Geophysical Research Abstracts
Vol. 13, EGU2011-10086, 2011
EGU General Assembly 2011

Overview of the SMOS Level 3 Salinity Products as Provided by Spanish CP34

Jordi Font (1), Jérôme Gourrion (1), Carolina Gabarró (1), Marco Talone (1), Fernando Pérez (1), Alessandra Monerris (1), Joaquín Villanueva (2), and Oscar Alonso (3)

(1) Institut de Ciencies del Mar CSIC, Barcelona, Spain (jfont@icm.csic.es, 00 34 932309555), (2) Indra Espacio, San Fernando de Henares, Spain, (3) GMV, Tres Cantos, Spain

More than one year has passed since the European Space Agency's (ESA) Soil Moisture and Ocean Salinity (SMOS) satellite was launched in November 2, 2009.

Since January 2010, ESA is providing, through the SMOS Data Processing Ground Segment (SMOS-DPGS) in Villafranca del Castillo (Spain) and for the first time ever, global and regularly measured Sea Surface Salinity (SSS) data at level 2 (along swath SSS values retrieved from radiometric measurements for each overpass of the satellite).

SMOS level 2 SSS products can be ingested by both oceanographic and weather forecasting models, nevertheless, their characteristics prevent the use for climatological studies. In this context their weaknesses are:
• The low accuracy of the retrieved SSS (1 psu rmse), and
• The very high spatial (15 km) and temporal (3 days) resolutions, which make not manageable the contemporaneous use of several semi-orbits.

The objective of the level 3 processing is to improve the quality of the retrieved SSS and, at the same time, to create more manageable products.

Two different institutions are in charge of producing and distributing SMOS level 3 maps: the French Centre Aval de Traitement des Données SMOS (CATDS) and the Spanish Centro de Procesado de niveles 3 y 4 (CP-34).

Six different salinity products are provided by the CP-34:
- Product 1: Characterized by the maximum spatial resolution (15 km) to locate salinity gradients. Only temporal weighted averaging of the level 2 SSS is performed according to the measurement uncertainty at level 2. Product 1 is calculated every 3 days over the last 10 days.
- Product 1b: Characterized by high spatial resolution (30 km). Spatio-temporal weighted averaging of the level 2 SSS is performed according to the measurement uncertainty at level 2. Product 1b is calculated every 3 days over the last 3 days.
- Product 2: Spatial and temporal averaging using the optimal interpolation method over the level 2 products. The product fulfills GODAE requirements and is defined on a regular 200-km spaced grid and calculated every 10 days over the last 10 days.
- Product 3: Spatial and temporal averaging using the optimal interpolation method over the level 2 products. The product is defined to be compared to existing climatologies, is provided in a regular grid spaced 100 km and calculated every 10 days over the last 30 days.
- Product 3a: Seasonal average of product 3, it is calculated every 3 months over the last 3 months (JFM, AMJ, JAS, and OND). The spatial resolution is the same as for product 3 (100 km).
- Product 3b: Yearly average of product 3, it is calculated every year over the last 12 months. The spatial resolution is the same as for product 3 (100 km).

Three versions of each product are generated using ascending, descending, and both types of orbits. Each absolute salinity value will be accompanied by its anomaly (difference between the absolute value and a predefined temporal mean), this predefined mean value, and a computation error value both for the absolute and mean values.

More details about the processing will be included in the presentation.