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Global validation of the different H SAF soil moisture products

Fabio Delogu (1), Sebastian Hahn (2), Simone Gabellani (1), Silvia Puca (3), and Luca Brocca (4)

(1) CIMA Foundation, Savona, Italy (simone.gabellani@cimafoundation.org), (2) TU Wien, Department of Geodesy and Geoinformation, Vienna, Austria, (3) National Civil Protection Department, Rome, Italy, (4) Research Institute for Geo-Hydrological Protection (IRPI), CNR, Perugia, Italy,

In the framework of the EUMETSAT H SAF (Satellite Application Facility on Support to Operational Hydrology and Water Management) project several soil moisture products, with different timeliness (e.g. NRT, offline, data records), spatial resolution, format (e.g. time series, swath orbit geometry) or the representation of the water content in various soil layers (e.g. surface, root-zone), are generated on a regular basis and distributed to users. The products are: H16 Metop ASCAT-B SSM NRT 12.5 km sampling, H101 Metop ASCAT-A SSM NRT 12.5 km sampling, H102 Metop ASCAT-A SSM NRT 25 km sampling, H103 Metop ASCAT-B SSM NRT 25 km sampling, H113 Metop ASCAT DR2018 SSM time series 12.5 km sampling, and the products H14 SM DAS 2, H27 SM DAS 3 of Soil wetness index in the roots region by scatterometer assimilation in a Land Data Assimilation System.
In the framework of the H SAF project these products are evaluated with a validation protocol defined by the project partners. The validation methodology is based on Triple Collocation (TC) performed between the test data set, Noah GLDAS v2.1 and the passive ESA-CCI v04.3 soil moisture product, whereas the Pearson Correlation Coefficient (R) was only computed between the test data set and Noah GLDAS v2.1.
In our study we will show, for each H SAF soil moisture product, the standard quality benchmark Signal-to-Noise Ratio (SNR) and the Pearson correlation coefficient (R) achieving a consistent and global validation of the different soil moisture products.