

# Passive Microwave Data Exploitation via the NRL Tropical Cyclone Webpage

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Operational Imperatives: 1 and 2

This Joint Hurricane Testbed (JHT) project provides multiple thrusts towards implementing upgrades of microwave imagery processing and products from the Naval Research Laboratory's Tropical Cyclone Webpage (NRL TC web; <http://www.nrlmry.navy.mil/TC.html>). The multiple goals of the project are: 1) Replicating and updating current processing in an open source python environment, including recalibration of the ice scattering channels to 89 GHz to reduce bias between sensors, bi-cubic spline interpolation, and CIMSS ARCHER recentering; 2) Adding new microwave channels and capabilities, as well as enhancing the colors and break points in current products; 3) Researching and testing a parallax correction of the microwave centers to adjust the surface center position; 4) Using the previous upgrades to populate an archive of historical passive microwave images and data since 1987.

Project work so far has involved the implementation and near-realtime demonstration of the multi-platform analysis standardization procedure as well as new product delivery, through visualizing new channels, color tables, and product fusions. Statistics on brightness temperature distributions in the climatological data have been calculated to facilitate new product visualizations. Near-realtime demonstration images processed from AMSR2, GMI, Himawari, and GOES have been processed and archived in near-realtime since June 2016. SSMIS, Windsat, Meteosat-8, and Meteosat-10 will be added for this upcoming season. Initial testing on parallax correction based on feature heights in microwave imagery suggest that center adjustment is near the uncertainty of current best track positioning and likely not a useful addition at this time. Finally, historical data from 1987-2012 is staged for generation of an archive of current and newly developed products. This talk will detail the current status of work, focusing on the introduction and explanation of new products.