



Interactive Analysis Tools for the Soil Moisture and Ocean Salinity (SMOS) mission

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The Interactive Analysis Tools (IAT) is a set of software elements that ESA has developed in the context of the SMOS mission ground segment. These IAT will be used off-line by different SMOS users according to the needs of each team like: sensor monitoring (instrument commissioning team), problem investigation (Data Processing Ground Segment team), calibration and validation support (Expert Support Laboratories), long term monitoring and data analysis (Calibration and Expertise Centre team).

The poster will present an overview and description of the main functionalities of the IATs available to the user community. In particular the IATs considered are the following:

the L1 processor prototype that provides Geolocated Calibrated Brightness temperature on antenna frame (L1c data) from the raw digital correlation measured by the sensor.

The L2 Sea surface salinity prototype that provides geolocated Sea salinity measurements retrieved by the L1c data.

The L2 Soil Moisture prototype that provides geolocated Soil Moisture measurements retrieved by the L1c data.

The SMOS Data Viewer that provides browse functionality for all the SMOS data products and auxiliary file. Specific visualization functions are also available for L1 and L2 in order to properly analyze the data content.

The SMOS Global Mapping Tool (GMT) that provides averaged maps over a user defined time period (e.g. one week, one month) of the key parameters available in the L1 and L2 data as well as maps of derived parameters like the first Stokes and the polarization index.

The SMOS Comparison Tool (SCoT) that provides data comparison between different L1 products. SCoT can be used in the context of L1 processor test acceptance (to verify the operational processor vs the prototype) and in the context of scientific analysis in order to compare L1 data processed with different configuration parameters.

The SMOSBox developed as module extensions of the existing BEAM tool. SMOSBox provides tools to analyze L1b, L1c and L2 data. In particular will be available: advanced plots: density plots, contour plots, 3-D plots, computation of derived quantities like Stokes parameter and pseudo L3 salinity maps and specific L2 data export function in NetCDF format.