Post-Beta Status of the SMAP Level-2 Passive Soil Moisture Product

Steven Chan*(1), Rajat Bindlish(2), Peggy O'Neill(3), Eni Njoku(1), Tom Jackson(2), Andreas Colliander(1), and Fan Chen(2)
(1) NASA Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA
(2) USDA ARS Hydrology and Remote Sensing Laboratory, Beltsville, MD
(3) NASA Goddard Space Flight Center, Greenbelt, MD

The Soil Moisture Active Passive (SMAP) mission is an L-band mission launched in January 2015. The SMAP instruments consist of a radar (active) and a radiometer (passive) that acquire complementary information to provide global mapping of soil moisture and freeze/thaw state every 2-3 days with unprecedented accuracy and coverage. This improvement in hydrosphere state measurement is expected to advance our understanding of the processes that link the terrestrial water, energy and carbon cycles, improve our capability in flood prediction and drought monitoring, and enhance our skills in weather and climate forecasts.

Since September 2015 the SMAP Level-2 and Level-3 Passive Soil Moisture products (SPL2SMP and SPL3SMP, respectively) have attained a preliminary (beta) science performance level and been released to the public for evaluation from the National Snow and Ice Data Center Distributed Active Archive Center (NSIDC DAAC). The release is expected to accelerate future product improvement in data accuracy and usability through feedback from the research and application communities.

In this presentation, an overview of the production and validation methodologies of SPL2SMP will be given, followed by a discussion on the latest development in algorithm refinement based on optimal model calibration and product validation results using *in situ* data properly scaled from core validation sites and sparse networks. A roadmap of outstanding tasks towards and beyond the validated release of the product will also be presented.