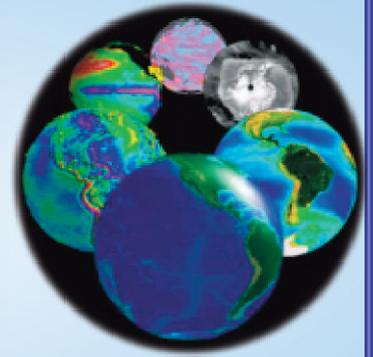


# BULLETIN

of the

# PORSEC



Association

Volume 11.1-2 August 2017

Dear Members of the PORSEC Association,

This is the combined first and second PORSEC Association issues of Volume 11. We have combined these two issues to be able to report initial facts about our future PORSEC 2018 meeting as well as report about the PORSEC 2016, and the state of publications resulting from PORSEC 2016 in the Special Issue of the International journal of Remote Sensing.

We have an entry in the Early Career Forum, which we started in Volume 10 (the editor for this special feature is Nico Caltabiano). Feel free to volunteer your early career history for this feature; what motivated you in making choices and what your aspirations were for your future career path. This is very instructive for other young scientists.

We have some reports and items of interest to the PORSEC community from our Asian correspondent and bureau chief Dr. Pan Gang.

Please keep in touch and keep informing us of any changes in your address or other information. We are in the process of updating our membership listings, and you can expect to hear soon from our Membership and Outreach Chair, Stephanie King, about our membership drive and how you can pay up your membership.

With our best regards,

Co-Editors Gad Levy and Kristina Katsaros  
Gad AT [porsec.nwra.com](mailto:porsec.nwra.com), Katsaros AT [whidbey.net](mailto:whidbey.net) \*

\*we use "AT" in the email addresses herein to avoid phishing

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## **Highlights from PORSEC Scientific Organizing Committee Meeting on November 9th, 2016 In Fortaleza, CE, Brazil**

In its meeting Nov. 9 the SOC approved the 2014 SOC meeting minutes; discussed changes to by-laws and governance and appointed a committee for a complete review of the by-laws, chaired by current executive secretary Nico Caltabiano; approved a motion to require SOC members to be more active and be PORSEC members in good standing by paying membership dues; heard a report from LOC (see separate report in this issue); held a general discussion on the next PORSECs and on the single proposal that had been received from South Korea to host PORSEC 2018 and voted and approved that proposal; and heard reports (published elsewhere in BPA issues) from committees (Awards, Education, Publications, Finance).

## **Report from Publications Committee**

Following a positive response from the International Journal of Remote Sensing (IJRS) to publish a Special issue after PORSEC 2016, an early February deadline for submission had been announced. The Special Issue, titled: "Pan-Ocean Remote Sensing: Enabling Earth Observations in Support of Global, Coastal, Ocean and Climate Change Research and Monitoring" is edited by Jim Gower, Stefano Vignudelli, and Gad Levy, with IJRS Chief Editor, Tim Warner, serving as editor in Chief. At present, there are 14 papers that have passed initial round of reviews, and are either accepted (1), or in different stages of revisions.

## **Initial details on PORSEC 2018 Venues and Dates**

Korea Institute of Ocean Science and Technology (KIOST) will be hosting PORSEC 2018, the fourteenth biennial conference, on Jeju Island, South Korea in November (4-7) 2018, with capacity building tutorial October 30 to November 3. The theme of PORSEC 2018 is yet to be determined but will be centered on interdisciplinary multi-sensor studies of the Pacific and Indian Oceans. The conference will be conducted through various plenary and technical sessions relevant to the conference theme. There is a desire to relate it to the Korean satellite missions GOCI and GOCI-II. We are now soliciting members to organize special sessions and serve on the program committee.

Participants from all over the world are expected to participate in the conference, including scientists, teachers, researchers, students and industry from various fields of ocean remote sensing and technology. The conference will also host a pre-conference tutorial to be held at Jeju International Marine Science Research & Logistics Center (one of the KIOST branch in Jeju Island) to benefit about 25 students selected from various countries.

