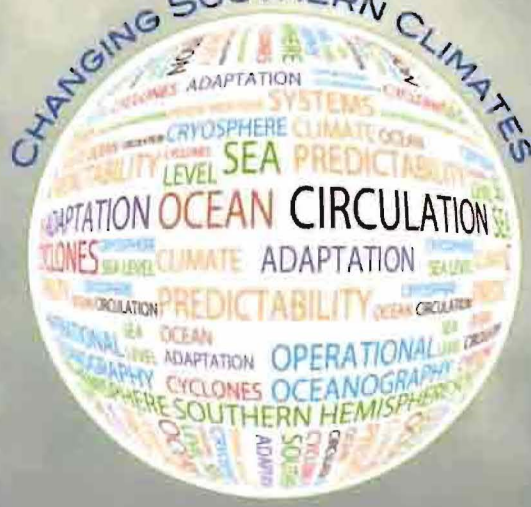
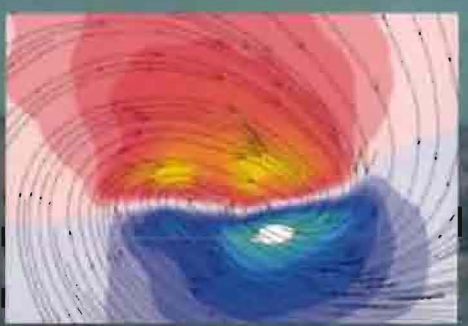


10TH ICSHMO

INTERNATIONAL CONFERENCE ON SOUTHERN HEMISPHERE METEOROLOGY AND OCEANOGRAPHY

23-27 April 2012, Tjibaou Cultural Centre
Noumea, New Caledonia



CONFERENCE BOOK

IPTA

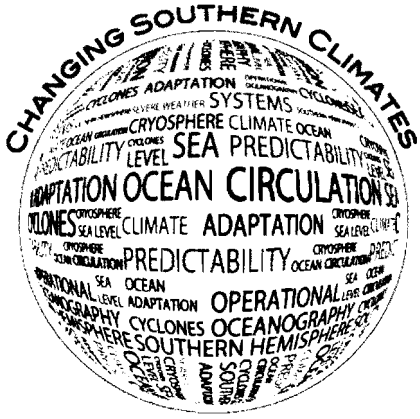
AMERICAN METEOROLOGICAL SOCIETY

METEO FRANCE
Toujours un temps d'avance

Published by the IRD Noumea Centre, Météo-France NC
and the ICSHMO Local Organizing Committee

Compiled by: N. Darricau, M. Vilayleck, A. Ganachaud
with : J. Aucan, S. Cravatte, S. Caudmont, I. Gasser, J. Lefèvre, F. Marin,
V. Mermoud

http://www.colloque.ird.fr/icshmo-2012/



10TH ICSHMO

INTERNATIONAL CONFERENCE ON SOUTHERN HEMISPHERE METEOROLOGY AND OCEANOGRAPHY

CONFERENCE BOOK

23–27 April 2012

Tjibaou Cultural Centre – Nouméa, New Caledonia

TABLE OF CONTENT

Message from the President of the Government of New Caledonia

New Caledonia enjoys an outstanding natural environment.
It has a pleasant climate, warm seas all year round and beautiful and accessible landscapes. The country also offers unique and invaluable ecosystems, some of which have UNESCO World Heritage status.

But exceptional also means vulnerable.
With the effects of strong wind events (our infamous 'westerlies' in particular) and potentially destructive cyclones, droughts and floods, the environment is suffering damage.
Other changes are also perceptible: global warming is a reality and sea level rise is already affecting some of our neighboring island countries. What can we do? How can we face up to these new threats that impact public health and safety, land management, farming, the economy and social life?

I thank all the scientists who are attending this 10th International Conference on Meteorology and Oceanography in the Southern Hemisphere for sharing their knowledge and the results of their work.
The responses they find to the issues being addressed today will make it possible to inform the decisions needed to preserve our environment and our quality of life in New Caledonia as in the whole of our Southern Hemisphere.

Harold Martin

Message du Président du Gouvernement de la Nouvelle-Calédonie

La Nouvelle-Calédonie jouit d'un environnement naturel d'une qualité exceptionnelle. Son climat est agréable, sa mer est chaude toute l'année, sa nature, riche, belle et facilement accessible, abrite des écosystèmes uniques au monde et précieux, dont certains sont inscrits au patrimoine mondial de l'Unesco.

Mais ce qui est exceptionnel est aussi vulnérable.
Soumis à des épisodes de vents forts (les célèbres « coups d'ouest » notamment), à des cyclones parfois destructeurs, aux sécheresses ou inondations, cet environnement se dégrade.
D'autres changements sont perceptibles, le réchauffement global est une réalité, la montée des eaux affecte déjà certains de nos voisins insulaires. Comment y faire face ? Comment affronter les nouvelles menaces qui impactent la sécurité et la santé publique, l'aménagement du territoire, l'exploitation agricole, l'économie et la vie sociale.

Je remercie les scientifiques qui se réunissent à l'occasion de la 10e conférence internationale sur la météorologie et l'océanographie dans l'hémisphère Sud pour mettre en commun leurs connaissances et leurs travaux. Les réponses qu'ils apporteront aux questions qui se posent aujourd'hui permettront d'éclairer les décisions nécessaires à la préservation de notre environnement et de notre qualité de vie en Nouvelle-Calédonie comme dans l'ensemble de notre hémisphère Sud.

THE 10th ICSHMO COMMITTEES

Program Organizing Committee

Chris Reason (Chair) Department of Oceanography, University of Cape Town, South Africa
Alexandre Ganachaud (co-Chair) LEGOS, Institut de Recherche pour le Développement, Nouméa, New Caledonia
Philippe Frayssinet, Météo-France, Nouméa, New Caledonia
Howard Diamond, NOAA National Oceanic and Atmospheric Administration, National Climatic Data Center, Silver Spring, USA
Agnes Kijazi, Tanzania Meteorological Agency, Dar es Salaam, Tanzania
Aldo Montecinos, Departamento de Geofisica, Universidad de Concepcion, Chile
Alice Marlene Grimm, Department of Physics, Federal University of Paraná, Brazil
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Arne Biastoch, IFM-GEOMAR, Kiel, Germany
Carolina Vera, Sea and Atmosphere Research Center, Bueno-Aires, Argentina
Caroline Ummenhofer, Climate Change Research Center, University of New South Wales, Sydney, Australia
Jens Kruger, SOPAC, SPC, Nadi, Fiji
Jim Renwick, Climate Variability and Change, NIWA, Wellington, New Zealand
Juliet Hermes, SAEON, Roggebaai, South Africa
Ken Takahashi, Intituto Geofisico del Peru, Lima, Peru
Luc Maîtrepierre, Météo-France, Nouméa, New Caledonia
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Marc Pontaud, CNRM, Météo-France, Toulouse, France
Matthew Wheeler, Bureau of Meteorology, Melbourne, Australia
Rob Allan, Met Office Hadley Centre, Exeter, UK
Robert Frouin, Scripps Institution of Oceanography, San Diego, USA
Rosemary Morrow, LEGOS-OMP, Toulouse, France
Scott Power, Bureau of Meteorology, Melbourne, Australia
Sophie Cravatte, IRD, Nouméa, New Caledonia

Local Organizing Committee

Alexandre Ganachaud (Chair), IRD, Nouméa
Philippe Frayssinet (co-Chair), Météo-France, Nouméa
Gilles Fédière, IRD Delegate for the South Pacific, Director of the IRD Noumea Centre
Mina Vilayleck (Project Manager), IRD, Nouméa
Nathalie Darricau (Project Assistant), Infosciences, Nouméa
Valérie Mermoud (Project Assistant), Météo-France, Nouméa
Véronique Paullic (Project Assistant), IRD, Nouméa
Isabelle Gasser (Project Administrator), IRD, Nouméa
Tana Potiaroa, IRD, Nouméa
Steren Caudmont (Project Assistant), Météo-France, Nouméa
Chris Reason, University of Cape Town, South Africa
Alexandre Peltier, Météo-France, Nouméa
Anne Leroy, Météo-France, Nouméa
Bernard Pelletier, IRD, Nouméa
Christophe Menkès, IRD, Nouméa
Frédéric Marin, IRD, Nouméa
Howard Diamond, NOAA, USA
Jérôme Aucan, IRD, Nouméa
Jérôme Lefèvre, IRD, Nouméa
Sophie Cravatte, IRD, Nouméa
Yves Le Tourneur, UNC, Nouméa

GENERAL INFORMATION

TRAVEL INFORMATION

Sanitary information

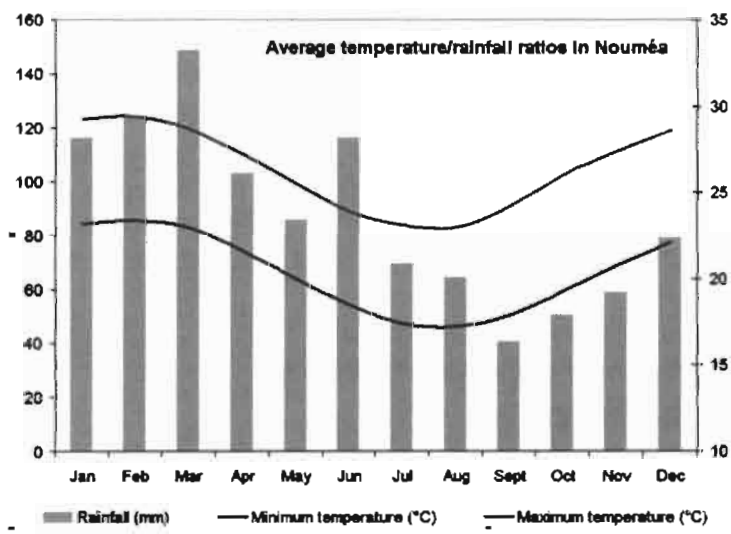
New Caledonia is preserved from numerous infectious diseases which affect other parts of the world. Consequently all animals, animal products, plants, plant products, and minerals are under very strict regulations and have to be declared to the customs at your arrival to New Caledonia. Any animal or plant-derived products must therefore be covered by appropriate veterinary and/or phytosanitary certificates.

Some goods may be imported without sanitary certificates while others are prohibited. They are registered in a list that can be modified anytime without warning following new sanitary information delivered from countries' counterparts or according to the risk analysis.
(*Source: http://www.davar.gouv.nc/portal/page/portal/davar/importations/particuliers*)

Please check with your Airline cabin crew about these administrative procedures.

Health information

The April–May period is not the worst for mosquitoes, but you may need mosquito repellent either for your comfort and/or your health (dengue fever is prevalent in New Caledonia).



Meteorological information

The April-May months are within the transition period between the hot and cool seasons. Sea temperatures are still warm. Rainstorms or even tropical depressions may still occur.

Moreover, even though La Niña is regressing, it is likely that rainfall during the March-April-May period will be above the average.

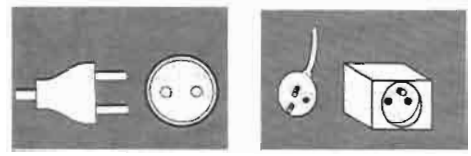
More information (in French) at www.meteo.nc

Clothing

Bring light, summer clothing with a long sleeved jacket for the nights. An umbrella might be useful. Do not forget a swimming suit, mosquitoes repellant and a sun cream.

Electrical standards

Voltage and frequency: 220–240 V / 50Hz
Plug types: C and E/F



Artwork from http://www.monde-du-voyage.com

You may need an adapter and/or a transformer. Please check and if needed buy it at the Airport Duty Free Shops, where this device may be easier to find than in Noumea.

Currency

ATM machines dispensing CFP (XPF) banknotes are common in the Territory.
The currency in New Caledonia is the Pacific Franc: **CFP** or **XPF**
The rate is fixed between the CFP and EUROS:

1 EUR = 119.33 XPF	**1000 XPF = 8.38 EUR**
1 USD = 89.39 XPF	**1000 XPF = 11.18 USD**

AT YOUR ARRIVAL at the International *La Tontouta* Airport

Noumea is 45 km far from La Tontouta International Airport. It takes on average 45–60 mn drive to go downtown Noumea from there, in normal traffic conditions.

You can either take a shuttle, a cab or rent a car at the airport.

Several shuttle companies attend the international flights' arrivals. Their offices are located outside the Airport building, on your right at the exit. A one-way transfer will cost you between € 16,76–20,95 (CFP 2000-2500).

ICSHMO participants can benefit from a reduced rate by presenting their ICSHMO registration receipt. The Arc-en-Ciel shuttle company will provide you with the ICSHMO Arrival Guide on their reception desk at the Airport.

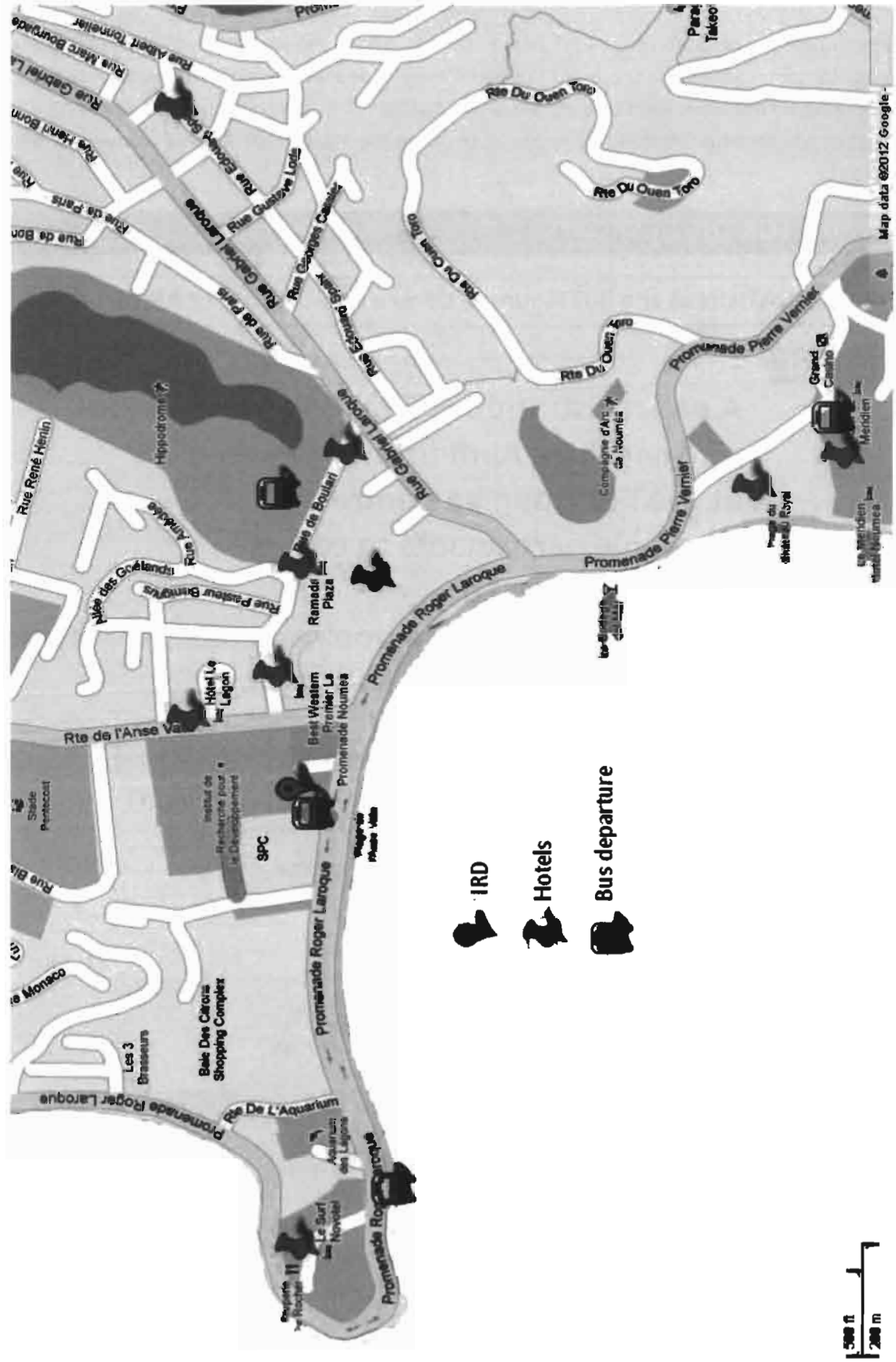
Booking your shuttle is recommended, please refer to the ICSHMO webpage
http://www.colloque.ird.fr/icshmo-2012/shuttles.html

Taxis are also available at the cost of 67 € for a one-way transfer to Noumea.

