

## **2.1 Providing operational GSI and EnKF to the research community**

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The Developmental Testbed Center (DTC), in partnership with NCEP and other operational and research institutions, provides operational data assimilation (DA) capabilities to the research community and helps transition research advances to operations. The primary DA system supported currently by the DTC is the Gridpoint Statistical Interpolation (GSI) DA system. The GSI system is a unified DA system being used for daily operations at NOAA, NASA, AFWA, and other operational agencies. Since 2009, the DTC has been releasing GSI code to the research community annually and providing user support. Meanwhile, the DTC has been conducting GSI tests, focused on assessing the GSI capabilities in regional applications beyond the Contiguous United States (CONUS) domain, which is the main area of interest for operational applications located in the United States.

Recently, the DTC started providing another operational DA system to the community, the NOAA Ensemble Kalman Filter (EnKF) system. This system is being operated as part of the GSI based hybrid (GSI-hybrid) system for NCEP global Forecast System (GFS) operations. It shares the observation operator with GSI and therefore can assimilate both conventional and non-conventional data (e.g., satellite radiance) as GSI does.

This paper will give an annual update on the GSI efforts and an overview of the EnKF system to be released in July 2015. It will present the latest code features and available community services for general users. The paper will also give some highlights on the testing activities performed at the DTC in the past year.