The conference will review and discuss the state of ocean remote sensing and will help scientists and students involved in ocean-atmosphere studies using remote sensing techniques to benefit from interactions with the experts participating from all over the globe. The conference will also provide an opportunity to showcase the research work carried out using remote sensing techniques from various satellite missions and the applications of ocean remote sensing for societal benefits.

## 1- Introduction

The "Pan Ocean Remote Sensing Conference" - PORSEC-2016, whose theme was "Enabling Earth Observations in Support of Global, Coastal, Ocean and Climate Change Research and Monitoring", was held between November 3 – 11, 2016. During November 3 - 7th, a training course, with focus on satellite data and their applications in oceanography, took place at the Institute of Marine Sciences (LABOMAR) of the Federal University of Ceará (UFC). The Main Conference was held at Marina Park Hotel in Fortaleza City – Ceará State-Brazil, from November 8 to 11th, 2016.

The purpose of the conference was to analyze and discuss the state of the art of the remote sensing of the ocean with the purpose of sharing the techniques being used in support of ocean and climate research to minimize adverse impact of the human activities on the oceans and climate. In addition, it helped the scientists and students involved in oceanographic studies and ocean-atmosphere interaction phenomena, using remote sensing techniques, to stay in contact, for example, with the recent space missions launched by major space agencies such as ESA (European Space Agency), INPE (Brazilian Institute of Space Research), and NASA (National Aeronautics and Space Administration), and with new sensors dedicated to acquire global ocean data.

The conference was also providing an opportunity for students and researchers to present their studies, which use remote sensing techniques applied to other satellites (i.e., not only to recent missions), and discuss social applications of ocean remote sensing. Thus, at the PORSEC 2016, students and scientists benefited from knowledge exchanged during the conference, through the training course offered, from lectures by experts in remote sensing, and from oral and poster presentations.

The training course and the conference were attended by professors and lecturers from the Brazilian Space Agency (AEB), Center National d'Études Spatiales (CNES), ESA, INPE, LABOMAR / UFC, NASA, and National Oceanic and Atmospheric Administration (NOAA), as well as by students and researchers from many institutions from Brazil and other countries. The opening lecture was held on November 8th, 2016, given by Dr. Josefino C. Comiso from the Goddard Space Flight Center (GFSC-NASA), entitled: "Enabling Earth Observations in support of global, coastal, ocean and Climate change research and monitoring".

## 2 – Achievements

The most relevant achievements accomplished during PORSEC 2016 were:

3.1 - Twelve [12] students participated in the Capacity Building Tutorial course, including undergraduate [3] and postgraduate [9] students. Eight [8] students were from Brazil and four [4] from other countries (India [1], Russia [2], and Turkey [1]). As mentioned before, the training course was held from November 03 – 07, 2016, with 40 classroom hours. At the end of the course students presented their research projects that they developed as a practical course activity. Each project was supervised by the lecturers.

The course was organized by the Chair of PORSEC 2016, Prof. Dr. Antonio Geraldo Ferreira, and Vice-Chair, Prof. Dr. Ana Paula Morais Krelling, both from LABOMAR-UFC. The chair of the PORSEC Education and Outreach Committee, Stephanie King (Sea This Consulting - Canada) also participated in the tutorial organization, which included Dr. Cara Wilson (NOAA - National and Oceanic Atmospheric Administration - USA) as instructor in Chief. The course schedule is in the Appendix.