Several car renting companies have an office at the airport:

- AVIS: Ph: +687 35 11 74 – avis@groupedang.nc
- DISCOUNT LOCATION: Ph: +687 24 10 42 – discountloc@lagoon.nc
- EUROP CAR: Ph: +687 28 48 00 – www.europcar.nc – europcar@mencar.nc
- HERTZ, Ph: +687 35 12 77 – hertz@canl.nc

ANSE VATA CITY AREA > ACCOMMODATIONS & DEPARTURE BUS STATIONS



Most of the accommodations and hotels are located in the Anse Vata area. This city area is very pleasant as it is built along sand beaches with lots of activities (swimming, snorkeling, visits to the Aquarium, etc.) and stores for tourists.

You will find various restaurants for your dinner and will have to choose between French, Japanese, Italian gastronomy. Seafood is proposed in several menus, and we can only recommend the local prawn. Please do not leave New Caledonia without tasting the local Kanak specialty based on yam (*Bougna*) or the coconut fish salad (*cf on the map: go to the* ***Promenade Roger Laroque*** and ***Baie des Citrons***).

TIMETABLE FOR THE FIRST DAYS

PRE-REGISTRATION at the IRD Noumea Centre on SUNDAY 22 APRIL

IMPORTANT !

A pre-registration will be organized on Sunday 22 April from 5-7 PM at the IRD Noumea Centre to enable participants to collect the conference kit: name tag, conference book and abstracts book (*please check the Anse Vata map*).

WE STRONGLY RECOMMEND YOU TO PRE-REGISTER AT THE IRD ON SUNDAY AS THE CONFERENCE SCHEDULE ON MONDAY MORNING IS REALLY TIGHT.

Please check with your Hotel Reception Desk for more specific information on how to get to the IRD Centre.

MONDAY 23 APRIL

6:45 Meeting at the closest bus departure point *(cf Anse Vata map)*

There are 4 ICSHMO Buses stations:

- **at the IRD Noumea Centre**
- **at the *Hippodrome* car park, just behind the Nouvata and Ramada Plaza Hotels (*rue Boulari*)**
- **at the Méridien Hotel**
- **at the Surf Hotel.**

Arc en Ciel

All these buses will have the **ICSHMO** logo displayed in the front. The shuttles are provided by the Arc-en-Ciel Company.

7:00 **Bus departure to the Tjibaou Cultural Centre**, the conference venue.

7:30 **Arrival at the Tjibaou Cultural Centre.** A Welcome breakfast will be provided in the Central Alley near the Reception Desk and on the Deck.

8:10 **KANAK CUSTOMARY WELCOME at the Ape Vila place** *(cf. Cultural Centre map)*
You will find a leaflet about this ceremony in the conference kit. It will provide you with useful information about the meaning and importance of this unique moment. ***Please note that during this traditional welcome, it is very impolite to bring food and beverages.***

8:30 **Beginning of the Opening Session in the Sisia Auditorium:** official addresses
(please check the programme)

DEPARTURE TIME FOR THE OTHER DAYS

7:30 Meeting at the closest bus departure point *(cf Anse Vata map)*

7:45 Bus departure to the Tjibaou Cultural Centre

8:15 Arrival at the Tjibaou Cultural Centre

8:30 Beginning of the sessions

The Arc-en-Ciel company will provide the transportation to and from the Tjibaou Cultural Centre. The bus drivers will have a list of participants' names according to their Departure Stations. These lists will be compiled by the Local Organizing Committee based on the Hotel Registration Desks. If someone is missing, a last-chance call will be made to the Hotel Reception Desk and this person will have either to cash the second shuttle or to pay a taxi.

We would be most grateful if you could avoid missing these buses. If unfortunately this happens, please contact the ICSHMO LOC members (cf phone numbers below).

USEFUL PHONE NUMBERS

Please note that the country code for New Caledonia is **+687**. You might need to dial this number before the following local phone numbers.

Nouméa Radio Taxi Association:	28 35 12
Tjibaou Cultural Center:	41 45 45
Medical Emergency:	15 or 18

ICSHMO LOC members

- **Nathalie Darricau: 76.31.26**
- **Mina Vilayleck : 79.21.66**
- **Alexandre Ganachaud : 75.39.35**

Shuttle issues:

- **Steren Caudmont : 75.22.97**
- **Véronique Paullic : 86.19.93**

Travel & registration issues :

- **Isabelle Gasser : 87.45.75**

Poster issues :

- **Tana Potiaroa : 75.67.44**

THE CONFERENCE VENUE
The Tjibaou Cultural Centre: A platform for arts and culture

ngan jila centre culturel
Tjibaou
agence de développement de la culture kanak

The 10th ICSHMO conference is held at the Tjibaou Cultural Centre.

This venue hosted the First International Symposium on French Research in the Pacific, in 2004 with ~400 scientists. Several international conferences have been organized since then in this unique site.

The Matignon Accords in 1988 created the Kanak Culture Development Agency (*ADCK* in French), which acted as a first institutional step in recognition of the Kanak culture.

Since its creation, the *ADCK* Board has been chaired by Marie-Claude Tjibaou, the widow of Kanak leader Jean-Marie Tjibaou. It gathers 11 members representing the French State, the New Caledonian Government, the Customary Senate and the three New Caledonian Provinces (Northern, Southern and the Loyalty).

In 1998, the ADCK acquired an exceptional tool: the Tjibaou Cultural Centre, also named *Ngan Jila* (House of Wealth) in the local *pije* language. Its objectives are the following :

- to develop Kanak artistic creativity and broadcast contemporary Kanak culture
- to stimulate the development of new cultural practices and references, common to New Caledonia communities overall
- to enhance the Kanak cultural heritage in all its forms: archeological, ethnographic and linguistic
- to define and conduct research programs of value to Kanak culture
- to create a major platform for regional and international cultural exchanges.

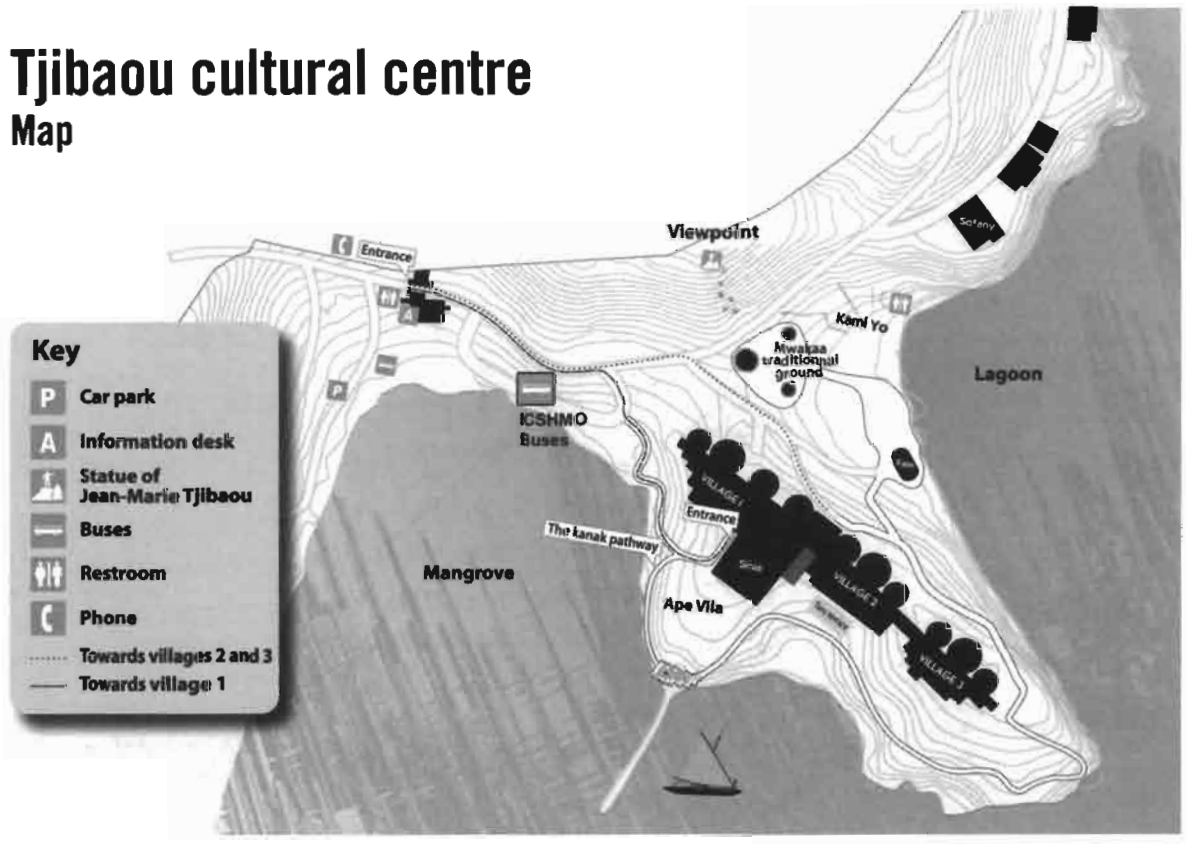
The Tjibaou Cultural Centre is, therefore, part of an effort to achieve a democratization of culture, by making contemporary creativity accessible to all. Tourists, arts lovers, young people: everyone can enjoy the rich and varied entertainment provided by the Centre.

Creativity: Visual and Performing Arts

Every year, about 15 performances take place on the indoor and outdoor stages of the Tjibaou Cultural Centre. These very popular events are made possible through public commissions or co-productions. The performers originate from New Caledonia, France and the rest of the world. Additionally, the Tjibaou Cultural Centre also hosts large festivals as well as shows organized by private producers. In the field of visual arts, the Tjibaou Cultural Centre supports creativity through a program of artistic residences, curators and public commissions. Today, the Kanak and Oceanian Contemporary Art Collection includes more than 2,000 pieces. In addition, temporary exhibitions by local or international artists have become a strong feature in the New Caledonian artistic calendar.

Further information: www.adck.nc

Tjibaou cultural centre
Map



The buses will pick up all participants from the 4 Departure Stations around the hotels and the IRD Centre (read above pages 8-9).
They will drop off the participants at the ICSHMO Buses point at the Cultural Centre. There is a 3-mn walk to the Main Entrance of the Cultural Centre.
After the conference sessions (and the social events for some days), the ICSHMO Buses will pick up the participants and bring them back to their hotel at the Anse Vata area.

Please check the Conference sites on the following page:

The conference sessions will take place in:

- the Sisia auditorium
- the Kanaké room (**03**)
- the Eman room (**09**).

Welcome desk: (**A**) in **Village 1**

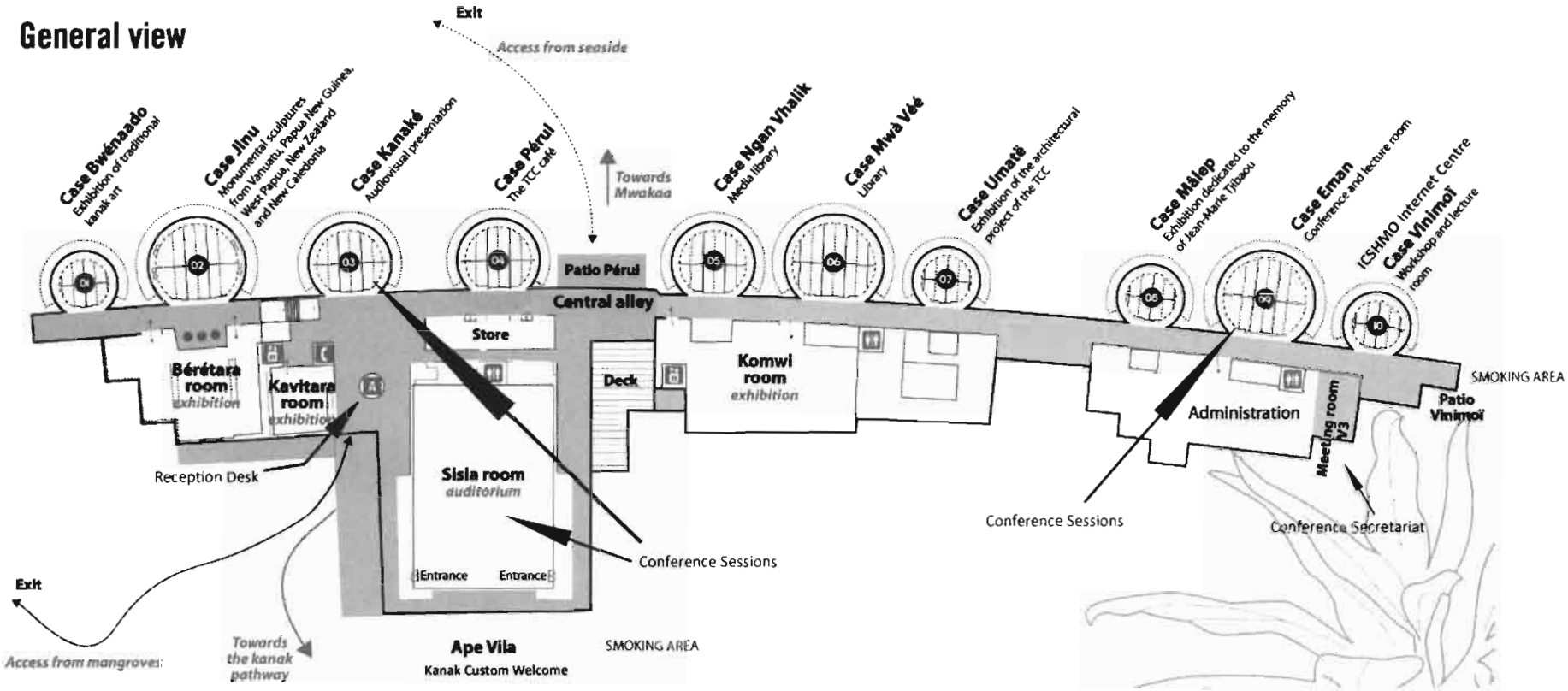
Conference Secretariat : (**V3**) **in Village 3**

Internet room : (**10**) in **the Vinimoï room.**

Coffee breaks: **Central Alley** near the **Sisia auditorium** and the **Reception Desk** (**A**)

Lunches: take place on the **Deck** & **Pérui Terrasse**

General view



CONFERENCE GUIDE

PRE-REGISTRATION & REGISTRATION

A pre-registration is organized on Sunday 22 April from 5 to 7 PM at the IRD Centre.
As the schedule on Monday is really tight, we strongly recommend you to attend this pre-registration session. The conference kit will be given at this occasion: nametag, abstract book, program and conference book. This will save you from standing in a queue line on the Monday morning.

The registration will be operating during the conference:

- from 7:30 AM to 5:00 PM at the Reception Desk on Monday, then
- from 7:30 AM to 5:00 PM at the Conference Secretariat from Tuesday on.

RECEPTION DESK AND CONFERENCE SECRETARIAT

The **ICSHMO Reception Desk** is at the usual Tjibaou Cultural Centre Reception Desk (*cf* **A** *on the map*). Information about the program and the rooms locations can be given there. The Infosciences volonteers will be located within the Tjibaou Cultural Centre to assist you with program questions and the location of the session rooms.

For any more specific requests such as:

- loading your oral presentation,
- printing a draft speech or a document,
- finding the place where to display your poster,
- any issues due to your oral and poster presentation to ICSHMO,
- organizing your stay, organizing field trip tours

Please contact the **Conference Secretariat** which **is located in the Village 3** (cf **V3** on the map).

