



Comparison of simulated and real SMOS data over the Valencia Anchor Station

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Soil Moisture and Ocean Salinity (SMOS), launched the 2nd November 2009, is the first space mission dedicated to surface soil water content observations. SMOS carries a fully polarimetric L-band (1.4 GHz) Microwave interferometer while the passive microwave observations are done at multiple viewing angles, between 0° - 55°.

In the framework of the validation of the SMOS products, this communication shows a comparison between SMOS observed data and the simulated ones over the Valencia Anchor Station (VAS), which was selected to be one of the main key test sites for the SMOS Calibration and /Validation activities.

In order to accurately reproduce the area seen by the sensor, a coupled SVAT - radiative transfer model was developed for modelling the surface soil moisture and the resulting microwave emissions. For In this purpose, in situ measurements, a detailed knowledge of the environment (land use, texture) and meteorological stations are used to describe the VAS site. The hydrological process as well as the spatialization of the soil moisture fields are performed by the use of the SVAT model, SURFEX (Externalized Surface) – module ISBA (Interactions between Soil-Biosphere-Atmosphere) from Météo-France. The microwave emission is simulated using the L-MEB (L-band Microwave Emission of the Biosphere) model upon which the SMOS Level 2 processor is based. L-MEB is adapted regarding the surface features of the VAS area and is computed using different parameterisation.

Main results of this comparison between the SMOS acquired data (Brightness temperatures and soil moisture) and the simulated one will be presented in this communication