P12 Testing and evaluation of the radar data assimilation for high resolution convective forecasts.

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To facilitate transitions between the research and operations, the Developmental Testbed Center (DTC) continues to conduct testing and evaluation of the GSI (Gridpoint Statistical Interpolation) Hybrid Ensemble-Variational system for the regional 3-km High Resolution Rapid Refresh (HRRR). This activity supports the wider goal to improve the convective scale and cloud-resolving numerical weather predictions at the National Oceanic and Atmospheric Administration Earth System Research Laboratory (NOAA/ESRL). This study used a HRRR system that is functionally similar to the operational HRRR, with all simulations being run on the NCAR supercomputer Cheyenne. To reduce computational cost, the operational 3-km HRRR domain has been reduced from the CONUS (Continental US) to the central US. The period for this testing and evaluation study is September 3-10 of 2016. The model was run with with hourly updates of the initial and boundary conditions from the retrospective 13-km Rapid Refresh (RAP) runs. A number of experimental runs were conducted using various configurations of radar radial wind data assimilation within the GSI. Verification was conducted for these experiments using the Model Evaluation Tools (MET) against conventional observations. This presentation will discuss the findings of this work and evaluate the forecast impact of different assimilation methods and scales of superobing the radar winds by comparing it to control experiment that uses the default configuration of the HRRR framework.