REGISTRATION ENTITLEMENTS

The registration fees entitles all participants to the following:

- Shuttles between the Anse Vata area and the Cultural Centre
- All sessions
- Conference kit including: nametag, conference book, abstracts book in a USB stick, touristic leaflets
- Opening ceremony and icebreaker cocktail
- Morning and Afternoon Coffee breaks ; Lunches
- Limited Complimentary Internet Access at the **Internet Centre** (*cf Vinimoï room on the CCT map*)
- Limited Complimentary Internet Wi-Fi Access at the Pérui Terasse and in the Vinimoï room
- Poster socials
- Dinning Cocktail on Thursday, 26 April 2012
- Free access to all the exhibition rooms, the outdoor areas and the Multimedia Library at the Cultural Centre.

Accompanying persons: additionnal cost of 14 EUR for the Icebreaker cocktail.

ORAL PRESENTATIONS

There are ~200 oral presentations in total for this 10th ICSHMO conference. The program of the oral presentations is presented further. All conference rooms (Kanaké and Eman Cases) and the Sisia auditorium are equipped with:

- an overhead projector,
- a PC computer linked to a VLAN network specifically implemented for the ICSHMO conference
- an audio system and microphones.

Presenters must visit the Conference Secretariat at least 24 hours prior to the start of their session to ensure their presentations are loaded successfully.

IMPORTANT ! **Interpretation of the Opening Session**

The Opening Session on Monday morning will be interpreted by the Secretariat of the Pacific Community (SPC) interpreters in English and French as some official Delegates and Representatives from New Caledonia will be invited to attend.

Therefore, in order to allow the SPC interpreters to prepare their performances beforehand, presenters contributing to the Opening session must contact the Conference Secretariat **at the pre-registration session organized on Sunday 22 April from 5-7 PM at the IRD Centre**. They will have to ensure their presentations are loaded successfully and give a printed version for the interpreters. If available, a typed speech will be appreciated.

POSTER PRESENTATIONS

There are ~120 poster presentations in total for this 10th ICSHMO conference. The program of the poster presentations is presented further.
There will be two sessions of 2 days each. Join fellow delegates to enjoy canapés and refreshments while roaming among the posters and exhibits.

INTERNET ACCESS

Internet Centre : Vinimoï room with free access to PC computers
Wifi Access: available at the Pérui Terrasse and the Vinimoï room

CATERING

All Morning and Afternoon Coffee / Tea Breaks will be served:

- in the Central Alley near the Reception Desk and the Deck around the Sisia auditorium and
- in Village 3 near the Conference Secretariat and the Vinimoï Case.

Lunch is included in the registration fee.
It will be served from 12:00 or 12:30 AM according to the sessions to 1:30 PM on the Deck and at the Pérui Terrasse. Lunch is provided by *Les Gourmandins*, a caterer specifically selected by the ICSHMO Local Organizing Committee. Below are the daily menus:

BUFFETS

Lundi : buffet asiatique
Verrine de salade vietnamienne
Salade pékinoise, Crevettes au soyu
Mini pâtés impériaux
Rouleaux de printemps
Nems aux légumes
Sushis japonais
Salade de fruits exotiques
Beignets de fruits frais

Mardi : buffet océanien
Salade de chouchoute aux épices
Salade de poisson au coco
Plateau de charcuterie du pays : saucisson de cerf, saucisse aux 5 épices
Pâté de cerf au vieux vin, rillettes de porc et cerf, Gratin de légumes : tubercules
Fricassée de légumes au coco
Curry de porc, Filet de thon jaune en brochettes sauce combawa
Riz aux 5 épices
Poé à la citrouille
Biscuit coco chocolat

Jeudi : buffet calédonien
Salade de papaye verte au citron
Crevette à l'ail
Salade calédonienne au cerf
Salade de poisson au soyu
Pâté en croûte, Terrine de poisson du large
Filet de poulet aux choux de Chine
Paupiette de filet de tazar à l'ananas
Mini gratin de patate douce
Gâteau au manioc
Crème à la citronnelle

Vendredi : buffet français
Brochette de coquilles St-Jacques au miel de niaouli
Carpaccio de bœuf aux aubergines
Pâté en croûte aux ris de veau
Jambon à l'os
Terrine de poisson aux agrumes
Filet de bœuf en brioche
Carré de porc aux pruneaux
Filet de mai aux poivrons doux
Gratin dauphinois
Flan de légumes
Mini pâtisseries

Monday: Asian Buffet
Vietnamese Salad, Pekinese salad
Shrimps with soyu sauce
Mini imperial pies
Spring Rolls
Vegetables Nems
Japanese Sushis
Exotic fruit salad
Fresh fruit fritters

Tuesday: Island Buffet
Christophine Salad with spices
Coconut Fish Salad
Plate of local pork-butchery: venison sausage, sausage with 5 spices
Venison Pies, French *rillettes*
Vegetable tubers gratin
Fricassee of vegetables in coconut
Pork Curry
Yellow tuna skewers with combawa sauce
Rice with 5 spices
Pumpkin *Poé*
Coconut Chocolate Cookies

Thursday: Caledonian Buffet
Green papaw salad with lemon
Shrimp with garlic
Caledonia venison Salad
Soyu Fish Salad
Meat pies, Fish pies
Chicken with China cabbages
Roll of tazar with pineapple
Mini sweet potato gratin
Manioc Cake
Lemongrass Cream

Friday: French Buffet
St-Jacques shells Skewer with niaouli honey
Beef Carpaccio with eggplants
Meat pie – Ham
Fish pie and citrus fruits
Beef *brioche*
Pork and prunes
Sweet peppers
Dauphinois Gratin
Vegetable piesMini pastry

ORGANIZING INSTITUTIONS – PARTNERS and SPONSORS

The 10th International Conference on Southern Hemisphere Meteorology and Oceanography (23-27 April 2012, Noumea, New Caledonia) will bring the best specialists in Weather, Climate, Water, Ocean and Polar Science to Noumea. Scientists will present their latest work on a range of topics from Earth System Science to Hydrological Predictions and Regional Climate Change studies, including unique Pacific-based science research work.

The 10th ICSHMO is organized by the American Meteorological Society, the Institute of Research for Development (IRD) and Météo-France. It is funded by the Pacific Funds, the New Caledonia Government, the Northern Province of New Caledonia and several other partner institutions and companies. They all made this *rendez-vous* possible.

ORGANIZING SCIENTIFIC INSTITUTIONS

The American Meteorological Society promotes the development and dissemination of information and education on the atmospheric and related oceanic and hydrologic sciences and the advancement of their professional applications. Founded in 1919, AMS has a membership of more than 14,000 professionals, students, and weather enthusiasts. AMS publishes 9 atmospheric and related oceanic and hydrologic journals, sponsors more than 12 conferences annually, and offers numerous programs and services.
(www.ametsoc.org/aboutams/index.html)

Institut de recherche pour le développement

The IRD (Institute of Research for Development) is a unique institution in the landscape of European research for development. Its task is to conduct research for the South. Its researchers are working on issues of major global importance: global warming, emerging diseases, biodiversity, access to water, migration, poverty, world hunger. The teaching and training provided empowers and enables scientific communities from developing nations. In the Pacific region, the IRD Noumea Centre was implemented since 1946 and represents a key scientific partner for development. While answering to local requirements in New Caledonia, the Institute also targets international issues. The on-going projects at an international scale are the following:

- the PACENET project : a Pacific-European network, funded by the European Union, which aims at the scientific networking in science and technology in the Pacific **(http://www.pacenet.eu/)**
- the Large Observatory of the Environment and terrestrial and marine Biodiversity in the South Pacific (GOPS) **(http://www.observatoire-gops.org/fr/accueil)**
- the Southwest Pacific Ocean Circulation and Climate Experiment (CLIVAR / SPICE project **http://www.clivar.org/organization/pacific**)

These projects are conducted in strong partnership with universities and research organizations in Europe and the Pacific (Australia, New Zealand, Pacific Island Countries and territories, United States, Japan, etc.). Further information on **www.nouvelle-caledonie.ird.fr** (English translation under process)

Météo-France, a public administration placed under the authority of the Ministry of Ecology, Sustainable Development, Transport and Housing, is the French organisation responsible for supplying information nation-wide on the state of the atmosphere and the repercussions this may have on human life and property.

To meet these requirements, Météo-France:

- manages observation networks
- receives and processes information supplied by weather satellites.
- analyses all the data and runs numerical prediction models,
- transmits this information to the general public, to state services responsible for public safety and to institutional organisations in important economic sectors (aeronautics, agriculture, production and transport of energy, maritime activities, etc.).
- archives the measurements thus gathered to meet the needs of climate studies.

Moreover, Météo-France plays an important role in atmospheric research thanks to its research service (the National Centre for Meteorological Research) **(www.meteo.nc).**

PARTNER INSTITUTIONS

The Pacific Funds is managed by the Permanent Secretariat for the Pacific and is included within the budget of the Ministry for Foreign and European Affairs (MAEE). It was created in 1986. Its objective is to promote the economic, social, scientific and cultural cooperation in the Pacific. It contributes to the regional insertion of New Caledonia, French Polynesia and the Wallis and Futuna islands.

The **New Caledonia Government**: it is the executive body of the French *sui generis* community of New Caledonia. Its operating process and its attributions is born from the agreement of Noumea of 1998. Until now, the executive power was exercised mainly by the High commissioner of the French Republic in New Caledonia, delegated Government, representative of the French State in the Territory. Since the agreement of Noumea, the High commissioner is confined in his functions of representation of the French State and exercise of competences of this one. The current government, elected on June 10th, 2011, is chaired by Harold Martin. **(www.gouv.nc/portal/page/portal/gouv)**

The Northern Province is one of the three provinces of New Caledonia. It is managed by an elected Assembly and has competency in all the matters which are not reserved by the law in the State, New Caledonia or the communes. The Northern Province is largest of the three provinces: it covers a little more half of the total surface area of the country and includes 17 municipalities.

METSERVICE

MetService is New Zealand's weather authority and operates as a commercially successful, international organization with over 215 employees in New Zealand, Australia, Asia, Europe and the Middle East. The global leader in local weather, MetService and its international brand MetraWeather deliver powerful weather intelligence to customers throughout the business spectrum, from small local businesses to large international organizations and in major market sectors such as energy, media, transport and retail. At the same time, our national weather services enhance public safety for outdoor activities **(www.metservice.com).**

AMOS AustralianMeteorological & OceanographicSociety

The Australian Meteorological and Oceanographic Society (AMOS) is an independent Australian society that supports and fosters interest in meteorology, oceanography and other related sciences. This is done by providing a forum for people with a common interest, and by publishing relevant material. The Society helps all those with an interest in the environment including research workers and professionals, those whose work is affected by, and affects, the atmosphere and oceans, and those who simply want to keep up with new findings. It provides support and fosters interest in meteorology and oceanography through its publications, meetings, courses, grants and prizes, and represents the views of its members to Government, institutes and the public **(www.amos.org.au).**

Australian Government
Bureau of Meteorology

Australian Government
Department of Climate Change and Energy Efficiency

Australian Government
AusAID

CSIRO

Pacific Australia Climate Change Science and Adaptation Planning Program (PACCSAP) scientists worked closely with 15 partner countries in five key areas:

- past and current climate trends (scientists are working closely with partner countries to retrieve and analyze observed climate data to provide an accurate picture of past and current climate trends in partner countries),

- understanding the climate (investigating how features such as the El Niño-Southern Oscillation affect partner countries and how this might change with future climate change,
- climate change projections (developing projections for what the climate in partner countries may look like around the years 2030, 2055 and 2090),
- oceans and sea-level rise (understanding how climate change is already affecting and will affect the oceans in areas such as sea-level rise and ocean acidification),
- and engagement and capacity building (working closely with partner countries to deliver research findings in practical and relevant ways), found in **www.cawcr.gov.au/projects/PCCSP/research.html**

The PCCSP was managed by the Bureau of Meteorology and CSIRO, with strong support from AusAID and the Department of Climate Change and Energy Efficiency. The PCCSP has recently been superseded by the Pacific Australian Climate Change and Adaptation Initiative (PACCSAP).

CSIRO, the Commonwealth Scientific and Industrial Research Organization, is Australia's national science agency and one of the largest and most diverse research agencies in the world. CSIRO's marine research - delivered through the Wealth from Oceans National Research Flagship - focuses on understanding our oceans and their biodiversity, resources and relationships with the climate system. The Flagship delivers practical science that enables governments, industries and communities to make informed decisions about the sustainable management of marine and coastal resources. Taking a whole-of-system approach to marine science, the Flagship contributes to national and international challenges where oceans play a central role. **(www.csiro.au)**

The Secretariat of the Pacific Community is an international organization that provides technical and policy advice and assistance, training and research services to its Pacific Island members. SPC works in a wide range of sectors with the aim of achieving three development outcomes – sustainable economic development, sustainable natural resource management and development, and sustainable human and social development. **(www.spc.int)**

The Bureau of Meteorology is Australia's national weather, climate and water agency. Its expertise and services assist Australians in dealing with the harsh realities of their natural environment, including drought, floods, fires, storms, tsunami and tropical cyclones. Through regular forecasts, warnings, monitoring and advice spanning the Australian region and Antarctic territory, the Bureau provides one of the most widely used services of the Australian government. The Bureau is also a leading provider of meteorological and oceanographic research. (www.bom.gov.au)

PACE-SD (USP): Since its inception in 2001, the Pacific Centre for Environment and Sustainable Development (PACE-SD) of the University of the South Pacific (USP) based in Suva, Fiji has been the forefront of a variety of Pacific environmental issues. It aims to be a center of excellence for teaching, training and research based capacity building for environment and sustainable development in the Pacific Island region, and has a mission of working with all other relevant sections of the University, regional and international organizations, regional governments and the civil society networks to promote environmentally friendly sustainable development through innovative and cost-effective approaches.

PACE-SD has a core number of staff based in Fiji liaising with in-country coordinators based in 15 Pacific Island states across the region. Some current projects deal with fine tuning of climate models on a country / regional scale, community participation in adaptation to climate change, and the integration of traditional cultural knowledge in native forest conservation.(**www.usp.ac.fj/index.php)**

INSU (National Institute for Earth Sciences and Astronomy) is one of the 10 institutes of the largest french public research body, CNRS (National Center for Scientific Research). INSU was created in 1985, in order to elaborate, develop and coordinate research carried out under the auspices of the Ministry of Research and Higher Education, in the fields of astronomy, earth, atmosphere, ocean and space science. The Ocean-Atmosphere domain at INSU includes more than 2000 scientists and engineers working in laboratories located in mainland France and some overseas territories. (www.insu.cnrs.fr/)

SPONSOR

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CARBON OFFSET with MOCAMANA

MOCAMANA is a New Caledonian non-governmental organization created in 2005 by several enthusiastic naturalists.

MOCAMANA acts for the protection of New Caledonian environment through various objectives:

- Environmental education (campaigns of environmental awareness in local schools – PROGRAM Spirit of Education
- Protection of endangered species – PROGRAM Spirit of Conservation
- Management of natural spaces and forests – PROGRAM Spirit of forest
- Projects of sustainable development (sustainable socioeconomic development of indigenous women, carbon offset, recycling, etc) – PROGRAM Spirit of sustainable Development
- Sustainable environment, enhancing life quality, improving labor possibilities (priority in job offers to the local and low income population; paid internships for young people) – PROGRAM FEVES

The 10th ICSHMO organizing committee is aware that air travel associated with an international conference generates large amounts of CO_2 emissions. To compensate —at least partially— the airborne-generated emissions, reforestation by planting native species in degraded areas is a good solution. The **10th ICSHMO** organizing committee will fund the plant plantation of endemic trees and restoration of one acre of dry forest (in Fort Téréka - Nouville, Nouméa).

The dry forest in New Caledonia

Tropical dry forest or *sclerophyllus* forest in New Caledonia is one of the world's most endangered tropical dry forests based on the current extent of the forest, endemism, number of protected areas, and threatened species. The tropical dry forest in New Caledonia contains 456 plant species, 262 of which are endemic to New Caledonia (http://www.foretseche.nc). The surface of the dry forest in New Caledonia has gone from 4.500 square kilometers to 45 today (1 %). Management of fire, of invasive and exotic plants and animals, and reintroduction of rare native species on private and community lands is of utmost importance.

