

## Soil moisture derivation using a combination of satellites.

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**Abstract:** Traditionally, satellite soil moisture products are derived from (dedicated) single sensor missions (e.g. SMOS, SMAP, ASCAT, and AMSR-E/2). These single sensor driven products all have their benefits but also their limitations. Within this presentation we demonstrate the state of the art of these individual soil moisture products. This information will then form the basis to present the added value when different sensors are combined. Two case studies are presented; 1) the development of a consistent 35+ year soil moisture climate record using all available microwave sensors, 2) the development of a high-resolution soil moisture product using a combination of coarse scale microwave sensors with ESA's Sentinel constellation. Both case studies reveal the true strength of a multi-sensor approach, which has a positive impact on both the spatial and temporal resolution and leads to further improvement in retrieval skills.

**Keywords:** *Microwave Satellites, Soil Moisture, Wetlands, Sentinel, SMAP, SMOS, ASCAT, AMSR*