

**Fourth CLIVAR Workshop on the Evaluation of ENSO in Climate Models:
ENSO in a Changing Climate**



Paris, France, July 8-10 2015

The El Niño – Southern Oscillation (ENSO) is the dominant mode of interannual climate variability on Earth, with worldwide impacts. Because ENSO involves a complex interplay of ocean and atmospheric processes, accurately modelling this climate phenomenon with coupled General Circulation Models (CGCMs), and understanding and anticipating its behaviour in a warming climate, still pose major challenges. Over the past three decades, new theoretical insights, together with longer and more comprehensive observations, increased computer power, and improved physical parameterizations of subgrid-scale processes, have resulted in better understanding of ENSO dynamics and much improved simulations of ENSO in CGCMs.

While many of the basic properties of ENSO are now well understood and simulated, the community is still faced with the problem of addressing its detailed mechanisms and impacts (e.g. extremes, inter-event diversity, physical feedbacks, asymmetries between El Niño and La Niña), their statistical robustness in light of short observational records, and how these evolve in a decadal- to centennially-varying background climate. Metrics to evaluate ENSO and the tropical Pacific in models need to be designed. In addition, a review of new developments – including recent research on extreme El Niño events, ENSO predictability, and ENSO non-linearity – is needed to consolidate existing understanding and plan for future research, including the design of a future Tropical Pacific Observation System (TPOS).

The World Climate Research Program (WCRP) has long recognised the central importance of understanding and predicting ENSO and this workshop is the first to be organised under the new CLIVAR ENSO Research Focus. Beyond addressing CLIVAR goals, this workshop will contribute to several of WCRP's Grand Challenges and discuss research priorities as well as topics for future workshops.

The specific goals of the workshop are to review, discuss and report on:

- The current mechanistic understanding of ENSO (extremes, diversity, decadal modulation, predictability and prediction of the 2014 warm event, etc.), particularly in the context of a warming climate.
- Observations of the tropical Pacific (paleo, historical, atmospheric, oceanic, related uncertainties), recommendations for future observing systems (TPOS), and metrics to evaluate and intercompare models.
- The role of the tropical Pacific in global-scale decadal variability including the recent hiatus in global warming.
- Anticipated changes in ENSO properties over the coming decades.

Format:

The workshop will be limited to 50 active researchers, of whom 30 will be invited. PhD students and postdoctoral researchers are invited to propose a contribution to the workshop; from among these, a selection of 20 presentations (oral or poster) will be made by the scientific committee; applications, including an abstract, a CV and a statement of interest, **should be sent to lei.han@clivar.org before March 31st**.

Program Committee:

Eric Guilyardi, Andrew Wittenberg, Magdalena Balmaseda, Wenju Cai, Matthew Collins, Mike McPhaden, Masahiro Watanabe, Sang-Wook Yeh