



First soil moisture values from SMOS over a Sahelian region.

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Soil moisture is a crucial variable which influences the land surface processes. Numerous studies shown microwaves at low frequency are particularly performed to access to soil moisture values. SMOS (Soil Moisture and Ocean Salinity), launched the November 2th 2009, is the first space mission dedicated to soil moisture observations.

Before SMOS, several soil moisture products were provided, based on active or passive microwaves measurements. Gruhier et al. (2010) analyse five of them over a Sahelian area. The results show that the range of volumetric soil moisture values obtained over Sahel is drastically different depending on the remote sensing approach used to produce soil moisture estimates. Although microwave bands currently available are not optimal, some products are in very good agreement with ground data.

The main goal of this study is to introduce the first soil moisture maps from SMOS over West Africa. A first analyse of values over a Sahelian region is investigated. The study area is located in Gourma region in Mali. This site has been instrumented in the context of the AMMA project (African Monsoon Multidisciplinary Analysis) and was specifically designed to address the validation of remotely sensed soil moisture. SMOS soil moisture values was analysed with ground knowledge and placed in the context of previous soil moisture products. The high sensitivity of the L-band used by SMOS should provide very accurate soil moisture values.