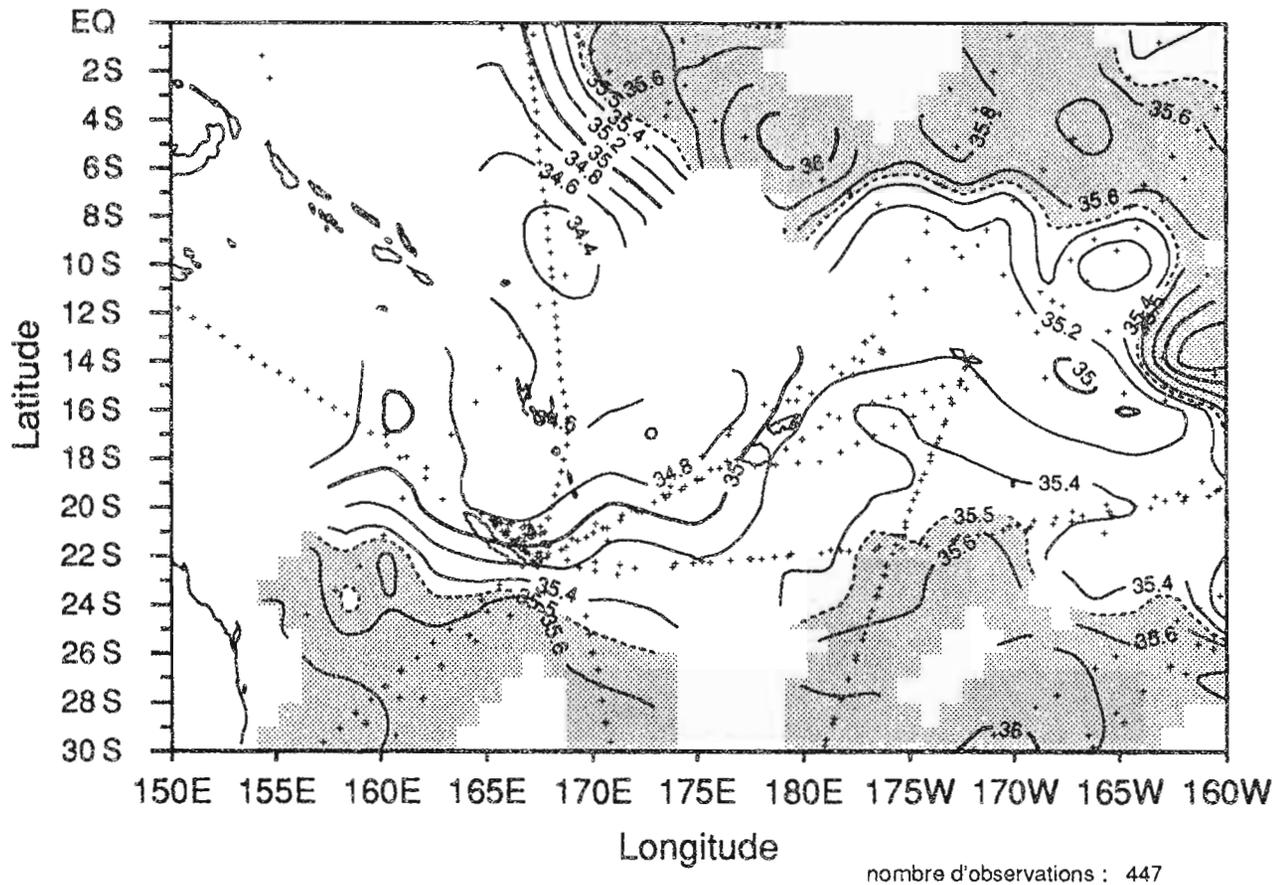
Salinite de surface du 01/11/85 au 31/12/85



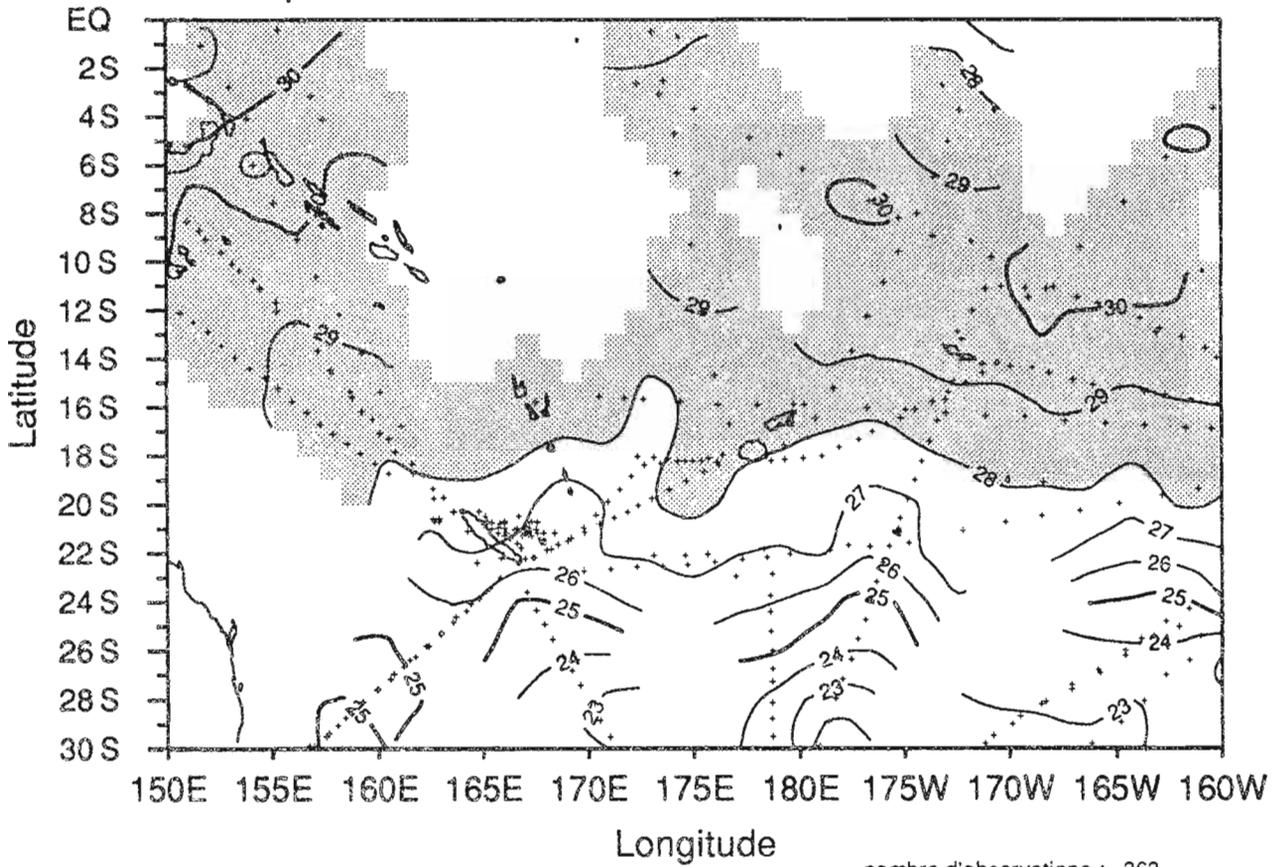
Temperature de surface du 01/01/86 au 28/02/86



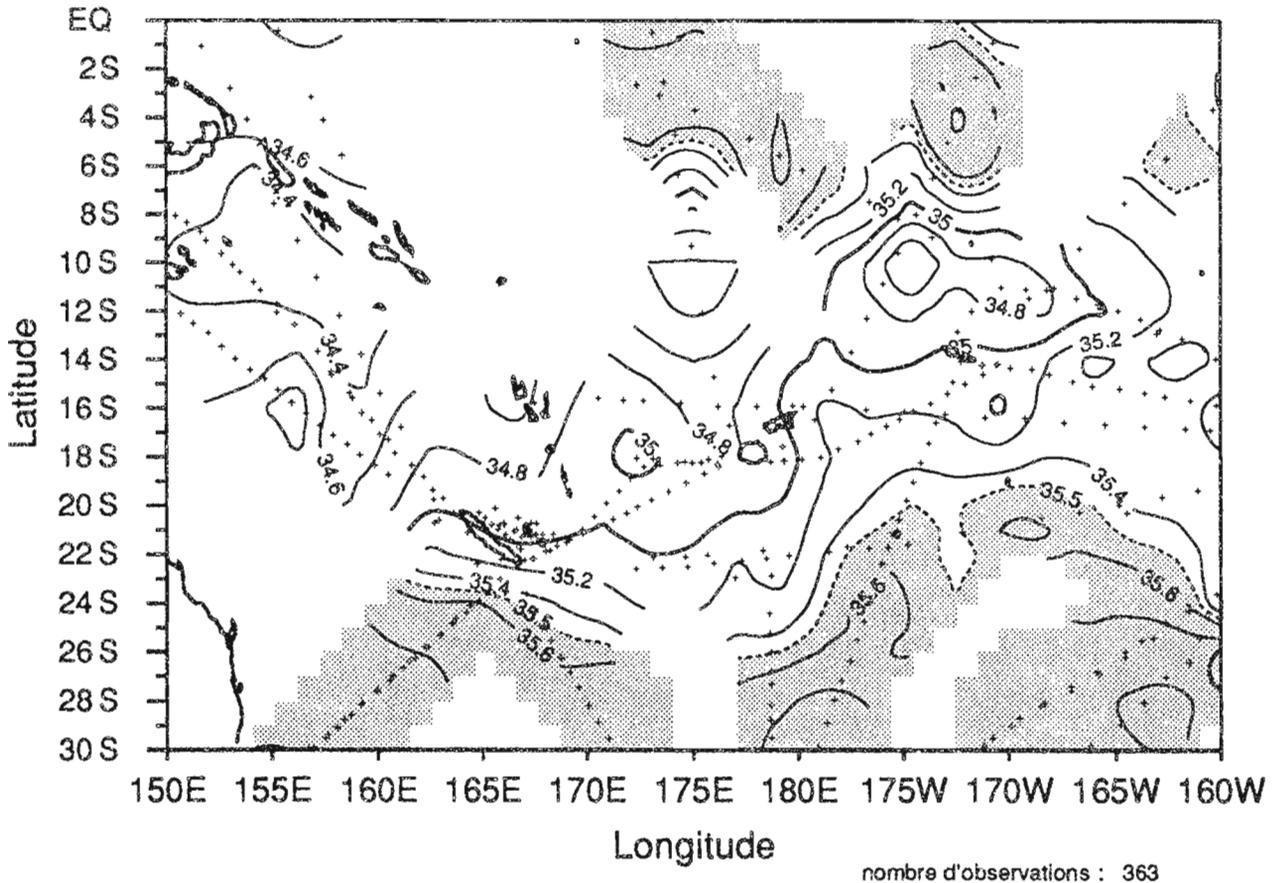
Salinite de surface du 01/01/86 au 28/02/86



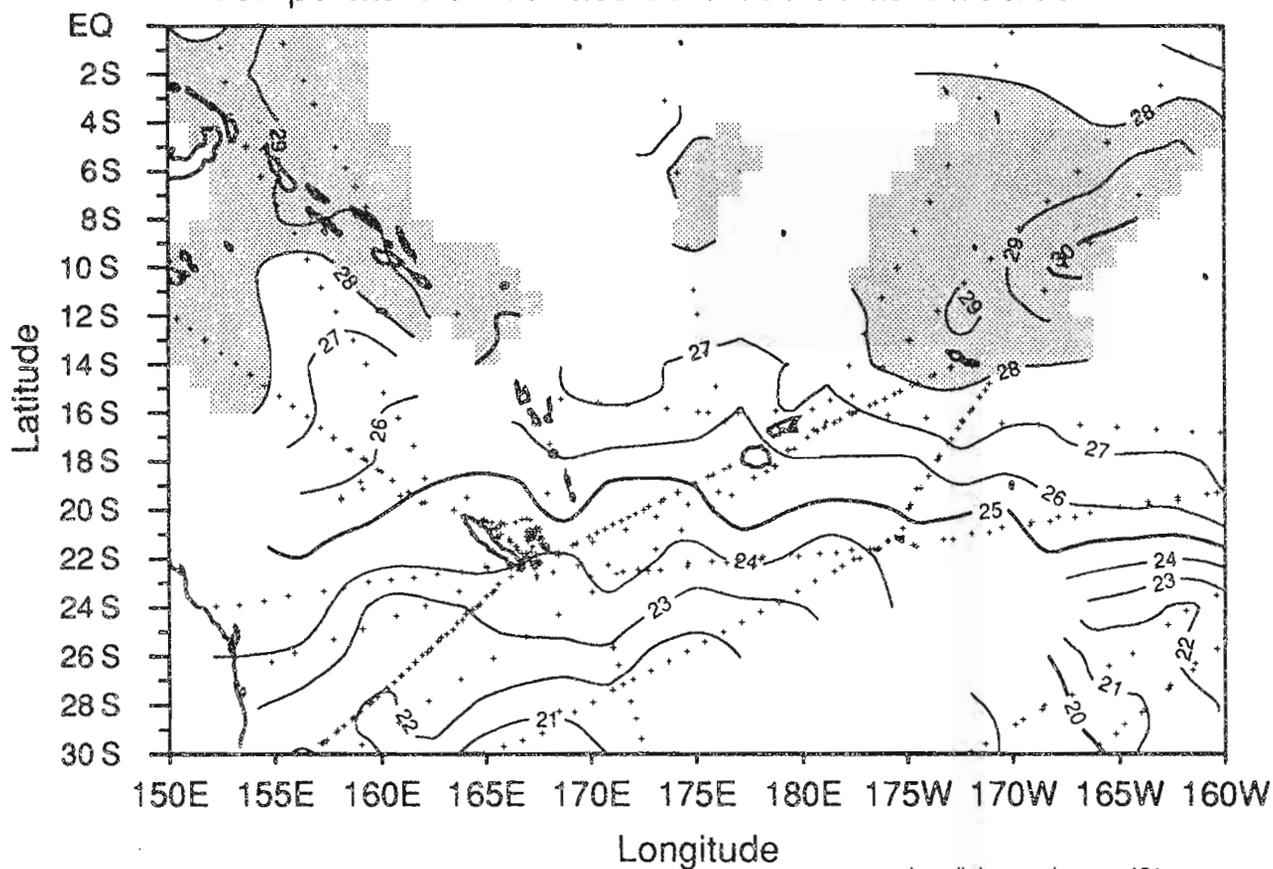
Temperature de surface du 01/03/86 au 30/04/86



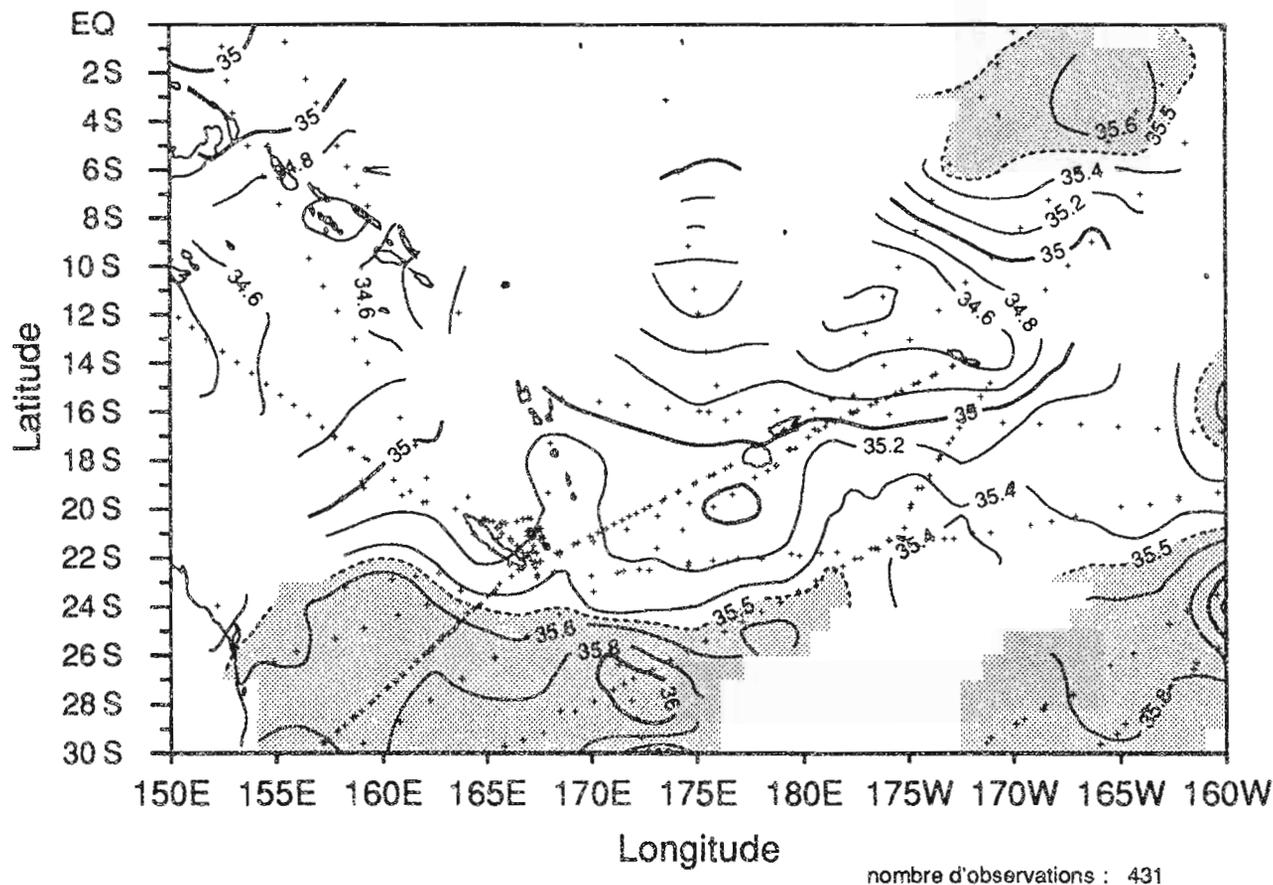
Salinite de surface du 01/03/86 au 30/04/86



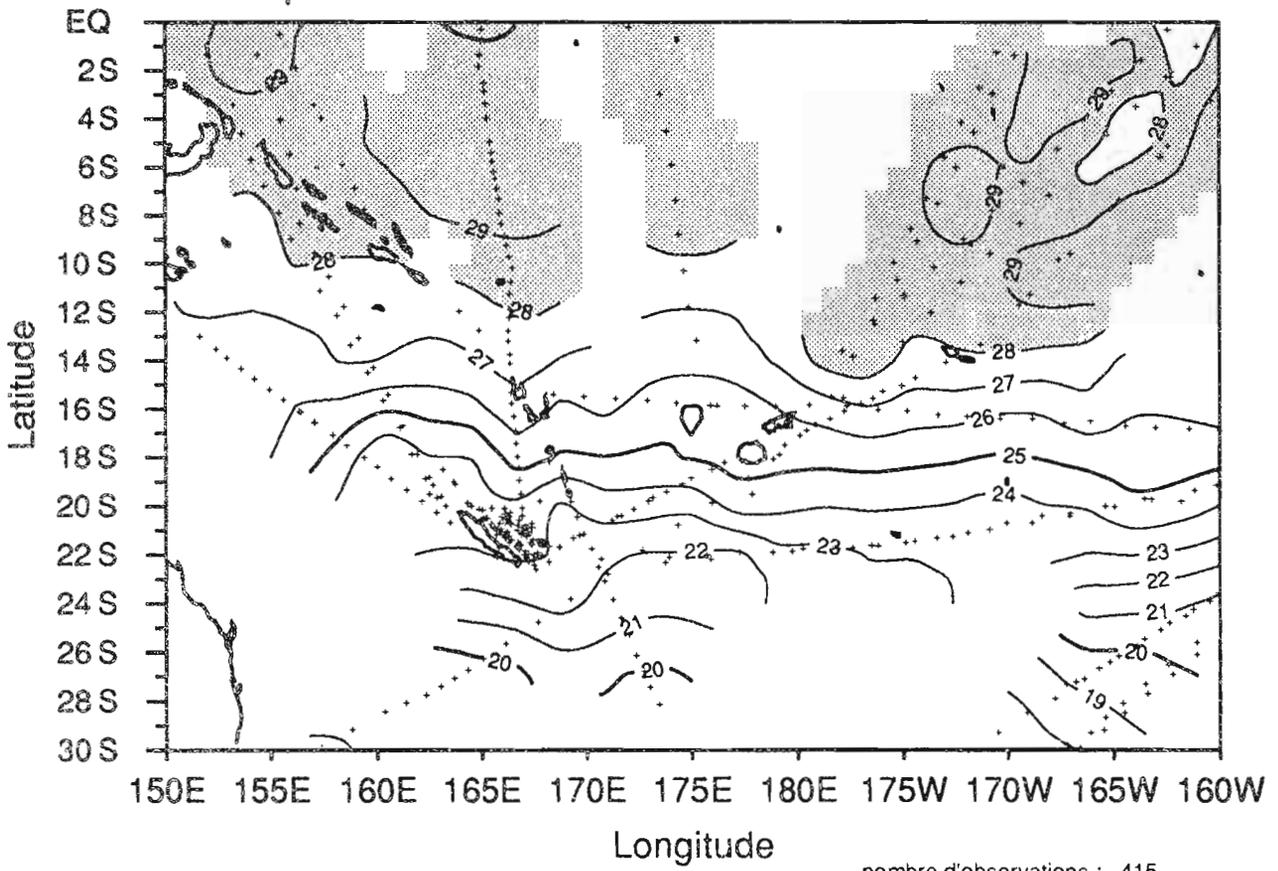
Temperature de surface du 01/05/86 au 30/06/86



