



The Abdus Salam  
**International Centre  
for Theoretical Physics**

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JOINT ICTP-TRIESTE / ICTP-SAIFR



# ADVANCED SCHOOL ON REGIONAL CLIMATE MODELING OVER SOUTH AMERICA

February 15 - 19, 2016  
São Paulo, Brazil

The Abdus Salam International Centre for Theoretical Physics (ICTP) and the International Centre for Theoretical Physics, South American Institute for Fundamental Research (ICTP-SAIFR) are jointly organizing the "**Advanced School on Regional Climate Modeling over South America**" to be held from February 15 - 19, 2016, at ICTP-SAIFR (IFT-UNESP campus) in São Paulo, Brazil.

Regional climate models (**RCMs**) are widely used tools to produce high-resolution climate simulations at regional scales. The ICTP regional climate modeling system, **RegCM**, is one of the most used RCMs worldwide, with applications ranging from regional process studies to paleoclimate, climate change, chemistry-climate and biosphere-atmosphere interactions.

According to global model (GCM) projections, temperatures may increase over South America (SA) by a wide range: by  $\sim 1.0$  to  $7.0^\circ\text{C}$  by the end of the 21st century. Although ensemble average changes indicate a general drying of the Amazon and wetting of southern SA, individual model projections range from a reduction of 20-40% to an increase of 5-10% over central and tropical SA, with even larger inter-model spread over southern SA.

Due to their coarse resolution, however, the GCMs considered in those studies do not reproduce all features of climate and its variability. RCMs can represent important local forcing features of the climate (such as complex topography, land-surface heterogeneity, coastlines and regional water bodies) and also better capture the interannual climate variability. It is argued that RCMs can reproduce the observed interannual variability of precipitation due to ENSO in some SA sectors better than the driving GCM can. Recent **RegCM4** simulations over the SA region, contributing to the Coordinated Regional Climate Downscaling Experiment (CORDEX), have verified previous results with GCMs with a better representation of local and remote influences such as El-Niño Southern Oscillation (ENSO).

As in previous workshops, this event will include lectures and extensive hands-on sessions on the theory of regional climate dynamics and regional climate change while providing a background on regional climate modeling studies focused on the SA region. Part of the workshop will involve the community of RCM over SA users in meetings and discussions about past and future activities in line with the CORDEX framework. The school is foreseen for a limited number of participants with proven experience in handling climate data and an interest in starting use of the RegCM4 as a tool for regional climate studies.

## PARTICIPATION

Scientists and students from countries that are members of the United Nations, UNESCO or IAEA, may attend the workshop subject to approval by the activity Directors. The School is intended for early career scientists and advanced Ph.D. students from developing countries, in particular South America. As the classes will be conducted in English, participants should have an adequate working knowledge of that language.

Although the ICTP mandate is to help researchers from developing countries through a programme 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. 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 a least half-fare). However, limited funds are available for some participants who are nationals of, and working in, a developing country. No registration fee is required.

The on-line application form can be accessed via the ICTP activity agenda page at:

<http://indico.ictp.it/event/7618/>

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## Invited Speakers

**M. Barreiro**  
(Univ. de la Republica-Uruguay)

**I. Cavalcante**  
(CPTEC-Brazil)

**C.S. Chan**  
(CPTEC-Brazil)

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**DEADLINE**

**November 30, 2015**

