

Towards Improved Microwave Remote Sensing: The Study and Observation of Tropical Cyclones (TC) from Space

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The application and use of space-borne scatterometer wind variables with sea-surface temperature (SST) and rain-rate from other microwave instruments for the analysis of tropical convergence has enormously grown upstream. These variables are important for understanding the genesis, movements, stage magnitudes, and inside-look physical processes of storms. The conically scanning pencil-beam scatterometer systems, such as the SeaWinds radar (aboard Midori-2 and QuickSCAT satellites) constitute an important class of microwave radars that can detect the storm in its early stages and provide a “minimum” (at least) estimate of the maximum sustained winds within the eye-wall in near-real time. In addition, SST from the Tropical Rainfall Measuring Mission (TRMM) microwave imager is applied for tracking while rain-rate measured by the TRMM precipitation radar is used to understand the precise physical state within the radius of gale. SeaWinds validation issues and suggestions for an improved suite of instruments will be highlighted.