

A Report on the US CLIVAR Decadal Predictability Working Group (DPWG)

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There is considerable user demand for anticipating climate variations over the coming decades to facilitate decision making, e.g., for the development of resilient infrastructure etc. Due to internal (or natural) climate variations in the Earth system, the trajectory of the climate on decadal time scale can deviate substantially from the trajectory that is a response to change in the external forcings, particularly related to GHGs. Anticipating the demand for this information, the design of CMIP5 experimental protocol also included a set of initialized decadal predictions to complement the climate projection and 20th Century climate simulations. To provide a common framework for assessment of decadal predictions, and to understand sources of predictability for climate variations on decadal time scale, a US CLIVAR Decadal Predictability Working Group (DPWG) was initiated in January 2009. The objectives of the DPWG were to:

- (1) Define a framework to distinguish natural variability from anthropogenically forced variability on decadal time scale for the purpose of assessing predictability of decadal-scale climate variations, and
- (2) Develop a set of metrics that can be used to assess and validate initialized decadal climate predictions and simulations.

As part of the DPWG activity, a review paper titled “Distinguishing the Roles of Natural and Anthropogenically Forced Decadal Climate Variability” was published in the July 2011 issue of BAMS

<http://journals.ametsoc.org/doi/abs/10.1175/2010BAMS2962.1>

A second paper on recommendations for common framework for the assessment of skill of initialized decadal predictions, and their comparison in the context of uninitialized projections, titled “A Verification Framework for Interannual-to-Decadal Predictions Experiments” is currently under review in Climate Dynamics.

Along with the summary of the DPWG, some highlights from the recent results on the assessment of decadal predictability will also be presented. Plans for sustaining activities related to DPWG will also be discussed.