Geophysical Research Abstracts
Vol. 16, EGU2014-14152, 2014
EGU General Assembly 2014


# Overview of SMOS L4 products under development and implementation at CATDS

Ahmad Al Bitar (1), Yann Kerr (1), Olivier Merlin (1), Sat Tomer (1), Beatriz Molero (1), Audrey Chone (1), François Cabot (1), Jean-Pierre Wigneron (2), and Selma Cherchali (3)

(1) Centre d'Etudes Spatiales de la Biosphère, Toulouse, France , (2) Division Ecologie fonctionelle et Physique de l'Environnement, Institut National de la Recherche Agronomique, Bordeaux-Aquitaine, France , (3) Centre National d'Etudes Spatiales, Toulouse, France

Higher end level 4 products for EOS (Earth observation satellites) are products obtained from the combination of sensors data with other sensors or models. Those products are obtained from the extension of remote sensing application studies to wider conditions and regions. This study concerns the SMOS (Soil Moisture and Ocean Salinity) level 4 products.
Several level 4 products using the SMOS data are under development in the framework of the CATDS (Centre Aval de Traitement des Données SMOS), the French national effort into the development of level 3 (time synthesis) and level 4 (higher-end products). Those products can be divided into two groups:
Enhanced resolution products: Higher resolution products obtained from the combination of optical, thermal and microwave remote sensing products, Synergetic higher resolution products obtained from the combination of radar and microwave soil moisture products over India.
Extreme event products: Global drought index obtained from the insertion of SMOS soil moisture L3 products and climate data from NCEP and ECMWF into a double bucket model, Flood prediction and monitoring at large scale based on the use of forecast precipitation data and SMOS soil moisture data before and during the flood events.
A selection of those products like enhance drought index, Dispatch products, enhanced rainfall products are being implemented in an operational context .
In this study the different algorithms behind each product are presented and detailed. Synthetic validation results and demonstration studies are shown, and quantitative comparison to other products are shown.

Keywords: SMOS, SMAP, microwave, level 4, soil moisture, flooding, drought, Dispatch, disaggregation