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Service Change Notice 18-59
National Weather Service Headquarters Silver Spring MD
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From: Dave Myrick
 NWS Office of Science and Technology Integration

Subject: Upgrade the Hurricanes in a Multi-scale Ocean-coupled Non-hydrostatic (HMON) Model: Effective July 9, 2018

Effective on or about Monday, July 9, 2018, beginning with the 1200 Coordinated Universal Time (UTC) run, the National Centers for Environmental Prediction (NCEP) will upgrade the HMON coupled (HMON-HYCOM) modeling system.

The scientific and technique enhancements include the following:

- Upgrade of Non-hydrostatic Multiscale Model on the B-grid (NMMB) dynamic core with bug fixes.
- Model vertical resolution has been increased from 42 to 51 levels.
- Improved vortex relocation.
- Updated convection scheme from Simplified Arakawa-Schubert (SAS) scheme to scale-aware SAS scheme.
- Updated the Planetary Boundary Layer (PBL) scheme from the Global Forecast System (GFS) PBL scheme to GFS Eddy-Diffusivity Mass-Flux (EDMF) PBL scheme.
- Updated momentum and enthalpy exchange coefficients (Cd/Ch).
- Added HYCOM coupling in the North Atlantic (NATL) basin.
- Unified HWRF/HMON coupler.

The 2018 HMON system has been fully tested and compared with the forecast skill of the 2017 operational HMON v1. Overall, it has shown improved skill in track and intensity forecasts for both NATL and Eastern Pacific (EPAC) basins.

Product Timing Changes:

Timing output will be up to 15 minutes later than the 2017 HMON version for the NATL basin, and up to five minutes later for Eastern and Central Pacific basins. All forecast products for all basins will be available before T+6:00.

Sample HMON products from 2018 HMON are available at:

<http://para.nomads.ncep.noaa.gov/>

More details about the HMON system are available at:

http://www.emc.ncep.noaa.gov/gc_wmb/vxt/HMON/index.php

NCEP encourages users to ensure their decoders are flexible and are able to adequately handle changes in content order, changes in the scaling factor component within the product definition section (PDS) of the gridded binary (GRIB) files, and any volume changes which may be forthcoming. These elements may change with future NCEP model implementations. NCEP will make every attempt to alert users to these changes prior to any implementations.

Any questions, comments or requests regarding this implementation should be directed to the contacts below. We will review any feedback and decide whether to proceed.

For questions regarding these model changes, please contact:

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For questions regarding the data flow aspects of these data sets, please contact:

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National Service Change Notices are online at:

<https://www.weather.gov/notification/archive>

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