

# The Abdus Salam International Centre for Theoretical Physics

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LAEA

School and Workshop on

*"Weather Regimes and Weather Types in the Tropics and Extra-tropics: Theory and Application to Prediction of Weather and Climate"* October 21-30, 2013 (*Miramare - Trieste, Italy*)

The Abdus Salam International Centre for Theoretical Physics is organizing a School and Workshop on *"Weather Regimes and Weather Types in the Tropics and Extra-tropics: Theory and Application to Prediction of Weather and Climate"*, to be held at ICTP, Trieste, Italy from October 21 to 30, 2013

The workshop will be to bring together researchers who apply classification techniques to describe and verify weather forecasts, climate anomalies over a range of time scales, and applications of human dimension. The variety of mathematical and statistical techniques used will be presented, leading to cross-fertilization of techniques and methods. Topics of interest will include:

- What are the common techniques used to describe large-scale circulation regimes and local weather types (e.g.cluster analysis, hidden Markov method, pdf analysis), and how are they related to each other?
- How are regimes used to characterize and verify forecasts from operational forecasting centers?
- How much is really understood about measuring the significance of deviations from Gaussian behavior, and the robustness of clustering / weather typing?
- Will climate change lead to an alteration of the frequency of occurrence of well-define regimes, or the modification of the whole regime structure?
- How can we describe coherent propagating structures, such as the Madden-Julian Oscillation (MJO) and the Monsoon intra-seasonal oscillation (ISO) in terms of regimes?

*"Hands-on" training* sessions will be held in weather typing and circulation regime analysis, using data sets such as ERA-40 or NCEP reanalyses, and simple classification techniques which can be applied to their home regions for problems of local interest.

#### **PARTICIPATION:**

Attendance is open to scientists and graduate students working in areas of Environmental Science such as Atmospheric Physics and Dynamics, Climatology, Oceanography and Mathematics from all countries that are members of the United Nations, UNESCO or IAEA. Although the main purpose of the Centre is to help research workers from developing countries, through a programmed of training activities within a framework of international cooperation, a limited number of students and post-doctoral scientists from developed countries are also welcome to attend. The activity will be conducted in English.



As a rule, travel and subsistence expenses of the participants should be borne by the home institution. Every effort should be made by candidates to secure support for their fare (or at least half-fare). Limited funds are available for some participants who are nationals of, and working in, a developing country, and who are not more than 45 years old. Such support is available only for those who attend the entire activity.. Registration is free-of-charge for all attendees.



## co-sponsor



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## **DIRECTORS**

Dr. **D. Straus** (GMU/COLA, USA)

Dr. **F. Molteni** (ECMWF, UK)

Dr. **S. Corti** (ISAC-CNR, Italy)

Dr. **F. Kucharski** (ICTP-ESP Local Organizer)

#### **INVITED SPEAKERS**

Dr. **Christophe Cassou** CNRS/CERFACS, Toulouse, France

Dr. **Rajib Chattopadhyay** IIT, Pune, India

Dr. **Steven Feldstein** The Penn State U., USA

Dr. **Christian Franzke** British Antarctic Survey, UK

### **Call For Papers**

For those interested in making an oral or poster presentation, a one-page abstract (size A4) should be uploaded <u>directly to the on-line application</u>. (Please upload file attachments in .pdf)

#### **APPLICATION:**

The "On-line Application" form can be accessed at the: *ICTP activity website*: http://agenda.ictp.it/smr.php?2496 inclusive of a *step-by-step instruction guide*. <u>ACTIVITY SECRETARIAT</u>

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