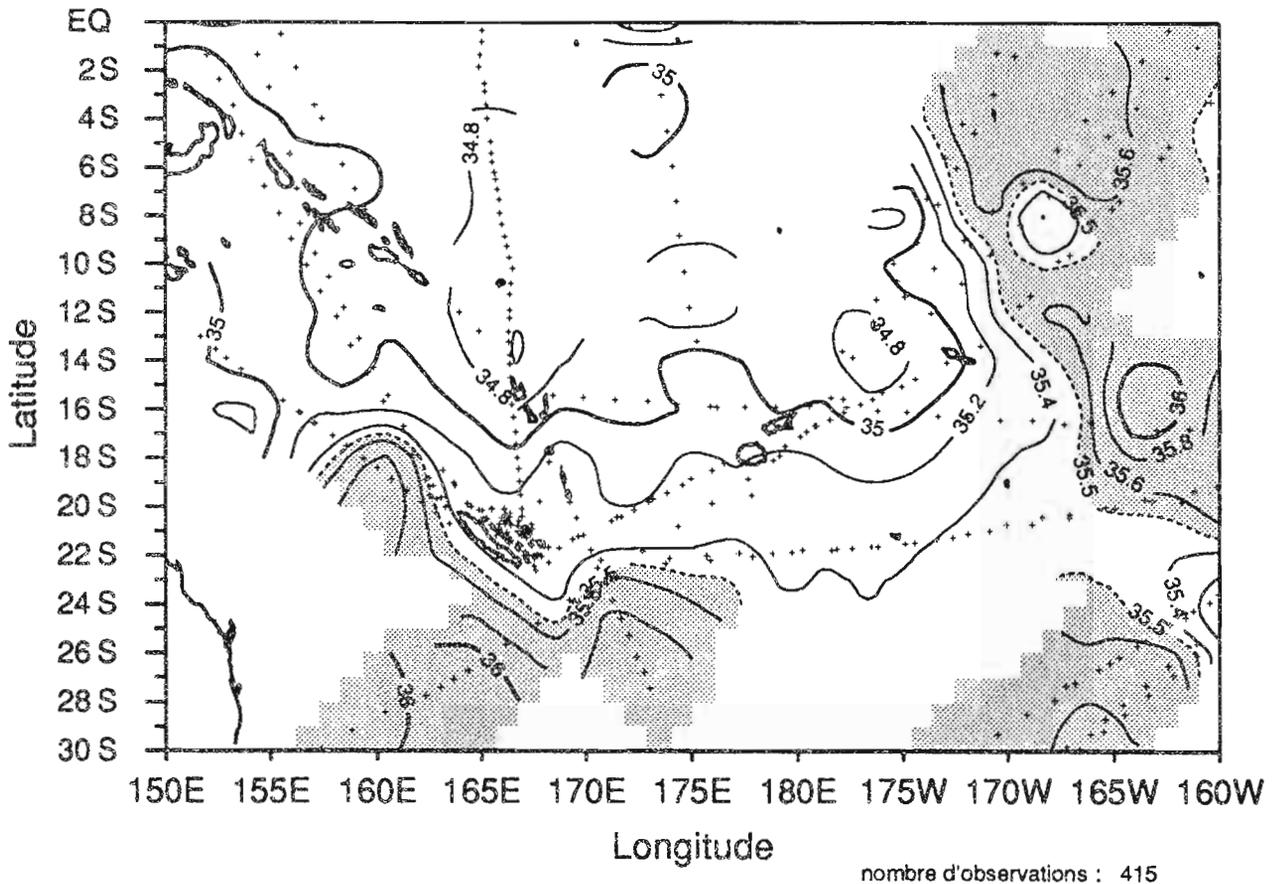
Salinite de surface du 01/05/86 au 30/06/86



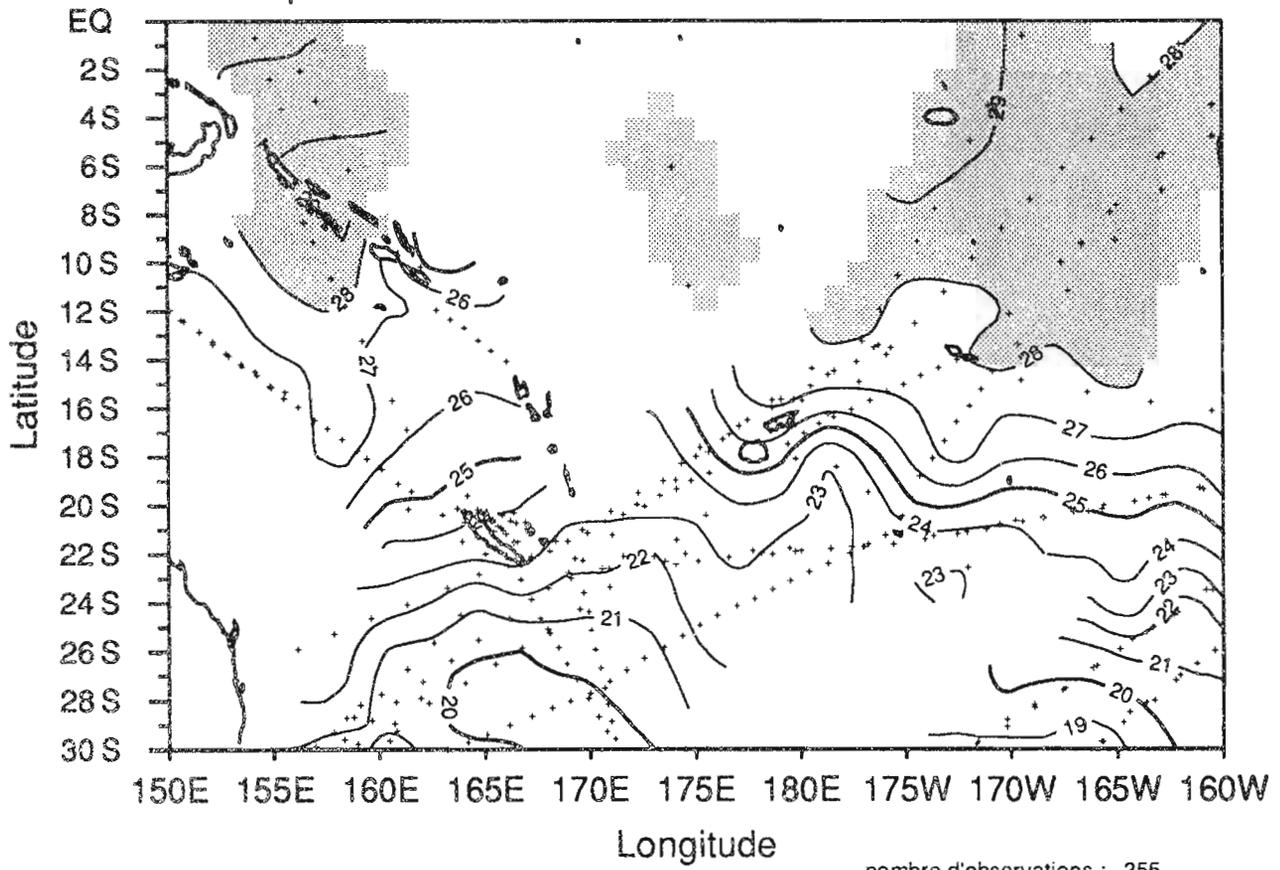
Temperature de surface du 01/07/86 au 31/08/86



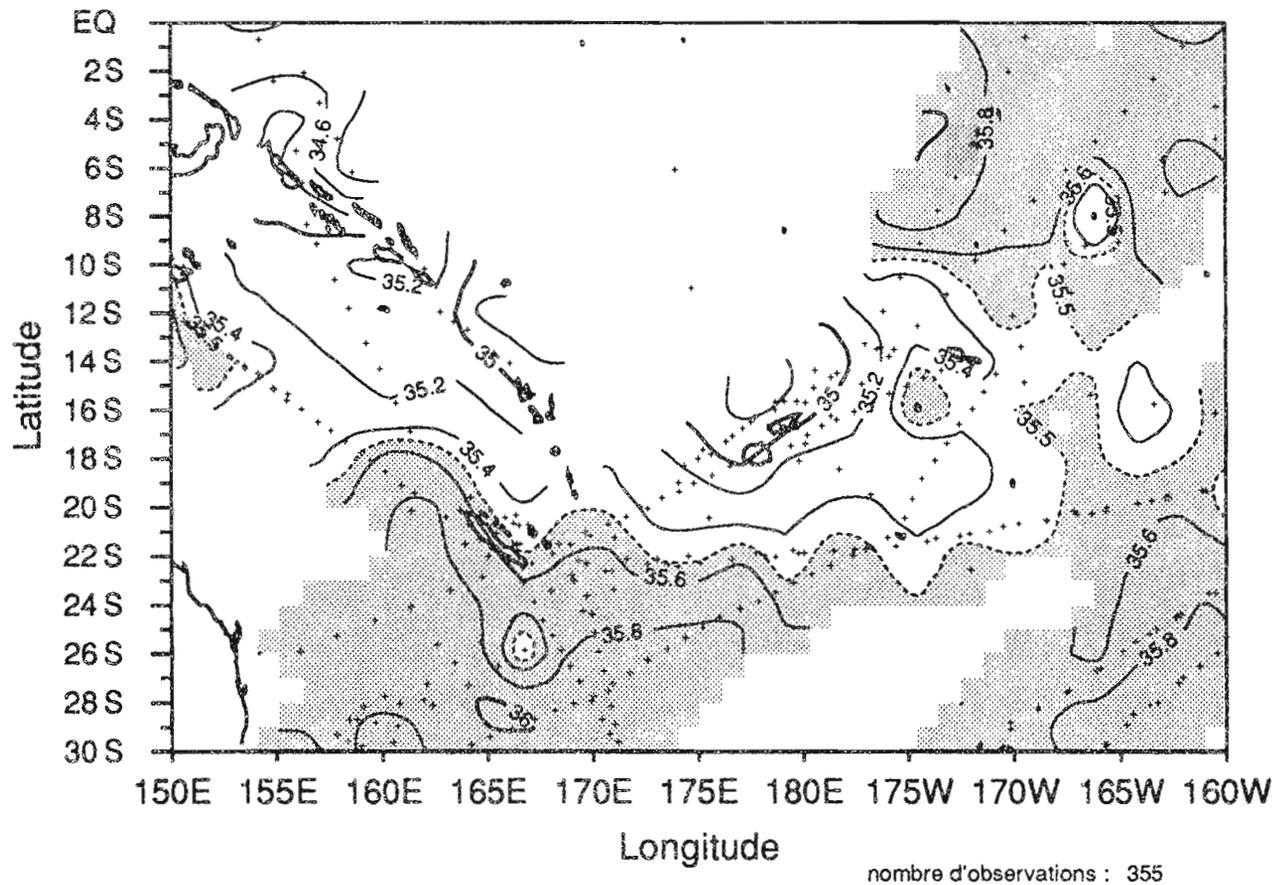
Salinite de surface du 01/07/86 au 31/08/86



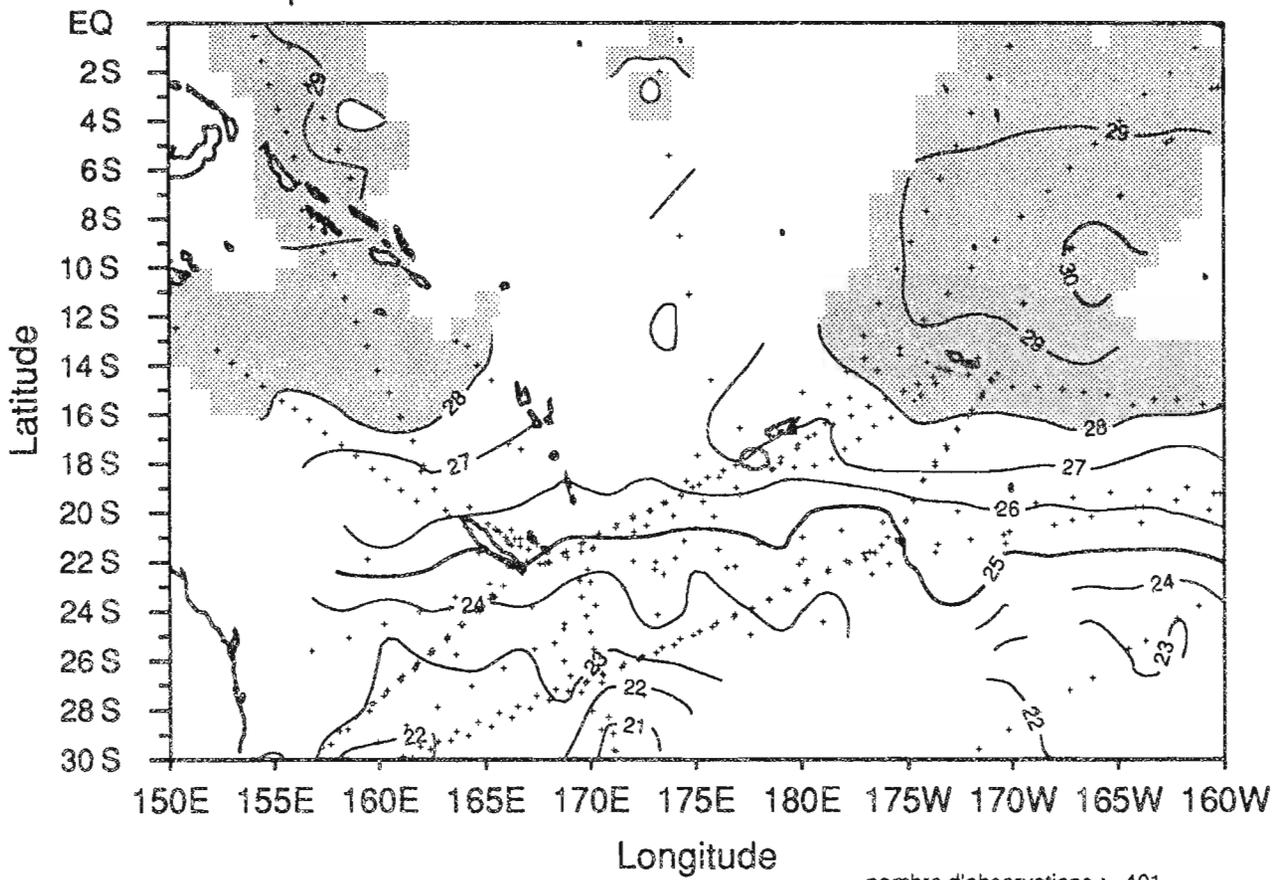
Temperature de surface du 01/09/86 au 31/10/86



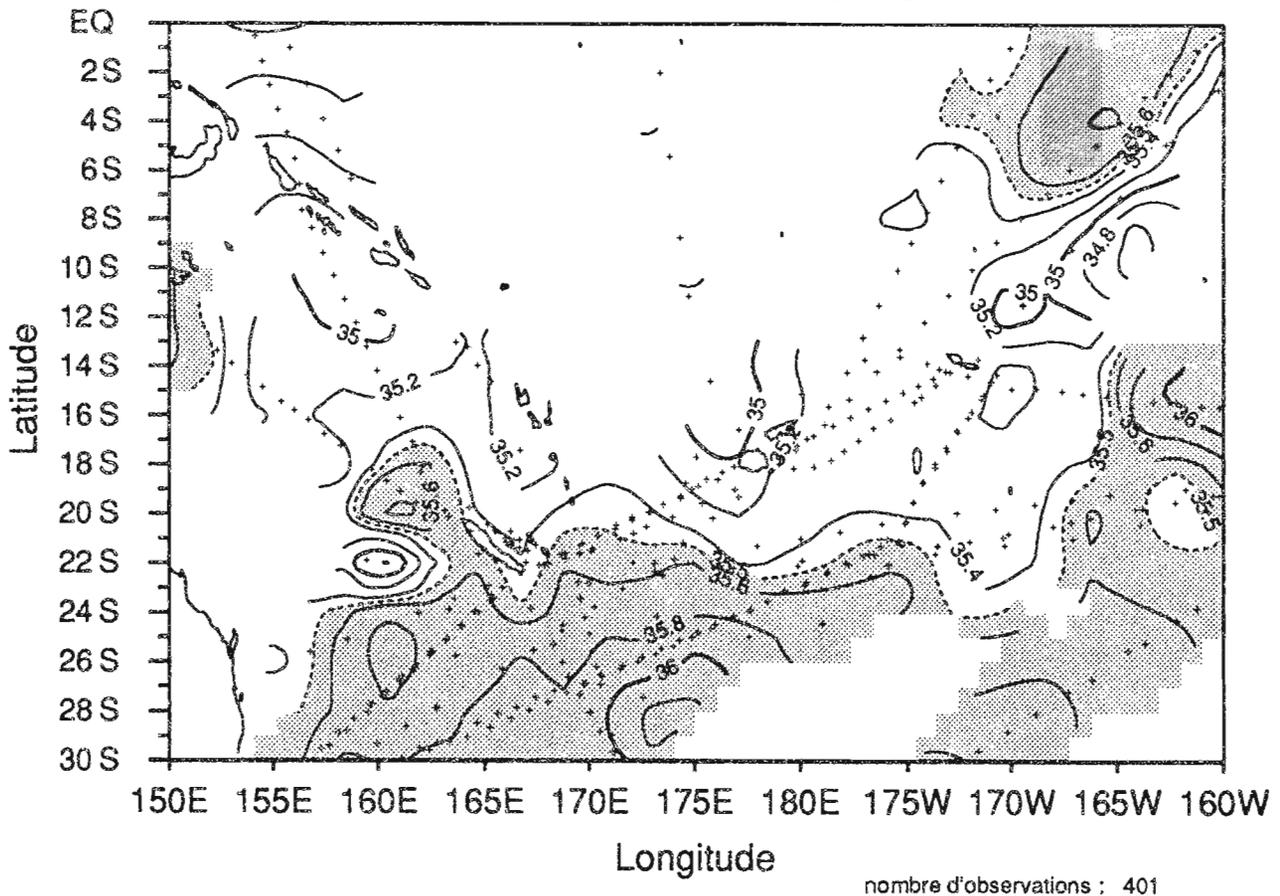
Salinite de surface du 01/09/86 au 31/10/86



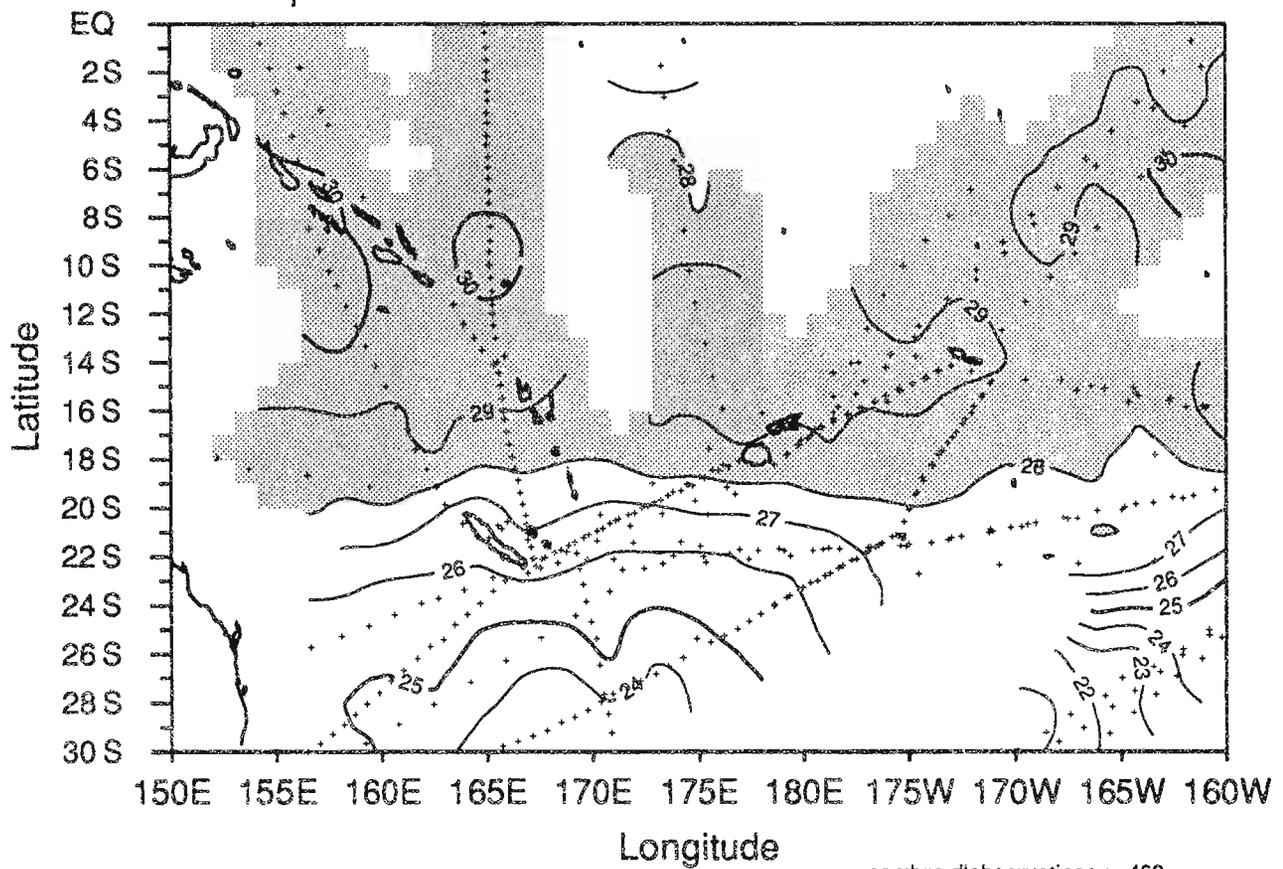
Temperature de surface du 01/11/86 au 31/12/86



