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Poster
This program includes several inland water science investigations that utilize a suite of archival (T/P, Jason-1, ERS), current (Jason-2/OSTM, ENVISAT) and potential future (Jason-3, SARAL, Sentinel-3) radar altimeter data sets. The science focus includes river and wetland hydraulics and dynamics, and the utilization of lake levels as a proxy indicator of climate change. A multi-altimeter approach provides a more global and long-term outlook, combining the temporal and spatial resolution merits of each instrument, while the exploration of additional synergistic data such as NASA's ICESat-1 mission offers a multi-sensor approach for the determination of river discharge. A strong instrument performance and validation theme runs throughout the proposed program. This includes addressing the problems inherent in the merger of multiple datasets, and seeking refined radar echo interpretation methods to improve target detection and elevation accuracy. Technical results feed directly into several new pilot projects as well as a near real time NASA/USDA operational program that monitors large lakes and reservoirs around the world for drought and water resources issues. This presentation explores the main objectives which include investigating Jason-2/OSTM and SARAL instrument performance and developing data evaluation methods that maximize elevation accuracy and resolution. The Yukon River (USA), the Balonne River (Queensland, Australia), the Sudd wetlands (Africa), and the Usangu Wetlands (Africa) are the specific case study regions, while large lakes and reservoirs around the global are the focus for examining the correlations between observed lake height variations and climatic indices (e.g. ENSO, NAO).
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