

SESSION: (A4) S2S forecasts for decision making

(A4-04)

Experimental subseasonal forecasting of atmospheric river variations for the western U.S. during Winters 2017-2018 and 2018-2019

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We utilize the Guan and Waliser (2015) atmospheric river (AR) detection algorithm and DeFlorio et al. (2018) AR activity forecast approach on three operational subseasonal forecast systems (ECMWF, NCEP, and ECCO) to predict AR activity over the eastern Pacific Ocean and western U.S., with a focus on subseasonal variations, and in particular the week-3 lead time. The predictand for these subseasonal forecasts is the likelihood of an AR occurring at any time during a given week, with the primary focus being the week-3 window. Forecast verification statistics for these subseasonal AR forecasts will be presented, as well as case studies demonstrating periods where the AR activity appeared to exhibit enhanced/diminished predictability and how well and consistently the models performed during these periods. This is a collaborative activity between the Jet Propulsion Laboratory/NASA, the Center for Western Weather and Water Extremes of the University of California at San Diego, and the Joint Institute for Regional Earth System Science (JIFRESSE) at the University of California, Los Angeles, with sponsorship from the California Department of Water Resources. This activity leverages the ECMWF, NCEP and ECCO hindcasts of the Subseasonal to Seasonal (S2S) Prediction Project, along with their real-time data stream counterparts, and represents one of the S2S Prediction Project's Pilot Projects for applications use. We will also discuss the "operational" framework for the collaboration, the interferences from the 2017-18 winter, and changes and plans for the 2018-19 winter.