

NOUS41 KWBC 291119  
PNSWSH

TECHNICAL IMPLEMENTATION NOTICE 10-17  
NATIONAL WEATHER SERVICE HEADQUARTERS WASHINGTON DC  
719 AM EDT THU APR 27 2010

TO: SUBSCRIBERS:  
-FAMILY OF SERVICES  
-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: HURRICANE WEATHER AND RESEARCH FORECAST MODEL CHANGES: EFFECTIVE  
JUNE 1 2010

EFFECTIVE TUESDAY JUNE 1 2010...BEGINNING WITH THE 1200 COORDINATED  
UNIVERSAL TIME /UTC/ RUN...THE NATIONAL CENTERS FOR ENVIRONMENTAL  
PREDICTION /NCEP/ WILL UPGRADE THE HURRICANE WEATHER AND RESEARCH FORECAST  
/HWRF/--PRINCETON OCEAN MODEL /POM/ COUPLED SYSTEM. THE SCIENTIFIC  
ENHANCEMENTS INCLUDE THE FOLLOWING:

- CODE CORRECTIONS FOR LAND SURFACE TEMPERATURE...RADIATION AND ADVECTION  
OF VERTICAL VELOCITY.
- ASSIMILATION OF AMSU...AQUA AND GOES SATELLITE RADIANCE DATA IN THE 9KM  
INNER NEST.
- MORE REALISTIC SPECIFICATION OF SURFACE HEAT AND MOMENTUM EXCHANGE  
COEFFICIENTS USED IN OCEANIC FLUX CALCULATION.
- ADDITION OF GRAVITY WAVE DRAG PARAMETERIZATION.

TEST RESULTS FROM THE COMBINATION OF THESE UPGRADES SHOWED IMPROVED TRACK  
AND INTENSITY FORECAST SKILL AND REDUCED INTENSITY BIAS FOR BOTH ATLANTIC  
AND EASTERN NORTH PACIFIC BASINS.

IN ADDITION...THE FOLLOWING ELEMENTS WILL BE ADDED TO THE HWRF MODEL  
OUTPUT GRIDDED BINARY /GRIB/ FILES:

- SIMULATED GOES SATELLITE IMAGERY PRODUCTS /INFRARED AND WATER VAPOR  
CHANNELS/
- SIMULATED RADAR REFLECTIVITY
- TEMPERATURE AT 2M
- DEWPOINT TEMPERATURE AT 2M AND OTHER PRESSURE LEVELS

THE FOLLOWING ELEMENTS WILL BE ADDED TO THE POM OCEAN MODEL OUTPUT FILES:

- MIXED LAYER DEPTH
- OCEANIC HEAT CONTENT

THE HWRF GRIB PRODUCTS ARE DISSEMINATED VIA THE NCEP FILE TRANSFER  
PROTOCOL /FTP/ SERVER.

THESE CHANGES WILL RESULT IN NO CHANGE IN PRODUCT DISSEMINATION TIME.  
THERE WILL BE AN INCREASE OF ROUGHLY 2 GB IN PRODUCT SIZE DUE TO THE  
ADDITIONAL ELEMENTS. THESE CHANGES WILL NOT IMPACT NOAAPORT OR THE  
ADVANCED WEATHER INTERACTIVE PROCESSING SYSTEM /AWIPS/.

MORE DETAILS ABOUT THE HWRF-POM ARE AVAILABLE AT /USE LOWER CASE EXCEPT  
FOR HWRF/:

[HTTP://WWW.EMC.NCEP.NOAA.GOV/HWRF/INDEX.HTML](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...PARAMETER FIELDS CHANGING  
ORDER...CHANGES IN THE SCALING FACTOR COMPONENT WITHIN THE PRODUCT  
DESCRIPTION SECTION /PDS/ OF THE GRIB FILES AND ANY VOLUME CHANGES WHICH  
MAY OCCUR. 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:

DR. VIJAY TALLAPRAGADA  
NCEP/ENVIRONMENTAL MODELING CENTER  
HURRICANE FORECAST PROJECT  
CAMP SPRINGS MARYLAND  
301-763-8000 X 7232  
[VIJAY.TALLAPRAGADA@NOAA.GOV](mailto:VIJAY.TALLAPRAGADA@NOAA.GOV)

NATIONAL TECHNICAL IMPLEMENTATION NOTICES ARE ONLINE AT /USE LOWER CASE/:

[HTTPS://WWW.WEATHER.GOV/NOTIFICATION/ARCHIVE](https://www.weather.gov/notification/archive)

\$\$  
NNNN