### 3.2 PORSEC 2016 in numbers

N°. of Participants	Countries		Invited Speakers		Presentations	
	Brazil	Others	Brazil	Others	Oral	Poster
96	55	40 (*)	7	5	40	30

(\*) Belgium (1), Canada (3), China (7), France (1), Germany (1), India (5), Italy (2), Japan (1), Korea South (2), Russian Federation (4), Taiwan (4), United Kingdom (1), United States (9)

## 3 – Conclusions

Taking into account the numbers and comments presented previously, the PORSEC 2016, in its 13th edition, whose theme was "Enabling Earth Observations in Support of Global, Coastal, Ocean and Climate Change Research and Monitoring", reached its objectives, since during the conference the state of the art of Remote Sensing of the oceans and atmosphere was discussed. New techniques being used to study the impact of human activities on oceans and climate were shared. Scientists and students involved in oceanographic and meteo-oceanographic studies were able to get in contact with personnel from space agencies that launched recent space missions such as ESA, NASA and INPE. The conference also gave students and researchers an opportunity to present the research they are doing, using Remote Sensing (RS) techniques applied to various satellites, and ocean RS applications for societal benefits.

The fact that the conference was held in Fortaleza, Ceará-Brazil, also contributed to the development of scientific connections of the region with other parts of the world, since students and researchers had the opportunity to collaborate with people around the world engaged in this field in different projects and collaborations, involving training as well as graduate programs. In addition, the conference provided an opportunity for students and researchers to present their works to the scientific community, promoting discussion and advances in the field of remote sensing for ocean applications.

**Fortaleza – Brazil, August 2, 2017**

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**PORSEC 2016**  
**Vice-Chair**

## APPENDIX

*PORSEC 2016 - Capacity Building Tutorial Program*  
**“PORSEC2016: Enabling Earth Observations in support of global, coastal, ocean and climate change research and monitoring - The 13th Pan Ocean Remote Sensing Conference” – Fortaleza – CE - Brazil**

**CONTENTS OF THE CAPACITY BUILDING (TUTORIAL)**  
**November 3 – 7, 2016**

DAY 1 – Thursday (03/11/2016)				
08:00 – 08:30	Registration			
08:30 – 09:00	Opening ceremony	A. Geraldo Ferreira / Danling Tang / Gad Levy		
TIME	TOPIC	LECTURER	Theor.	Pract.
09:00 – 10:00	Fundamentals of Satellite Remote Sensing (Visible part)	Milton Kampel (INPE-Brazil)		
10:00 – 10:30	Coffee break			
10:30 – 11:30	Fundamentals of Satellite Remote Sensing (Thermal part)	João Lorenzetti (INPE-Brazil)		
11:30 – 12:30	Fundamentals of Satellite Remote Sensing (Microwave)			
12:30 – 14:00	Lunch			
14:00 – 16:00	Accessing data: an Introduction to ERDDAP	Cara Wilson (NOAA-USA)		
16:00 – 16:30	Coffee break			
16:30 – 18:00	Accessing data with ArcGIS using the EDC	Cara Wilson (NOAA-USA)		

**INPE:** National Institute for Space Research

**NOAA:** National Oceanic and Atmospheric Administration

DAY 2– Friday (04/11/2016)				
TIME	TOPIC	LECTURER	Theor.	Pract.
08:00 – 09:00	Statistical Data Analysis	Ana Paula (LABOMAR-UFC – Brazil)		
09:00 – 10:00	Statistical Data Analysis			
10:00 – 10:30	Coffee break			
10:30 – 11:30	Satellite Data Assimilation	Gad Levy (NWRA-USA)		
11:30 – 12:00	Introduction to Giovanni	Jim Gower (IOS-Canada)		
12:00 – 12:30	Time for projects			
12:30 – 14:00	Lunch			
14:00 – 15:00	Fundamentals of Satellite Remote Sensing (Microwave)	João Lorenzetti (INPE-Brazil)		
15:00 – 16:00	Accessing data: using R or Matlab scripts	Cara Wilson (NOAA-USA)		
16:00 – 16:30	Coffee break			
16:30 – 18:00	Accessing data: using R or Matlab scripts	Cara Wilson (NOAA-USA)		
21:00	Fraternization Dinner			

