



The SMOS ocean salinity retrieval algorithm

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SMOS (Soil Moisture and Ocean Salinity) will be, from spring 2009, the first space mission attempting the determination of sea surface salinity using microwave L-band radiometry. The SMOS aperture synthesis technique poses strict requirements to instrument calibration and stability for a successful brightness temperature image reconstruction. Besides this, the low sensitivity of Tb to salinity, even at L-band, and the still not fully developed/validated emissivity models at this frequency taking into account all the physical processes that impact on it, mainly the effects of surface roughness, plus the need of removing from the recorded signal the contributions of scattered radiation from external sources (sun, galaxy) result in a really challenging salinity determination by SMOS.

In this presentation we review the approach implemented in SMOS for salinity retrieval from the calibrated brightness temperature maps. The different processing steps are summarily described, as well as their implementation status and validation in the SMOS level 2 salinity processor.