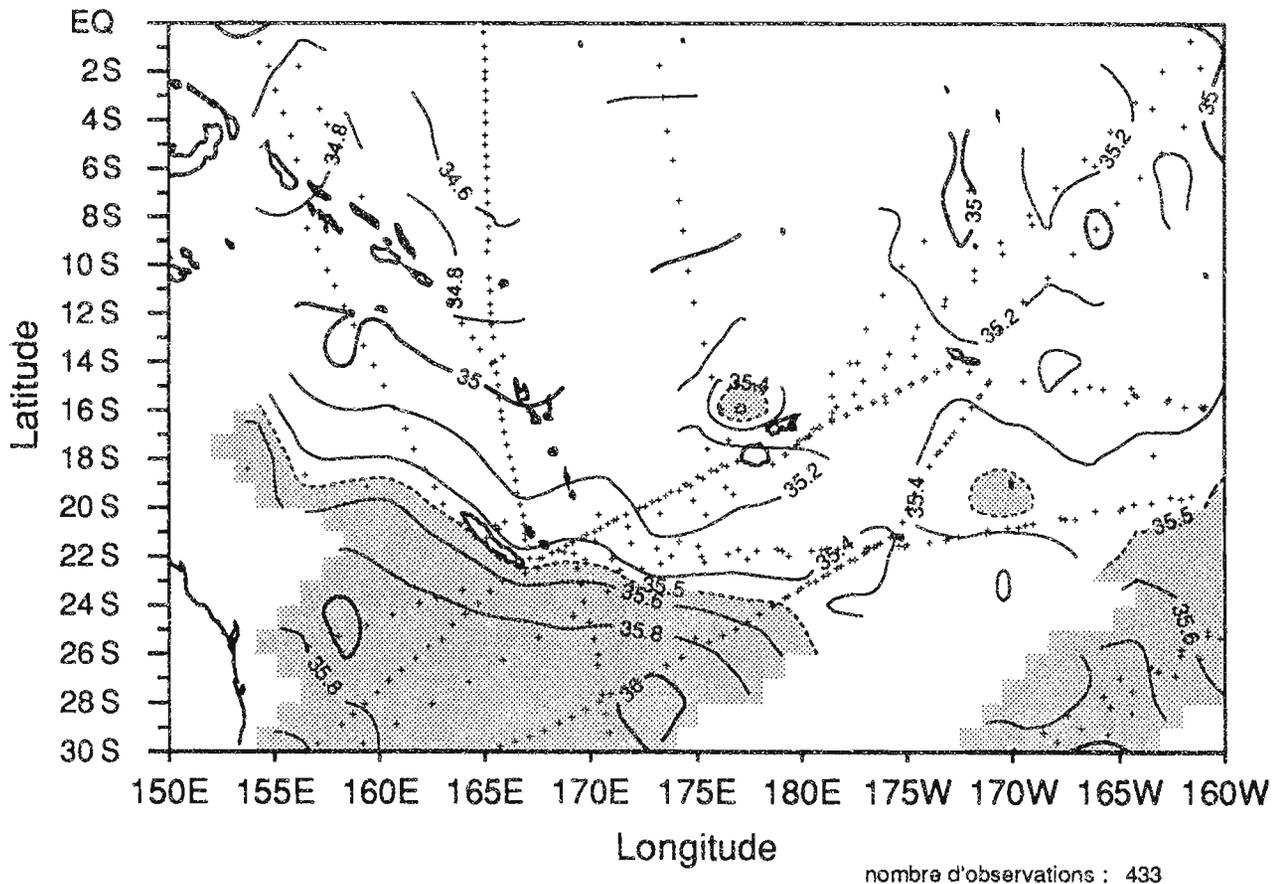
Salinite de surface du 01/11/86 au 31/12/86



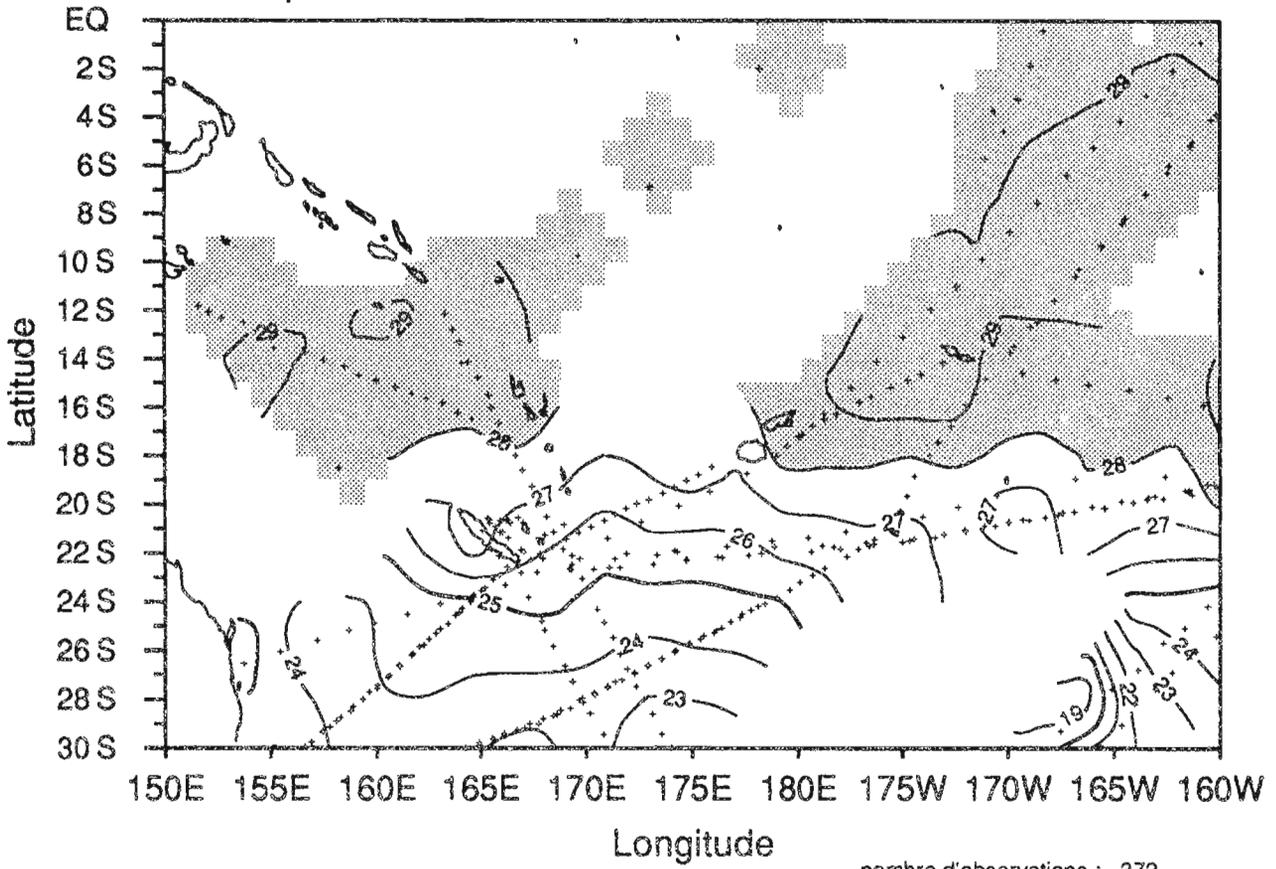
Temperature de surface du 01/01/87 au 28/02/87



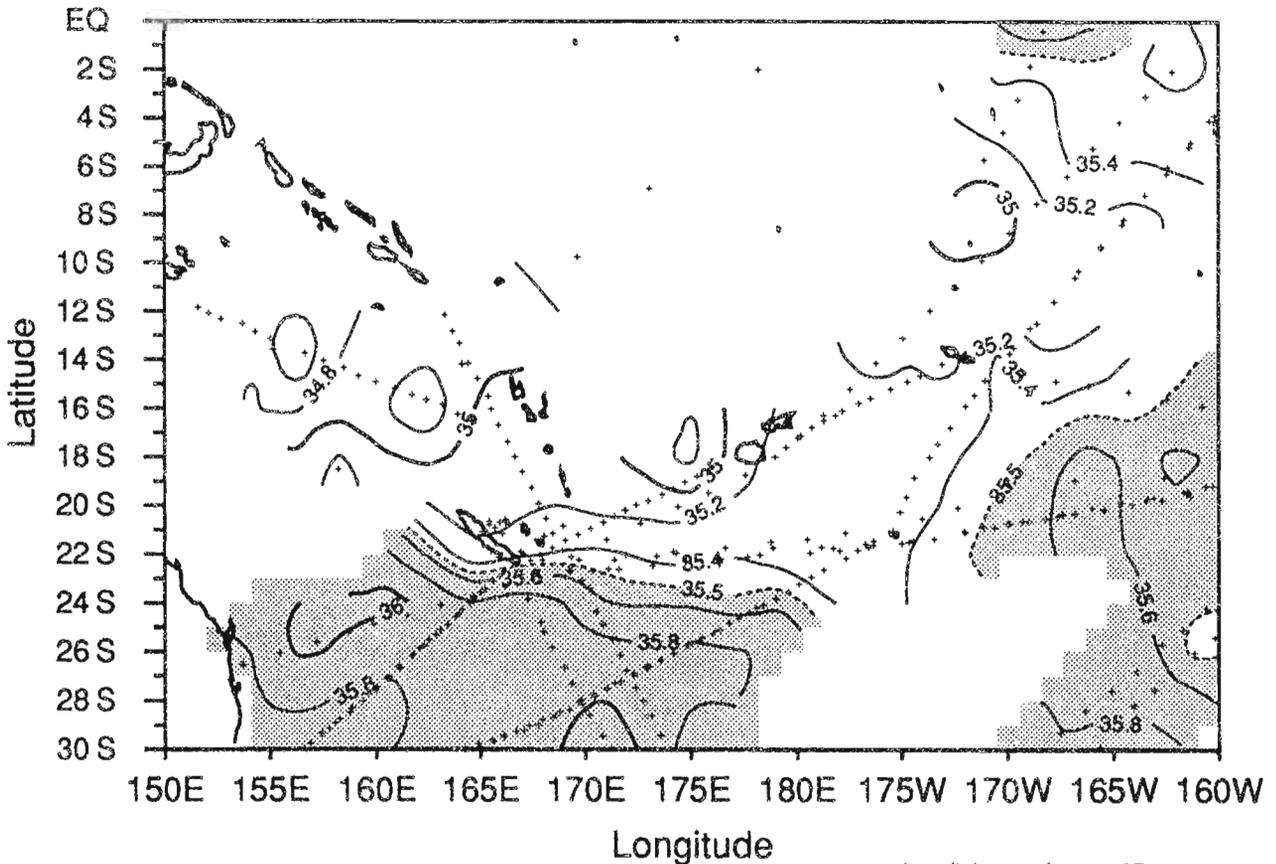
Salinite de surface du 01/01/87 au 28/02/87



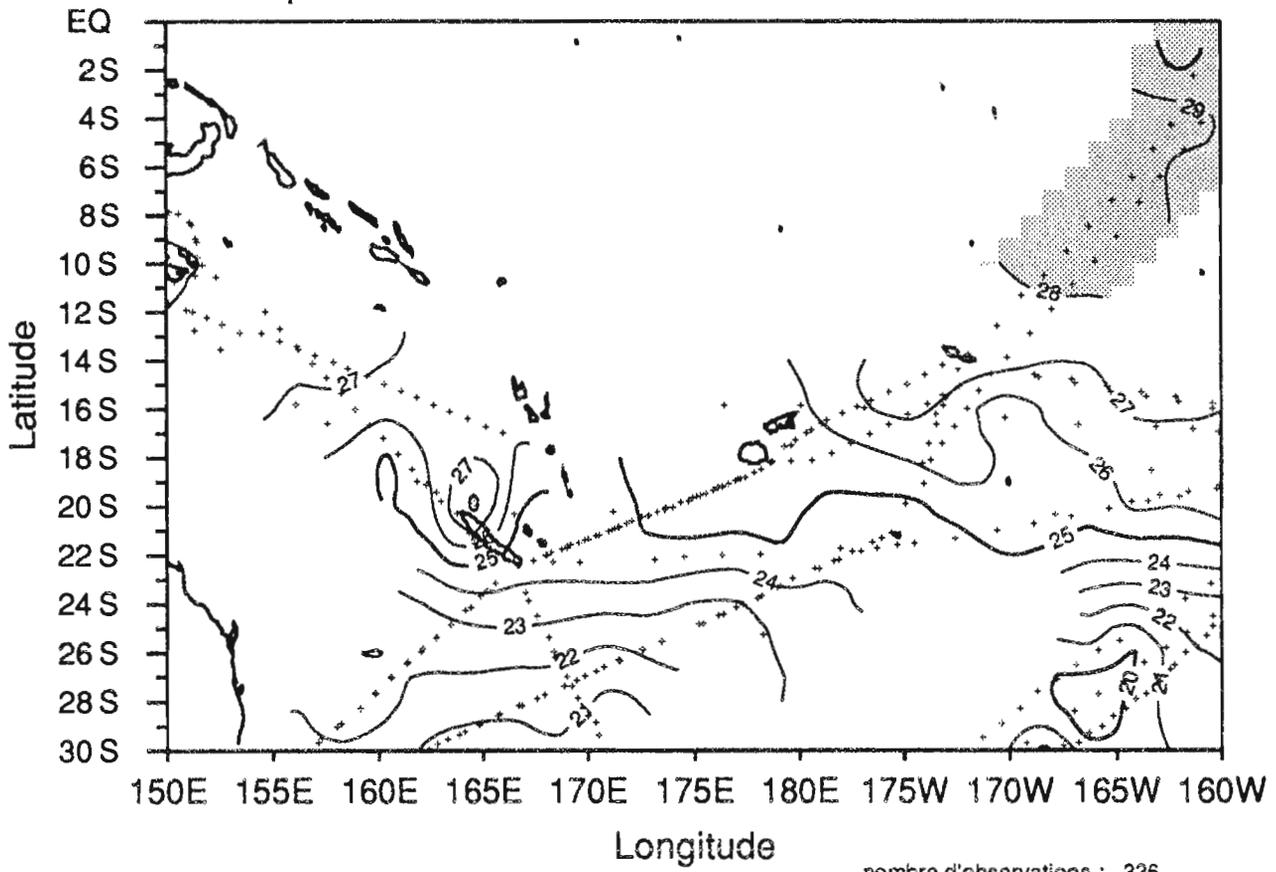
Temperature de surface du 01/03/87 au 30/04/87



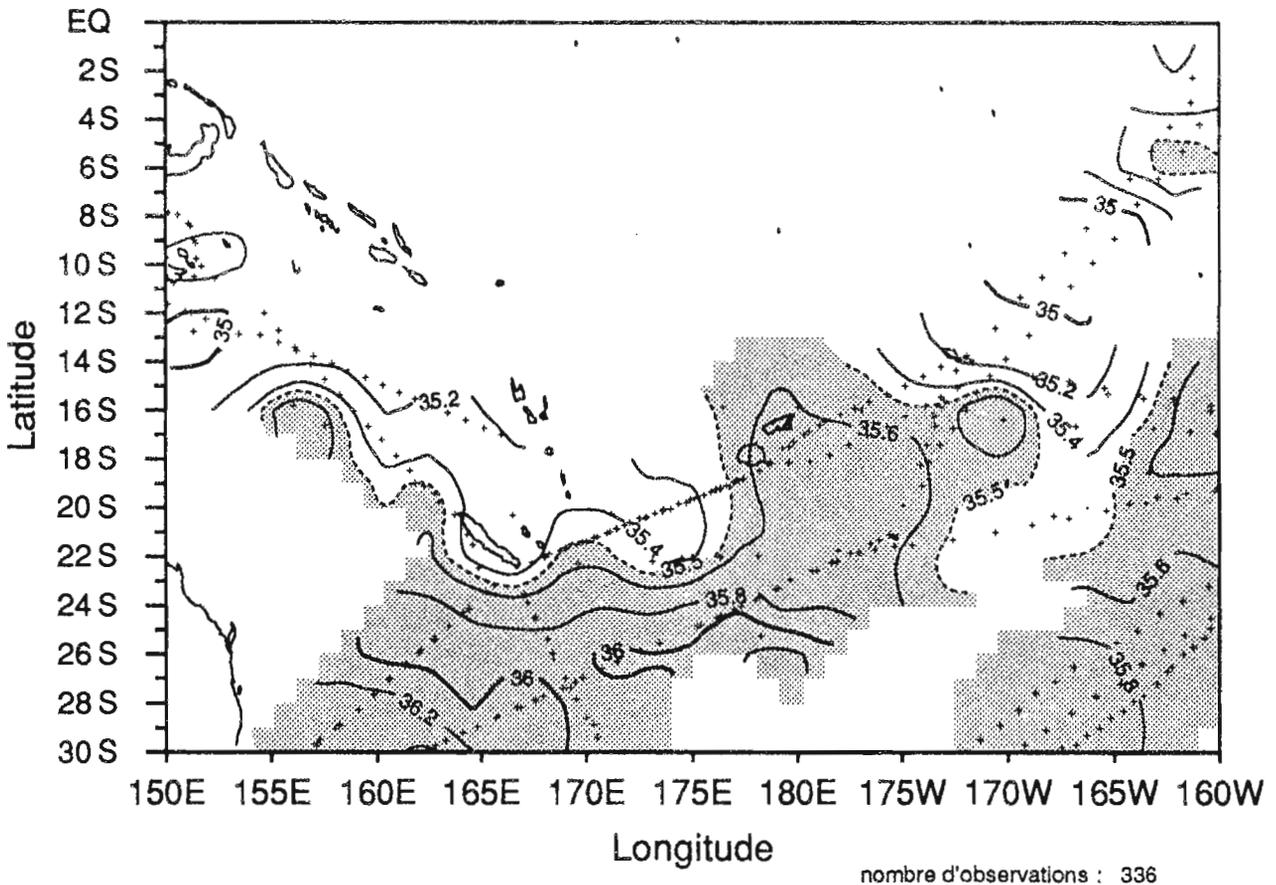
Salinite de surface du 01/03/87 au 30/04/87



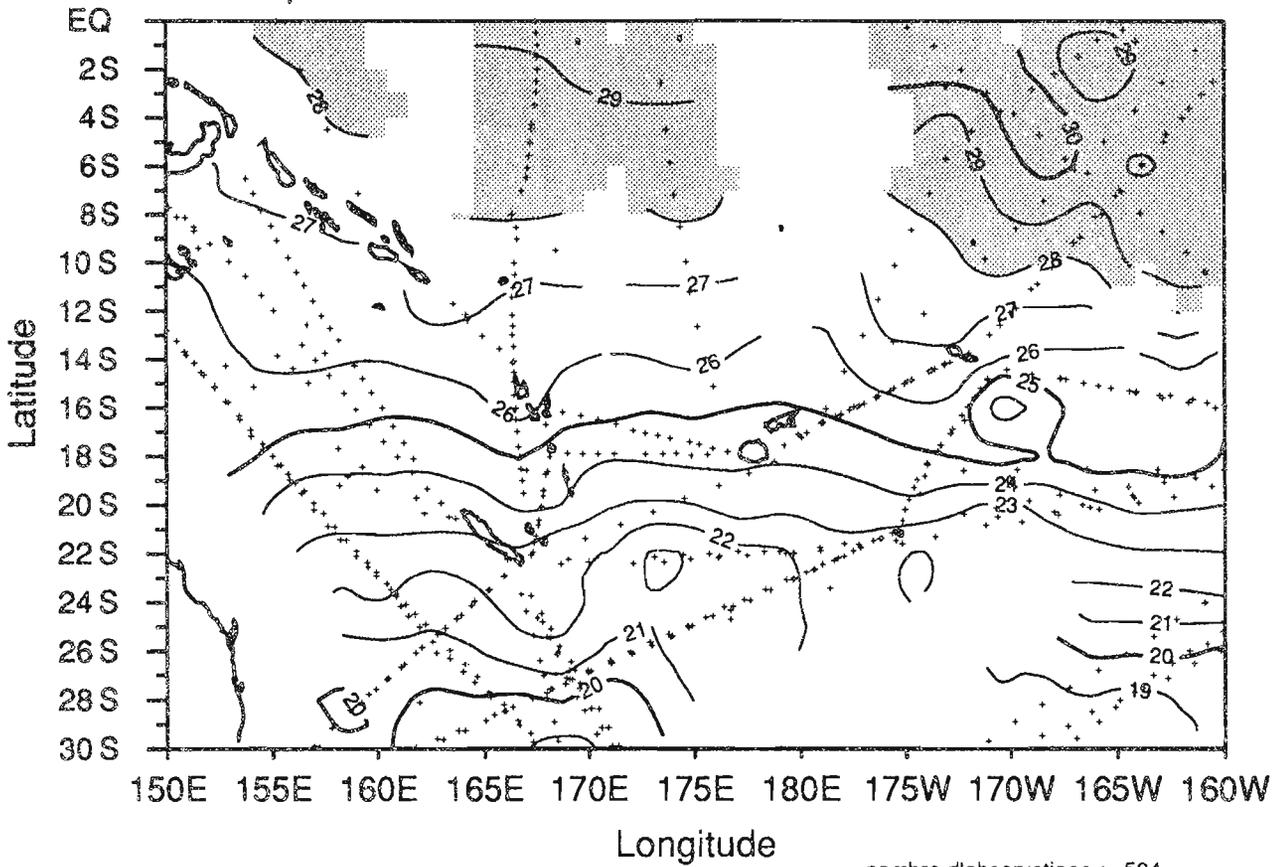
Temperature de surface du 01/05/87 au 30/06/87