**LABOMAR/UFC:** Sea Science Institute/Federal University of Ceará

**NWRA:** NorthWest Research Associates    **IOS:** Institute of Ocean Sciences

DAY 3 – Saturday (05/11/2016)				
TIME	TOPIC	LECTURER	Theoretical	Practical
08:00 – 08:30	Web seminar - Earth Observation in Support of the Water Sector. Remote Sensing for Water Management Optimisation	Ernesto Lopez Baeza (Valencia University-Spain)		
08:30 – 10:30	Time for projects			
10:30 – 11:00	<b>Coffee break</b>			
11:00 – 12:30	Satellite Wind Estimation	Abderrahim Bentamy (IFREMER – FRANCE)		
12:30 – 14:00	<b>Lunch</b>			
14:00 – 16:00	Satellite Wind Estimation	Abderrahim Bentamy (IFREMER – FRANCE)		
16:00 – 16:30	<b>Coffee break</b>			
16:30 – 17:30	Satellite Altimetry	Stefano Vignudelli (CNR-Italy)		
21:00	<b>Free Time</b>			

**IFREMER:** Institut Français pour la Recherche et l'Exploitation de la Mer

**CNR:** National Research Council

DAY 4 – Sunday (06/11/2016)				
TIME	TOPIC	LECTURER	Theoretical	Practical
08:00 – 10:00	Satellite Altimetry	Stefano Vignudelli (CNR-Italy)		
10:00 – 10:30	Oil spill detection	Leonid Mitnik (RAS – Russia)		
10:30 – 11:00	<b>Coffee break</b>			
11:00 – 13:00	Oil spill detection	Leonid Mitnik (RAS – Russia)		
13:00	<b>Lunch</b>			
	<b>Free Time – Excursion to the Beach</b>			

**RAS:** Russian Academy of Sciences

DAY 5 – Monday (07/11/2016)				
TIME	TOPIC	LECTURER	Theoretical	Practical
08:00 – 09:00	Ocean Color	Jim Gower (IOS-Canada)		
9:00 - 10:00	Time for projects			
10:00 – 10:30	<b>Coffee break</b>			
10:30 – 12:30	Fisheries Applications of Satellite Data	Cara Wilson (NOAA-USA)		
12:30 – 14:00	<b>Lunch</b>			
14:00 – 16:00	Student Presentations			
16:00 – 16:30	<b>Coffee break</b>			
16:30 – 18:00	Student Presentations			
18:00 – 19:00	<b>Closing</b>			
22:00	Pirata Bar (“The Craziest Place on Earth on a Monday Night” - NYTimes)			

**PHOTOS**



**Photo 1:** Some PORSEC 2016 participants at Marina Park Hotel. Behind the participants we can see the Atlantic Ocean



**Photo 2:** PORSEC 2016 Opening talk – DR. Josefino C. Comiso (NASA/USA)



**Photo 3:** PORSEC 2016 – Some Speakers



**Photo 4:** Presentation of the headquarters of the next edition of PORSEC - PORSEC 2018 - South Korea



**Photo 5:** Closing Ceremony - transfer of the event banner to the organizers of the next edition of PORSEC 2018 at South Korea



**Photo 6:** Teachers and students of the Capacity Building (tutorial) – Closing Ceremony at LABOMAR-UFC



**Photo 7:** Teachers and students in the Capacity Building (tutorial) at LABOMAR-UFC (Practical Classroom)



**Figure 1 – PORSEC 2016 Divulcation Banner**

## An Early Career Scientist's Report

My name is Svetlana Karimova. Currently I am a postdoctoral fellow at the University of Liege (ULg), Institute of Physics, Department of Astrophysics, Geophysics and Oceanography. During my master, PhD and postdoctoral studies, I have been learning how to do research in the field of satellite oceanography.

In the beginning of my studies, nothing was indicating that I was going to be involved in ocean science. As a high school student I was fond of geography, so after the graduation I entered the Geography Faculty of my home town university (the Bashkir State University, Ufa, Russia) located quite far from any ocean. If I completed my studies at that faculty, I could have become a specialist in landscape science, geomorphology or similar. However, in two years I decided to change for the Lomonosov Moscow State University (MSU), Moscow, Russia, where there was a much greater choice of departments. I picked the one I found the most exotic, Department of Oceanology. That was the a choice I never regret .

