Development of a New Geophysical Model Function for QuikSCAT using 10 Years of Data

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We are currently redeveloping a geophysical model function (GMF) for QuikSCAT. The original GMFs (Ku2001 and QSCAT-1) were developed following the methodology similar to that used for NSCAT (Wentz and Smith, 1999). The dependence of the backscatter cross section (σ_0) was determined by collocating one year of QuikSCAT observations with buoy winds and NCEP GDAS winds. The new GMF we are developing collocates almost 10 years of QuikSCAT observations with a variety of ancillary wind retrievals: a much larger buoy dataset, output from the NCEP GDAS model and high-wind case studies from the Hurricane Research Division at NOAA. The new model function will integrate all the ancillary observations in order to determine a unified algorithm with improved low and high winds compared to Ku2001 winds. Our presentation will describe the methodology being used to develop this model function and will present some sample cases of wind retrievals with the new GMF.