

P12 Testing and evaluation of the GSI-Hybrid data assimilation and its applications for hurricane forecasts

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In collaboration with research and operational centers, the Developmental Testbed Center (DTC) works toward the improvement of data assimilation and initialization of numerical models for tropical cyclone forecasting. Recent work has been performed in the framework of the NCEP/EMC (Environmental Modeling Center) experimental basin-scale Hurricane Weather Research and Forecast (HWRF) model, which employs a hybrid variational-ensemble configuration of the Gridpoint Statistical Interpolation (GSI) system.

Multiple cases of tropical storms have been run to investigate various aspects of the GSI-Hybrid DA system, including: cross covariance feature, background error tuning, ensemble selection, cycling scheme, and data impact. As part of the effort to advance the GSI-Hybrid DA system in HWRF, diagnostics have been performed to study the impact of numerous configurations on hurricane forecasts.