During my bachelor studies at MSU, I was still doing traditional 'in situ' oceanographic research. My transformation into a satellite oceanographer happened in the beginning of the master studies, when we were given an introductory course on ocean remote sensing. Soon after, I got a position of a laboratory assistant at the Space Radar Laboratory of the Space Research Institute (IKI RAS), Moscow, Russia. At that laboratory, I was analyzing one of

the most 'tricky' types of satellite imagery of water bodies, namely synthetic aperture radar (SAR) images.

Not long after my joining IKI RAS, I started attending international meetings on Earth remote sensing. The joint conference ISRS 2006 PORSEC, Busan, South Korea, was the very first international symposium I attended. That time the atmosphere of a scientific conference was totally new to me. A huge congress center, crowds of scientists from all over the world ... and Prof. Werner Alpers sitting in the front row in the room where I was presenting my results. After that successful congress, I also attended the two following PORSEC meetings in 2008 (Guangzhou, China) and 2010 (Keelung, Taiwan). Last year, after some break, I came back to PORSEC 'family' and participated in PORSEC 2016 in Fortaleza, Brasil. In 2008 and 2016, I was also a student of the PORSEC Tutorial on ocean remote sensing.

At an early stage of my work at IKI RAS, there happened something crucial for my further development as a researcher. I got fascinated by imprints of oceanic eddies in satellite imagery. Eddies became an object of my studies for many years that followed. On graduation from MSU, I became a PhD student of IKI RAS and my PhD thesis was devoted to observation of submesoscale eddies in SAR images of the European seas.

On obtaining the PhD degree, I was fortunate to continue my studies abroad. My first postdoctoral job was in Germany, at the Helmholtz-Zentrum Geesthacht, Institute of Coastal Research, Department of Remote Sensing. During that period, I was further developing techniques for assessing meso- and

submesoscale eddy activity in the European seas, which was needed for planning in situ and air-borne campaigns aimed at studying submesoscale oceanic vortices. My current postdoctoral project at ULg is devoted to multiscale observations of surface circulation in the Western Mediterranean Basin and its effects on bioproductivity of its marine ecosystem. I hope that after completion the postdoctoral project I will be able to stay in the field of oceanographic research and will continue my studies of oceanic vortices.



*Figure 1. Manifestation of surface water stirring in an Envisat ASAR image obtained on 13.01.2011, the Black Sea. Dimensions of the fragment are approx. 73 by 62 km.*

## A report from Asia

by Pan Gang

First, you will see the invitation to the recent meeting in China of the Group for High Resolution Sea Surface Temperature written by its chair, Anne O'Carroll. It includes a web-page where all the presentation can be found.

Second, Information about a meeting of the 4th phase of the Dragon Cooperation between P.R of China and the European Union.



### GHRSSST XVIII

**Qingdao, China**  
**5 – 9 June 2017**

Final Agenda – 25 May 2017



Meeting hosted and sponsored by  
the Ocean University of China (OUC)



Co-sponsored by  
the National Ocean Satellite Application Center  
K. C. Wong Education Foundation

## 18th International GHRSSST Science Team Meeting

The meeting, hosted and sponsored by the Ocean University of China, and co-sponsored by the National Ocean Satellite Application Center K. C. Wong Education Foundation, was held to bring scientific and operational SST users and producers together to review progress and achievements of SST science and applications within the GHRSSST framework.

An important aim for the week will be to achieve a greater coordination and exchange of ideas with our colleagues from China. The presentations from CMA, NSOAS and NMEFC on the first day will be an interesting introduction, with further contributions during the week in the applied sessions. This week we will hear more about SST observations from the FY-3 series, Gaofen-5, and the HY-2 series.

