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Topic: Cal/Val SMAP Salinity

Title: Characterization of SMAP Salinity Dataset Biases and Errors

Abstract: The Salinity Validation Data System (SVDS) was developed with the goal of providing a systematic estimation and assessment of satellite sea surface salinity over the global ocean. Using an in situ centered dataset matchup (±3.5 days, 50km), we evaluate, global, latitudinal, and regional biases, and assess satellite salinity data product errors. Here, we present results from the evaluation of NASA RSS V6.0 and V6.3 SMAP (Soil Moisture Active Passive) salinity data. These biases and errors are characterized for both L2 (swath, profile) and L3 (monthly gridded) data based on regional and local ocean conditions (rain, wind, SST, ice, stratification). Comparison with RSS SMAP V5.0, ESA SMOS (Soil Moisture and Ocean Salinity), and in situ data show bias reductions in most regions. Radio Frequency Interference (RFI) impacts are also explored. In addition, we use the covariance method of triple collocation analysis to quantify dataset errors for gridded SMAP, SMOS, in situ (EN4) data products. Sources of error – measurement versus representation - are also assessed.

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