SESSION: (B3) S2D ensemble predictions and forecast information

(B3-01)

Near-term hydroclimate outlooks based on the CESM Decadal Prediction Large Ensemble

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The Community Earth System Model (CESM) Decadal Prediction Large Ensemble (DPLE) is a new public data resource for studying Earth System prediction that offers unprecedented statistical power for assessing hindcast accuracy and skill, quantifying the benefits associated with initialization, and exploring the probabilistic attributes of decadal predictions of climate and the carbon cycle. The

CESM-DPLE consists of 40-member ensembles initialized each year between 1954 and 2015, and it represents the initialized counterpart to the 40+ member CESM Large Ensemble of historical/projection simulations that were spun up from preindustrial conditions (CESM-LE; Kay et al. 2015). In this talk, I will present a global survey of decadal precipitation forecasts through 2025 based on CESM-DPLE, focusing on land regions characterized by significant hindcast skill enhanced through initialization and for which there exist at least tentative mechanistic links to ocean-driven sea surface temperature signals. The survey will encompass both seasonal mean hydroclimate and, where appropriate, outlooks for precipitation extremes. If resources permit and operational issues associated with near real time ocean initialization can be surmounted, more recent start dates will be added to extend the considered forecast range through 2027.