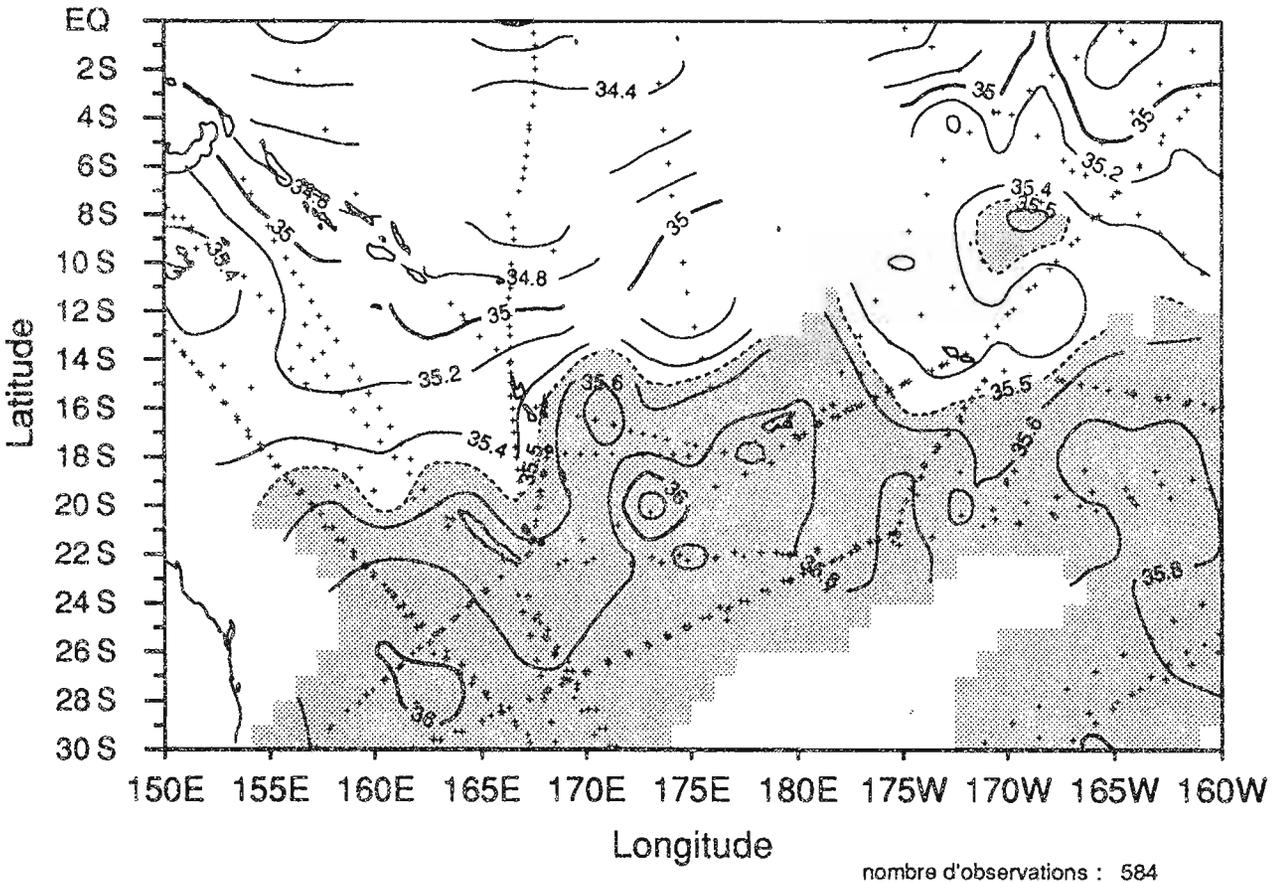
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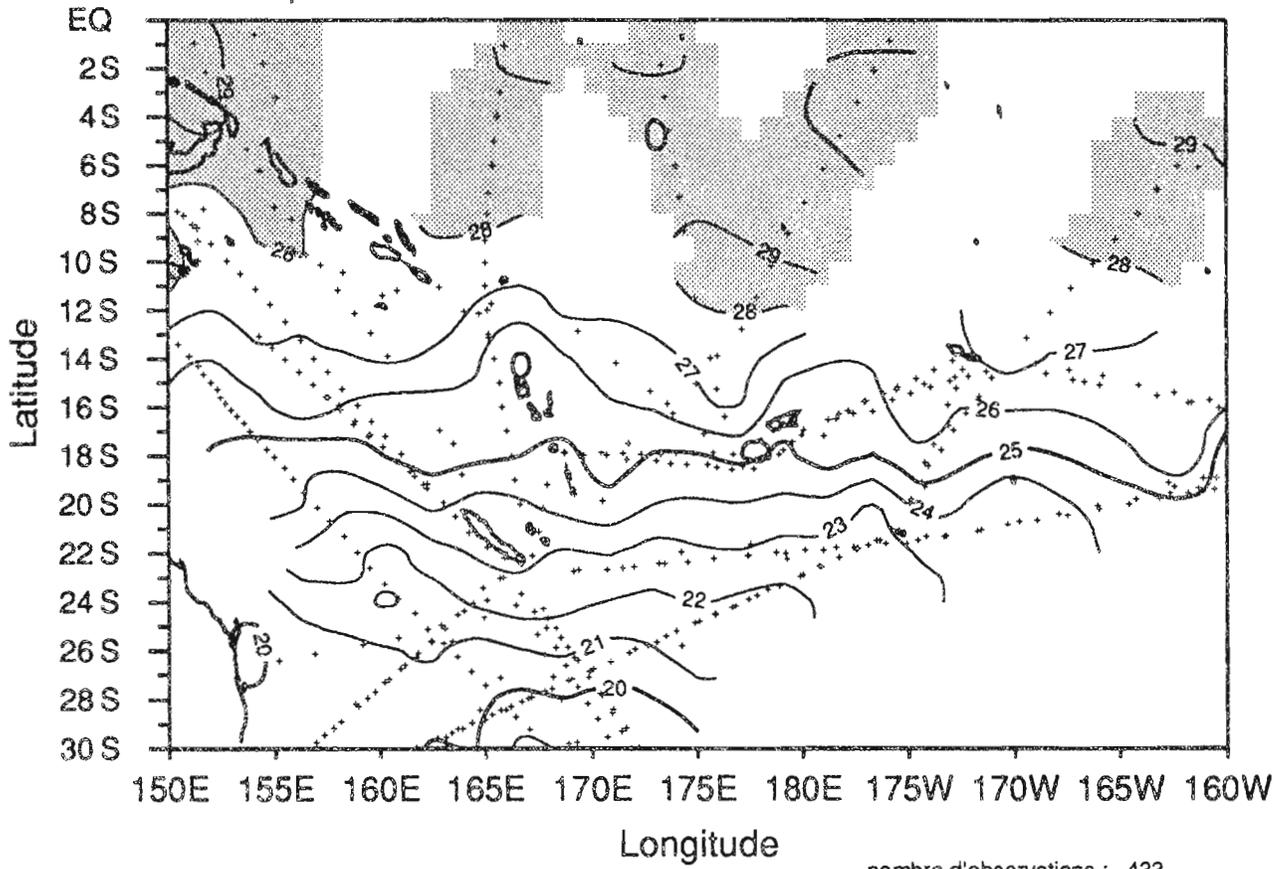
Temperature de surface du 01/07/87 au 31/08/87



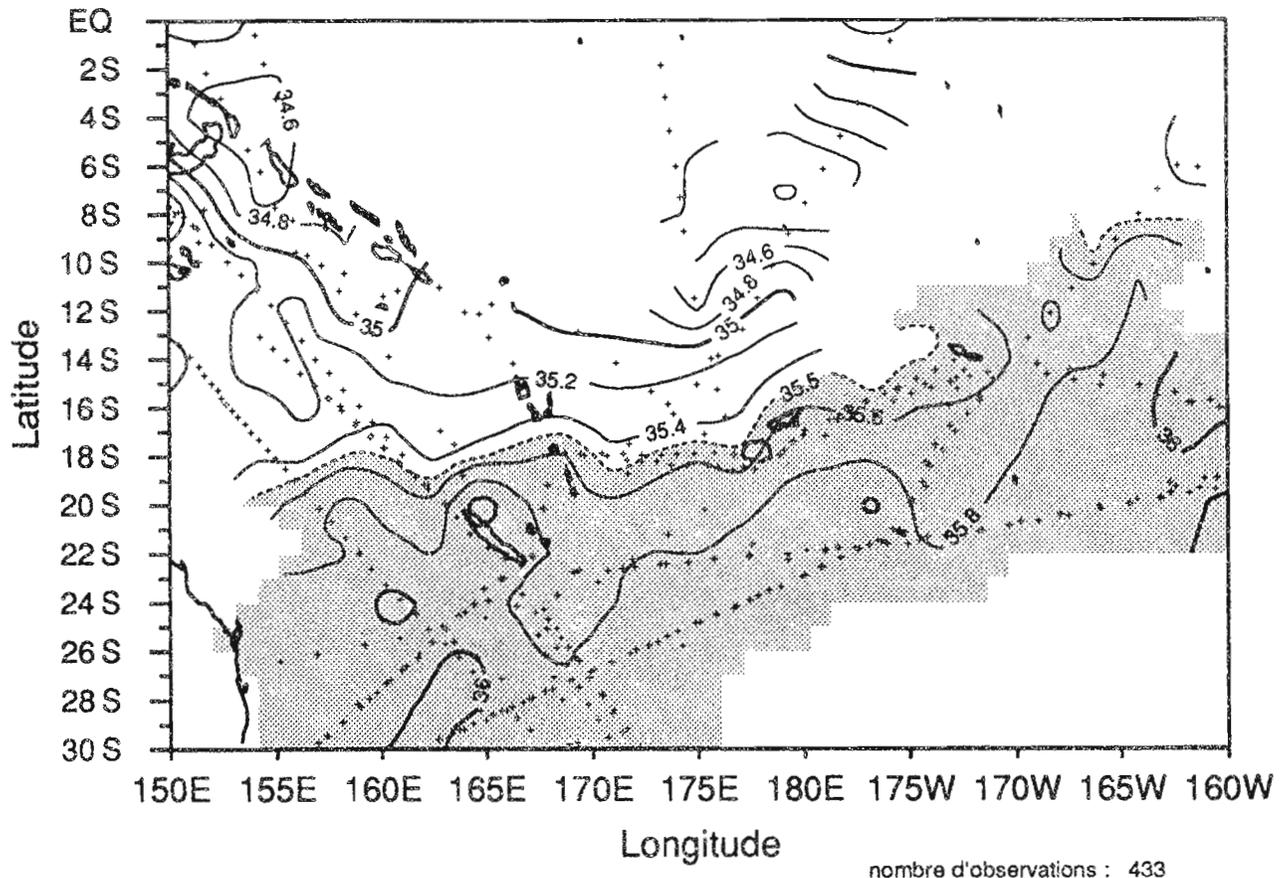
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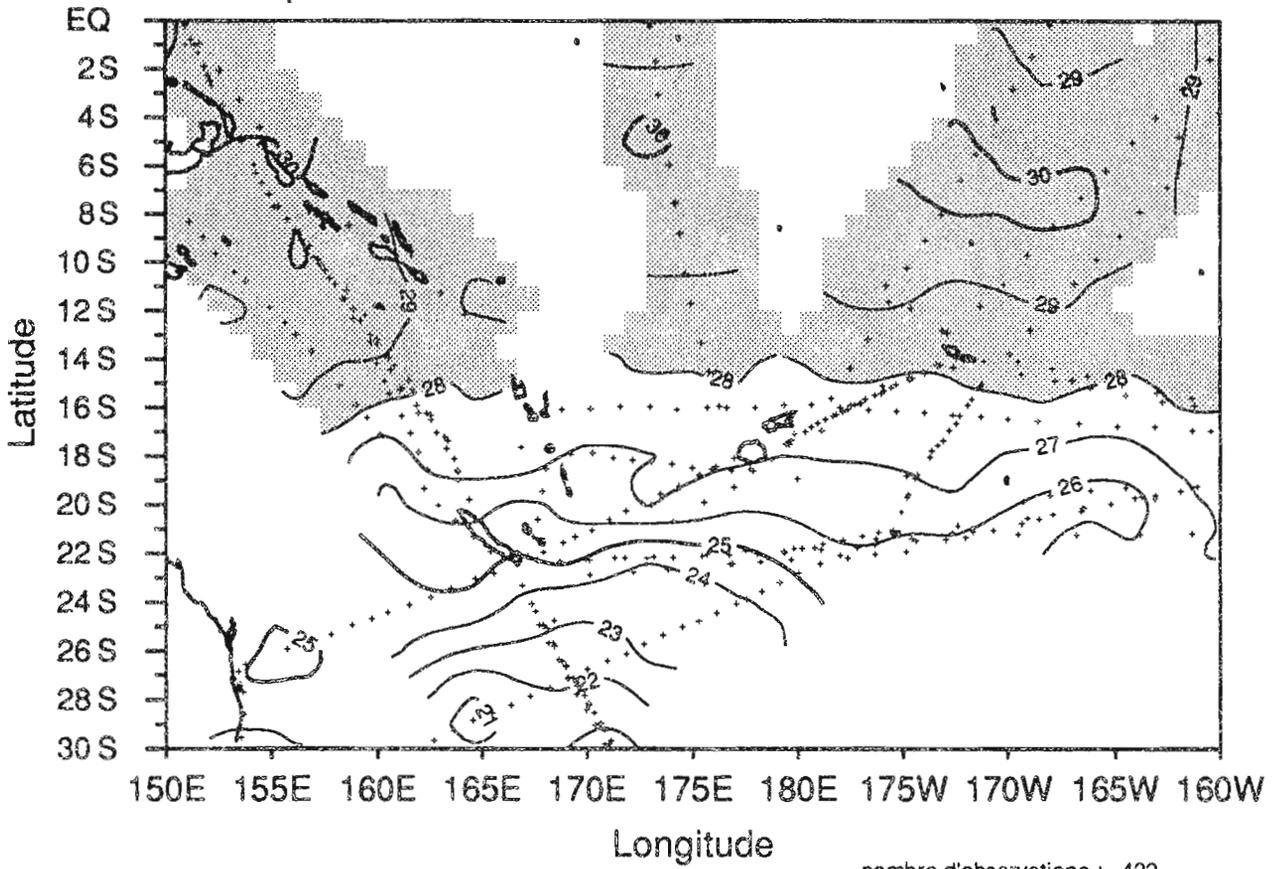
Temperature de surface du 01/09/87 au 31/10/87



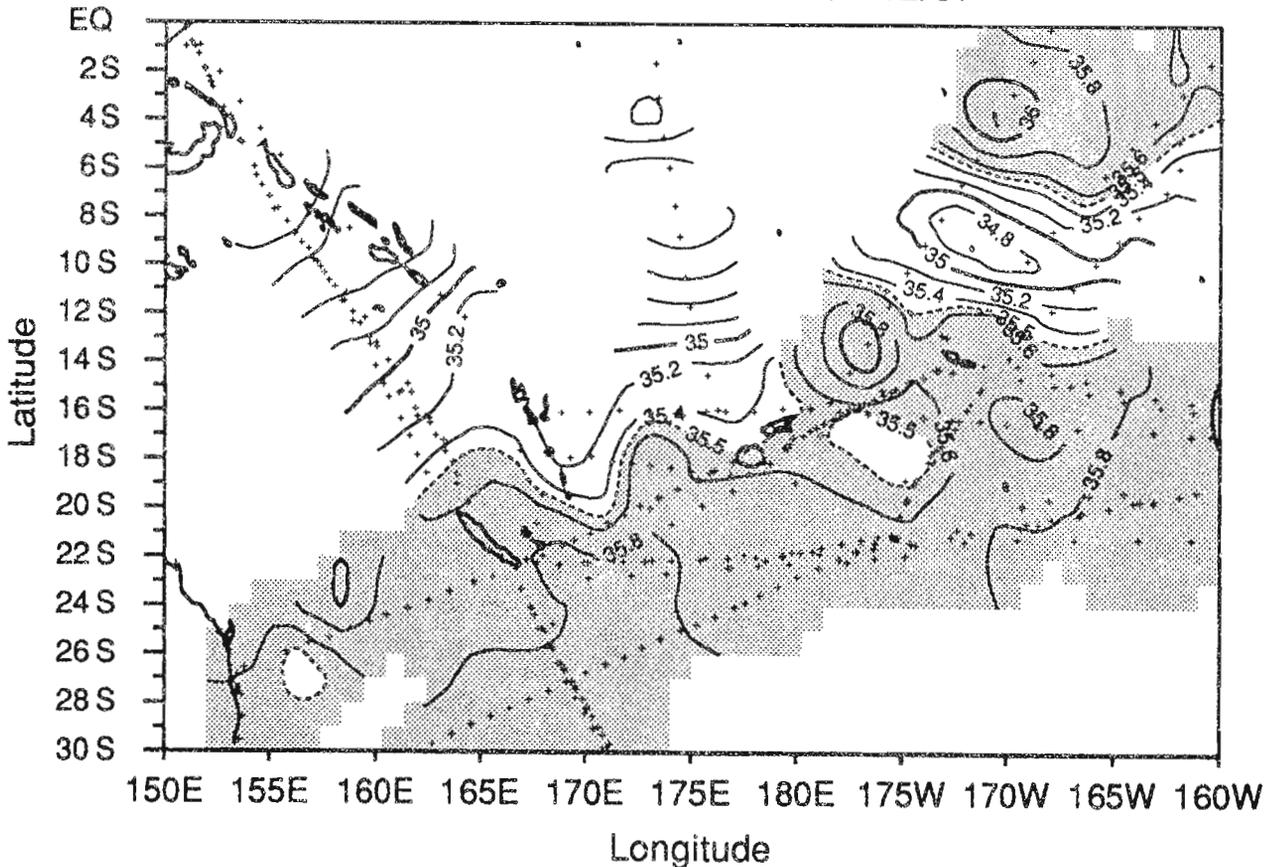
Salinite de surface du 01/09/87 au 31/10/87



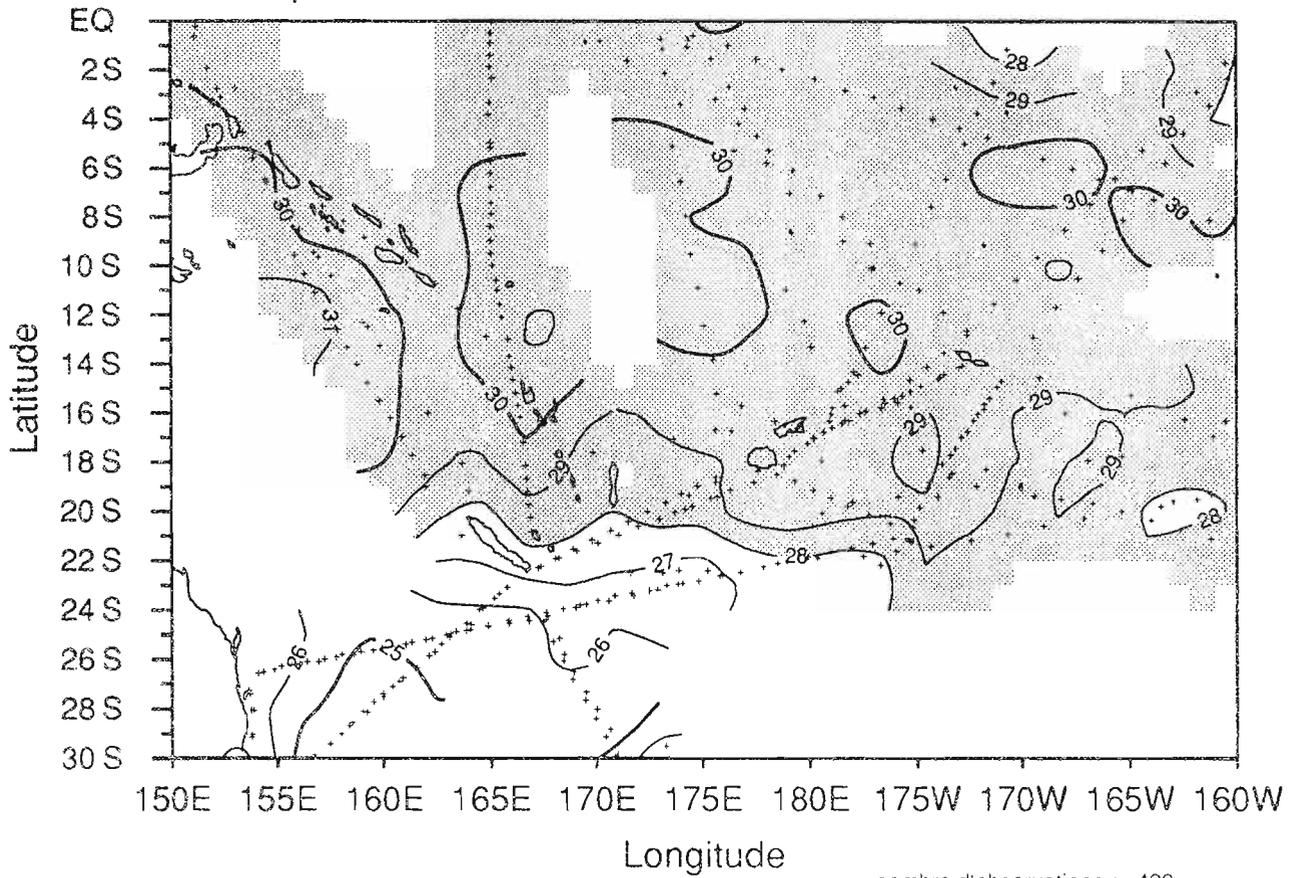
Temperature de surface du 01/11/87 au 31/12/87



