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PNSWSH

Technical Implementation Notice 11-09 Amended
National Weather Service Headquarters Washington DC
740 AM EDT Mon May 16 2011

To: Subscribers:
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           -NOAA Weather Wire Service
           -Emergency Managers Weather Information Network
           -NOAAPort
           Other NWS Partners, Users and Employees

From: Timothy McClung
           Chief, Science Plans Branch
           Office of Science and Technology

Subject: Amended: Hurricane Weather and Research Forecast (HWRF) Model
Changes: Effective May 24, 2011

Amended to reschedule this implementation from May 17 to May 24, 2011 to
avoid upgrading both NCEP hurricane models on the same day.

Effective Tuesday, May 24, 2011, beginning with the 1200 Coordinated
Universal Time (UTC) run, the National Centers for Environmental
Prediction (NCEP) will upgrade the HWRF - Princeton Ocean Model (POM)
coupled system. The scientific enhancements include the following:

- Upgrade WRF NMM dynamic core from v2.0 to v3.2.
- Modify vortex size corrections based on radius of outermost closed
isobar (ROCI) and radius of 34 knot (kt.) winds.
- Upgrade HWRF Grid point Statistical Interpolation (GSI) analysis scheme
to community version 2.5.
- Upgrade Simplified Arakawa-Schubert (SAS) deep convection
parameterization to new version implemented in the NCEP Global Forecast
System (GFS).
- Modify surface enthalpy exchange coefficient at high wind speeds.
- Expand coupled region in the Eastern Atlantic domain to prevent storms
from losing coupling effect with the ocean due to insufficient overlap
with the Western Atlantic region.
- Upgrade HWRF post-processing to new NCEP Unified Post Processor (UPP).

Test results from the combination of these upgrades showed improved track
and intensity forecast skill, reduced initial growth of errors (spin-up
and spin-down) and reduced intensity bias for the Atlantic and a majority
of the eastern North Pacific basins.

Product Changes:

The following elements will be added to the HWRF model output gridded
binary (GRIB) files:
- Angle corrected simulated goes satellite imagery products /infrared and
water vapor channels/.

- Simulated microwave satellite imagery products.
- Additional vertical pressure levels for three-dimensional variables.

The frequency of model output will be increased from 6-hourly to 3-hourly for all variables.

The HWRF gridded binary (GRIB) products are disseminated via the NCEP and NWS FTP servers and are not available on NOAAPort or on the Advanced Weather Interactive Processing System (AWIPS). These changes will result in no change in product dissemination time. There will be an increase of roughly 2GB in product size due to the additional elements.

More details about the HWRF-POM are available at:

http://www.emc.ncep.noaa.gov/HWRF/index.html

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 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.

For questions regarding these model changes, please contact:

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National Technical Implementation Notices are online at:

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

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