# Global Perspective of Atmospheric Rivers: Climatology, and Climate Modulation

**Bin Guan**, Joint Institute for Regional Earth System Science and Engineering, University of California, Los Angeles, 4800 Oak Grove Drive, Pasadena, California 91109, USA; bin.guan@jpl.nasa.gov; +1-818-354-0252

**Jonathan J. Rutz**, National Weather Service, Western Region Headquarters, Salt Lake City, Utah, USA

**Alexander Gershunov**, Scripps Institution of Oceanography, University of California, San Diego, La Jolla, California, USA

**Abstract**

This presentation highlights materials under consideration for Chapters 4.1 and 4.2 of the atmospheric river (AR) monograph. Using an ERA-Interim-based global AR catalog (Guan and Waliser, 2015; extended to the period of 1979–2015), a consistent accounting of the climatology, seasonality, and climate modulation of AR activities (e.g., frequency, precipitation, landfall) will be presented. In this context, consistencies (or lack thereof) will be identified and discussed for studies using different AR identification techniques, and justification will be given for the technique employed herein. The results highlight the footprints and potential impacts of ARs in many locations across the globe (including areas where ARs have received less scientific attention), as well as potential subseasonal, seasonal, and long-term predictability of AR activities associated with El Niño–Sothern Oscillation, Madden-Julian Oscillation, and other large-scale climate variations.