3300 trees at Fort Téréka

MOCAMANA is involved in dry forest restoration on the site of Fort Téréka. It is one of the last dry forest area and the biggest green natural space of Nouméa. The site presents entertaining activities (educational paths, climbing wall) and a cultural and historic heritage (artillery of Fort Téréka).

MOCAMANA has already planted more than 3300 trees on this site.

CONFERENCE PROGRAM OVERVIEW

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
	RoomSisia (plenaries)	RoomSisia (plenaries)	RoomSisia (plenaries)	RoomSisia (plenaries)	RoomSisia (plenaries)
	Sisia / Eman / Kanaké	Sisia / Eman / Kanaké	Sisia / Eman / Kanaké	Sisia / Eman / Kanaké	Sisia / Eman / Kanaké
8:15	Opening custom				
8:30-10:00	Openings addresses R. Somerville	**S08** **S04** **S10**	**S02** **S12** **S11**	**S05** **S12** **S13**	G. Meehl **S06** **S03** **S16**
10:00-10:30	Morning coffee	Morning coffee	Morning coffee	Morning coffee	Morning coffee
10:30-12:30	A. Biastoch **S08** **S04** **S09**	**S08** **S04** **S10** **S01** **S17**	**S02** **S12** **S07**	**S05** **S03** **S15**	**S06** **S14** **S16**
12:30-14:00	Lunch	Lunch	Free	Lunch	Lunch
14:00-15:30	P. Dias **S08** **S04** **S09**	D. Karoly **S08** **S01** **S17**		N. Bindoff **S05** **S03** **S16**	Poster session Plenary closing
15:30-16:30	Tea time / poster session	Tea time poster session		Tea time / poster session	
16:30-17:30	**S08** **S17** **S09**	**S11** **S01**		**S05** **S03** **S16**	
	PACCSAP POSTER EVENT 17:30-19:00			10ICSHMO cocktail 17:30-19:00	

S01	**Monsoon Systems in the Southern Hemisphere**
S02	**Tropical cyclones: past, present and future**
S03	**Other severe weather systems: MCCs, cut off lows**
S04	**Intraseasonal Variability and Prediction in the Southern Hemisphere**
S05	**Interannual climate variability and Southern Hemisphere teleconnections**
S06	**Interdecadal climate variability and SH impacts**
S07	**Climate predictability in the Southern Hemisphere**
S08	**Climate change in the Southern Hemisphere**
S09	**Inter-ocean exchanges**
S10	**Ocean observing systems and operational oceanography**
S11	**Southern Hemisphere Subtropical Convergence Zones: SPCZ, SACZ, SICZ**
S12	**Southern Hemisphere Ocean circulation and climate**
S13	**SH Island weather and oceanography: past and future**
S14	**From Climate Change Science to Adaption**
S15	**Special Session: ACRE - Atmospheric Circulation Reconstructions over the Earth**
S16	**Special Session: Southwest Pacific Ocean Circulation and Climate Experiment (SPICE)**
S17	**Climate Change in developing SH island countries**

The 10th ICSHMO conference covers 17 topics (session S01 to session S17) listed above.

There are 184 oral presentations and 114 poster presentations scheduled in total.

Plenary sessions take place in the Sisia auditorium.

In addition, the conferences are organized in three parallel sessions in:

- the Sisia auditorium (*cf 1st column of the table*)
- the Eman conference room (*cf 2nd column of the table*)
- the Kanaké conference room (*cf 3rd column of the table*).

Each oral presentation lasts 15 minutes. Invited speakers have a 30 mn slot.

SOCIAL EVENTS

Monday 23 April, 17:30–19:00. PACCSAP poster event / icebreaker. Join fellow delegates to enjoy canapés and refreshments while roaming among the posters and exhibits. This social event is sponsored by the **Pacific Australia Climate Change Science and Adaptation Planning Program** (PACCSAP).

Wednesday 25 April, 17:30–19:00. Meeting organized by the Tjibaou Cultural Centre. Only a small group of French speaking participants will be involved in this intimate meeting with local representatives, customary delegates, environmental associations and some customers. Invitations will be provided to these participants.

Thursday 26 April, 17:30–19:00. ICSHMO cocktail. Come and relax after 4 intensive conference days. Enjoy the outdoor beautiful views while tasting some French and Pacific Island gastronomical specialties.

NAMED SESSIONS: ICSHMO and AMS Council honoring two scientists

The ICSHMO series of conferences has a history of holding special sessions in order to honor the work of scientists who have made outstanding contributions to advancing Southern Hemisphere science in the atmospheric and oceanic sciences.

The two named sessions of the 2012 edition are for **Dr. Pedro L. Silva Dias** from Brazil and **Professor Johann Lutjehjarms** (recently deceased) from South Africa. Both have made outstanding contributions to advancing the understanding of atmospheric and oceanic science (respectively) in the Southern Hemisphere.

In Honor of Pedro L. Silva Dias

National Laboratory for Scientific Computing, Brazil
Monday 23 April, 14:00 Sisia auditorium

Dr. Pedro L. Silva Dias, elected as an AMS Fellow in 1999, is also a member of the Brazilian Academy of Sciences. He has been the President of the Brazilian

Meteorological Society during1992-94 as well as the Science Director of the Society from 2006 to 2008. Currently serves as the Director of the National Laboratory for Scientific Computing of the Ministry of Science and Technology, in Petrópolis, Brazil, and has also served as head of the Center of Weather Forecasting and Climate Research (CPTEC) between 1988 and 1990, and Professor at the Institute of Geophysics and Atmospheric Sciences since 1975.
He has published approximately 120 papers, book chapters, mostly in international journals, and about 240 complete papers in national and international scientific events, while also serving as an advisor to 40 Masters and 21 PhD students. As a world renowned expert in a wide variety of themes ranging from weather forecasting to climate variability and change in South America, he served as one of the primary authors of the Contribution of Working Group I report to the Forth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC AR4)published in 2007.

A special plenary session will take place on Monday 23 April, 14:00 in his honor. Dr Dias will present the theory and observations of multiscaling characteristics of the South American Monsoon System.

In Honor of Johann Lutjeharms

by Dr. Arne Biastoch
Helmholtz Centre for Ocean Research Kiel (GEOMAR), Germany
Monday 23 April, 10:30 Sisia auditorium

Johann Lutjeharms, one of Southern Africa's leading marine scientists and most-known experts on the Agulhas Current, died on Wednesday, 8 June 2011, after a 10-year battle with cancer. He died during the last hour of World Oceans Day at the age of 67. As an internationally recognized leader in his field he was an "A" rated researcher of the South African National Research Foundation. In April 2011 he received South Africa's highest honor, the Order of Mapungubwe, an award for South Africans who have "accomplished excellence and exceptional achievement to the benefit of South Africa and beyond" – an excellent summary of Lutjeharms' career. For the international science community he served on working groups of the Scientific Committee for Oceanic Research (SCOR), the International Union of Conservation of Nature and Natural Resources (IUCN), and the International Association for the Physical Sciences of the Ocean (IAPSO). Johann Lutjeharms' main field of investigation was in establishing, quantifying and understanding the large-scale circulation patterns of the oceans adjacent to southern Africa and their influence on weather and climate. In this research he laid grounds for the recognition of the importance of the Agulhas Current system for the global oceanic circulation in the international science community. In the 104-year history of the South African Journal of Science, Johann Lutjeharms was its most published author, he produced eight books, 32 contributions to books, 177 papers in peer-reviewed international journals, 117 reviews and popular articles, 46 research and technical reports and 14 contract reports. His articles in prestigious journals included two in Science and five in Nature.

In his honour, Dr. Arne Biastoch will give a scientific presentation "On the role of the Agulhas system in ocean circulation and climate".

SESSIONS DESCRIPTION

REGULAR SESSIONS

01-Monsoon Systems in the Southern Hemisphere

Alice Grimm (grimm@fisica.ufpr.br)
Matthew Wheeler (M.Wheeler@bom.gov.au)

For much of the Southern Hemisphere tropical/subtropical land areas and surrounding seas the weather and climate is associated with monsoon systems. This session aims to promote discussion on advances and current issues on all time scales (mesoscale, synoptic, intraseasonal, interannual, decadal/interdecadal, millenial) that are relevant to the understanding of the nature, mechanisms, and variability of monsoons, and to their prediction. Papers are invited regarding theoretical, observational, and modeling studies of the nature, variability and mechanisms of monsoons in the Southern Hemisphere, including but not limited to extreme events, the influence of the principal modes of climate variability in different time-scales, air-sea-land interactions, predictability, prediction, and consequences of anthropogenic climate change.

Invited Speakers:
Gerald Meehl, National Center for Atmospheric Research, Boulder, CO, USA
Ernesto Hugo Berbery, Department of Atmospheric and Oceanic Science/ESSIC, University of Maryland, College Park, MD, USA

02-Tropical cyclones: past, present and future

Howard Diamond (Howard.Diamond@noaa.gov)
Matthew Wheeler (M.Wheeler@bom.gov.au)
Kevin Tory (k.tory@bom.gov.au)

Tropical Cyclones are one of the most destructive phenomena on the planet. From the perspective of the Southern Hemisphere, tropical cyclones are significant weather and climate features in the southwest Pacific Ocean basin from French Polynesia to the eastern and northern coastlines of Australia, as well as in the south Indian Ocean basin from Australia to the east coast of Africa. This session aims to promote discussion on advances and current issues on all space and time scales (e.g., mesoscale, synoptic, intraseasonal, and interseasonal) that are relevant to the understanding of tropical cyclones. Papers are invited on weather and climatic aspects of tropical cyclones in the southern hemisphere including, but not limited to, short-term forecasts, short to long-term outlooks, tropical cyclone dynamics, climate studies, statistical analyses, simulation, observational needs, and modulation by climate change and variability.

Invited speakers
Kevin Walsh, University of Melbourne
Steve Ready, New Zealand Met Service

03-Other severe weather systems: MCS, cut off lows

Luis Gimeno (l.gimeno@uvigo.es)
Tercio Ambrizzi, University of Sao Paolo, Brazil

The scope of the session covers all aspects of other severe weather systems occurring in the Southern Hemisphere with the exception of tropical cyclones, with a special focus on Mesoscale Convective Systems (MCS) and Cut off low (COL). An MCS results of deep moist convection developing from individual thunderstorm cells which merge into long-lived organized larger systems. They are capable of producing heavy rainfall and severe weather events but also are responsible for a good percentage of the total precipitation in any areas of the Southern Hemisphere being important in socioeconomic aspects of these regions. A cut-off low pressure system (COL) represents a closed low in the upper troposphere that has become completely detached (or "cut off ") from the characteristic westerly current of the jet stream, and which is usually advected towards the equatorial side of the mid-latitude westerlies. Systems related to COLs are capable of affecting the weather conditions at the earth's surface to a considerable degree for periods of several days at a time. The instability of the troposphere beneath the COL can lead to the occurrence of severe convective events, depending on surface conditions. COLs yield significant precipitation when the air mass below the COL is very moist and generates a potentially unstable condition. Such weather systems are among the most severe that affect any areas of the Southern Hemisphere and are responsible for some of the most catastrophic events in terms of their precipitation rate, especially during warm months.

All researchers, operational forecasters, and risk and emergency managers are invited to submit contributions. In the light of the global relevance of the session themes, participants from all over the world are welcome to attend.

04-Intra-seasonal variability and prediction in the Southern Hemisphere:

Matthew Wheeler (M.Wheeler@bom.gov.au),
Agnes Kijazi (akijazi2000@yahoo.co.uk),
Alice Grimm (grimm@fisica.ufpr.br)

Intraseasonal variability covers those time scales between synoptic weather and seasonal climate variability, while intraseasonal prediction generally covers the forecast range from the second week to two months. Phenomena in the Southern Hemisphere that are relevant to this time scale are the Madden Julian Oscillation, Southern Annular Mode, atmospheric blocking, land-atmosphere interaction, and stratospheric influences on the troposphere. Dynamical model prediction on this timescale involves its own special considerations, including the generation of ensembles, initialization of the land and atmosphere, and coupled model initialization shock. This session seeks papers that are focused on all aspects of the intraseasonal time scale including but not limited to theoretical work, observational analysis, modelling, prediction, and impacts. Papers addressing links between the intraseasonal and other time scales will also be considered.

Invited speakers:
Adrian Matthews, School of Environmental Sciences / School of Mathematics, University of East Anglia
Andrew Marshall, Centre for Australian Weather and Climate Research, Bureau of Meteorology

05-Interannual climate variability and Southern Hemisphere teleconnections

Rob Allan (rob.allan@metoffice.gov.uk),
Marc Pontaud (marc.pontaud@meteo.fr),
Caroline Ummenhofer (C.Ummenhofer@unsw.edu.au)

The scientific focus on climatic variability on interannual timescales has a long history within weather and climate science fields. In fact, efforts to develop and improve our ability to forecast and predict the influence and impacts of interannual climatic variability are second only to those with synoptic weather via numerical weather prediction techniques.
In the 21st century, we are very cognisant of features in the global climate system which have strong definition on interannual timescales, particularly the North Atlantic Oscillation (NAO) and the El Niño-Southern Oscillation (ENSO) phenomena. This includes the vital role of teleconnections, which propagate the physical influence of climatic phenomena to regions remote from the core physical interactions that define them - such as those transmitting the climatic influence of the core ENSO dynamics in the Indo-Pacific domain to higher latitudes in both hemispheres or the impact of extratropical variability associated with the annular modes on the mid-latitudes.
This session invites papers on any aspect of interannual climate variability and teleconnections research relating to Southern Hemisphere climatic patterns.

06-Interdecadal climate variability and SH impacts:

Carolina Vera (carolina@cima.fcen.uba.ar),
Caroline Ummenhofer (C.Ummenhofer@unsw.edu.au),
Arne Biastoch (abiastoch@ifm-geomar.de),
Rob Allan (rob.allan@metoffice.gov.uk)

Improving our ability to assess the impacts of variations and future changes in climate is crucial. It would enable governments, communities, and businesses to determine strategies to reduce potential negative impacts and to take advantage of opportunities by adapting infrastructure, activities and plans. However, the issue about how much of the regional climate changes is attributable to natural variations and how much is due to anthropogenic activities has not yet been resolved. During recent decades there has been considerable effort in trying to understand the decadal and interdecadal variability of the climate system and very recently climate predictions on decadal timescales are becoming available through multi-model experiments like the WCRP/CMIP5. This session invites papers on the general topic of describing and understanding climate variability on interdecadal time scales as well as on assessing decadal predictions at both large and regional scales of the Southern Hemisphere. The session will also cover the impacts of climate variability interdecadal timescales on socio-economic activities.

Invited speakers:
Scott Power, Bureau of Meteorology, Melbourne, Australia
Gerald Meehl, National Center for Atmospheric Research, Boulder, CO, USA

07-Climate predictability in the Southern Hemisphere:

Marc Pontaud (marc.pontaud@meteo.fr)
Carolina Vera (carolina@cima.fcen.uba.ar)

Demands are increasing for prediction in different time-scale: monthly, seasonal, annual up to decadal (near-term climate prediction). Prediction about the shortest climate time scales are already in application while the decadal prediction is a research issue identified in the current IPCC-AR5 experiment. These prediction exercises arise specific issues about initial conditions, hindcast simulations, ensemble approach, analysis methods, ... This session invites papers about theoretical developments and results on climate prediction from month to decade focusing on southern hemisphere.

Invited speaker
David Jones, Bureau of Meteorology

08-Climate change in the Southern Hemisphere

Robert Frouin (rfrouin@ucsd.edu)
Jens Kruger (jkruger@sopac.org)

The ocean and atmosphere of the Southern Hemisphere have undergone substantial changes in the past half century. These include rising atmospheric carbon dioxide levels, ozone losses, higher aerosol concentrations, increasing surface temperatures, shifts in circulation patterns, decreasing ocean pH, and retreating Antarctic sea ice. This session will address, via observations and/or modeling, trends in the physical and biological environment, the causes and mechanisms responsible for the observed changes, the effects on weather, currents, biogeochemical cycles, and ecosystems, the various feedbacks and linkages, and the prediction of future impacts for projected scenarios of climate change.

