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Latest upgrades in the METOP ASCAT Soil Moisture Product

S. Hahn, T. Melzer, and W. Wagner
Vienna University of Technology, Photogrammetry and Remote Sensing, Austria (shahn@ipf.tuwien.ac.at)

The METOP ASCAT Soil Moisture Product will contribute to the most consistent and complete global ECV (essential climate variable) soil moisture data record, which will be based on different active (ERS-1/2 AMI, METOP ASCAT) and passive (SMMR, SSM/I, TMI, AMSR-E, Windsat) microwave sensors. The METOP ASCAT soil moisture product is computed using the current version of the Water Retrieval Package (WARP 5.4), which is based on a semi-empiric change detection method exploiting the multi-incidence angle viewing capabilities of ASCAT. However, an enhanced version (WARP 6.0) will be developed to address weaknesses in the semi-empiric model, e.g. w.r.t. arid environments. The soil moisture product generated with the new version WARP 6.0 will then serve as input in the ECV production system. The aim of the system is to merge the different soil moisture products from the various sources, in order to facilitate long-term studies like trend analysis.
This study presents first results of the latest upgrades in WARP, as well as various validations using other soil moisture products (e.g. SMOS, GLDAS, in-situ).