P30 Evaluation of two microphysics and radiation schemes in HWRF using remote sensing data.

Bao, Shaowu, *Coastal Carolina University*, Ligia Bernardet, *National Oceanic and Atmospheric Administration (NOAA)*, Greg Thompson, *National Center for Atmospheric Research (NCAR)*, Christina Holt, *NOAA*, and Mrinal Biswas, *NCAR*

Three multi-year HWRF T&E tests (two of them in pervious DTC T&E tests and the other in this study) have been conducted using different microphysics and radiation schemes. The tests are post-processed to create model synthetic satellite cloud-top brightness temperature. The GOES remote-sensing data are also collected and processed for the modeled hurricane cases. The model synthetic cloud-top brightness temperatures are evaluated using the satellite observed data. Probability density distribution function (PDF) and Fractions skill scores (FSS) are used as the main analysis methods. The evaluation revealed that when the same microphysics scheme is used, the difference between results using RRTMG (in HDRF) and GFDL (in HDGF) radiations are small. The difference between the results using the Thompson (in HDRT) and the Ferrier (HDGF/HDRF) schemes are significant, especially in the EP. For the low-level stratus cloud simulation, the Thompson scheme is more skillful. For the very cold high cloud, the Ferrier scheme over estimates the cloud's area and the Thompson scheme underestimates it.