Invited speaker
Richard Somerville, Scripps Institution of Oceanography, USA

09-Inter-ocean exchanges

Arne Biastoch (abiastoch@ifm-geomar.de),
Juliet Hermes (Juliet@saeon.ac.za)

Inter-ocean exchanges are important for the global redistribution of momentum, heat and salt. In the Southern Hemisphere, the Drake Passage, Agulhas System, Indonesian Throughflow and the waters south of Australia act as 'choke points' in the global wind-driven and thermohaline circulation. Major international and regional observational and modelling initiatives act to determine and to monitor the amount of inter-ocean exchanges, and potentially detangle anthropogenic trends from multi-decadal changes. This session invites contributions which address latest findings on the inter-ocean exchanges and their role for the large-scale and global circulation.

Invited Speakers:
Michael Meredith, British Antarctic Survey, UK
Janet Sprintall, Scripps Institution of Oceanography

10-Ocean observing systems and operational oceanography

Andreas Schiller (Andreas.Schiller@csiro.au)
Jerome Vialard (jerome.vialard@ird.fr)
Juliet Hermes (Juliet@saeon.ac.za)

The last 20 years have provided us with an unprecedented ability to observe, monitor and forecast the oceans. In-situ and remotely sensed ocean observations underpin many research and application areas, including climate research and operational oceanography. The latter aims to address many challenges with timescales from days to decades and regions ranging from coastal areas to the global ocean. This session invites presentations about the development of the global ocean observing system, the development and application of operational ocean forecasting systems and the relationship between operational oceanography and the design/development of an ocean observing system. This includes – but is not limited to:

- the global and regional analyses and forecasting systems (incl. modelling and data assimilation);
- the development and scientific testing of the next generation of systems covering bio-geochemical and eco-systems and extending from the open ocean into the shelf seas and coastal waters;
- the exploitation of this capability in other applications (weather forecasting, seasonal and decadal prediction, climate change detection and its coastal impacts, etc);
- the assessment of the contribution of the various components of the global ocean observing system and scientific guidance for improved design and implementation of the ocean observing system (e.g. Observing System Experiments (OSEs) and Observing System Simulation Experiments (OSSEs)).

Invited speakers:
Tony Lee, Jet Propulsion Laboratory, Pasadena, USA
Katy Hill, Integrated Marine Observing System, University of Tasmania

11-Southern Hemisphere Subtropical Convergence Zones: SPCZ, SACZ, SICZ

(PACCSAP-sponsored)

Scott Power (S.Power@bom.gov.au)
Ken Takahashi (ktakahashi@geo.igp.gob.pe)

Subtropical convergence zones (CZs) have a major influence on climate and the general circulation, and on life in many nations in the Southern Hemisphere. Despite the importance of the SH CZs they have been relatively little studied compared with CZs in the northern hemisphere. The purpose of this session is to hear from speakers and discuss e.g.,: what is known about the structure and other characteristics of the CZs; comparisons and contrasts between the CZs; the impact of the CZs on climate and the ocean; the underlying physics of the CZs; variability in the CZs from synoptic through to interdecadal and longer time-scales; our ability to simulate the SPCZ using climate models; and the impact of global warming on the CZs.

Invited Speaker
Wenju Cai, CSIRO, Aspendale, Australia

12-Southern Hemisphere Ocean circulation and climate

Rosemary Morrow (Rosemary.Morrow@legos.obs-mip.fr),
Juliet Hermes (Juliet@saeon.ac.za),
Arne Biastoch (abiastoch@ifm-geomar.de)

The Southern Ocean plays a key role in hemispheric and global ocean circulation, which in turn impacts on the carbon cycle, regional ecosystems, and sea level rise. Complex interactions occur between the atmosphere, ocean, cryosphere and marine organisms, which are all evolving over time. Recent advances in observations and modelling of finer-scale structures in the Southern Ocean have allowed a better

understanding of the ocean circulation, and its impact on the carbon cycle, ecosystems, and the global overturning circulation. This session invites papers which address the current state of knowledge concerning the role of the Southern Ocean in the global climate system.

Invited Speaker
Matthew England, University of New South Wales, Sydney
Tomoki Tozuka, University of Tokyo

13-Southern Hemisphere Island weather and oceanography: past and future:

Adrian Matthews (a.j.matthews@uea.ac.uk)
Jim Renwick (j.renwick@niwa.co.nz),
Isabelle Ansorge (isabelle.ansorge@uct.ac.za)

The Southern Hemisphere is home to a large number of small and often isolated islands, with climates ranging from tropical to sub-antarctic. Observations from several key islands are a critical component of the global observation network. This session will explore the meteorology and oceanography of the various island climates, their oceanographic settings, and how these are likely to change in the future.

14-From Climate Change Science to Adaptation:

Brian Dawson (briand@spc.int)

The scientific understanding of climate change is rapidly improving and the a increasing body of scientific evidence is becoming available to decision makers. However, the transfer of knowledge from the scientific community in a form that is readily understandable to decision makers needs much greater attention. There needs to be stronger two-way linkage between key decision makers and the science community to ensure that available resources are deployed effectively and that the scientific work undertaken meets the needs of decision makers in terms of planning, prioritising and implementing climate change adaptation measures. There is also a need for decision makers to become more actively involved with the climate change science community and more clearly articulate the information and knowledge gaps. Furthermore, building stronger links between the atmospheric and oceanographic scientists and those that study the impact of climate change on ecosystems and biodiversity is also needed to ensure that the available scientific knowledge is used effectively. This session will focus on approaches to effectively disseminating the outcomes of scientific research to decision makers and the community and building stronger cross linkages with other members of the science community.

17-Climate change in developing SH island countries (PCCSP-sponsored)

Scott Power (S.Power@bom.gov.au)
Brad Murphy (B.Murphy@bom.gov.au)

Many small island states in the Southern Hemisphere are vulnerable to the impacts of climate variability and climate change. This session will cover what is known about climate and climate change in and around such countries. Issues to be addressed include: how has climate changed in the region? what caused the changes evident? how might climate and the ocean in the region change in the future? Information presented will include an overview of recent research conducted for 15 countries participating in the Pacific Climate Change Science Program (PCCSP). Presentations on research from other regions and other countries is strongly encouraged.

Invited speakers
Jaclyn Brown, CAWCR, CSIRO Hobart
Damien Irving, CAWCR, CSIRO Aspendale
Jack Katzfey, CAWCR, CSIRO Hobart
David Jones or **Simon Mcgree** (TBD)

SPECIAL SESSIONS

15-ACRE – Atmospheric Circulation Reconstructions over the Earth

Rob Allan (rob.allan@metoffice.gov.uk)
Philippe Frayssinet (philippe.frayssinet@meteo.fr)

The international Atmospheric Circulation Reconstructions over the Earth (ACRE) Initiative (http://www.met-acre.org/) both undertakes and facilitates the recovery of historical instrumental surface global weather observations to underpin three dimensional reanalyses spanning the last 200-250 years for the needs of climate science and climate applications, educators and students, and citizens worldwide.
Under its international umbrella, that links more than 35 projects, institutions, and organisations around the globe (http://www.met-acre.org/Home/ACRE_G2.png?attredirects=0), ACRE has both developed, and is looking to develop, regional foci which will hone its efforts to recover, image, digitise and archive historical instrumental surface terrestrial and marine weather observations in regions with untapped or under-represented data potential. The regional activities with ACRE Chile, ACRE Pacific, ACRE India and ACRE SE Asia will be specifically highlighted in this Special Session, as will the Initiative's efforts to develop ACRE Africa and ACRE China. This Special Session is not limited to those working with or linked to ACRE, and papers dealing with any use of the Initiative's products, especially the ACRE-facilitated 20CR, are encouraged.

Invited speakers
Pene Lefale, National Institute of Water & Atmosphere (NIWA), Auckland. New Zealand
Andrew Lorrey, National Institute of Water & Atmosphere (NIWA), Auckland. New Zealand

16-Southwest Pacific Ocean Circulation and Climate Experiment (SPICE)

Sophie Cravatte (Sophie.Cravatte@ird.fr)
William Kessler (William.S.Kessler@noaa.gov)
Alexandre Ganachaud (Alexandre.Ganachaud@ird.fr)

SPICE is a regionally coordinated experiment. Its goal is to observe, model and understand the role of the Southwest Pacific ocean circulation in the large-scale, low- frequency modulation of climate from the Tasman Sea to the equator, and the generation of local climate signatures whose diagnosis will aid regional sustainable development. This session is not limited to research officially linked to SPICE. Papers are invited on any aspect concerning the Southwest Pacific: oceanic circulation in the Coral, Solomon and Tasman seas; heat and mass transports; properties and dynamics of the strong boundary currents and jets; water mass transformations in the region, and their effects on the local and global climate; air-sea interactions.
Submissions are also encouraged on processes concerning the South Pacific Convergence Zone.

Invited speakers
Bo Qiu, Department of Oceanography, University of Hawaii at Manoa
Andreas Schiller, CSIRO, Hobart, Australia

MONDAY, 23 APRIL 2012 8:15–12:30

SISIA auditorium
OPENING SESSION 8:15–9:30

8:15 Welcome / Kanak Custom

Gathering in front of the Sisia Auditorium for the traditional Kanak Custom Welcome.

8:30 Opening session

Official speeches from New Caledonia representatives and from the 10th ICSHMO scientific committee.

SISIA auditorium
PLENARY SESSION 9:30–10:00

S08 Climate change in Southern Hemisphere
Chair: R. Frouin

9:30 **INVITED** GCMS, The IPCC, and climate change in the Southern Hemisphere
Somerville R. – abstract # 235.

10:00–10:30 COFFEE BREAK

SISIA auditorium
PLENARY SESSION 10:30–11:00

AMS-ICSHMO Named Session

10:30 **Named session in honor of Johann Lutjeharms**: On the role of the Agulhas system in ocean circulation and climate
Biastoch A.

SISIA auditorium
PARALLEL SESSION A 11:00–12:30

11:00 From climate change science to adaptation
Dawson B.

S08 Climate change in Southern Hemisphere
Chair: R. Frouin

11:15 Modelling and understanding the causes of increased rainfall in Northwestern Australia
Ackerley D., Reeder M., Jakob C. – **abstract # 158**

11:30 Recent global trends in atmospheric fronts
Berry G., Jakob C., Reeder M. – **abstract # 231**

11:45 ACCESS coupled model and its present-day and pre-industrial Climate simulations
Bi D., Dix M., Marsland S., Hirst T., O'Farrell S., Uotila P., Rashid H., Kowalczyk E., Sullivan A., Sun Z.
– abstract #329

12:00 Deep waters melting West Antarctic ice sheet margin mirror global ocean exponential warming
Martinson D., Webb L. – **abstract # 411**

12:15 Analysis of uncertainties in climate change projections over southern South America using CMIP3 and CMIP5 models
Blazquez J., Nuñez M. – **abstract # 207**

12:30–14:00 LUNCH

MONDAY, 23 APRIL 2012 11:15–12:30

EMAN room
PARALLEL SESSION B 11:15–12:30

S04 Intraseasonal Variability and Prediction in the Southern Hemisphere

Chair: M. Wheeler

11:15 **INVITED** Intra-seasonal prediction of remote drivers of Australian climate variability using POAMA-2
Marshall A., Hudson D., **Wheeler M.**, Hendon H., Alves O. – **abstract # 341**

11:45 Winter intraseasonal variability in South America
Alvarez M. S., Vera C., Kiladis G., Liebmann B. – **abstract # 309**

12:00 Rainfall variability and implication for agricultural sector in the Limpopo district (South Africa)
Ambrosino C., Chandler R., Todd M.– **abstract # 12**

12:15 Seasonal simulation of heavy rainfall events over southern Africa using a high-resolution regional model: sensitivity to cumulus parameterization schemes
Bishoyi Ratna S., Venkata Ratnam J., Behera S., Rautenbach H., Takahashi K., Yamagata T.– **abstract # 22**

12:30–14:00 LUNCH PERUI and V1

KANAKE room
PARALLEL SESSION C 11:15–12:30

S09 Inter-ocean exchanges / Indo-Pacific

Chair: A. Biastoch

11:15 **INVITED** Inter-ocean exchange through the Indonesian seas: Developing proxies for long-term monitoring
Sprintall J. – abstract # 16

11:45 Modeling and energetics of tidally generated wave trains in the Lombok strait: impact of the Indonesian Throughflow
Aiki H., Matthews J., Lamb K. – **paper # 425**

12:00 Contribution of Pacific wind stress to multi-decadal variations in upper-ocean heat content and sea level in the tropical South Indian Ocean
Schwarzkopf F. U., Boening C. W. – **abstract # 90**

12:15 Forcing of Indian Ocean dipole on the interannual variations of the tropical Pacific ocean: roles of the Indonesian Throughflow
Wang J., Yuan D., Xu P., Zhou H., Zhao X., Luan Y., Zheng W., Yu Y. – **abstract # 456**

12:30–14:00 LUNCH PERUI and V1

MONDAY, 23 APRIL 2012 14:00–15:30

SISIA auditorium
PLENARY SESSION 14:00–14:30

AMS ICSHMO Named session
Chair: A. Grimm

14:00 In honor of Pedro L. Silva Dias. The theory and observations of multiscaling characteristics of the South American Monsoon System
Silva Dias P. L. (Introduction by Grimm A.)

SISIA auditorium
PARALLEL SESSION A 14:30–15:30

S08 Climate change in Southern Hemisphere
Chair: R. Dargaville

14:30 Some aspects of the annual surface temperature cycle in the Southern Hemisphere
Bye J., Fraedrich K., Kirk E., Schubert S. – **abstract # 219**

14: 45 CSIRO-MK3.6.0 Southern Hemisphere heat and momentum change under uniquely forced attribution and detection experiments
Collier M., Kwang-Yul K., Hirst T., Rotstayn L., Jeffrey S. – **abstract # 466**

15:00 Southeast Australian autumn rainfall reduction: A climate-change induced poleward expansion of atmospheric circulation
Cowan T., **Cai W. – abstract # 209**

15:30–16:30
COFFEE BREAK / POSTER SESSION

EMAN room
PARALLEL SESSION B 14:45–15:30

S04 Intraseasonal Variability and Prediction in the Southern Hemisphere
Chair: M. Wheeler

14:45 Teleconnections between South America and South Africa in intraseasonal time scales
Grimm A., Reason C. – **abstract # 414**

15:00 The role of antecedent soil moisture conditions on climate variability over southern Africa
Mdoka M., Tadross M., Hewitson B., – **abstract # 379**

15:15 Spatial patterns of tropical OLR intraseasonal anomalies, as revealed by a self-organizing map. Influence on southern Africa rainfall
Oettli P., Tozuka T., Izumo T., Yamagata T.
– **abstract # 57**

15:30–16:30
COFFEE BREAK / POSTER SESSION

KANAKE room
PARALLEL SESSION C 14:45–15:30

S09 Inter-ocean exchanges / Indo-Pacific
Chair: A. Biastoch

14:45 The dynamics of Tasman leakage in a high-resolution model
Van Sebille E., England M. – **abstract # 334**

15:00 Unravelling the influence of the Southern Hemisphere winds on the Agulhas current system
Durgadoo J., Biastoch A. – **abstract # 112**

15:15 Greater Agulhas response to shifts in the Indian Ocean wind field
Loveday B., Reason C., Penven P. – **abstract # 118**

15:30–16:30
COFFEE BREAK / POSTER SESSION

MONDAY, 23 APRIL 2012 16:30–17:45

SISIA auditorium
PARALLEL SESSION A 16:30–17:30

S08 Climate change in Southern Hemisphere

Chair: M. Collier

16:30 Impacts of Gravity Wave Drag Parameterizations on Antarctic Ozone Hole Simulations
Dargaville R., Morgenstern O. – **abstract # 278**

16:45 Rainfall variability in South Australia – Highlighting the influence of Hadley circulation and sub-tropical ridge
Ewenz C., Kamitakahara R. – **abstract # 281**

17:00 Changes and projections in the annual cycle of Southern Hemisphere weather systems
Frederiksen J., Frederiksen C., Osbrough S., Sisson J.
– **abstract # 291**

17:15 Zonal analysis of the kinect energy associated with the storm tracks between the subpolar and subtropical regions in the Southern Hemisphere
Freitas R.-A., Souza R., Justino F. – **abstract # 424**