Salinite de surface du 01/11/87 au 31/12/87

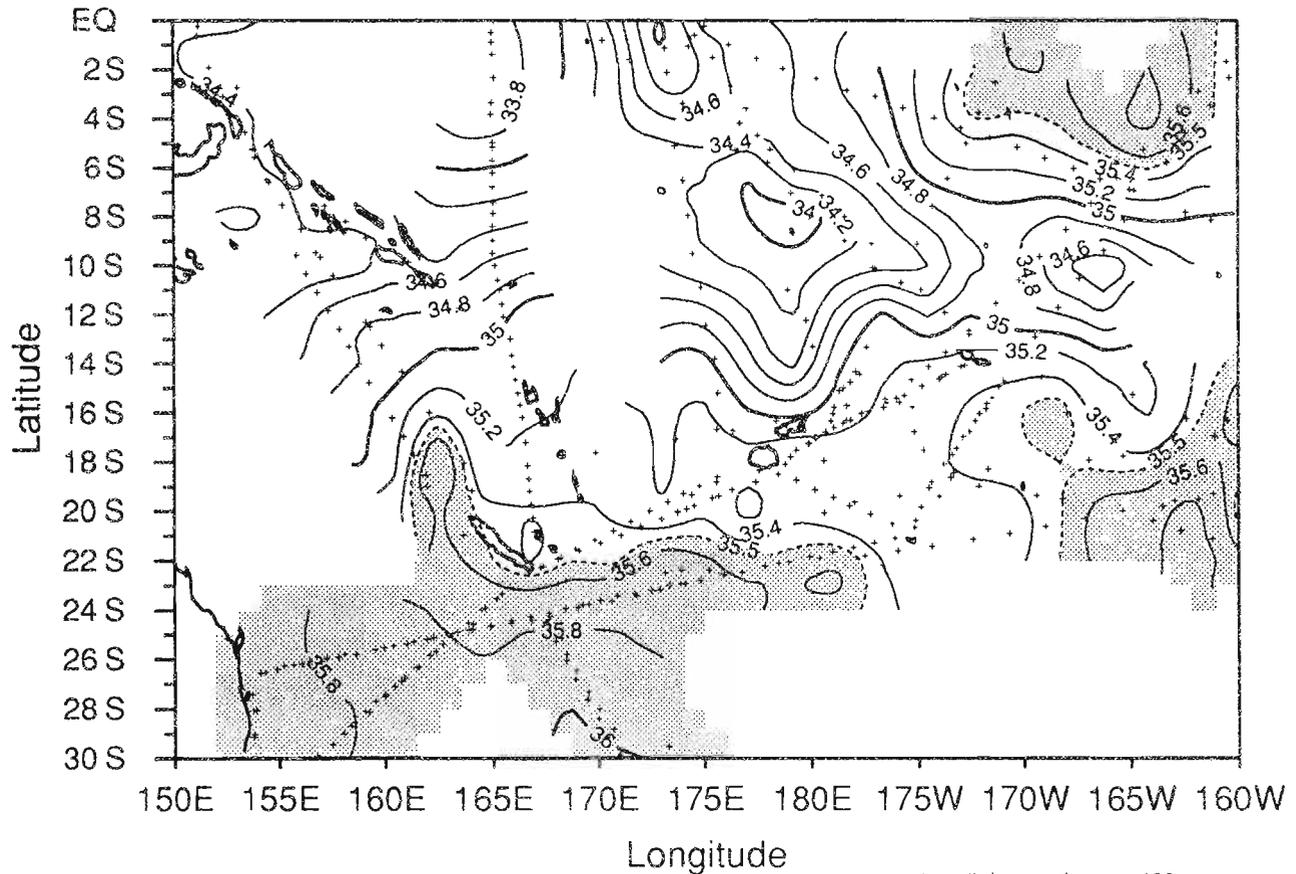


Temperature de surface du 01/01/88 au 29/02/88



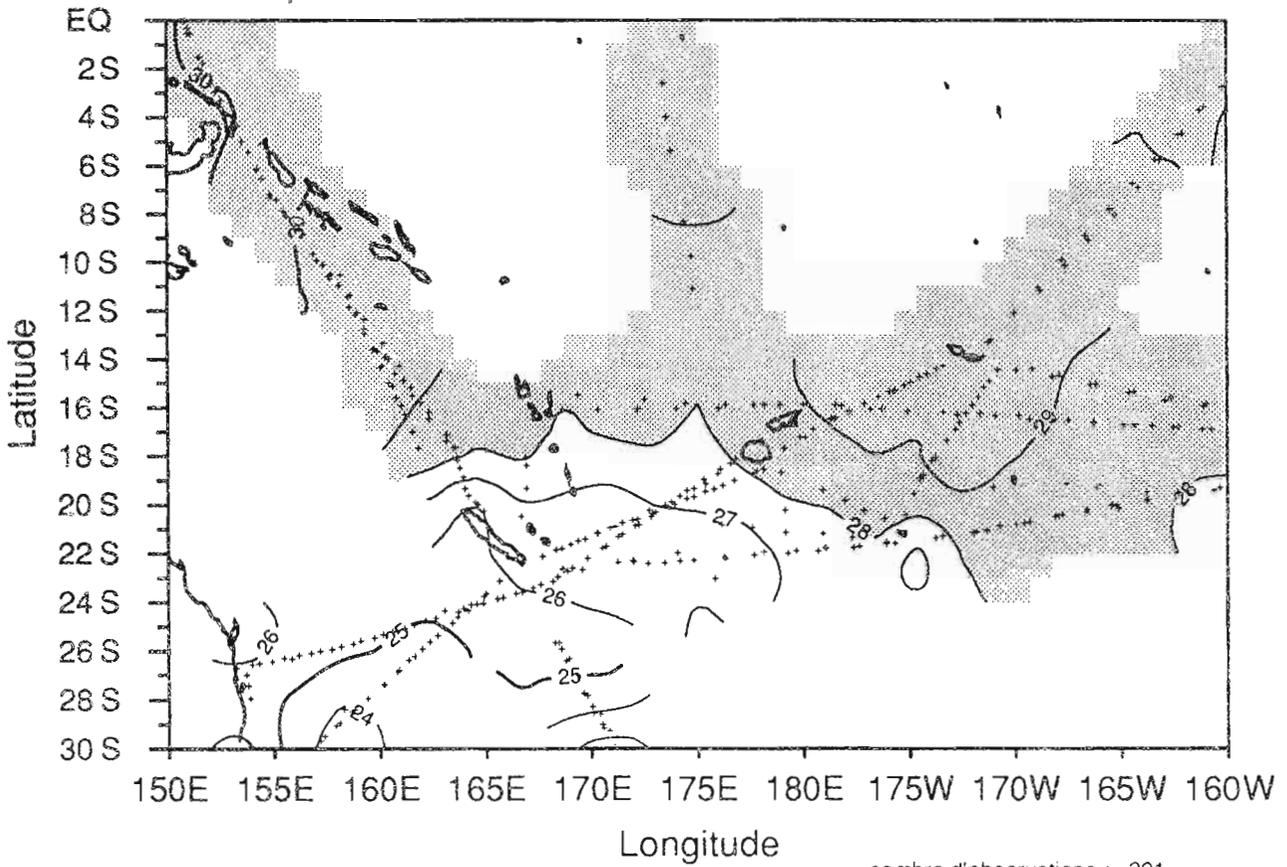
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Salinite de surface du 01/01/88 au 29/02/88

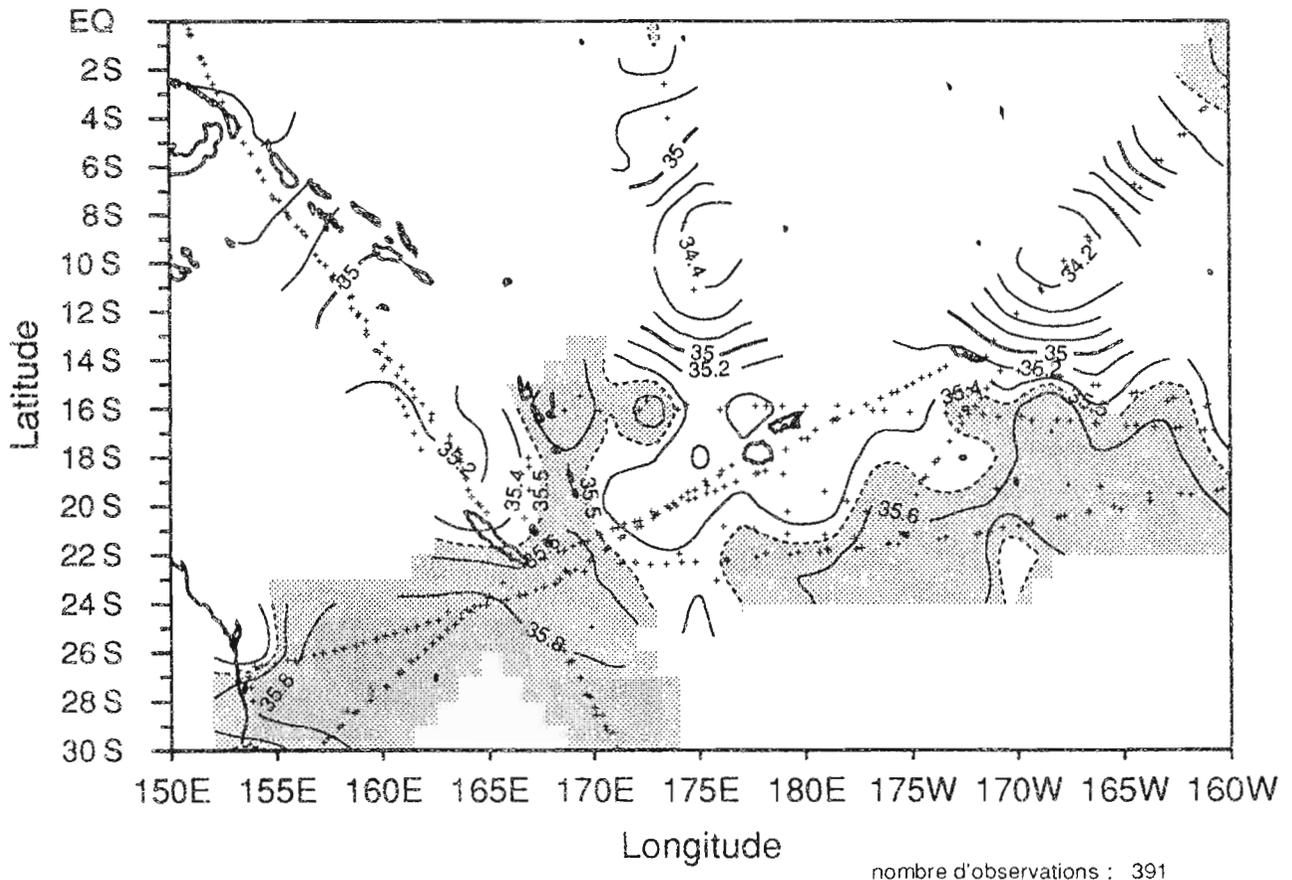


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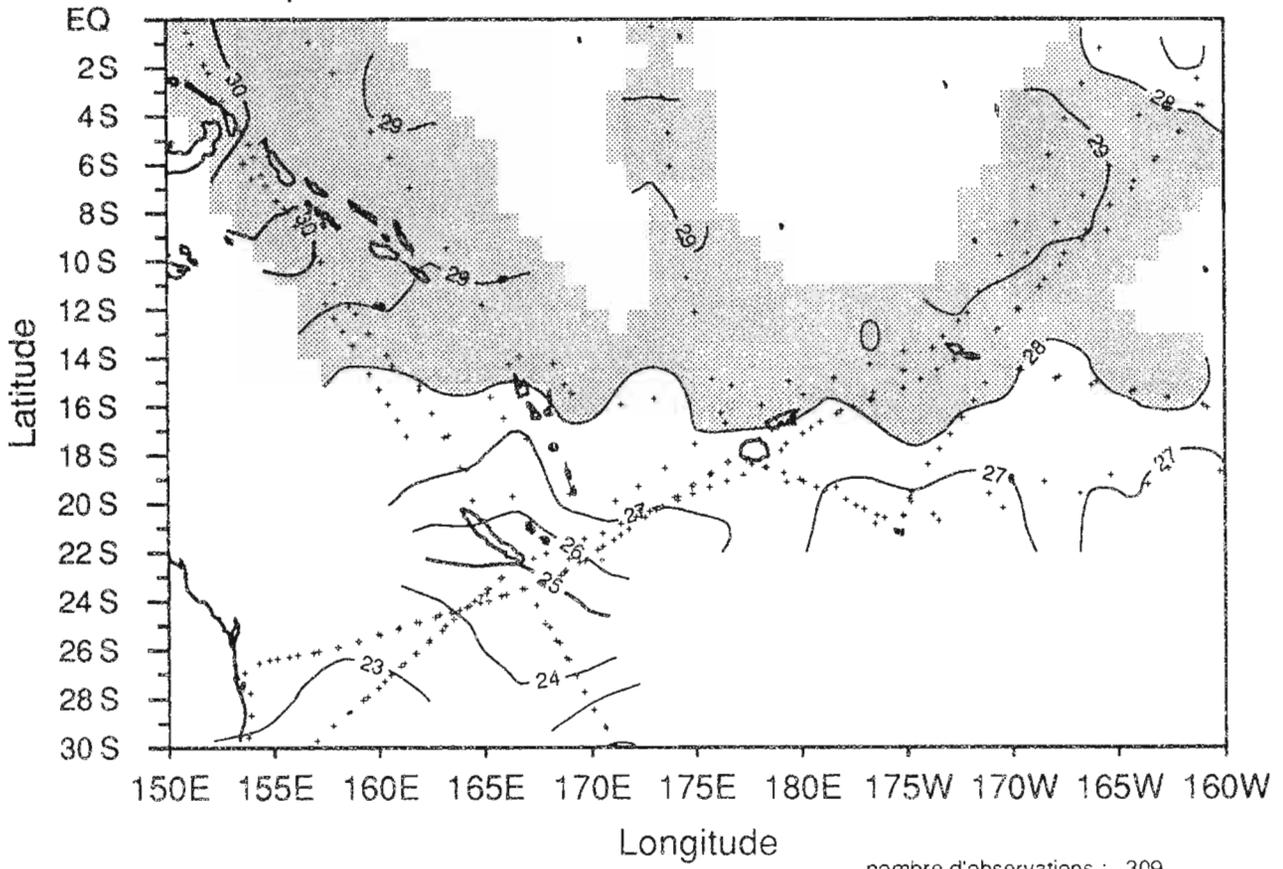
Temperature de surface du 01/03/88 au 30/04/88



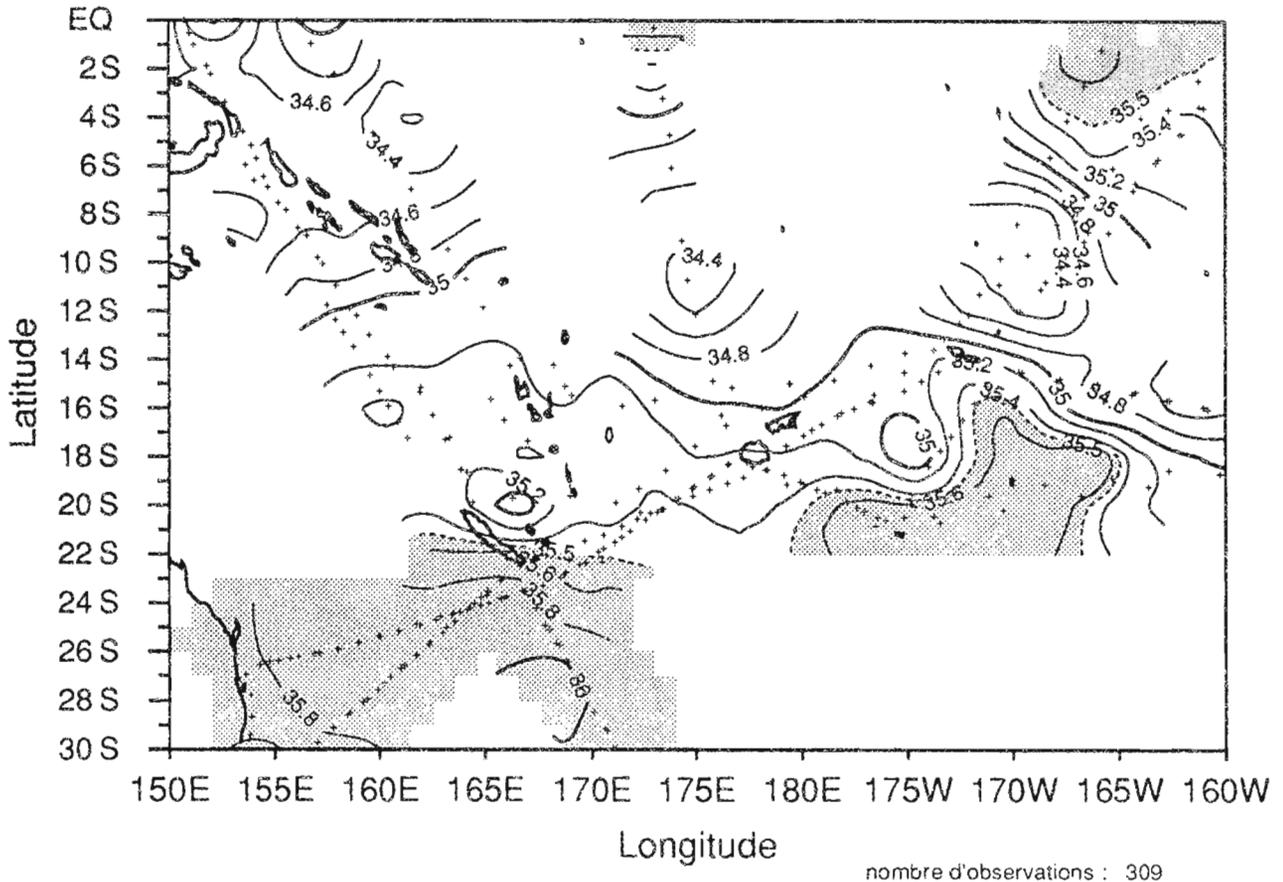
Salinite de surface du 01/03/88 au 30/04/88



