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Major Results from the SMOS data analysis over the oceans for the seasonal cycle of year 2010

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After one year of quasi-continuous acquisition, we will present the main scientific results our team found analyzing the Soil Moisture and Ocean Salinity satellite mission data over the world oceans. Main properties of the reconstructed L-band brightness temperature and associated retrieved Sea Surface Salinity fields will be presented. Results based on the comparisons between SMOS data, radiative transfer forward model predictions, external satellite data, as well as in situ measurements of Sea Surface Salinity will be provided. These are used to assess instrument stability, brightness temperature image reconstruction quality, radio-frequency interference perturbations, land-contamination, and overall geophysical content in SMOS data over the oceans for the complete seasonal cycle of year 2010. Global quality of ESA/DPGS Level 2 and CATDS/Level 3 salinity products will be discussed based on extensive in situ validations and geophysical consistency check with external ocean surface data and products (satellite SST, color, microwave brightness at higher frequency, precipitation, evaporation, ocean circulation & meteorological model outputs, altimetry..).
Particular focus will be given to new results concerning Amazon plume monitoring, Tropical Pacific ocean salinity anomalies and to the general interest of SMOS L-band radiometer sensing for better monitoring sea surface physico-chemical state in very high wind conditions.