Data Assimilation for NOAA's Next Generation Regional High Resolution NWP System

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Abstract

The Rapid Refresh Forecast System (RRFS) is NOAA's next generation rapidly-updating regional/storm scale operational Numerical Weather Prediction (NWP) system. Development is a highly collaborative process involving many partners. The RRFS is targeted to replace many current regional and storm scale operational NWP systems, including the Rapid Refresh (RAP), High Resolution Rapid refresh (HRRR), High Resolution Ensemble Forecast System (HREF), and North American Mesoscale Forecast System (NAM). The RRFS is based upon a hybrid EnVar framework having rapid analysis updates of at least an hourly cadence, ensemble forecasts initialized every hour, and covers North America on a 3 km grid - over 9 million grid cells in the horizontal dimension. This presentation will cover a broad, programmatic description of the RRFS data assimilation system, current progress, and scientific as well as computational design considerations.

Keywords: convection allowing, regional, rapid update, ensemble

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