



Aquarius Status And SMOS Cross-Calibration Over Oceans

G Lagerloef (1), Y Kerr (2), E Anterrieu (2), T. Jackson (3), R. Bindlish (3), and H. Kao (1)

(1) Earth and Space Research, Seattle, WA, United States (lager@esr.org, 1 206 726-0524), (2) Centre d'Etudes Spatiales de la Biosphère (CESBIO), Toulouse, France, (3) US Department of Agriculture, Beltsville, MD, United States

The SMOS and Aquarius/SAC-D satellites, launched November 2009 and June 2011 respectively, are now measuring the global ocean salinity field. An important goal of both programs is to inter-calibrate and combine the respective satellite data sets and in situ ocean measurements to provide an accurate and well resolved ocean surface salinity observing capability for ocean and climate studies. This paper first provides a status update on the Aquarius mission and some examples of early scientific findings. It then addresses some initial efforts to compare the surface brightness temperatures and the salinity retrievals of the two sensors. SMOS data are recomputed to extract measurements that match the three fixed Aquarius incidence angles to make direct polarized brightness temperature (TH and TV) comparisons between SMOS and Aquarius. The SMOS data show more scatter than Aquarius, which is expected from the shorter SMOS integration time. Biases between the various channels have magnitudes from 0.14 to 1.52 K. The respective global mean salinities interpolated to a 1x1 degree grid show the same large-scale oceanographic features. Regionally, SMOS salinity values are less in the Southern Ocean, while Aquarius values are less in the low salinity regions of the tropical, western and northeast Pacific. These and other systematic regional differences between the two satellites will be further analyzed as the data processing and calibration continues in the months ahead, and we will present updated results at the conference.