EMAN room
PARALLEL SESSION B 16:30–17:30

S17 Climate change in developing South Hemisphere Island Countries

PACCSAP sponsored session

Chair: B. Murphy

16:30 A major new scientific report on Climate Change in the Pacific
Power S. Hennessy K., Cambers G., Rischbieth J., Baldwin S., Brown J., Collins D., Colman R., Irving D., Katzfey J.
– **abstract # 29**

16:45 Past, Current and Future Climate for Islands in the South West Pacific and impacted by the South Pacific Convergence Zone
Kumar R., Brown J. R. – **abstract # 79**

17:00 Past, current and future climate for islands in the far Western Pacific and impacted by the West Pacific monsoon
Hiriasia D., Irving D. – **abstract # 77**

17:15 Past, current and future climate for Pacific Islands on or north of the equator and impacted by the Intertropical Convergence Zone
Ngemaes M., Murphy B. – **abstract # 78**

KANAKE room
PARALLEL SESSION C 16:30–17:30

S09 Inter-ocean exchanges Drake passage / Southern Ocean

Chair: A. Biastoch

16:30 **INVITED** Sustained monitoring of the Southern Ocean at Drake Passage: past achievements and future priorities
Meredith M., Woodworth P., Chereskin T., Marshall D., Jullion L., King B., Provost C., Hughes C., Donohue K., Naveira Garabato A. – **abstract # 65**

17:00 Oceanic teleconnection between the Southern Ocean and other basins
Masuda S., Awaji T., Sugiura N., Ishikawa Y., Kawano T.
– **abstract # 14**

17:15 Coupled ocean-atmosphere above Brazil-Malvinas Confluence region based on data collected in situ, satellite and numerical model
Casagrande F., Souza R., Pezzi L. – **abstract # 443**

Pérui poster area
PLENARY SESSION 17:30–17:45

S17 Pacific Australia Climate Change Science and Adaptation Planning Program (PACCSAP)

PACCSAP sponsored session

17:30 Advancing the understanding of climate change science in Pacific Island Countries and East Timor
Cook G., Cambers G. – **abstract # 76**

17:45–19:00 POSTER SESSION / ICEBREAKER PACCSAP SPONSORED

TUESDAY, 24 APRIL 2012 8:30–10:00

SISIA auditorium
PARALLEL SESSION A 8:30–10:00

S08 Climate change in Southern Hemisphere
Chair: R. Frouin

8:30 Climate Change and Phytoplankton Diversity in the Southern Ocean
Frouin R., Ueyoshi K., Alvain S., Loisel H.
– abstract # 460

8:45 Presenting the effect of key climate drivers on rainfall to Southern Australian Agriculturalists
Grey D., Sounness C. **– abstract # 370**

9:00 Global wave climate change from a community ensemble of wind-wave projections
Hemer M., **Greenslade D.**, Fan Y., Mori N., Semedo A., Swail V., Wang X. **– abstract # 322**

9:15 Impact of the Indian Ocean high pressure system on winter precipitation over Western and Southwestern Australia
Iqbal M. J., Hameed S. , Rehman S., Collins D.
– abstract # 17

9:30 Climate Change in apparent temperature indices over Australia
Jacobs S., Pezza A., Bye J., Barras V. **– abstract # 211**

9:45 Spectral analysis and spectral trends of sea surface height in the southern Hemisphere
Krieger S., Polito P. – abstract # 430

10:00–10:30 COFFEE BREAK

EMAN room
PARALLEL SESSION B 8:30–10:00

S04 Intraseasonal Variability and Prediction in the Southern Hemisphere
Chair: A. Grimm

8:30 **INVITED** A dynamical ocean feedback mechanism for the Madden-Julian Oscillation
Matthews A., Webber B., Heywood K., Stevens D.
– abstract # 73

9:00 The dynamics of subtropical anticyclones
Schwendike J., Reeder M., Jakob C. **– abstract # 199**

9:15 Atmospheric circulation associated a wet and dry spells in the Mantaro valley, Perù
Sulca J., Silva Y., Takahashi K., Mosquera K.
– abstract # 438

9:30 Oceanic response to the Madden Julian oscillation in the Southern Hemisphere
Vialard J., Duvel J.-P., Lengaigne M., Jayakumar A., Sengupta D., Gnanaseelan C. **– abstract # 459**

9:45 Intraseasonal tropical atmospheric variability associated to the two flavors of El Niño
Gushchina D., Dewitte B. **– abstract # 109**

10:00–10:30 COFFEE BREAK

TUESDAY, 24 APRIL 2012 8:30–10:00

KANAKE room
PARALLEL SESSION C 8:30–10:00

S10 Ocean observing systems and operational oceanography

Chair: A. Schiller

8:30 **INVITED** Australia's Integrated Marine Observing System - Achievements and Future Challenges
Hill K., Moltmann T., Proctor R. – **abstract # 50**

9:00 Southern ocean surface salinity changes over the last two decades
Morrow R., Kestenare E., Dencausse G. – **abstract # 251**

9:15 The Southern ocean observing system: towards implementation
Newman L., Meredith M. P., Gunn J., Sparrow M., Urban E., Rintoul S. R., Speer K., Hofmann H., Summerhayes C., – **abstract # 153**

9:30 The EUMETSAT ocean and sea ice saf and its products over the Southern Hemisphere
Guevel G., Le Borgne P., Eastwood S., Stoffelen A., Piolle J. F., Tonboe R. – **abstract # 116**

9:45 Physical variability of the Eastern Australian shelf from an integrated marine observation system
Schaeffer A., Roughan M., Morris B., Rossi V.
– **abstract # 371**

10:00–10:30 COFFEE BREAK

TUESDAY, 24 APRIL 2012 10:30–12:30

SISIA auditorium
PARALLEL SESSION A 10:30–12:30

S08 Climate change in Southern Hemisphere
Chair: R. Frouin

10:30 Anthropogenic Impact on Agulhas Leakage
Biastoch A., Boening C. W. – **abstract # 34**

10:45 Regime dependent changes in monsoon precipitation over tropical Australia and the wider region
Moise A., Colman R., Hanson L. – **abstract # 359**

11:00 Projected seasonality in omega saturation state in the western tropical Pacific and its potential impacts on coral reef health by 2100
Nandini S., Des Combes H., Lenton A., Lima I., Kuchinke M., Holland E., Doney S. – **abstract # 333**

11:15 Assessment of climate variability and change in East Africa in using high resolution models, HIRHAM5
Osima S., Hewitson B., Stendel M. – **abstract # 249**

11:30 Impacts of land use changes in southern South America climate for extreme climatic periods
Pessacg N., Solman S.– **abstract # 115**

11:45 Seasonal influence of zonal wave three on Antarctic surface temperature
Raphael M. – abstract # 442

12:00 Trends in climate extremes of rainfall and temperatures in the Mantaro Valley
Silva Y., Trasmonte G. – **abstract # 444**

12:15 Estimating the effects of Eastern and Central Pacific ENSO upon the observed freshening trends of the western Tropical Pacific Ocean
Singh A., Delcroix T. – **abstract # 206**

12:30–14:00 LUNCH

EMAN room
PARALLEL SESSION B 10:30–12:00

S04 Intraseasonal Variability and Prediction in the Southern Hemisphere
Chair: A. Grimm

10:30 An analysis of the cloud phase over the Southern Ocean using A-train
Huang Y., Siems S., Manton M., Protat A., Delanoë J.
– **abstract # 86**

10:45 Comparison of split flow blocking indices and a cluster state representation of blocking in the Southern Hemisphere
Risbey J., O'Kane T., Franzke C., Monselesan D.
– **abstract # 280**

11:00 Characteristics of intraseasonal oscillation during two contrasting monsoon years
Varikoden H., Krishnakumar K. – **abstract # 204**

S01 Monsoon Systems in the Southern Hemisphere / South American Moonsoon
Chair: A. Grimm

11:15 **INVITED** Model simulations of the evolution and variability of the South American Monsoon System (SAMS)
Berbery E. H. – abstract # 388

11:45 Aerial rivers and lakes: looking at large scale moisture transport over South America and its relation to Amazonia
Arraut J., Nobre C., Marengo J., Barbosa H.
– **abstract # 409**

TUESDAY, 24 APRIL 2012 10:30–12:30

KANAKE room
PARALLEL SESSION C 10:30–12:30

S10 Ocean observing systems and operational oceanography

Chair: J. Vialard

10:30 **INVITED** Recent development and applications of ocean state estimation
Lee T. – abstract # 185

11:00 PI-GOOS - From Ocean Observations to Societal Benefit in the SW Pacific
Wiles P., D'Adamo N., Piotrowicz S., Diamond H., Dexter P., Webb A., Ostrander C. – **abstract # 325**

11:15 Global developments in operational oceanography and Southern Hemisphere applications
Schiller A. – abstract # 32

S17 Climate change in developing South Hemisphere Island Countries

PACCSAP sponsored session

Chair: B. Murphy

11:30 **INVITED** Providing climate projections for individual Pacific Island Nations - Part I: Limitations imposed by climate model biases
Brown J. N., Brown J. R., Hennessy K., Irving D., Muir L., Murphy B., Perkins S., Risbey J., Sen Gupta A., Zhang X.
– abstract # 126

11:50 **INVITED** Providing Climate Projections for Individual Pacific Island Nations, Part 2: Current Progress and Future Directions
Irving D., Hennessy K., Brown J. N., Brown J. R., Sen Gupta A., Perkins S., Muir L., Rischbieth J.
– abstract # 39

12:15 An updated assessment of land-based rainfall trends across the island nations of the Western Pacific
McGree S., Collins D., Akapo A., Campbell B., Diamond H., Fa'anunu O., Hiriasia D., Hugony S., Hutchinson R. et al. **– abstract # 43**

12:30–14:00 LUNCH PERUI and V1

TUESDAY, 24 APRIL 2012 13:45–15:30

SISIA auditorium
PLENARY SESSION 13:45–14:15

S08 Climate change in Southern Hemisphere
Chair: M. Collier

13:45 **INVITED** On the evolution of climate science over the last 30 years, as reflected in the ICSHMO conferences
Karoly D. – **abstract # 465**

SISIA auditorium
PARALLEL SESSION A 14:15–15:45

S08 Climate change in Southern Hemisphere
Chair: M. Collier

14:15 **INVITED** Evaluating the radiative impact of Southern Hemisphere dry season forest fire aerosol emissions in short multiscale climate model forecasts
Somerville R., Kooperman G., Pritchard M.
– **abstract # 169**

14:45 Spatial changes in the annual cycle of atmospheric pressure across the Southern Hemisphere in recent decades.
Stephens D. J., Evans F., Van Loon H. – **abstract # 452**

15:00 Joint distribution of daily temperature and precipitation in Argentina
Tencer B., Rusticucci M. – **abstract # 200**

15:15 Mechanisms associated with the East Africa severe drought of 2010-11
Thiaw W. – **abstract # 461**

15:30 The impact of climate change on the global energetics
Veiga J.A., Ambrizzi T., Pezza A. – **abstract # 136**

15:30–16:30
COFFEE BREAK / POSTER SESSION

EMAN room
PARALLEL SESSION B 14:30–15:30

S01 Monsoon Systems in the Southern Hemisphere / South American Moonsoon
Chair: A. Grimm

14:30 Changes in precipitation variability over South America from both CMIP3 and CMIP5 models
Vera C., **Junquas C.,** Li L., Le Treut H., Lejeune Q.
– **abstract # 305**

14:45 Influence of decadal variability of the Atlantic and Pacific Oceans on South American Monsoon
Krishnamurthy V. – **abstract # 421**

15:00 Evidence of ENSO forced late Holocene failure of the Northwest Australian monsoon
McGowan H., Marx S., Moss P., Hammond A.
– **abstract # 229**

15:15 Managing climate variability in agriculture: predicting the onset of the North Australian wet season
Wheeler M., Drosdowsky W. – **abstract # 215**

15:30–16:30
COFFEE BREAK / POSTER SESSION

TUESDAY, 24 APRIL 2012 14:30–16:30

KANAKE room
PARALLEL SESSION C 14:30–16:00

S17 Climate change in developing South Hemisphere Island Countries

PACCSAP sponsored session

Chair: S. Power

14:30 **INVITED** Regional climate simulations over the South Pacific: results for current and future climate
Katzfey J., Chattopadhyay M., McGregor J., Nguyen K. **– abstract # 364**

15:00 Impacts of ENSO on South Pacific Islands and their representation in CMIP3 and CMIP5 models
Murphy B. – abstract # 216

15:15 Interannual variability of the Papua New Guinea monsoon
Inape K., Smith I., Moise A. – **abstract # 38**

15:30 The role of the Pacific-Indian ocean warming pattern on climate change simulated for the Australasian region
Watterson I. – abstract # 188

15:45 PCCSP climate futures web-tool for Asia-Pacific
Pulehetoa-Mitiepo R., Clarke J. **– abstract # 159**

16:00–16:30 COFFEE BREAK / POSTER

TUESDAY, 24 APRIL 2012 16:30–17:30

SISIA auditorium
PARALLEL SESSION A 16:30–17:30

S11 Southern Hemisphere Subtropical Convergence Zones: SPCZ, SACZ, SICZ

PACCSAP sponsored session

Chair: M. Collier

16:30 **INVITED** Asymmetric events of the South Pacific Convergence Zone (SPCZ)
Cai W., Lengaigne M., Borlace S., Cowan T.
– abstract # 457

17:00 Influence of the Brazilian plateau orography over austral summer precipitation in South America
Junquas C., Vera C., Li L., Le Treut H. **– abstract # 143**

17:15 Interannual and long-term variability of the South Pacific Convergence Zone
Lengaigne M., Vincent E., Jourdain N., Menkes C., Thibaut S., Marchesiello P., Lefevre J. **– abstract # 290**

17:30 END OF THE SESSIONS

EMAN room
PARALLEL SESSION B 16:30–17:15

S01 Monsoon Systems in the Southern Hemisphere / Australian and African Moonsoon

Chair: M. Wheeler

16:30 **INVITED** Decadal variability of Asian-Australian monsoon-ENSO-TBO relationships
Meehl G., Arblaster J. **– abstract # 453**

17:00 Observed and simulated anomalous rainfall and circulation patterns during the Australian monsoon
Ramasamy S., Moise A., Colman R., Hanson L.
– abstract # 259

17:30 END OF THE SESSIONS

WEDNESDAY, 25 APRIL 2012 8:30–10:00

SISIA auditorium
PARALLEL SESSION A 8:30–10:00

S02 Tropical cyclones: past, present and future

Chair: M. Wheeler

8:30 **INVITED** Severe weather forecasting disaster risk reduction and demonstration project (SWFDDP) and tropical cyclones
Ready S. – abstract # 463

9:00 Seasonal forecasting of tropical cyclone activity in the tropical Pacific using a dynamical coupled model
Shelton K., Kuleshov Y., Hendon H. – **abstract # 356**

9:15 Global impact of tropical cyclones onto the marine ecosystem
Menkes C., Levy M., Lengaigne M., Bopp L., Vincent E., Ethe C., Madec G., Jullien S. – **abstract # 355**

9:30 The influence of ENSO on inter-annual variability of tropical cyclones in the Southwest Pacific region
Devi V., Jacot Des Combes H., Hemstock S., Murphy B., Chand S. – **abstract # 150**

9 :45 A Southwest Pacific Tropical Cyclone climatology and linkages to ENSO
Diamond H., Lorrey A., Renwick J. – **abstract # 138**

10:00–10:30 COFFEE BREAK

EMAN room
PARALLEL SESSION B 8:30–10:00

S12 Southern Hemisphere Ocean circulation and climate

Chair: R. Morrow

8:30 **INVITED** Variability and trends in Southern Ocean surface waters and possible implications for global climate
England M. – abstract # 416

9:00 The response of the Antarctic Circumpolar Current to decadal wind stress changes in a hierarchy of ocean model simulations
Patara L., Biastoch A., **Boening C. W. – abstract # 380**

9:15 Influence of winds and SST on summer Chl-*a* in the Southern Ocean
Carranza M., Gille S. – **abstract # 316**

9:30 Analysis of the seasonal characteristics of mixed layer stratification in the Southern ocean from model and *in-situ* observations: a rigorous test for upper ocean physics models
Chang N., Swart S., Monteiro P. – **abstract # 397**

