



Towards The Validation Of Ocean Surface Salinity Measurements From The ESA SMOS Mission

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We report on studies of sea surface salinity (SSS) in the Atlantic in relation to the calibration and validation of the European Space Agency Soil Moisture and Ocean Salinity (SMOS) satellite launched in November 2009. First order validation of SMOS SSS focus on large SSS signatures such as the meridional gradient of SSS, the maximum SSS in the Atlantic subtropical gyres and freshwater plumes from large rivers (e.g. Amazon) and whether these are detectable in single-pass SMOS images. Finer validation against in situ data will require considerable sustained effort to build multi-pass products and careful handling of errors and biases in both in situ and satellite data.

Early comparisons of in situ SSS from ARGO and PIRATA show good consistency between different sources of in situ data. The important relation between SSS, precipitation and evaporation is tentatively explored but made difficult by the dearth of in situ SSS data close to the surface. Other relations between precipitation, sea surface temperature, wind and evaporation in different parts of the Atlantic are also examined. Recent results are presented from a trans-oceanic hydrographic cruise in the tropical Atlantic in January 2010, including results from new conductivity-temperature micro-sensors deployed to provide measurements of salinity and temperature in the top meter of the ocean water column.