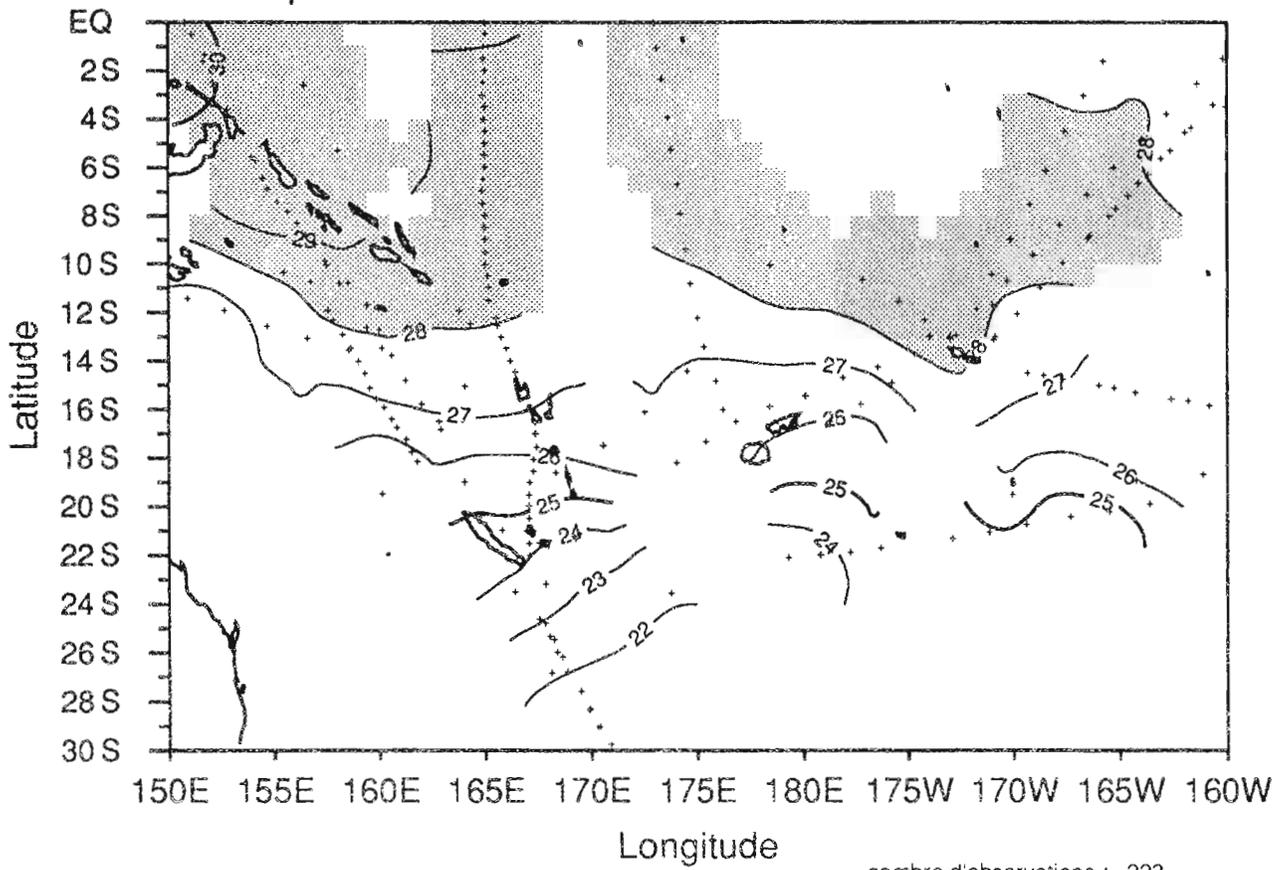
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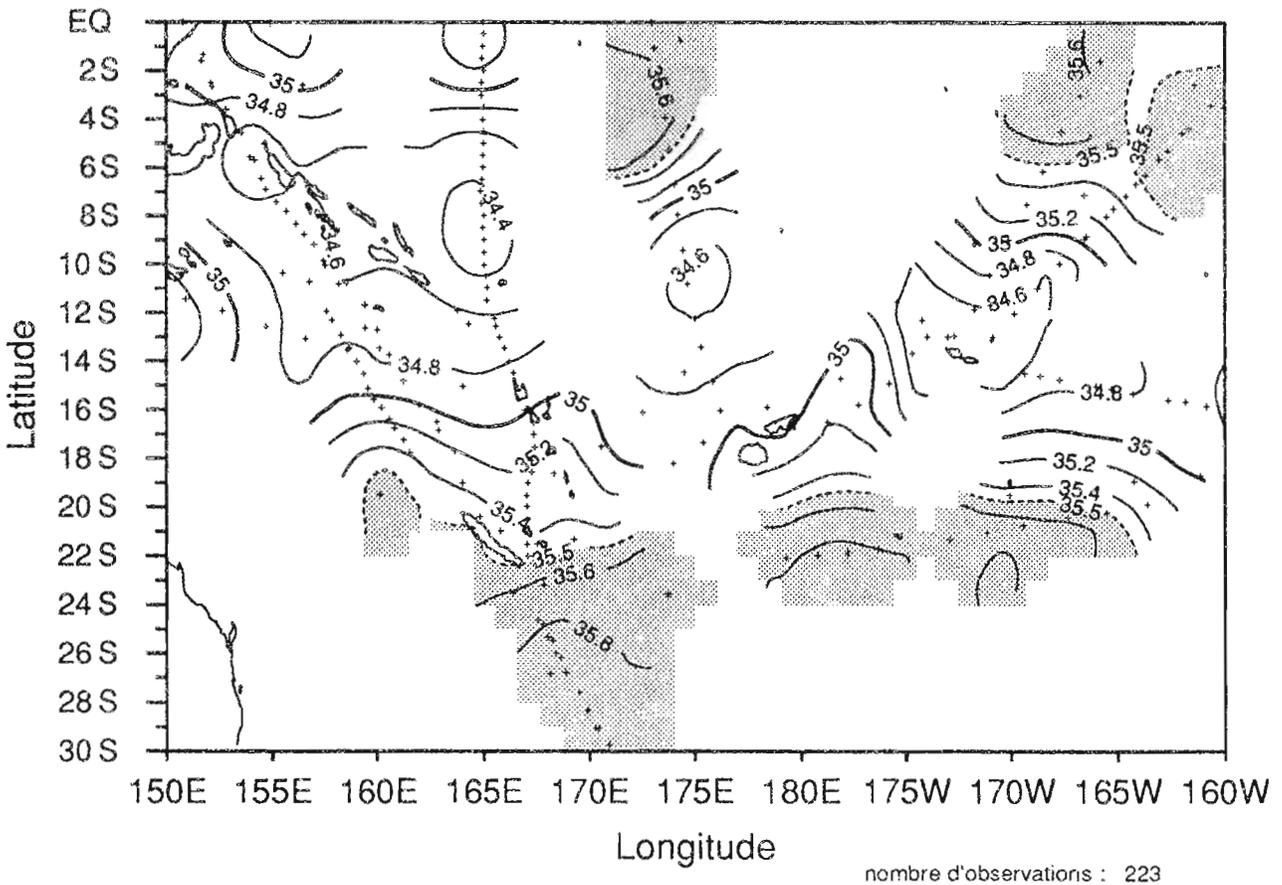
Salinite de surface du 01/05/88 au 30/06/88



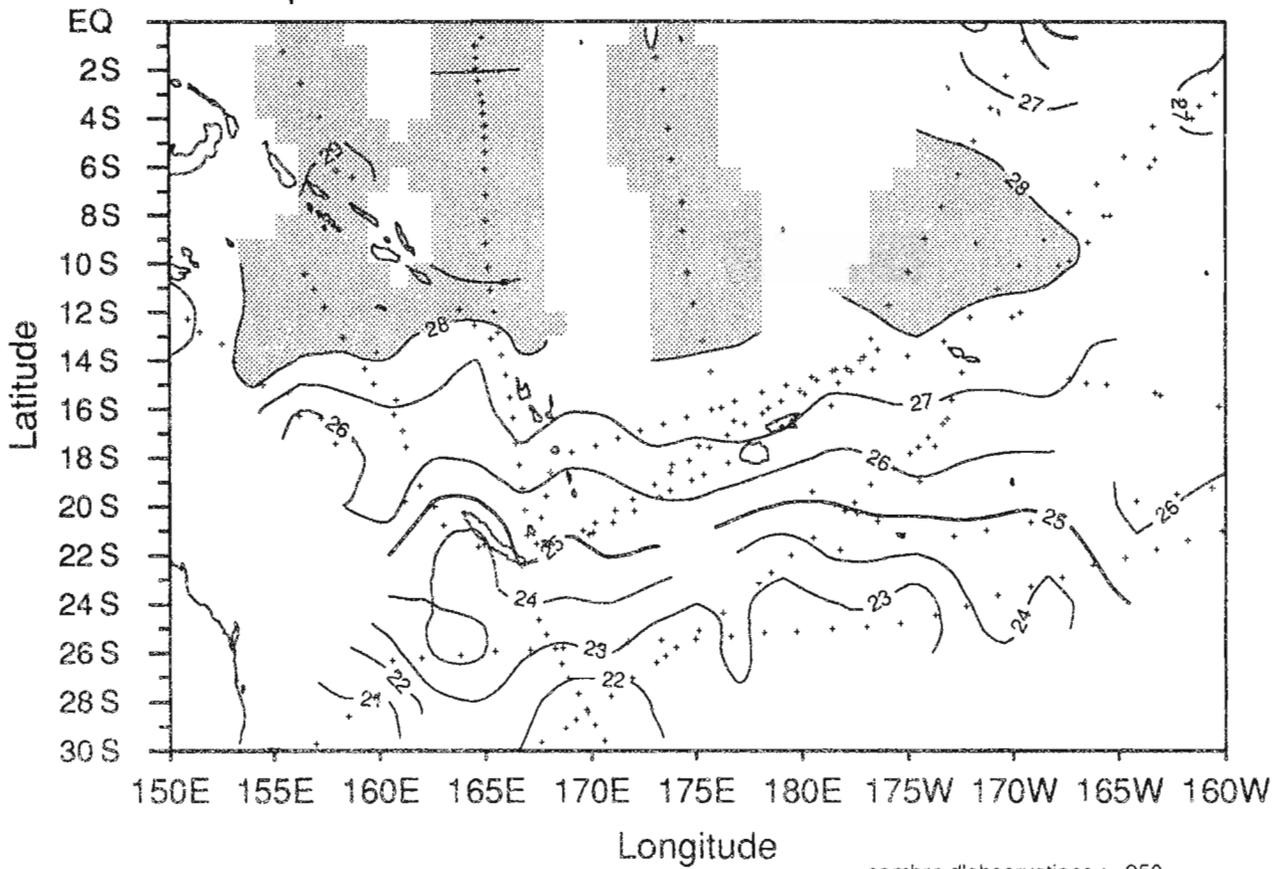
Temperature de surface du 01/07/88 au 31/08/88



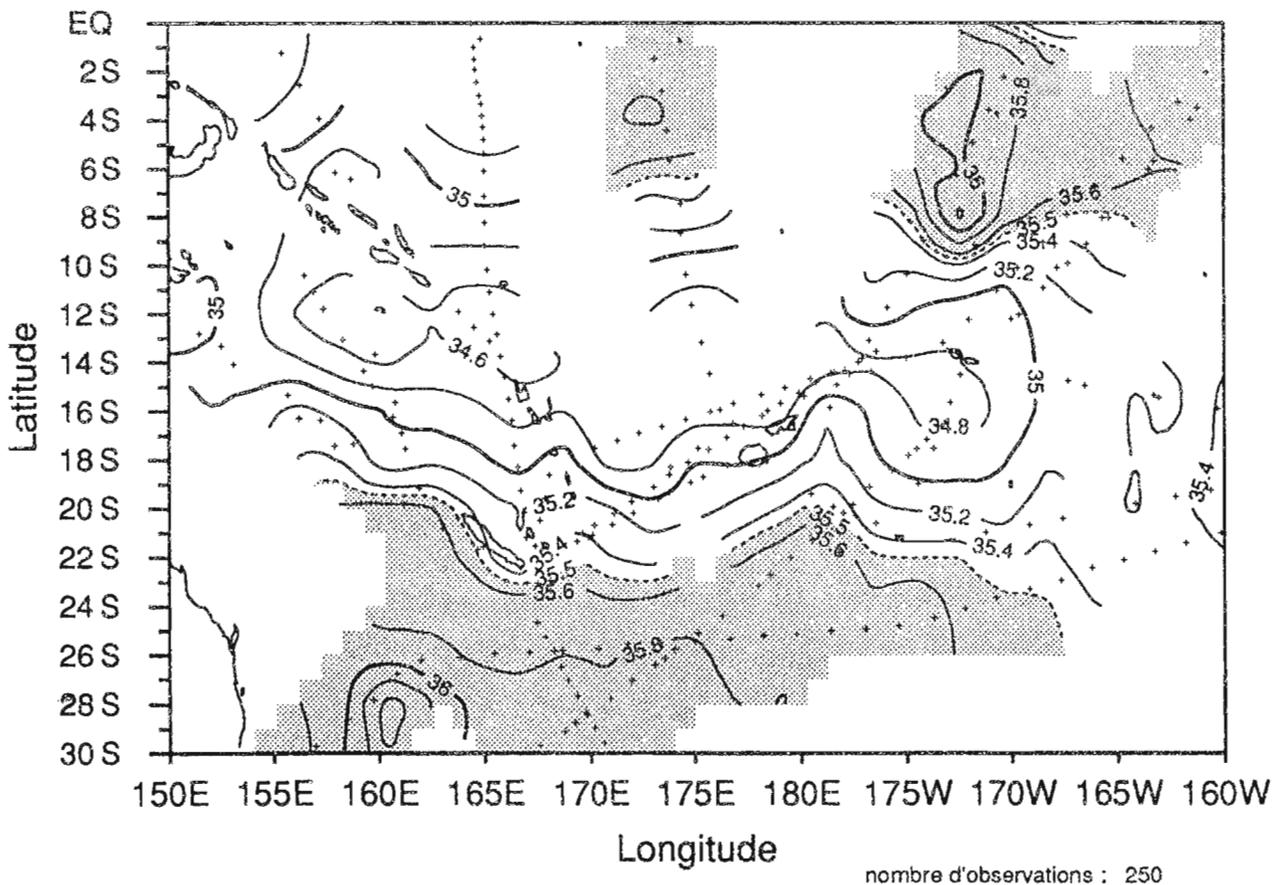
Salinite de surface du 01/07/88 au 31/08/88



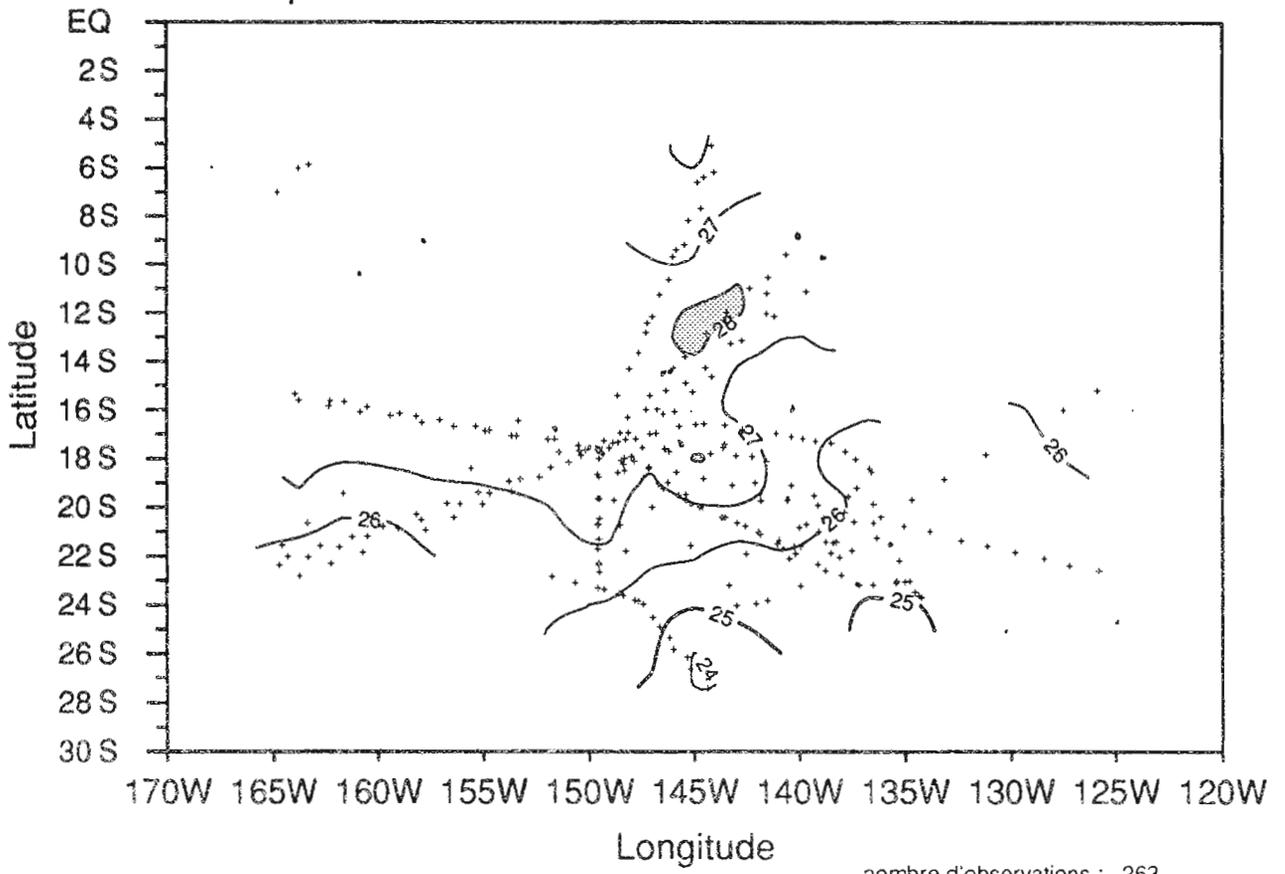
Temperature de surface du 01/09/88 au 31/10/88



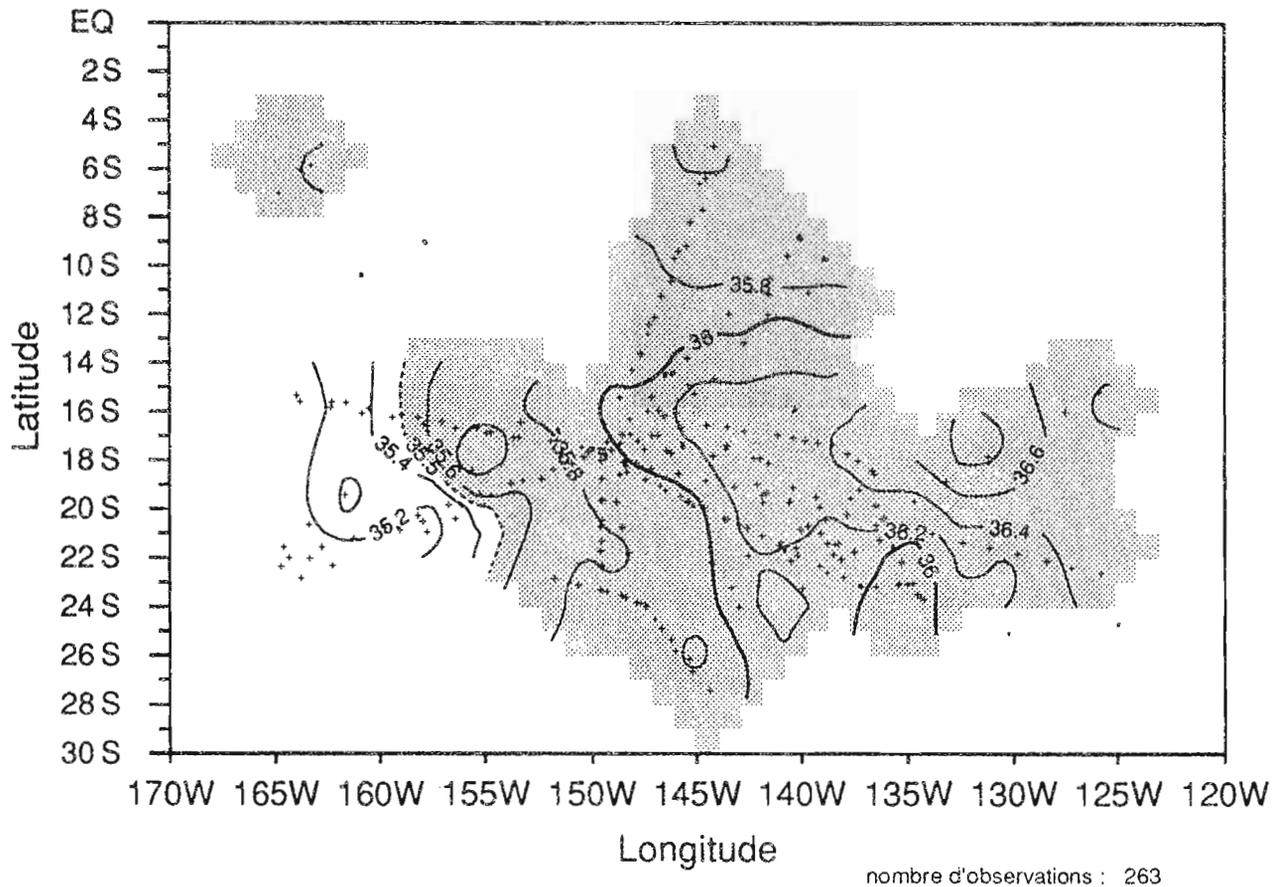
Salinite de surface du 01/09/88 au 31/10/88