9:45 Eddy compensation of the enhanced sea-to-air CO2 flux during positive phases of the SAM
Dufour C., Le Sommer J., Gehlen M., Orr J. C., Simeon J., Molines J.-M., Mainsant G., Barnier B. – **abstract # 95**

10:00–10:30 COFFEE BREAK

WEDNESDAY, 25 APRIL 2012 8:30–10:00

KANAKE room
PARALLEL SESSION C 8:30–10:00

S11 Southern Hemisphere Subtropical Convergence Zones: SPCZ, SACZ, SICZ

PACCSAP sponsored session

Chair: S. Power

8:30 Interpreting precipitation changes between present-day and mid-Holocene in the South Pacific and South Atlantic Convergence Zones
Lintner B., Mantsis D., Broccoli A. – **abstract # 257**

8:45 A multi-scale framework for the origin and variability of the South Pacific Convergence Zone
Matthews A. – abstract # 75

9:00 Changing SST gradients and projected drying of the South Pacific Convergence Zone in bias-corrected climate model experiments
Widlansky M., Timmermann A., Schneider N., McGregor S., Stein K., England M. **– abstract # 335**

9:15 Changes in the South Pacific Convergence Zone in IPCC AR4 coupled model projections of future climate
Brown J. R., Moise A., Delage F., Power S.
– abstract # 26

9:30 Low-level wind, moisture, and precipitation relationships near the South Pacific Convergence Zone in CMIP3 models
Niznik M., Lintner B. **– abstract # 83**

9:45 Vertical structures of diabatic heating in the SPCZ, SZCZ, and SICZ
Zhang C., Ling J. **– abstract # 97**

10:00–10:30 COFFEE BREAK

WEDNESDAY, 25 APRIL 2012 10:30–12:30

SISIA auditorium
PARALLEL SESSION A 10:30–12:30

S02 Tropical cyclones: past, present and future

Chair: H. Diamond

10:30 INVITED Tropical cyclones and climate change in the Southern Hemisphere
Walsh K. – abstract # 279

11:00 Dynamically downscaled simulations of Australian region tropical cyclones - a multi-model approach for the Australian region
Abbs D., Lavender S., Rafter T. **– abstract # 117**

11:15 Tropical cyclogenesis on an aquaplanet
Ballinger A., Held I., Zhao M. **– abstract # 392**

11:30 Variability in projected tropical cyclone activity in GCM ensembles and a regional climate model
Chattopadhyay M., Abbs D. – **abstract # 84**

11:45 Detection of tropical cyclones in the Southern Hemisphere from a global 50 kms ARPEGE simulation
Chauvin F. – abstract # 464

12:00 Reanalysis of tropical cyclone : ORAMA - VEENA - TAHMAR
Laurent V. – abstract # 127

12:15 Tropical Cyclogenesis Conditions in the South-Western Indian Ocean
Roux F., **Meetoo C. – abstract # 28**

AFTERNOON OFF

EMAN room
PARALLEL SESSION B 10:45–12:30

S12 Southern Hemisphere Ocean circulation and climate

Chair: R. Morrow

10:45 Regionally contrasted mixed layer depth response to the SAM
Mainsant G., Le Sommer J., Dufour C., Molines J.-M., Barnier B., Gallee H. – **abstract # 374**

11:00 Synchronous intensification and warming of Antarctic Bottom Water outflow from the Weddell Gyre
Meredith M., Gordon A., Naveira Garabato A., Abrahamsen P., Huber B., Jullion L., Venables H.
– abstract # 132

11:15 Impact of Ocean Acidification on carbonate production by the large benthic foraminifer Marginopora vertebralis in the coastal waters of Fiji
Naidu R., Erez J., Pohler S., Jacot des Combes H., Maata M. – **abstract # 156**

11:30 The non-equivalent barotropic structure of the Antarctic Circumpolar Current
Phillips H., Bindoff N. – **abstract # 467**

11:45 The relationship between wind stress and Ekman currents in the Antarctic Circumpolar Current
Roach C., Phillips H., Bindoff N., Rintoul S.
– abstract # 23

12:00 Biogeochemistry implementation in a regional ocean circulation model at the Brazil-Malvinas confluence region: analysis for 1987-1996 period
Schultz C., Pezzi L., Ferreira W. **– abstract # 423**

12:15 Southern ocean water masses numerical investigation using the regional ocean model system -ROMS with a sea ice/ice shelf parametrization module
Tonelli M., Wainer I. **– abstract # 298**

AFTERNOON OFF

WEDNESDAY, 25 APRIL 2012 10:30–11:45

KANAKE room
PARALLEL SESSION C 10:30–11.45

S07 Climate predictability in the Southern Hemisphere

Chair: M. Pontaud

10:30 **INVITED** Seasonal prediction to support climate change adaptation - capacity building in Pacific Island Countries and East Timor
Jones D., Charles A., Cottril A., Lim E.-P., Langford S., De Wit R., Shelton K., Hendon H., Kuleshov Y., Pahalad J.
– abstract # 44

11:00 Bias correction and post-processing under climate change
Vannitsem S. - abstract # 33

11:15 Can a better initialization method improve the predictive skill of Southern Ocean Sea Ice at decadal time scales?
Zunz V., Goosse H., Jungclaus J., Dubinkina S., Sallaz-Damaz Y. **– abstract # 442**

11:30 Use of seasonal forecasts in New Caledonia: a challenge for downscaling
Leroy A., Céron J.-P., Déqué M., Charon I.
– abstract # 361

11:45 END

AFTERNOON OFF

THURSDAY, 26 APRIL 2012 8:30–10:00

SISIA auditorium
PARALLEL SESSION A 8:30–10:00

S05 Interannual climate variability and Southern Hemisphere teleconnections

Chair: R. Allan

8:30 Seasonality and decadal variability of Central Pacific and Eastern Pacific teleconnection in SW Pacific
Barbero R., Moron V. – **abstract # 265**

8:45 Extreme oceanic and atmospheric anomalies in the South Pacific and Western Antarctica associated with the 2009–10 El Niño
Boening C., Lee T. – **abstract # 210**

9:00 Teleconnection pathways of ENSO and the IOD and the mechanisms for impacts on Australian rainfall
Van Rensch P., **Cai W.,** Cowan T., Hendon H.
– **abstract # 71**

9:15 Extreme discharge and climate variability in the upper Solimões River (Western Amazon basin)
Espinoza J. C.,, Ronchail J., Guyot J.-L., Junquas C., Vauchel P., Santini W., Lavado W., Drapeau G., Pombosa R. – **abstract # 310**

9:30 Southern Hemisphere response to warm pool El Niño events in a future climate
Hurwitz M., Newman P., Oman L., Molod A.
– **abstract # 141**

9:45 Seasonal zonal asymmetries in the Southern Annular Mode and their impact on regional climate anomalies
Jones J., Fogt R., Renwick J. – **abstract # 170**

10:00–10:30 COFFEE BREAK

EMAN room
PARALLEL SESSION B 8:30–10:00

S12 Southern Hemisphere Ocean circulation and climate

Chair: A. Biastoch

8:30 **INVITED** Interannual variations of the Seychelles dome
Tozuka T., Yokio T., Yamagata T. – **abstract # 52**

9:00 Water property changes along WOCE repeat sections in the Australian Antarctic Basin between the 1990's and recent years
Van Wijk E., Rintoul S. – **abstract # 260**

9:15 ENSO controls on Tropical wave climate: Present and Future
Lengaigne M., **Vega A.**, Menkes C., Andrefouet S., Queffeulou P., Ardhuin F., Vincent E., Marchesiello P., Legendre R. – **abstract # 201**

9:30 Upper ocean circulation and mixing in the Southern Ocean
Zajaczkovski U., Gille S. – **abstract # 326**

9:45 Dynamics of the Durban Cyclonic Eddy and the possible consequences of climate change
Guastella L., Roberts M., Shillington F. – **abstract # 359**

10:00–10:30 COFFEE BREAK

THURSDAY, 26 APRIL 2012 8:30–10:15

KANAKE room
PARALLEL SESSION C 8:30–10:15

S13 Southern Hemisphere Island weather and oceanography: past and future

Chair: A. Matthews

8:30 New-Caledonia's climate of the future
Cavarero V., Leroy A., Ganachaud A., Lefèvre J., Menkes C., Lengaigne M., Peltier A. **– abstract # 256**

8:45 Wind shear and the Southern Ocean buffer layer
Hande L., Siems S., Manton M. **– abstract # 131**

9:00 Annual extreme sea-level climatologies for Pacific and Indian Ocean Island Nations
Hoeke R., McInnes K. **– abstract # 320**

9:15 Transport and dispersal of gas and aerosols from passive degassing of Vanuatu volcanoes
Lefèvre J., Frouin R., Marchesiello P., Menkès C., Bani P., Rodier M. **– abstract # 336**

9:30 Air-sea energy fluxes over a coral reef, Heron Reef, Great Barrier Reef, Australia
MacKellar M., McGowan H., Phinn S. – **abstract # 151**

9:45 Climate-based models for understanding and forecasting dengue epidemics
Descloux E., **Mangeas M.,** Menkes C., Lengaigne M., Leroy A., Tehei T., Teurlai M., Gourinat A.-C., Benzler J., Pfannstiel A. **– abstract # 357**

10:00 Understanding storm surge risk in Fiji in the South Pacific due to climate variability and change
McInnes K., O'Grady J., Hoeke R., Walsh K., Colberg F. **– abstract # 489**

10:15–10:30 COFFEE BREAK

THURSDAY, 26 APRIL 2012 10:30–12:30

SISIA auditorium
PARALLEL SESSION A 10:30–12:00

S05 Interannual climate variability and Southern Hemisphere teleconnections

Chair: C. Ummenhofer

10:30 On the role of Eddies in the Southern Ocean temperature response to the Southern Annular Mode
Le Sommer J., Zika J., Molines J.-M., Barnier B., Dufour C., Penduff T., Vivier F. – **abstract # 61**

10:45 The effect of the South Pacific Convergence Zone on the termination of El Niño events and the meridional asymmetry of ENSO
McGregor S., Timmermann A., Schneider N., Stuecker M., England M. – **abstract # 48**

11:00 On the impacts of the South Atlantic Ocean dipole on regional precipitation
Nnamchi H., Li J. – **abstract # 376**

11:15 Key synoptic components of cool season rainfall across Southern Australia: relative contributions, variability and trends
Pook M., Risbey J., McIntosh P. – **abstract # 212**

11:30 Comparing ENSO properties in two versions of the Australian Community Climate and Earth System Simulator (ACCESS) coupled model
Rashid H., Bi D., Dix M., Hirst A., Marsland S., O.Farrell S., Sullivan A., Sun Z., Uotila P., Zhou X.– **abstract # 358**

11:45 Southern African climate variability
Reason C. – **abstract # 246**

12:00 Large-scale patterns linked to low-frequency variability of daily intensity of extreme rainfall for spring in Argentina
Robledo F., Penalba O., Vera C.– **abstract # 296**

12:30–14:00 LUNCH PERUI and V1

EMAN room
PARALLEL SESSION B 10:30–12:30

S03 Other severe weather systems: MCCs, cut off lows

Chair: T. Ambrizzi

10:30 **INVITED** Cyclonic developments over South Atlantic Ocean: present and future climate
Ambrizzi T., Reboita M., Rocha R. – **abstract # 315**

11:00 The influence of convective systems on the diurnal cycle of precipitation over Tropical South America
Barros S., Oyama M. – **abstract # 237**

11:15 Island effects on contrasted rainfall regimes over Society Islands during the wet season
Chaboureau J.P., Ortega P., Bielli S. – **abstract # 303**

11:30 The three-dimensional distribution of clouds around Southern Hemisphere extratropical cyclones
Govekar P., Jakob C., Reeder M., Haynes J.
– **abstract # 213**

11:45 The dynamics of blocking anticyclones and the connection to heatwaves in Southern Australia and rainfall in Northeastern Australia
Parker T., Reeder M., Berry G. – **abstract # 164**

12:00 New developments on explosive and cut-off cyclones based on energetics and thermal properties
Pezza A., Black M., Garde L., Veiga A., Simmonds I., Davidson N. – **abstract # 85**

12:15 Cut-off low predictability in Southern South America: a case study
Saucedo M., Ruiz J., Campetella C. – **abstract # 276**

12:30–14:00 LUNCH PERUI and V1

THURSDAY, 26 APRIL 2012 10:30–12:30

KANAKE room
PARALLEL SESSION C 10:30–12:30

S15 Special Session: ACRE - Atmospheric Circulation Reconstructions over the Earth

Chair: P. Frayssinet

10:30 The International Atmospheric Circulation Reconstructions over the Earth (ACRE) Initiative
Allan R. – abstract # 18

10:45 **INVITED** ACRE Pacific: inception, current work and future directions
Lorrey A., Lefale P., Diamond H., Lutebacher J., Chappell P., Malsale P., Allan R. – **abstract # 347**

11:15 Reconstructing southern weather from the archives of English mariners
Brohan P. – abstract # 89

11:30 Developing the sparse input reanalysis for climate applications (SIRCA) 1850-2012
Compo G., Whitaker J., Sardeshmukh P., Giese B. – **abstract # 433**

11:45 South Pacific historical environmental data recovery - the SPHERE project
Wilkinson C. – abstract # 15

12:00 Rescuing and securing climate data in Oceania
Hutchinson R., Campbell B., Collins D., Howard A., **Martin D.– abstract # 105**

12:15 Estimating Bellingshausen Sea winter sea-ice extent from 20th Century Reanalysis winds
Marshall G. – abstract # 113

12:30–14:00 LUNCH PERUI and V1

THURSDAY, 26 APRIL 2012 14:00–15:30

SISIA auditorium
PLENARY SESSION 14:00–14:30

S00 INVITED PLENARIES
Chair M. Pontaud

14 :00 **INVITED** The evolving state of the Southern Ocean
Bindoff N.

