

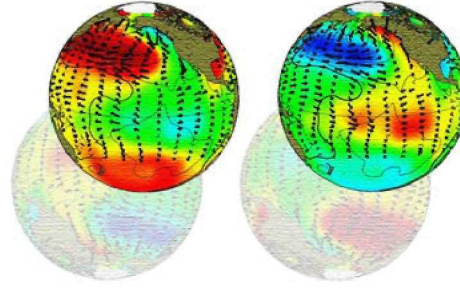


The Abdus Salam
International Centre for Theoretical Physics



Conference on Decadal
Predictability

August 16 - 20, 2010
ICTP, Trieste, Italy



The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, is organizing a **Conference on Decadal Predictability**, to be held from August 16 - 20, 2010 in Trieste, Italy.

Decadal Predictions bridge the gap between two well established research fields: Seasonal and Climate Change predictions. The former is essentially an ocean-atmosphere-biosphere initial value problem, whereas the latter is currently treated mainly as a prediction based on future projections of human induced gas emissions that may influence Climate. Therefore, decadal prediction is a mixed, ocean and land-surface initial value and externally forced problem. In terms of social-economic impacts decadal predictions may be as important as seasonal and Climate Change predictions, but of more eminence than Climate Change forecasts that often aim at a time horizon of 50 to 100 years, meaning about several generations ahead. This may be true particularly for the most vulnerable regions in the developing world, such as sub-Saharan Africa, which has experienced a persistent drought in the second half of the 20th century, although a recovery seems on the way now. From Atmospheric-only (AMIP-type) simulations, where sea surface temperatures (SSTs) boundary conditions are prescribed from observations, there are indications of substantial potential skill in decadal predictions of, for example, Sahel rainfall, Indian and other monsoon systems. Whether such a skill can be translated in a corresponding skill in ocean-atmosphere coupled models is still an open question. Observed SST variability on decadal time-scales may contain contributions from greenhouse gas (GHG) forcings and natural coupled variability. There is evidence that the GHG forced part may be predictable, whereas it is to date unclear to what extent the internal coupled climate variability part is predictable. A related unsolved question is if internal coupled climate variability may overshadow (at least regionally and temporarily) the GHG forced Climate Change signal in the observed SST record. There are indications that the Atlantic Multi-decadal Oscillation (AMO) may be a partially predictable ocean-atmosphere coupled mode and this has immediate implications for the European near surface temperature predictability. If other decadal modes, such as the Pacific Decadal Oscillation (PDO) or the Inter-decadal Pacific Oscillation (IPO) show similar predictability is still not clear, although no evidence of any predictability of these modes has been provided yet. Coupled General Circulation Models (CGCM) currently disagree strongly on the net influence of enhanced GHG relative to the present mean state of ENSO (and thus PDO/IPO). Predictability of the IPO would be imperative, like forecasting the Indian monsoon rainfall decadal variability. Does the GHG forcing enhance the internal variability of the coupled system? Current CGCMs largely disagree on the impact of the expected warming of the tropical Pacific in coming decades on the ENSO frequency and amplitude. Another related question is if the reliability of the climate models is high enough to be able to detect the predictable signals in decadal variability. The application of decadal predictions in hydrological and crop modeling will also be a topic of discussion.

This conference will bring together scientists and graduate students of both modeling and observational aspects of atmospheric, oceanic and land-surface related climate variability on decadal to multi-decadal time scales, as well as hydrological and crop modelers.

Primary Conference Goals:

1. To report on the most up-to-date scientific findings on the mechanisms responsible for decadal predictability;
2. To report any outstanding questions related to decadal predictability, including: *Is there decadal predictability in the absence of GHG forcing? Can internal coupled climate variability, regionally and temporarily, overshadow the effects of GHG forcing? Can external forcing of the Climate enhance internal variability?;*
3. Identify the major obstacles for numerical models to simulate the observed seasonal, interannual and decadal coupled modes that may lead to decadal predictability; assessing the performances of models and proposing potential solutions;
4. Assess which of the existing applications in terms of hydrological and crop modeling of decadal predictions are used and provide an outlook for future modeling in case improved decadal predictions are available.

PARTICIPATION

The Conference is intended for scientists and post-graduate fellows working in the areas of Climatology and Oceanography from all countries, which are members of the United Nations, UNESCO or IAEA. The main purpose of the Abdus Salam ICTP is to help researchers from developing countries through a program based on international co-operation. The activity will be conducted in English.

Limited funds are available for some applicants who are nationals of, and working in, developing countries and will be granted only to those attending the full four days. **Registration is free-of-charge for all attendees.**

Call For Papers

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

APPLICATION

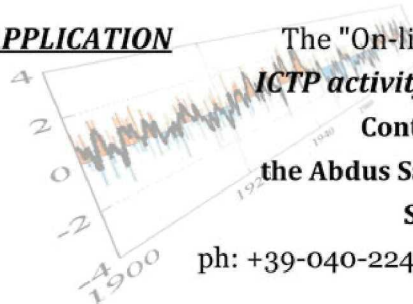
The "On-line Application" form can be accessed at:
ICTP activity web page: <http://agenda.ictp.it/smr.php?2160>

Contact Information: Lisa Iannitti (smr2160)

the Abdus Salam International Centre for Theoretical Physics

Strada Costiera 11, 34151 Trieste, Italy

ph: +39-040-2240 227, fax: +39-040-2240 558, e-mail: iannitti@ictp.it



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CONFIRMED SPEAKERS

INCLUDE:

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(Hadley Centre, UK)

Application Deadline

May 15, 2010

ICTP Webpage: <http://www.ictp.it/>