**Grand Challenges in Earth System Modeling: Decadal Climate Variability and Change, Prediction and its Applications**

**The deadline for abstract submissions is Wednesday, 3 August 23:59 EDT.**

Over past several decades, regions across the globe have experienced substantial climate variability and change, such as warming surface temperature, prolonged droughts, increased frequency of floods; such changes have profound impacts on the human, ecological, and physical systems. Despite considerable improvements in Earth System models, accurately simulating and predicting global and regional climate variability at interannual, decadal and centennial scales remains a grand challenge.

This session welcomes contributions on the development and application of the new-generation Earth System models to study the interactions and feedbacks between meteorological, oceanic, cryospheric, hydrological, biogeochemical, ecological, and aerosol processes from global to regional scales. Results on the prediction and predictability of climate processes, such as monsoon, ENSO, and droughts, at decadal time scales associated with the ocean and land memory and on the impacts of climate variability and change on agricultural and other human activities are encouraged. This cross-cutting session will report both on state-of-the-art achievements as well as future opportunities and challenges.

Primary Convener: Yongkang Xue, University of California Los Angeles, California, United States

Conveners: Anjuli Bamzai, National Science Foundation, Arlington, Virginia; Eric C. Itsweire, National Science Foundation, Arlington, Virginia; and Raymond Arritt, Iowa State University, Ames, Iowa, United States

Cross-Listed:

 B - Biogeosciences

 GC - Global Environmental Change

 H - Hydrology

 OS - Ocean Sciences

Index Terms:

0402 Agricultural systems [BIOGEOSCIENCES]

1622 Earth system modeling [GLOBAL CHANGE]

3305 Climate change and variability [ATMOSPHERIC PROCESSES]

4215 Climate and interannual variability [OCEANOGRAPHY: GENERAL]