During the last year, we have seen the launch of GOES-R from NOAA on 19th November 2016 and the launch of Himawari-9 from JMA on 2nd November 2016, beginning an exciting era of further observations from the next generation of geostationary satellites. The launches of JPSS are anticipated, with JPSS-1 planned for 2017, continuing the successful observations from the VIIRS sensor on Suomi-NPP. The commissioning of Sentinel-3A and the preparation of SST products has continued over the last year with the general release of dual-view SST products from the Sea and Land Surface Temperature Radiometer (SLSTR) planned for this summer. The launch of Sentinel-3B to extend the coverage is expected in 2018. Microwave SSTs from AMSR2 continue, but there are still concerns with the outlook for microwave satellite missions with a global coverage capability. We also look forward to hearing this week about the SST products and applications from missions including from Himawari-8, INSAT-3D, MODIS, COMS, Metop and MSG.

Anne O'Carroll

(Chair of the GHRSSST Science Team)





All oral and poster presentations can be found at the web-link below. They are ordered by the day they were actually presented.

<https://www.ghrsst.org/agenda/ghrsst-xviii/>

### The Dragon 4 Symposium

The 2017 Dragon Symposium was held in Copenhagen Denmark, from 24 to 30 June 2017.

The 2017 Dragon Symposium brought together the joint Sino-European teams after one year of activity. On a project-by-project basis, the 27 project teams reported on the progress of each project to date including the latest scientific results and in particular:

- ≡ Detail the ESA, ESA TPM, Copernicus Sentinels and Chinese EO data acquired and investigated after one year of activity
- ≡ Detail the in-situ data measurements and requirements particularly joint field visits made in P.R. China in the last year
- ≡ Report on the role of young scientists within the projects and presentation of their results in a dedicated poster session

- ≡ Outline academic exchange programmes developed
- ≡ Outline the progress and status of cooperation within the project
- ≡ Inform on planning of research to be undertaken in the next 2 to 3 years

In summary, the chairs reported in plenary on each workshop's results and recommendations.

### BACKGROUND

Dragon is a cooperation between ESA and the Ministry of Science and Technology (MOST) of the P.R. China. Starting in 2004, there have been 4 phases, each lasting 4 years. The latest and newest phase Dragon 4, commenced in July 2016 at the Wuhan Dragon 4 Kick-off Symposium and will be completed in 2020. The 4 cooperation phases are:

- Dragon 1 (2004 to 2008)
- Dragon 2 (2008 to 2012)
- Dragon 3 (2012 to 2016)
- Dragon 4 (2016 to 2020)

Dragon 4 focuses on the scientific exploitation of ESA, ESA Third Party Missions, Copernicus Sentinels and Chinese EO data for geo-science and applications development. There are 8 topics including CAL / VAL that are addressing information provision for key societal issues facing Europe and China today. The new phase in the cooperation brings together 27 joint Sino-European teams to investigate these topics:

- ≡ Atmosphere, climate & carbon cycle
- ≡ Agriculture, food & water
- ≡ Urbanization & smart cities
- ≡ Ecosystems including forest and grasslands
- ≡ Oceans & coastal zones
- ≡ Solid earth & associated disaster risk reduction
- ≡ Hydrology and cryosphere
- ≡ Calibration/validation.



# Notes and Announcements of interest to PORSEC members

## OPPORTUNITY

### Co-editor for PORSEC Bulletin

Our long time Bulletin editor, Kristina Katsaros, who started the bulletin eleven years ago, while serving as PORSEC president, has announced her intention to retire from that editorship. The Bulletin of the PORSEC Association's current editors are therefore looking for a new co-editor interested in and committed to the PORSEC Association and willing to report on news worthy items, opportunities and stories of interest to the PORSEC membership, solicit scientific contributions, edit the bulletin, and provide overall leadership to the bulletin, publishing 3 issues per year to our subscribers base.

If interested, contact Gad or Kristina (current editors of the PORSEC Bulletin).

