



Initial Validation of ASCAT Soil Moisture Data with In-Situ Measurements

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The Advanced Scatterometer (ASCAT) is part of the payload of three METOP satellites which constitute the EUMETSAT Polar System (EPS) - Europe's first polar orbiting operational meteorological satellite system. It was designed solely for operational wind monitoring over the oceans, but research with its successor instrument, the scatterometer on board of ERS-1 and ERS-2, has shown that it can also be used for monitoring soil moisture over land surfaces. Therefore, in a cooperation between EUMETSAT and the Vienna University of Technology (TU Wien) a near-real-time (NRT) processing system has been set at EUMETSAT which was declared operational 11 December 2008.

The ASCAT soil moisture product is produced in near real-time by EUMETSAT, using the so-called WARP-NRT software originally developed by TU Wien and prototyped for EUMETSAT. ASCAT soil moisture is a Level 2 product delivered in orbit geometry at two different grid spacing: 25 km and 12.5 km. The two products are derived directly and on the same grid as the equivalent ASCAT Level 1b backscatter products, hence the resolution of the soil moisture values is approximately 50/35 km respectively. The ASCAT Level 2 Soil Moisture product is disseminated via EUMETCast-Europe, channel "EPS-3" within 2h from sensing in BUFR format.

This poster shows initial validation results of ASCAT soil moisture using in-situ soil moisture observations from different networks in Europe and North America. The initial results show that ASCAT soil moisture data compare slightly more favorably to the in-situ measurements as published results with the ERS scatterometer. It is believed that this is due to some algorithmic improvements, a higher temporal sampling rate and, possibly, the higher radiometric accuracy of ASCAT.