Simulated OVW Retrieval Performance for the Dual Frequency Scatterometer in Hurricanes

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The Dual Frequency Scatterometer (DFS) is a candidate design of the next-generation NASA/NOAA scatterometer, which has been proposed to fly on the future GCOM-W2 JAXA mission. To support this activity, CFRSL has collaborated with the Scatterometer Projects office at JPL to develop a simulation to evaluate the OVW measurement performance in extreme wind events (hurricanes). This poster paper will present simulation results for the Conically Scanning **Active/Passive Sensor Simulation** (CAPSS) for Hurricane Katrina.

The CAPSS computer simulation tool allows system engineers to vary orbit/sensor scenarios and data processing algorithms to simulate the DFS (Ku- and C-band) measurements of high-resolution sigma-0 slices and radiometric brightness temperatures in a typical hurricane environment. Also the study includes simulated brightness radiances from JAXA's Advanced Microwave Scanning Radiometer (AMSR). Trade studies are conducted for various combinations of DFS and AMSR sensor observation, which are used in a Maximum Likelihood Estimation (MLE) OVW retrieval algorithm. Simulation cases of OVW retrievals are presented and comparisons are made with a "nature run" for Hurricane Katrina (2004) using a 3-dimensional WRF numerical hurricane model simulation.