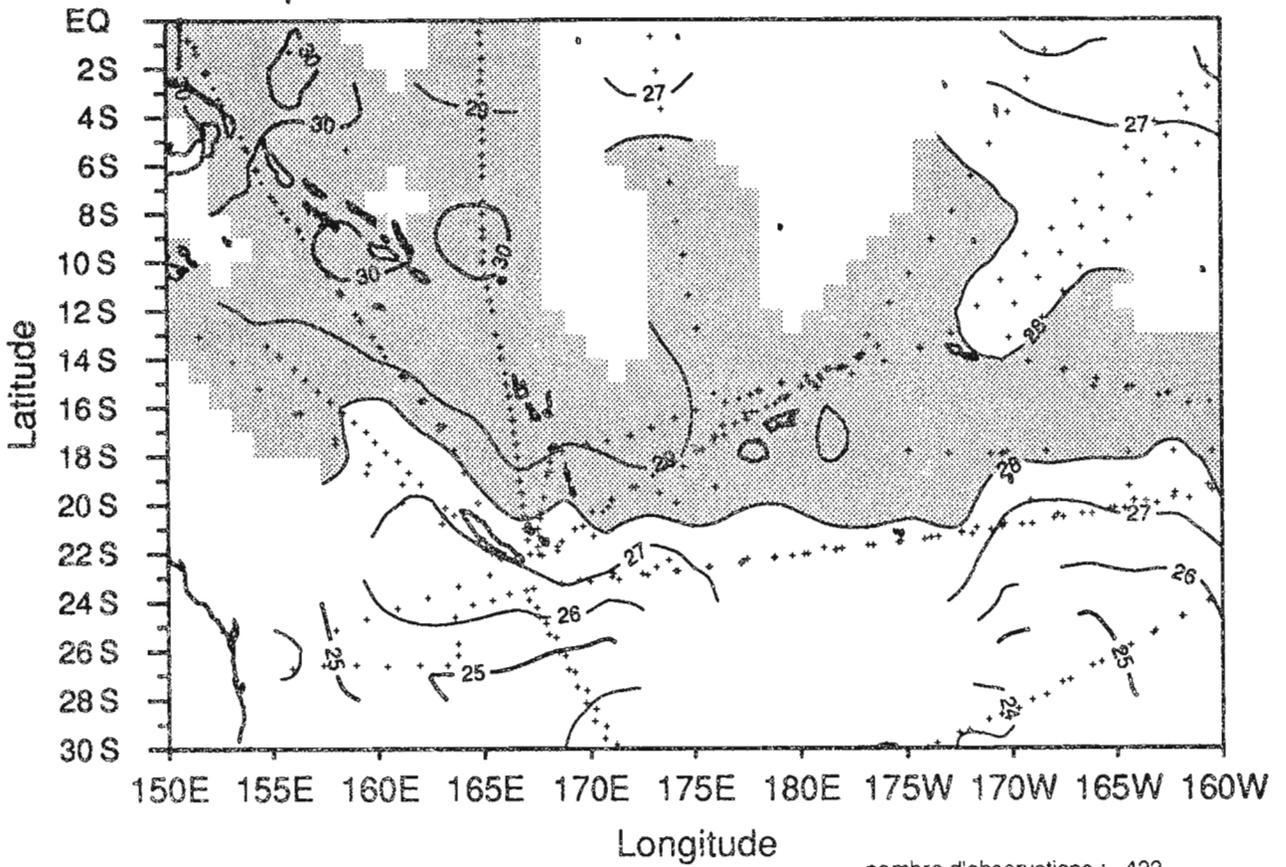
Temperature de surface du 01/11/88 au 31/12/88



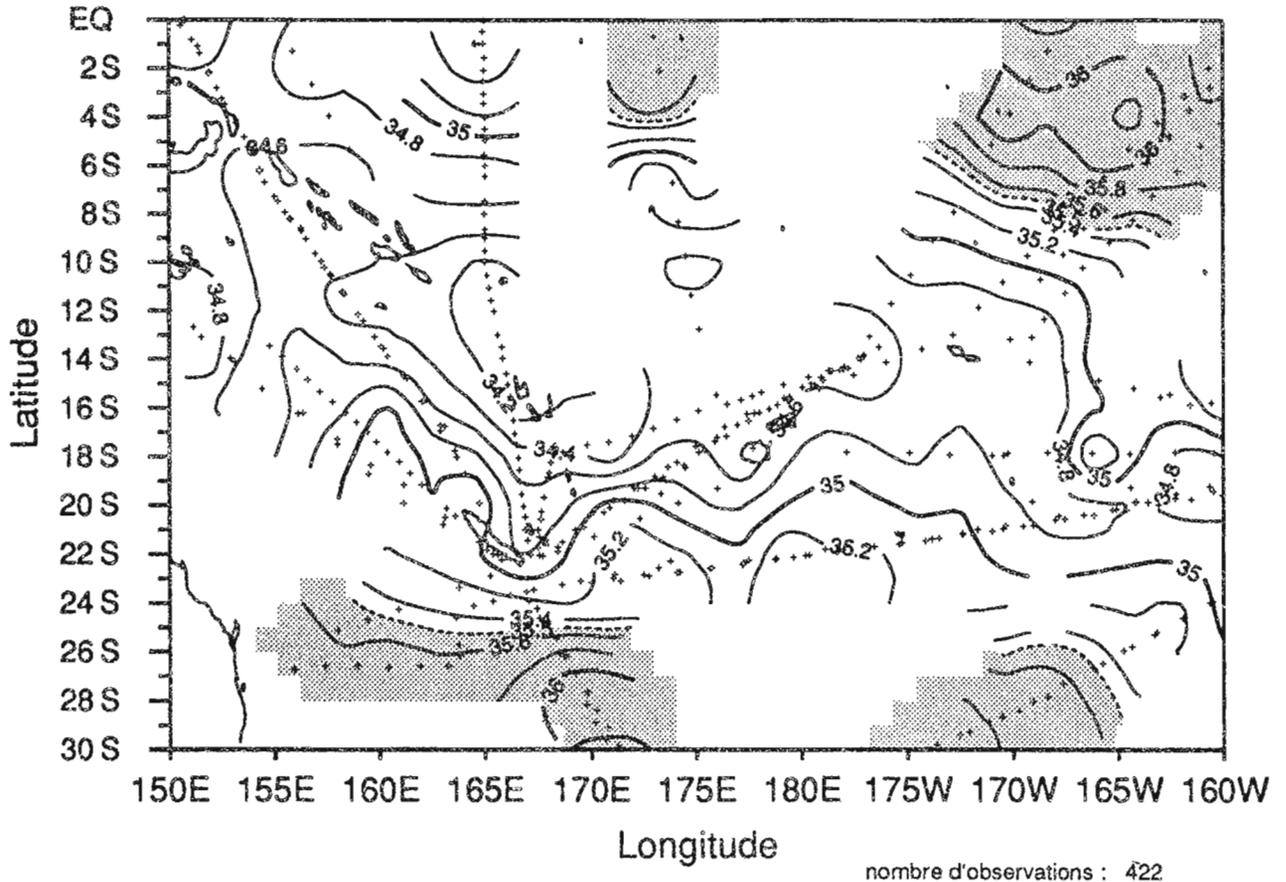
Salinite de surface du 01/11/88 au 31/12/88



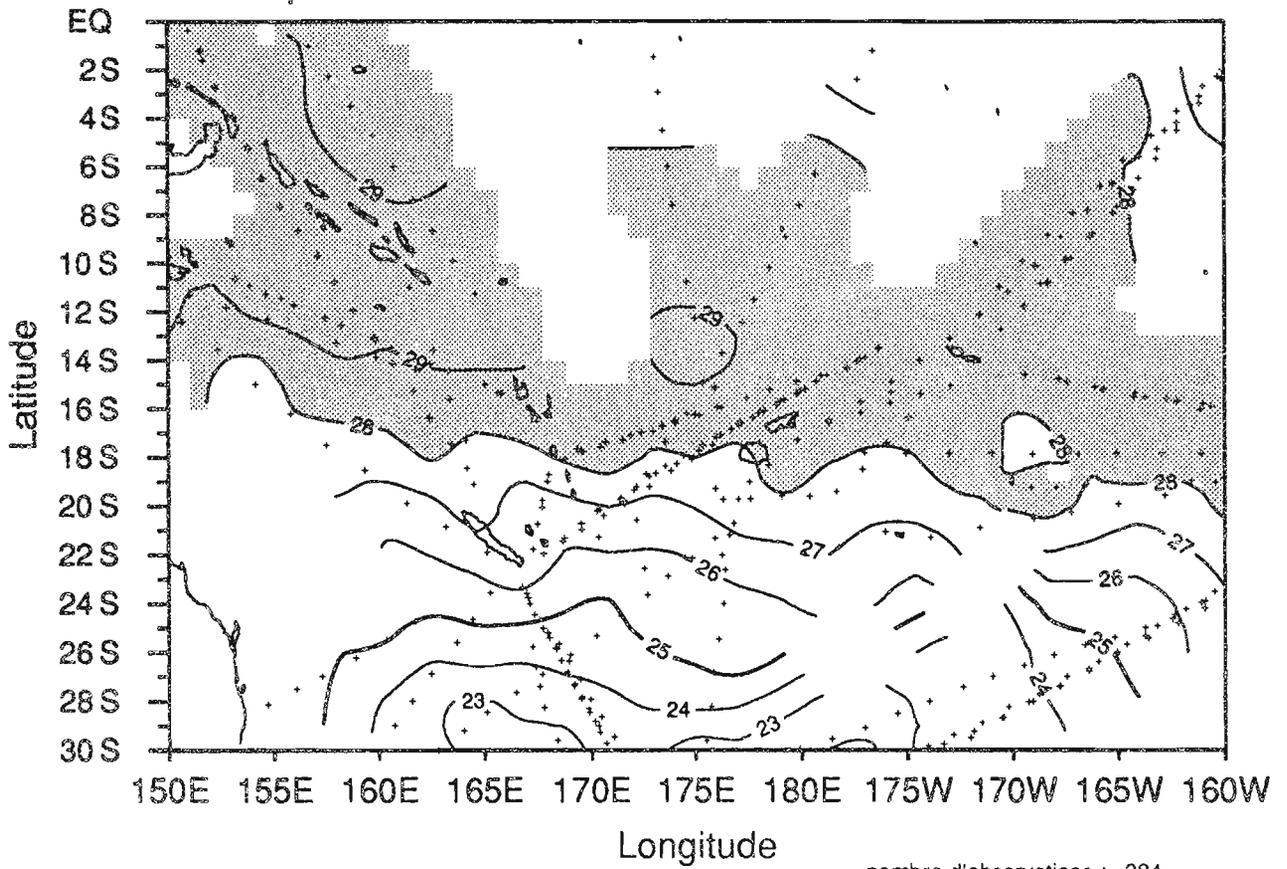
Temperature de surface du 01/01/89 au 28/02/89



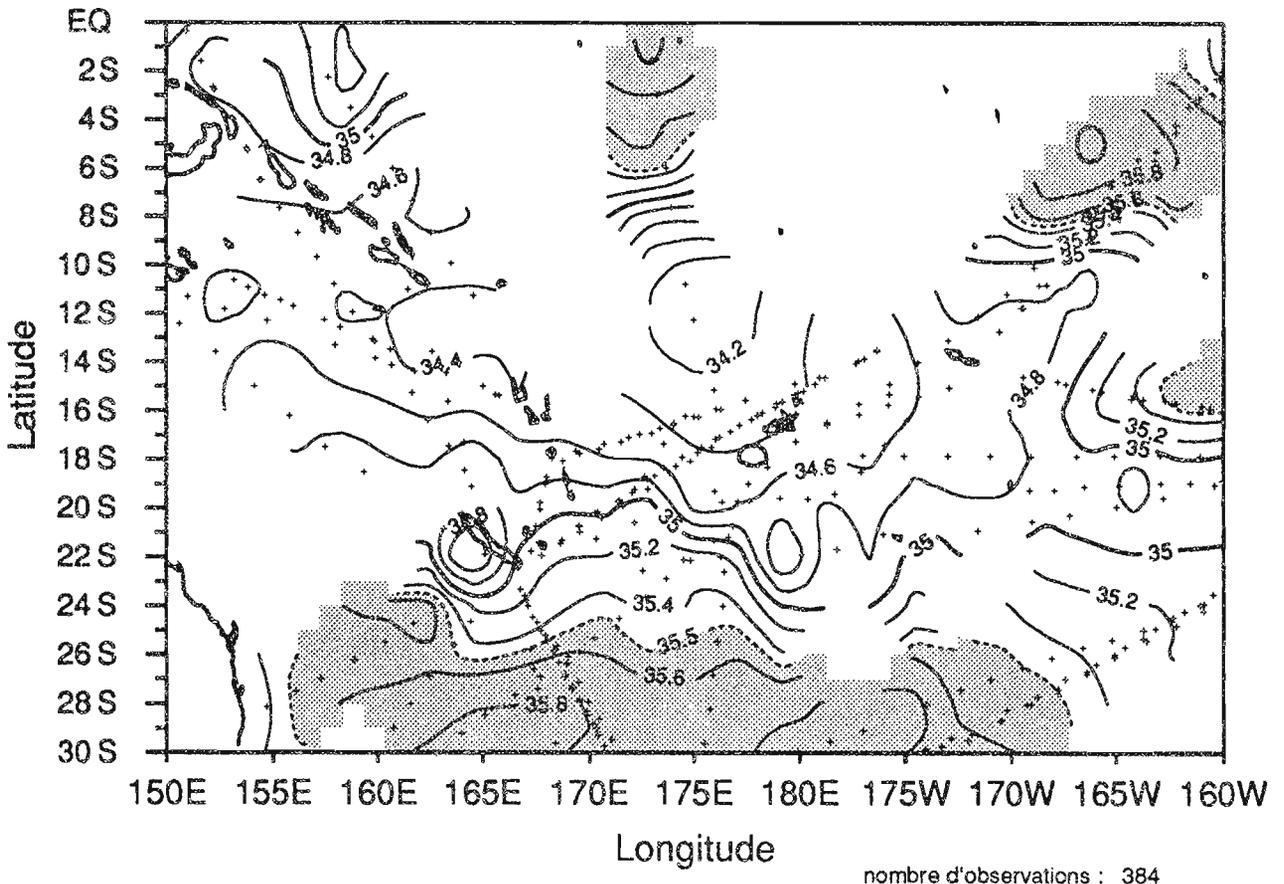
Salinite de surface du 01/01/89 au 28/02/89



