



Understanding large-scale climate change events using satellite gravimetry

Jianli Chen (1,2)

(1) Center for Space Research, University of Texas, Austin, United States (chen@csr.utexas.edu), (2) Shanghai Astronomical Observatory, Chinese Academy of Sciences, Shanghai, China

Satellite gravity observations from the Gravity Recovery and Climate Experiment (GRACE) provide a unique means for monitoring large-scale terrestrial water storage (TWS) change on a global basis. The over 8 years GRACE data have revealed a coherent picture of large-scale transient hydrologic signals, and captured some major climate and environmental change features, including severe droughts and floods, excessive groundwater depletions, and ice melting from polar ice sheets and mountain glaciers. This presentation will show some example studies of GRACE satellite gravity data in monitoring and quantifying the global water cycle and some major climate events, including the exceptional 2009 Amazon flood and the extended drought conditions in the La Plata basin in recent years.