

P42 Verification of FV3 forecasts using the Model Evaluation for Research Innovation Transition (MERIT) testing framework.

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In order to address the ultimate goal of helping improve operational NWP, the Model Evaluation for Research Innovation Transition (MERIT) was established by the DTC as a testing framework to assess and improve upon shortcomings in operational models. This testing framework is made available to NCEP's Environmental Modeling Center (EMC) to test their model developments and also allows for community contributions to be readily tested. Providing the research and operational communities with an end-to-end framework will streamline the testing process to accelerate more effective and efficient physics development, encourage community engagement, and provide an infrastructure that supports Research to Operations and Operations to Research.

The MERIT testing framework includes, running the Finite-Volume Cubed-Sphere (FV3) system and post-processing, verifying, and plotting model output. Baseline results for 3 cases of interest as part of the initial FV3 public release were run for a 7-day forecast period using the testing framework. These cases include 18 January 2016 (East Coast Blizzard), 12 August 2016 (Louisiana Flooding) and 29 September 2016 (Hurricane Matthew). In addition, NCEP's Global Forecast System (GFS) baselines were also established for the 3 cases to facilitate benchmarking of results, and comparisons between the GFS and FV3 were conducted using the Model Evaluation Tool (MET) and python plotting utilities. Objective verification comparisons will be presented for surface and upper-air temperature, relative humidity, and winds, as well as 24-hour precipitation accumulation.