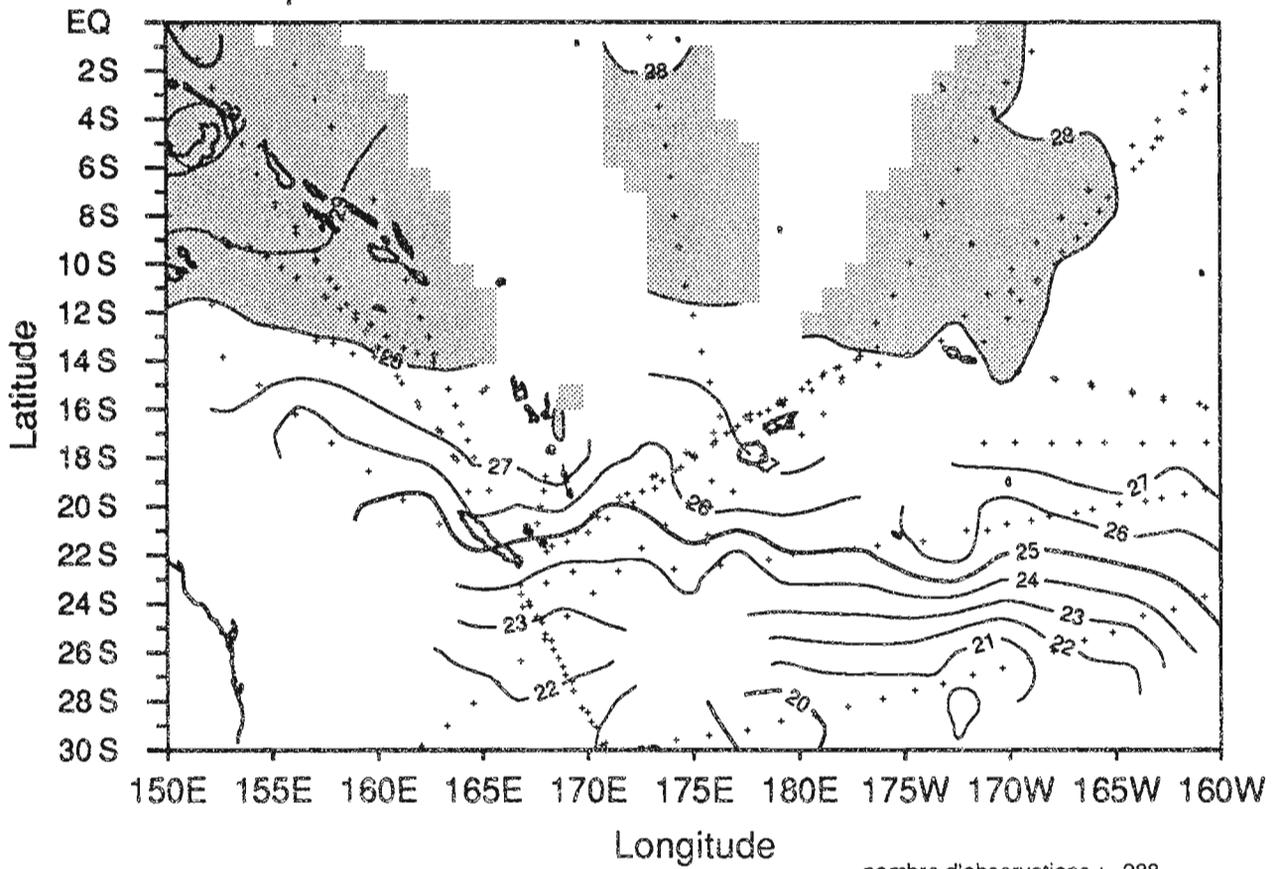
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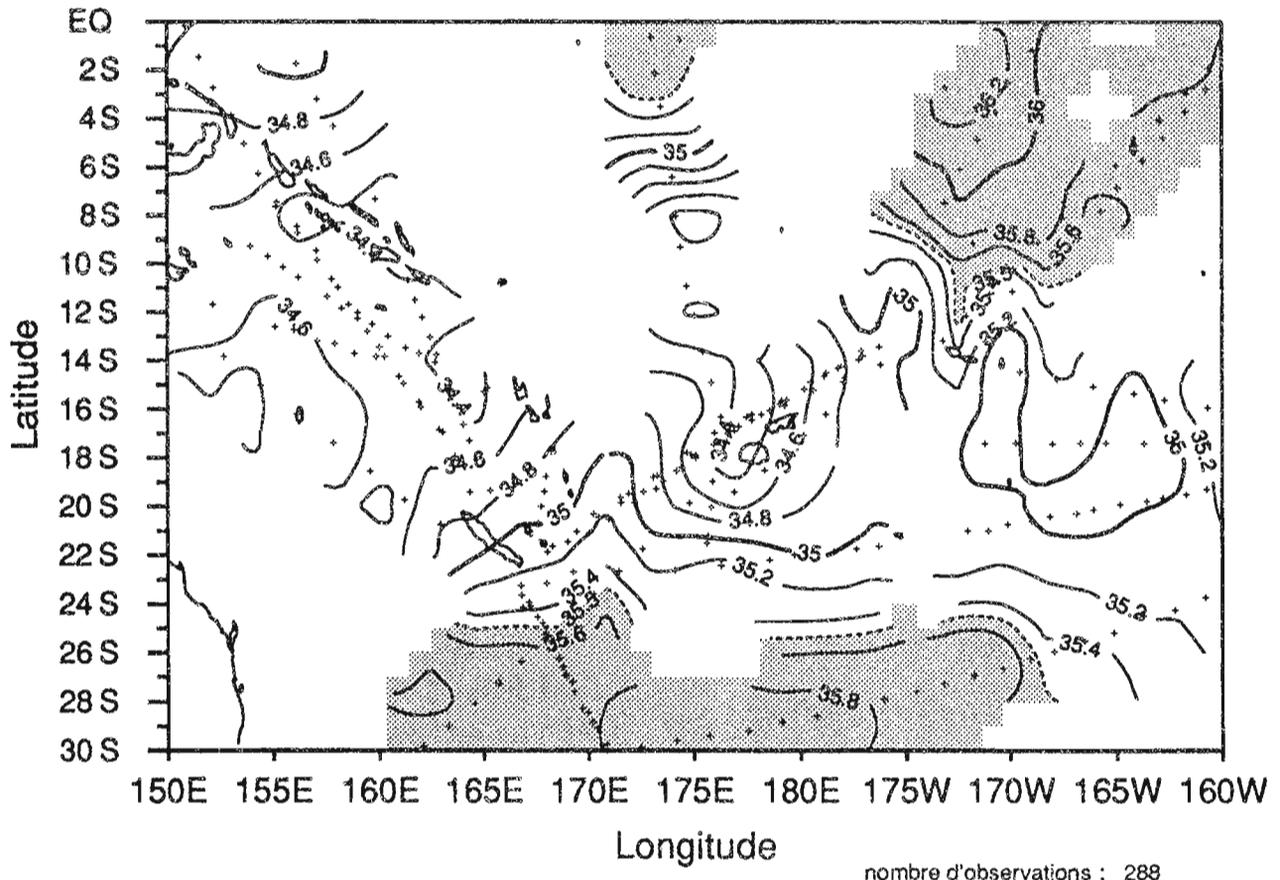
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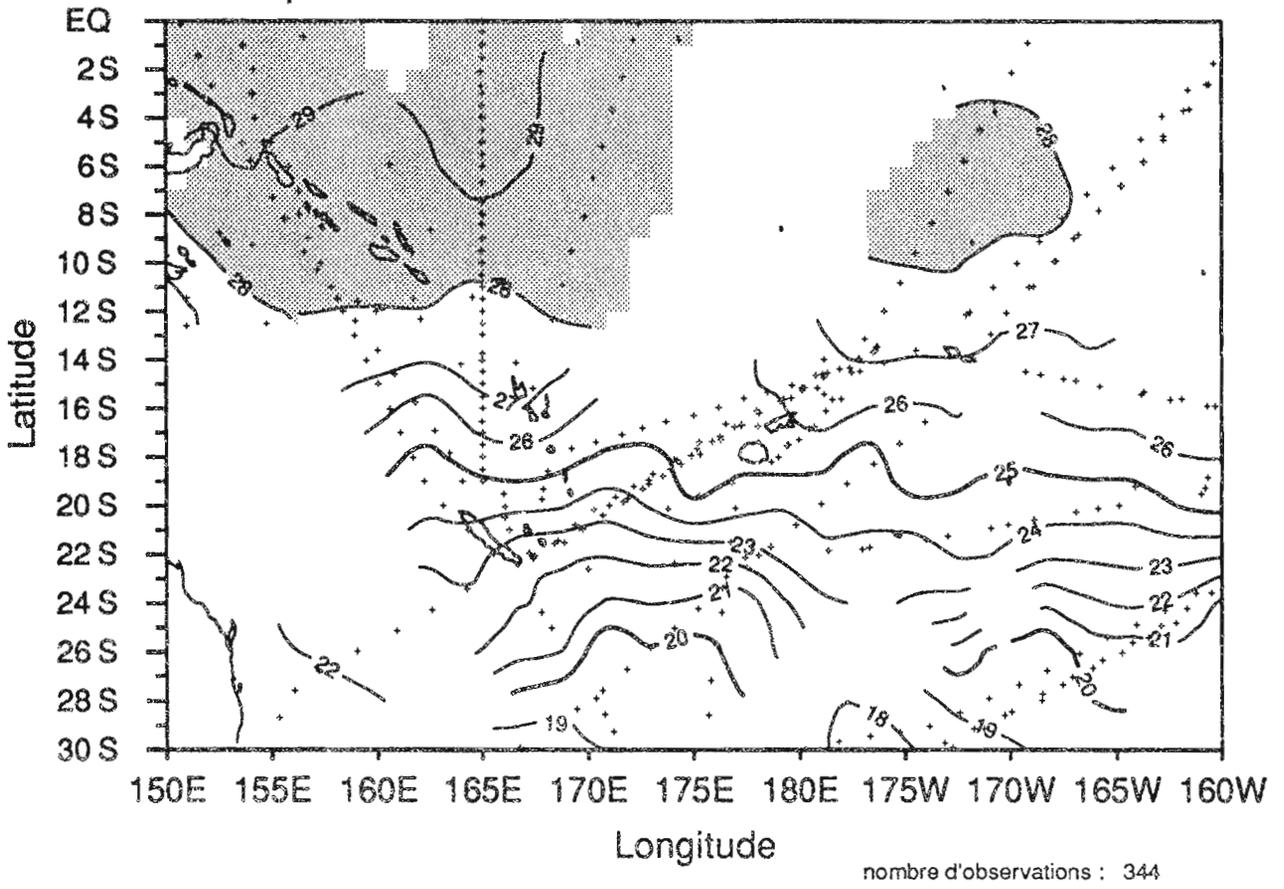
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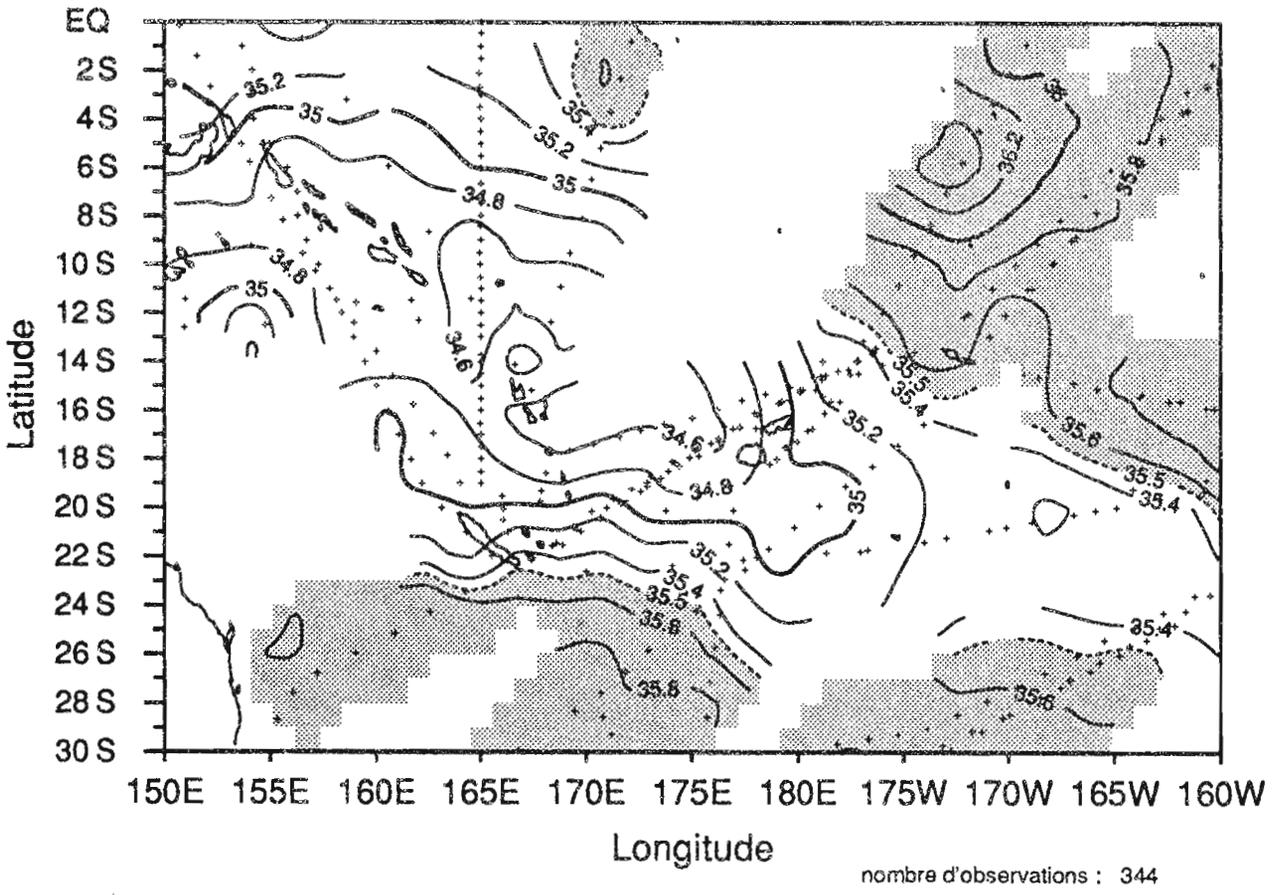
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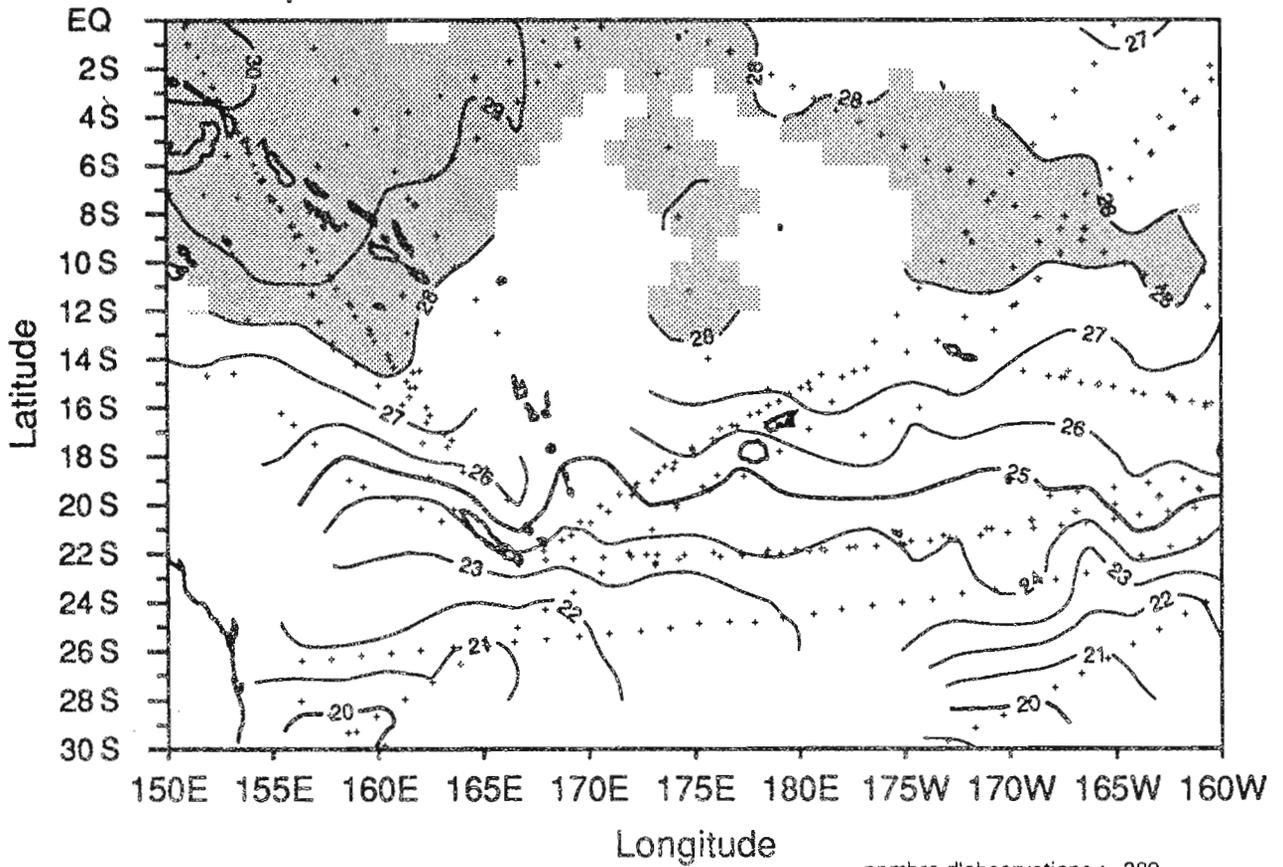
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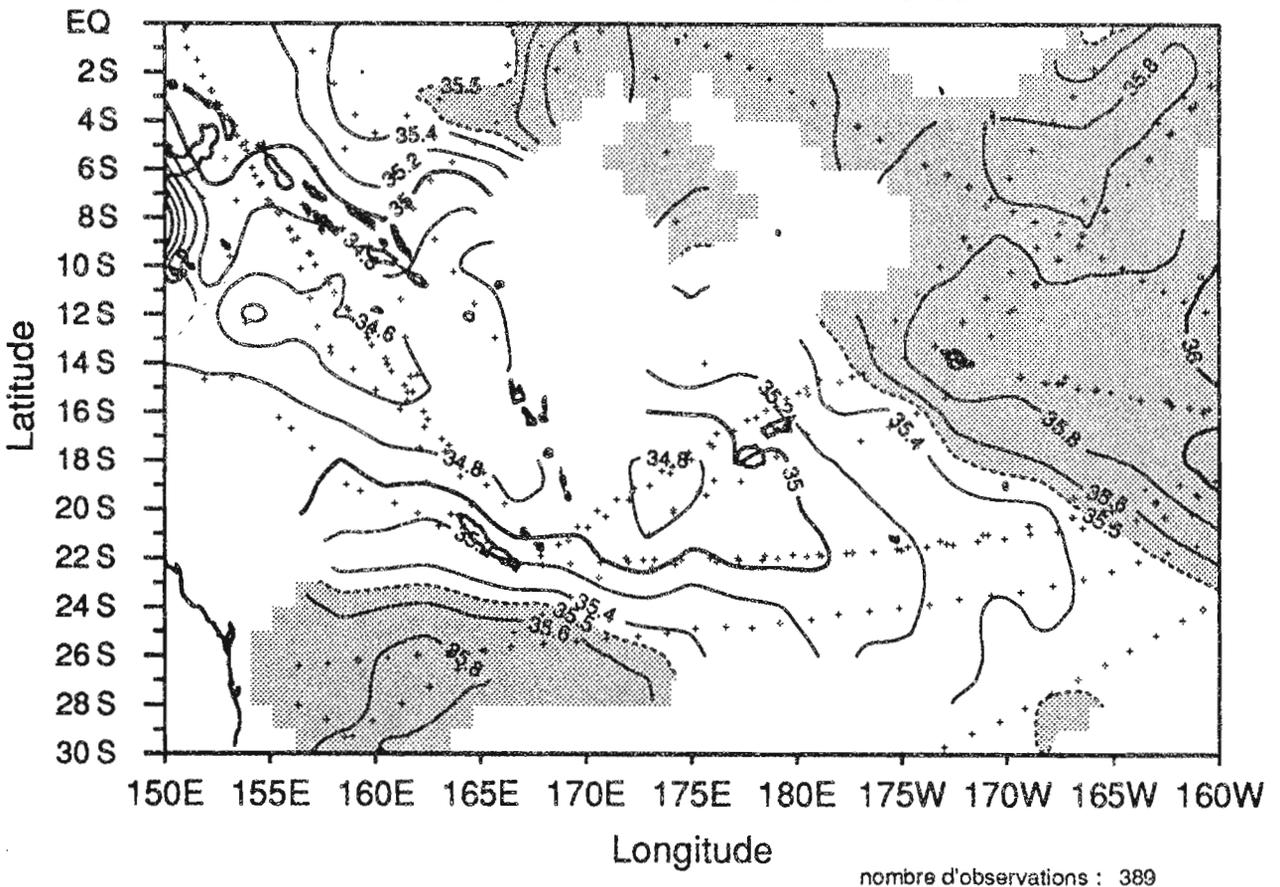
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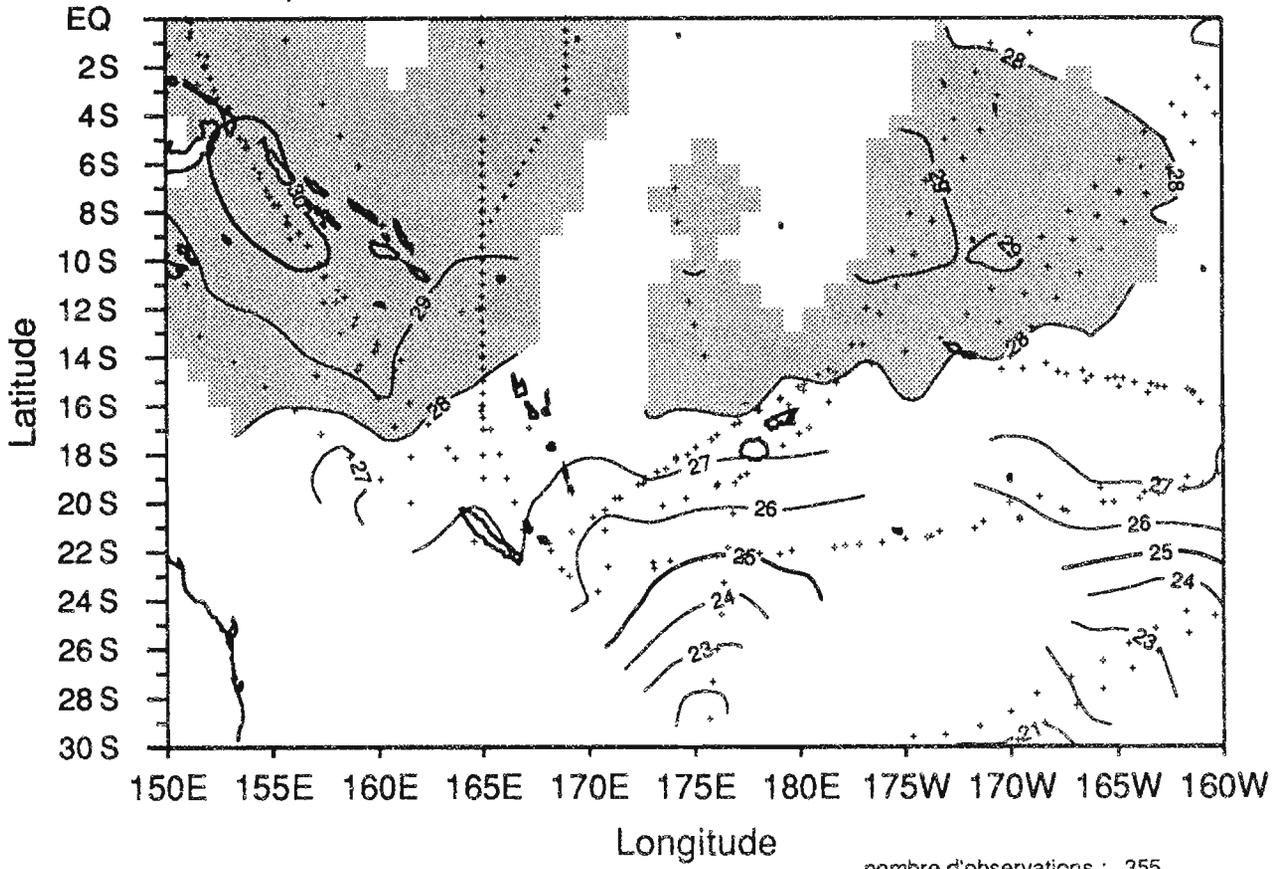
Temperature de surface du 01/09/89 au 31/10/89



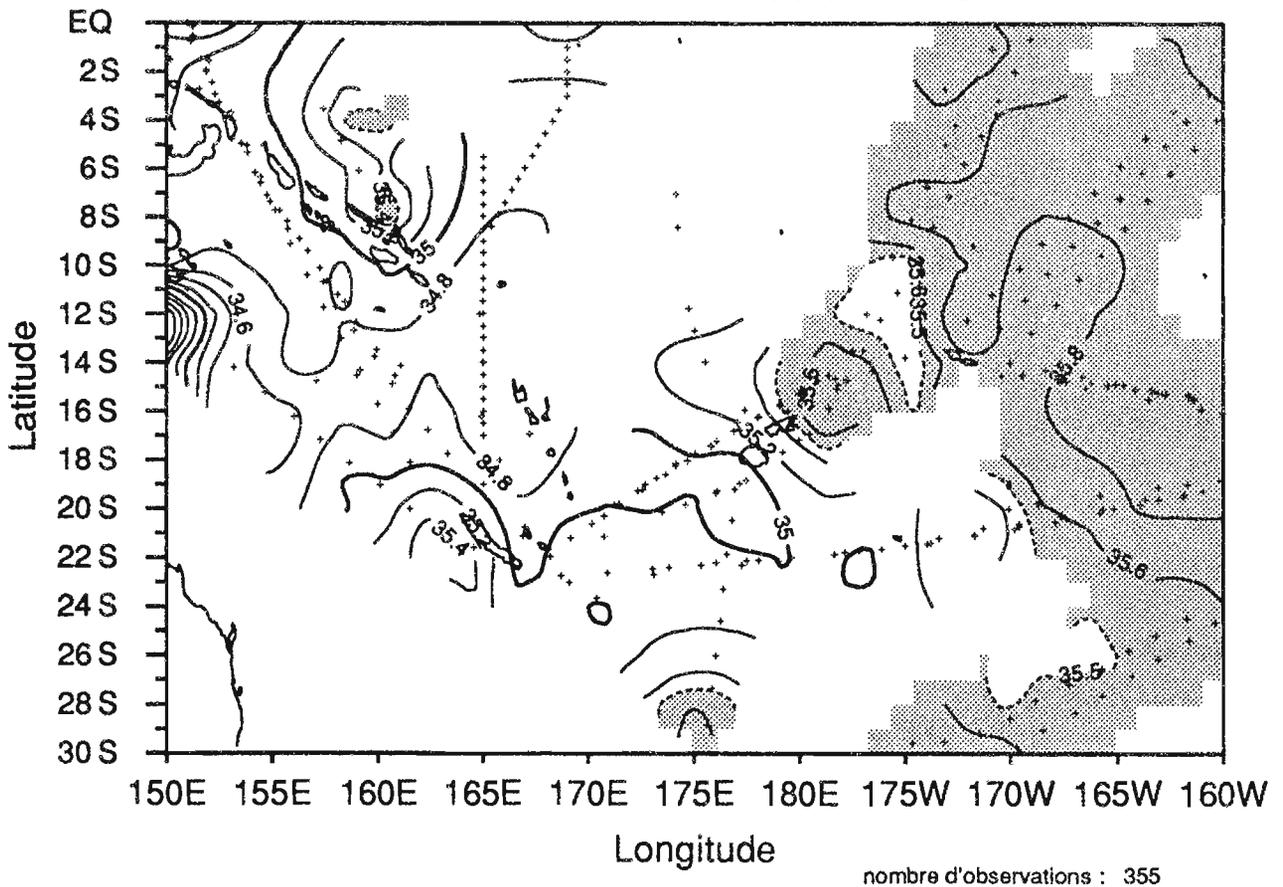
Salinite de surface du 01/09/89 au 31/10/89



Temperature de surface du 01/11/89 au 31/12/89



Salinite de surface du 01/11/89 au 31/12/89



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