## COURSES, WORKSHOPS, CONFERENCES

### UN Conference in Beijing

United Nations International Conference on Space-based Technologies for Disaster Risk Reduction

United Nations International Conference on Space-based Technologies for Disaster Risk Reduction - Building Resilience through Integrated Applications, Beijing, 23-25 October 2017

### PIRATA – PREFACE – TAV Tropical Atlantic Variability Conference

Fortaleza – CE, Brazil,  
05–10 November, 2017

The Twenty second PIRATA conference (PIRATA 22 mee-

ting) will occupy a prominent position, because the project celebrates its 20 years in 2017. Taking this into account, with TAV (Tropical Atlantic Variability) and PREFACE (PREdiction of Tropical Atlantic ClimatE and its Impacts) participation, the following topics will be addressed during PIRATA 22:

#### *Session 1 - Mechanisms of tropical Atlantic Climate Variability and Change*

The progress in the understanding of the different modes of tropical Atlantic Climate Variability, their physical mechanisms and time scales as identified in observations and simulations will be addressed in this session. Areas of particular focus will be a) the interannual variability of tropical Atlantic SST; b) ocean-atmosphere interaction and its effect on atmospheric circulation over the ocean and surrounding continents; c) teleconnections to other ocean basins; d) deep ocean circulation changes; e) the response of the tropical climate system to anthropogenic climate change; and f) observational studies utilizing in-situ data sets including PIRATA moorings and hydrography data, Argo floats and surface drifter data, satellite observations, and model output from process-oriented simulations.

#### *Session 2 - Oceanic and Atmospheric Processes Affecting Biogeochemical Interaction in the Tropical Atlantic*

Climate-biogeochemistry interaction is of particular importance in the tropical ocean. The effect of global warming in the biologically highly-productive regions in the eastern tropics, deoxygenation, acidification, and the sequestration/outgassing of radiative and chemical active gases are highly relevant aspects of ongoing tropical Atlantic climate research. This session invites observational as well as modeling studies addressing ocean chemistry and physical-biogeochemical interactions in the tropical Atlantic on all space and time scales.

#### *Session 3 - Predictability, Coupled and Uncoupled Model Biases*

This session will address the improved understanding of tropical Atlantic climate predictability. The focus of the session will be on the bias problem and the predictive skill of state-of-the-art coupled models. Studies based on coupled land-ocean-atmosphere simulations, as well as uncoupled

led ocean and atmosphere simulations are invited, e.g. the impacts of river discharges on tropical Atlantic circulation and temperature changes in coupled models; the impact of continental rainfall on coupled models ocean and atmospheric biases. In particular, we welcome studies using multimodel climate analyses produced by the different sets of experiments performed within the CMIP5 inter-comparison exercise. Validation of coupled and uncoupled model studies against PIRATA array data time series are especially welcomed.

***Session 4 - Towards Realizing Socio - Economic Researches on Damages and Benefits of Climate Prediction in the Tropical Atlantic for Marine Ecosystems, Fisheries, and Continental Climate***

The climate of the tropical Atlantic Ocean is currently experienced pronounced changes which are potentially of great socio-economic importance for the oceanic resources and the surrounding continents. Such acceleration due to climate change and anthropogenic activities already affects the marine environment (ex. Acidification, Sargassum blooms, coral growth, etc) as well the coastal areas (ex. beach erosion, human activities & pollution). In this session, we shall estimate the effects of climate change on: i) fish resources, ii) coastal degradation, iii) disease of humans in tropical lands, like dengue fever; iv) conventional and non-conventional sources of water supply in semi-arid regions; v) agriculture, vi) tourism, etc.

***Round Table*** - PIRATA Research Infrastructure: Present, Future Observations and New Technologies for the Next 20 Years.

From 20 years and the early steps of the PIRATA network, the Tropical Atlantic Observing System considerably evolved, notably with new TFLEX moorings replacing ATLAS, world-wide Argo Project, new satellite measurements etc. In the context of the future internationally developed Blueprint of Integrated Atlantic Ocean Observing Systems that will be developed for the OceanObs19 conference, it seems timely to discuss about the potential evolution and optimization of the PIRATA network. Therefore, how we will observe the ocean in the next 20 years?, what new instruments, new measurements techniques, in situ data with transmission in real time will be used?, what new simulation/forecasts systems, real time alert warning systems, etc, will be available?

