



# SPRING COLLOQUIUM on the Physics of Weather and Climate 'REGIONAL WEATHER PREDICTABILITY AND MODELING'

April 11 - 22, 2005  
Miramare-Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics (Abdus Salam ICTP) is organizing a Spring Colloquium on '*Regional Weather Predictability and Modeling*', to be held from **April 11 to 22, 2005**, in Trieste, Italy.

Regional atmospheric models are a standard tool for enhancing the global model used for weather prediction on a regional or local scale. These, nowadays, are more accessible and useful to a wide variety of users with relatively modest computer resources. Yet, how much and what type of improvements over the driver global models can be obtained and for how long, remain open questions. As a follow-up to a successful ICTP 2002 activity, the purpose of the 2005 Colloquium is, **i)** to facilitate adoption and use of a current state-of-the-art limited area model, **ii)** to assess the progress made since 2002, **iii)** to address issues of ongoing research aimed at advancing and understanding the predictive abilities of limited area models. This is to be achieved through the following combination of activities:

» a *seven-day Workshop* [April 11 - 19] on "*Design and Use of Regional Weather Prediction Models*". This workshop will include tutorial lectures on the design of regional weather prediction models, with emphasis on several features of ongoing research, such as the representation of topography, modeling of convection, and modeling land-surface/boundary layer processes. The workshop will include lab sessions in which students will be taught to install and run a recently refined version of the Eta Model. Students will also be encouraged to perform experiments relevant to a specific region or model feature.

» a *three-day Conference* [April 20 - 22] on "*Current Efforts Toward Advancing the Skill of Regional Weather Prediction. Challenges and Outlook*". The conference will include invited and contributed papers highlighting some of the following topics:

- Operational and data considerations: limited area systems, current directions;
- Basic numerical design: grid point Eulerian/semi-Lagrangian, conservation/finite-volume issues, nested spectral, stretched grids and variable resolution approaches, other;
- Open questions concerning the numerical design: nonhydrostatic, how and when; vertical co-ordinate/topography, lateral boundary conditions;
- Resolution vs. domain size, convergence issues; benefits from "local" vs. regional models;
- Physical parameterizations, convection and explicit cloud physics schemes; boundary layer/subgrid-scale transport;
- Regional weather predictability: value added by a limited area model, downscaling, "Upscaling"?, limited area ensembles.
- Storm-scale prediction - a reality at hand?

## PARTICIPATION

The colloquium is intended for scientists and graduate students working in the areas of Atmospheric Physics and Dynamics, Climatology, Oceanography, Physics and Mathematics. It is open to scientists from all member countries of the United Nations, UNESCO and IAEA. Although the main purpose of the Abdus Salam ICTP is to help researchers from developing countries through a program based on international cooperation, scientists from developed countries are also welcome to attend. The activity will be conducted in English. Limited funding (including travel grants) for participation in the workshop is available for scientists from developing countries. Such financial support is granted only for those who attend the entire activity. Registration is free-of-charge.

Those wishing to apply should be complete and return the "Request for Participation" form, to be found at the back of the Bulletin (via WWW Server: <http://agenda.ictp.trieste.it/smr.php?1652> & at web address <http://www.ictp.it/~smr1652/>). The deadline for submitting requests for participation to the workshop is **January 28, 2005**. The completed form should be sent either by electronic mail, fax or mail to:

Spring Colloquium on '*Regional Weather Predictability and Modeling*'  
the Abdus Salam International Centre for Theoretical Physics (ICTP)  
c/o Lisa Iannitti [smr1652]  
Strada Costiera 11, 34014 Trieste, Italy

e-mail to: [smr1652@ictp.trieste.it](mailto:smr1652@ictp.trieste.it), web page address: <http://www.ictp.it/~smr1652/>

(Please save and send file attachments in **RTF** format)

Telephone: +39-040-2240227 Telefax: +39-040-2240558

## Organizers

Fedor Mesinger (U. Maryland, USA)  
Sin Chan Chou (CPTEC/INPE, Brazil)  
Filippo Giorgi (ICTP, Italy)

## Workshop Lecturers

Sin Chan Chou (CPTEC/INPE, Brazil)  
Michael Ek (NCEP, MD, USA)  
Frank Freedman (San Jose U., CA, USA)  
Fedor Mesinger (U. Maryland, USA)  
Miodrag Rancić (NASA/U. Maryland, USA)  
Borivoj Rajković (U. Belgrade, Serbia and Montenegro)  
Tomi Vukicević (Colorado State U., USA)  
Milija Županski (Colorado State U., USA)

## Expected Conference Lecturers include:

Lennart Bengtsson (ESSC, U. Reading, UK)  
Andrea Buzzi (U. Bologna, Italy)  
George Kallos (U. Athens, Greece)  
Simon Krichak (Tel Aviv U., Israel)  
Lazar Lazić (U. Belgrade, Serbia and Montenegro)  
Jagadish Shukla (COLA, MD-USA)  
Jürgen Steppeler (DWD, Germany)  
Stefano Tibaldi (ARPA, Bologna, Italy)  
Per Undén (SHMI, Sweden)  
Sergej Zilitinkevich (FMI, Finland)  
Dušanka Županski (Colorado State U., USA)

## **Deadline for Requesting funds**

**January 28, 2005**

