



Near-real time ASCAT soil moisture data for hydrological applications in Europe

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Soil moisture is a highly variable climate parameter, which is observed at scales ranging from local to regional and which is assessed from a variety of sensors. The retrieval methods differ mainly in geographical resolution, coverage and sensor system, with scatterometer and Synthetic Aperture Radar (SAR) systems being well-suited for hydrological applications.

In order to serve the needs of the hydrology community, the Satellite Application Facility on Support to Operational Hydrology and Water Management (H-SAF) has the aim to produce new satellite derived soil moisture products (amongst a range of other products for precipitation and snow) on an operational level for European hydrological users.

This work introduces the product generation and product characteristics of the value-added surface soil moisture products, derived from the Advanced Scatterometer Instrument (ASCAT) on-board the METOP satellite. At the end of the development phase, users of H-SAF will benefit from an operational, near-real time surface soil moisture product with 1 km resolution over Europe, derived from the 25 km ASCAT product. It is developed by TU Wien following a statistical disaggregation approach, where the strong relationship between the mean soil moisture content of a small-scale local area (derived from ENVISAT ASAR data) and its regional-scale mean (derived from METOP ASCAT data) is used. The product is foreseen to be generated operationally at the Austrian Central Institute for Meteorology and Geodynamics (ZAMG) in Vienna.