SISIA auditorium
PARALLEL SESSION A 14:30–15:30

S05 Interannual climate variability and Southern Hemisphere teleconnections
Chair M. Pontaud

14:30 Southern Hemisphere atmospheric circulation: role of teleconnections, sea surface temperatures, horizontal resolution, physical parameterizations and topography on the simulated climate in a Global Climate Model
Saurral R., Camilloni I., Ambrizzi T. – **abstract # 191**

14:45 The impact of the South Pacific Convergence Zone on the phase transition of ENSO - Insights from CGCM results
Stuecker M., Timmermann A., McGregor S., Jin F. F.
– **abstract # 68**

15:00 The role of Indian Ocean SST for South American climate
Taschetto A., Ambrizzi T., Ummenhofer C.
– **abstract # 295**

15:15 A CART analysis of south-east Australia precipitation regimes from relationships with sub-tropical ridge variability
Whan K., Timbal B., Raupach M., Lindesay J.
– **abstract # 285**

15:30–16:30
COFFEE BREAK / POSTER SESSION

EMAN room
PARALLEL SESSION B 14:45–15:30

S03 Other severe weather systems: MCCs, cut off lows
Chair: T. Ambrizzi

14:45 Synoptic analysis of mesoscale convective systems occurred in Parana river basin in 2011
Silveira V., Teixeira M. – **abstract # 297**

15:00 Synoptic-scale patterns associated with extreme rainfall events in Southern and Southeastern Brazil occurred between 1979 and 2004
Teixeira M., Satyamurty P. – **abstract # 114**

15:15 The contribution of mesoscale convective complexes to Southern Africa summer rainfall
Blamey R., Reason C. – **abstract # 142**

15:30–16:30
COFFEE BREAK / POSTER SESSION

KANAKE room
PARALLEL SESSION C 14:45–15:30

S16 Special Session: Southwest Pacific Ocean Circulation and Climate Experiment (SPICE)
Chair: S. Cravatte

14:45 Achieved and expected scientific advances from the Southwest Pacific Ocean Circulation and Climate Experiment (SPICE)
Ganachaud A., SPICE contributors – **abstract # 108**

15:00 **INVITED** The circulation of the Southwest Pacific Ocean
Schiller A., Ridgway K. – **abstract # 263**

15:30–16:30
COFFEE BREAK / POSTER SESSION

THURSDAY, 26 APRIL 2012 16:30–17:30

SISIA auditorium
PARALLEL SESSION A 16:30–17:15

S05 Interannual climate variability and Southern Hemisphere teleconnections

Chair M. Pontaud

16:30 A comparison of classification methods for identifying relationships between the Southern Annular mode and the Australian hydroclimate
Tozer C., Kiem A., Verdon-Kidd D. **– abstract # 345**

16:45 The sensitivity of atmospheric blocking in the Australian region to local and remote SST, regional temperature gradients, and topography
Ummenhofer C., McIntosh P., Pook M., Risbey J.
– abstract # 300

17:00 Millennial-scale insights into ENSO activity and teleconnections from kauri tree rings
Fowler A., Boswijk G., Lorrey A. **– abstract # 125**

17:30–19:00 ICSHMO COCKTAIL

KANAKE room
PARALLEL SESSION C 16:30–17:15

S16 Special Session: Southwest Pacific Ocean Circulation and Climate Experiment (SPICE)

Chair: S. Cravatte

16:30 Circulation of the Coral Sea from mapped ARGO trajectories
Kessler W., Cravatte S. **– abstract # 208**

16:45 Mean and seasonal variations of the ocean surface circulation in the Coral Sea
Sudre J., **Maes C. – abstract # 111**

17:00 Q-IMOS monitoring of the western boundary currents of the Coral Sea the Great Barrier Reef
Steinberg C., McAllister F., Rigby P., Brinkman R., Luethcford J., Brinkman G., Bartlett C., Herzfeld M.
– abstract # 362

17:30–19:00 ICSHMO COCKTAIL

FRIDAY, 27 APRIL 2012 8:30–10:00

SISIA auditorium
PLENARY SESSION 8:30–9:00

S06 Interdecadal climate variability and Southern Hemisphere impacts

Chair: A. Biastoch

8:30 **INVITED** The mid-1970s climate shift in the Pacific and the relative roles of forced versus inherent decadal variability
Meehl G., Hu A., Santer B., Teng H., Arblaster J.
– **abstract # 454**

SISIA auditorium
PARALLEL SESSION A 9:00–10:00

S06 Interdecadal climate variability and Southern Hemisphere impacts

Chair: A. Biastoch

9:00 Changes in the Southern Hemisphere Hadley Cell and attribution
Nguyen H., Timbal B., Arblaster J., Syktus J., Wong K.
– **abstract # 342**

9:15 Recent changes in atmospheric circulation over New Zealand and their impact on temperature trends in the marlborough vineyard region
Sturman A., Quénol H. – **abstract # 106**

9:30 Factors affecting the interannual variability of Australian Rainfall
Baines P. – **abstract # 287**

9:45 Analysis of impacts of ENSO and PDO phases on maximum and minimum extremes temperature in Southern Brazil
Firpo M., Sansigolo C. – **abstract # 339**

10:00–10:30 COFFEE BREAK

EMAN room
PARALLEL SESSION B 9:15–10:00

S03 Other severe weather systems: MCCs, cut off lows

Chair: T. Ambrizzi

9:15 Fronts and Precipitation in Observations and Climate Models
Catto J., Berry G., Jakob C., Nicholls N. –**abstract #239**

9:30 Correlation between cutoff-low systems in the Southern Hemisphere and SAM and ENSO
Reboita M., Garreaud R., Nieto R., Da Rocha R., Gimeno L., Ambrizzi T. – **abstract # 178**

10:00–10:30 COFFEE BREAK

KANAKE room
PARALLEL SESSION C 9:15–10:00

S16 Special Session: Southwest Pacific Ocean Circulation and Climate Experiment (SPICE)

Chair: A. Ganachaud

9:15 **INVITED** Multi-decadal sea level and gyre circulation variability in the southwestern tropical Pacific Ocean
Qiu B., Chen S., Kessler W. – **abstract # 277**

9:45 Southwest Pacific Ocean changes over the past 50 years
Holbrook N., Couto A., Vargas M. – **abstract # 351**

10:00–10:30 COFFEE BREAK

FRIDAY, 27 APRIL 2012 10:30–12:30

SISIA auditorium
PARALLEL SESSION A 10:30–12:00

S06 Interdecadal climate variability and Southern Hemisphere impacts
Chair: C. Ummenhofer

10:30 **INVITED** The Walker circulation, tropical cyclones, and global warming
Power S., Kociuba G., Callaghan J. – **abstract # 21**

11:00 Using reanalysis and tide-gauge data to determine ocean decadal climate variability since 1950
Vargas Hernandez J.M., Wijffels S., Meyers G., Holbrook N. – **abstract # 203**

11:15 On the ability of climate models to simulate meridional circulation variability over New Zealand
Dean S., Renwick J., Mullan B. – **abstract # 37**

11:30 South Eastern Australia rainfall in relation to the mean meridional circulation
Timbal B., Nguyen H., Lucas C., Hendon H., Fawcett R.,Griffiths M. – **abstract # 319**

11:45 Interdecadal variability of low streamflows over the Argentinean Andes
Rivera J., Penalba O. – **abstract # 176**

12:30–14:00 LUNCH PERUI and V1

14:00–15:00
POSTER SESSION

EMAN room
PARALLEL SESSION B 10:30–12:45

S14 From Climate Change Science to Adaption
Chair: B. Dawson

10:30 Adapting Tropical Pacific fisheries and aquaculture to climate change: the importance of atmospheric and ocean science
Bell J. – abstract # 294

10:45 Dealing with climate model biases in the western Tropical Pacific Ocean.
Brown J.N., Muir L., Sen Gupta A., Brown J., Murphy B., Risbey J., Zhang X., Ganachaud A. – **abstract # 189**

11:00 Downscaling the climate change for oceans around Australia
Chamberlain M., Matear R., Sun C., Feng M.
– abstract # 367

11:15 Understanding the implications of climate change for Pacific staple food production - a Cassava case study
Crimp S., Taylor M., Naululvula P., Hargreaves J., Webber B., Laing A., Gleadow R., Aallbersberg B.
– abstract # 455

11:30 Why won't you use data from my Ocean Model in your Fisheries Model?
Hillary R., **Evans K.**, Hobday A. – **abstract # 271**

11:45 Wallis and Futuna Islands in the global climate change
Allenbach M., Hoibian T., Couturier A., Touraivane, Pouillet S. – **abstract # 366**

12:00 The incorporation of science into Vanuatu's infrastructure design
Malsale P., Phillips P. – **abstract # 458**

12:15 Future Projections for the Tropical Western Pacific
Sen Gupta A., Brown J. N., Ganachaud A., Muir L.
– abstract # 202

12:30 Seasonal dynamical prediction of coral bleaching risk in the Western Pacific Ocean
Spillman C. – abstract # 24

12:45–14:00 LUNCH PERUI and V1

14:00–15:00
POSTER SESSION

FRIDAY, 27 APRIL 2012 10:30–12:30

KANAKE room
PARALLEL SESSION C 10:30–12:15

S16 Special Session: Southwest Pacific Ocean Circulation and Climate Experiment (SPICE)

Chair: W. Kessler

10:30 Variability in the East Australian Current: Existing Evidence and Observing System Plans
Hill K., Sloyan B., Ridgway K., Rintoul S., Oke P.
– abstract # 51

10:45 New Zealand's subtropical boundary currents and the Tasman Front: a summary of observations
Bowen M., Sutton P. **– abstract # 327**

11:00 Ocean circulations in the Solomon Sea: a very high resolution modelling approach
Verron J., Djath N., Melet A., Barnier B., Molines J.-M., Gourdeau L. **– abstract # 27**

11:15 From the Western Boundary Currents to the Pacific Equatorial Undercurrent: modeled pathways and water mass evolutions
Grenier M., **Cravatte S.,** Blanke B., Menkes C., Koch-Larrouy A., Durand F., Melet A., Jeandel C.
– abstract # 293

11:30 The mean and the time-variability of the meridional overturning circulation in the South Pacific Ocean
Zilberman N., Roemmich D., Gille S. **– abstract # 420**

11:45 Coastal upwelling and upper ocean circulation in the Bismarck Sea: its impact on SST cooling
Hasegawa T., Ando K., Mizuno K., Lukas R., Taguchi B., Sasaki H. **– abstract # 227**

12:00 Seasonal Sea Surface Salinity and Temperature changes in the Western Solomon and Bismarck SEAS
Delcroix T., Alory G., Leger F., Radenac M.-H., Singh A.
– abstract # 234

12:15–14:00 LUNCH

14:00–15:00
POSTER SESSION

FRIDAY, 27 APRIL 2012 15:00–15:30

SISIA auditorium PLENARY CLOSING SESSION 15:00–15:30

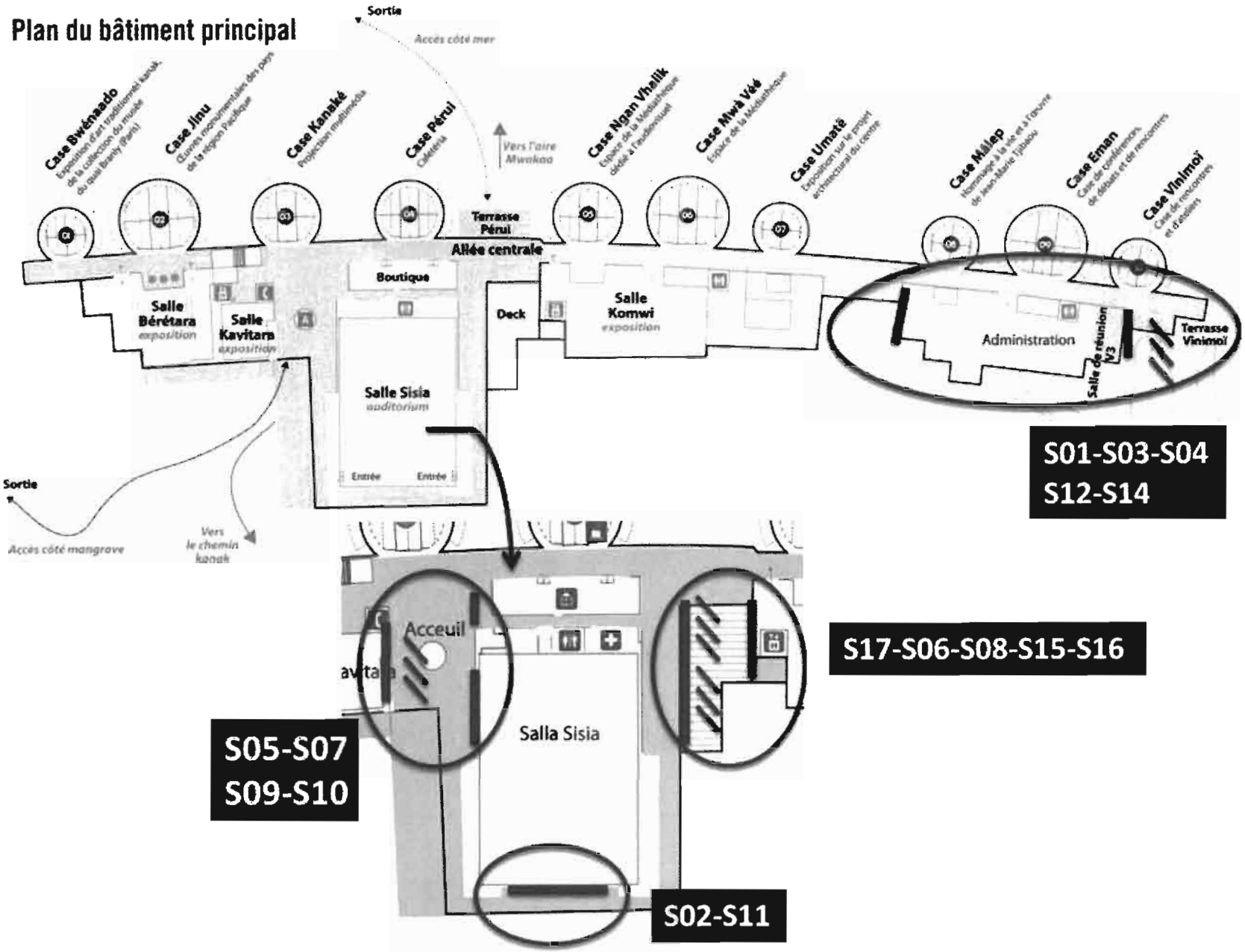
OVERVIEW OF THE POSTER PRESENTATIONS

Posters will be on display during the entire meeting, according to the information below:

- Poster set-up: Monday 23 April, during morning coffee break
- Poster teardown: Friday 27 April, immediately following the poster session at 3:00 PM.

There are two different poster groups.
Presenting authors are expected to be available at their poster during designated poster session.

POSTER ATTENDANCE TIME		
Group 1	PACCSAP poster session	Group 2
Monday, 3:30-4:30 pm Tuesday, 3:30-4:30 pm	Monday, 5:30 pm	Thursday, 3:30-4:30 pm Friday, 2:00-3:00 pm
Session 01 Session 02 Session 04 Session 07 Session 08 Session 09 Session 10 Session 11	Session 17	Session 03 Session 05 Session 06 Session 12 Session 13 Session 14 Session 15 Session 16


Plan du bâtiment principal
Sortie
Accès côté mer
Case Bwénaado
Case Jinu
Case Kanaké
Case Pérul
Vers l'aire Mwakaa
Case Ngan Vhalik
Case Mwà Véé
Case Umaté
Case Méiep
Case Eman
Case Vinimoï
Terrasse Pérul
Allée centrale
Boutique
Salle Bérétara
exposition
Salle Kavitara
exposition
Salle Sisia
auditorium
Entrée
Entrée
Deck
Salle Komwi
exposition
Administration
Salle de réunion V3
Terrasse Vinimoï
S01-S03-S04
S12-S14
Sortie
Accès côté mangrove
Vers le chemin kanak
Acceuil
Salla Sisia
S17-S06-S08-S15-S16
S05-S07
S09-S10
S02-S11

POSTER SESSIONS

S01 - Monsoon Systems in the Southern Hemisphere

Monday-Tuesday, 3:30 – 4:30 pm

Probabilistic forecasts during the monsoon season: the analogs technique as a tool for precipitation prediction over Southeastern-South America
Aldeco L., Ruiz J., Saulo C. - **abstract # 299**

Low level flow characterization crossing Santa Cruz de la Sierra during summer: a Lagrangian approach
Drumond A., Marengo J., **Ambrizzi T.,** Nieto R., Gimeno L., Wernli H. - **abstract # 273**

Interdecadal variability of the South American monsoon: impacts on extreme precipitation events
Grimm A., Drozd L. - **abstract # 415**

Impacts of ENSO and the East Asian winter monsoon on boreal winter rainfall in Asian-Australian monsoon region
Jian M. - abstract # 232

Estimating and evaluating rainfall patterns over Papua New Guinea
Smith I., Moise A.- **abstract # 233**

S02 - Tropical cyclones: past, present and future

Monday-Tuesday, 3:30 – 4:30 pm

Validation of TRMM daily precipitation estimates of TC rainfall using PACRAIN data
Chen Y., Ebert E., Davidson N. - **abstract # 330**

Southern Hemisphere tropical storm response to global warming
Gleixner S., **Durgadoo J.,** Keenlyside N., Tseng W.- L., Bengtsson L., Hodges K. - **abstract # 92**

Evaluation of the impact of hurricane Tomas on Futuna Islands
Hoibian T., Allenbach M. - **abstract # 363**

Global study of ocean surface cooling induced by tropical cyclones: oceanic control
Lengaigne M., Vincent E., Masson S., Menkès C., Samson G., Jourdain N. - **abstract # 223**

Intraseasonal forecasts of TC activity over the Southern Hemisphere
Leroy A., Wheeler M., Vittart F. - **abstract # 222**

Contribution of tropical cyclones to the air-sea CO2 flux: a global view
Levy M., Lengaigne, M., Bopp L., Menkès C., Madec G., Ethe C., Kumar D., Sarma V. - **abstract # 7**

Water vapor budget and the development of tropical cyclones
Li W., Chen S., Wang L. - **abstract # 47**

Research activities at La Réunion regarding the intensification of tropical cyclones and their impacts
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PACCSAP sponsored session

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PACCSAP sponsored session

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