

Planned FY17 Hurricane Modeling at NWS/NCEP: Upgrades for HWRF and Implementation of new HMON Model (replacement for GFDL Hurricane Model)

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Regional Hurricane modeling systems implemented at NWS/NCEP operations are now used for forecasting guidance in all ocean basins of the world. Lately, HWRF (Hurricane Weather Research and Forecast) modeling system has made significant improvements to the state of the art in numerical forecast guidance. These improvements come from advances in various components of the modeling system that are incorporated into the model in yearly cycles. In this talk we will discuss specific planned model improvements for the 2017 yearly upgrade cycle along with future plans for regional Hurricane modeling at NCEP.

After 22 years of service at NCEP operations, the GFDL hurricane model is planned for decommissioning from service before the hurricane season begins in 2017. Following UMAC recommendations on unifying and simplifying the NCEP production suite, EMC hurricane team has been developing another non-hydrostatic hurricane model in NOAA Environmental Modeling System (NEMS) framework known as HMON (Hurricanes in a Multi-scale Ocean-coupled Non-hydrostatic) Model which is being prepared to replace the GFDL hurricane model in operations this year. Development of HMON is consistent with, and a step closer to developing NGGPS chosen FV3 dynamic core based global to local scale coupled models in a unified modeling framework. We will also discuss operational configuration details of the new HMON model, and its scientific performance compared to GFDL and HWRF based on multi-year retrospective experiments.