***Local Organizing Committee***

Antônio Geraldo Ferreira - LABOMAR - UFC (Chair); Meiry Sayuri Sakamoto - FUNCEME (Co-Chair); Carlos Eduardo Peres Teixeira - LABOMAR – UFC; Ana Beatriz Leite Cavalcante – LABOMAR – UFC; Débora Moraes Cavalcante - LABOMAR – UFC

***Scientific Organizing Committee***

Adrienne Sutton – NOAA; Bernard Boulrès – IRD; Fabrice Hernandez – IRD; Hervé Giordani - Meteo France; Leticia Cotrim – UERJ; Mike McPhaden - NOAA; Moacyr Araujo – UFPE; Nathalie Lefèvre – IRD; Paulo Nobre – INPE; Peter Brandt – GEOMAR; R. Saravanan – TAMU; Rick Lumpkin – NOAA

***Registration and Abstracts Submission***

<http://www.funceme.br/pirata22/>

**33rd Conference on Hurricanes and Tropical Meteorology  
American Meteorological Society  
16–20 April 2018, Ponte Vedra, FL USA**

The AMS has issued a Call for Papers for the 33rd Conference on Hurricanes and Tropical Meteorology that is now available to view and submit abstracts (*by 16 October, 2017*).

**International Workshop on Tropical-subtropical Weather, Climate and Oceans  
November 18-20, 2017  
South China Sea Institute of Oceanology, Chinese Academy of Sciences, Guangzhou, China**

The Sun Yat-sen University, the CAS South China Sea Institute of Oceanology and the CMA Guangdong Meteorological Service will organize an international conference (International Workshop on Tropical-subtropical Weather, Climate and Oceans) on November 18-20, 2017 in Guangzhou, China. See: International Workshop on Tropical-Subtropical Weather, Climate, and Oceans

## The Polar Prediction School 2018

7 - 27 April 2018, Abisko Scientific Research Station in Sweden.

The Polar Prediction School 2018 is open to 30 early career researchers to learn about weather and climate prediction in the polar regions. Applications are due September 15.

See: <http://www.apecs.is/events/upcoming-event-highlights/polar-prediction-school-2018.html>

## Fifth International Symposium on Arctic Research

January 15-18, 2018, Tokyo, Japan

Abstracts for the Fifth International Symposium on Arctic Research, January 15-18, 2018, in Tokyo, Japan, are *due August 31*.

See: <https://jcar.org/isar-5/index.html>

## PORSEC Database

For our database of the PORSEC Association members we would like you to enter your information directly into our web membership form, if you haven't already done so: <http://porsec.nwra.com/membershipform.php>

Please fill this form even if you have already given the information to us in any other format since we may not have all that information down correctly. **Please use this form to update your information whenever you have any changes.** It can also be used to pay your membership fee.

This form is also accessible through our main page (<http://porsec.nwra.com>) by clicking on "Join the PORSEC Association".

Please work on getting us more members; use the PORSEC home page and the above links for information. The prospective member provides us with the same information through the form. Memberships can be paid by U.S. check, if you have that available. It is too expensive to do bank transfers, so we suggest that the fee be paid to the PORSEC Association at the next conference. Any donations are also most welcome.

### Information

For information about the association and links to Newsletters from the president and Bulletin issues go to: <http://porsec.nwra.com/>. To join the PORSEC Association go to membership on the web site or contact one of us directly. The Bulletin of the PORSEC Association is edited by Gad Levy and Kristina B. Katsaros. Production Editor Susanne Öhrvik. ***We welcome contributions about your work and about any activities of our PORSEC members that may be of interest to other members for future issues of the Bulletin.*** To submit articles for this Bulletin of the PORSEC Association, please contact gad at [porsec.nwra.com](mailto:porsec.nwra.com) or katsaros at [porsec.nwra.com](mailto:katsaros@porsec.nwra.com).