

The ENSO Diversity Working Group

Antonietta Capotondi

In my presentation, I will start by reviewing the motivation for the ENSO Diversity Working Group. The major focus of the Working Group is on the diversity in the longitudinal position of the equatorial SST anomalies. The importance of understanding and predicting events peaking at different longitudes stems from the differences in their impacts, both locally and remotely. Given the large and increasingly growing literature on the topic, and the very diverse approaches and definitions used to identify different event types, one of the Working Group tasks is to help synthesize, clarify, and coordinate ENSO diversity research.

During our first year, we have discussed ideas through conference calls and two in-person meetings, convened a session at the AGU Fall 2012 meeting (“The El Niño Southern Oscillation Continuum”, and held a community workshop on “ENSO diversity”. The workshop, which took place in Boulder, CO, February 6-8 2013 was the culminating point of our first year activities as it brought together ~50 scientists, with expertise in various aspects of ENSO diversity research. Focal workshop themes included: ENSO diversity in observations, dynamical processes of different ENSO types, predictability and prediction, teleconnections, and paleoclimate insights. An important outcome of the workshop is the recognition that bimodality in ENSO types is not supported by long ocean reanalysis or model-produced time series. While we cannot rule out the possibility of distinct modes of variability of the system, each event will be the superposition of those modes, resulting in a multiplicity of different flavors. Large uncertainties remain on the existence of specific “precursors” for different ENSO types, and their efficiency, on the ability of predicting different ENSO flavors, and on the exact structure of teleconnections and resulting impacts.

During our second-year, we will start by summarizing the outcome of our first year activities, in particular the workshop, in a BAMS article for the broader scientific community. To foster further research on ENSO research, a Climate Dynamics Special Collection will be organized. We will work in defining metrics to assess the performance of the CMIP5 models in simulating ENSO diversity, and the working group webpage will be expanded to include an updated bibliography on the topic, as a resource for the community, as well as to serve as a platform for discussion and result sharing among working group members.