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PNSWSH

TECHNICAL IMPLEMENTATION NOTICE 09-33  
NATIONAL WEATHER SERVICE HEADQUARTERS WASHINGTON DC  
855 AM EDT THU SEP 24 2009

TO: SUBSCRIBERS:  
-FAMILY OF SERVICES  
-NOAA WEATHER WIRE SERVICE  
-EMERGENCY MANAGERS WEATHER INFORMATION NETWORK  
-NOAAPORT  
OTHER NWS PARTNERS...USERS AND EMPLOYEES

FROM: JASON TUELL  
SCIENCE PLANS BRANCH CHIEF  
OFFICE OF SCIENCE AND TECHNOLOGY

SUBJECT: NAM/DGEX MODIFICATIONS:  
EFFECTIVE NOVEMBER 3 2009

EFFECTIVE NOVEMBER 03 2009...BEGINNING WITH THE 1200  
UNIVERSAL COORDINATED TIME /UTC/ MODEL RUN...THE NATIONAL  
CENTERS FOR ENVIRONMENTAL PREDICTION /NCEP/ WILL MODIFY THE  
NORTH AMERICAN MESOSCALE /NAM/ MODEL. THE CHANGES WILL IMPACT  
THE RESULTING NAM AND DOWNSCALED GFS BY NAM EXTENSION /DGEX/  
PRODUCTS.

THE FORECAST MODEL AND POST-PROCESSING CHANGES AND THEIR  
RESULTING IMPACTS INCLUDE THE FOLLOWING:

- FIX BUG IN HORIZONTAL ADVECTION OF VERTICAL VELOCITY AND  
HEIGHT IN NON-HYDROSTATIC MODEL RESULTING IN SLIGHTLY  
IMPROVED VERTICAL PROFILES OF VERTICAL VELOCITY ASSOCIATED  
WITH FLOWS OVER MOUNTAINS
- MAKE FIX TO RADIATION PHYSICS RESULTING IN CLOUDS BEING LESS  
OPAQUE TO SHORTWAVE AND LONGWAVE RADIATION AT GRID POINTS  
WHERE RAIN IS FALLING IN THE COLUMN
- CHANGE MICROPHYSICS PARAMETER TO INCREASE THE NUMBER OF  
SMALL NON-PRECIPIATING ICE PARTICLES RESULTING IN MORE  
REALISTIC NAM GOES LOOKALIKE BRIGHTNESS TEMPERATURES AND  
IMPROVED UPPER LEVEL RH BIAS AND ROOT MEAN SQUARE /RMS/  
ERRORS VERSUS RAOBS
- CHANGE MICROPHYSICS TO ENFORCE A MINIMUM NUMBER  
CONCENTRATION FOR LARGE ICE PARTICLES AT ALL TEMPERATURES  
RESULTING IN THE ELIMINATION OF TINY VALUES OF ICE REACHING  
THE GROUND WHICH CREATED SPURIOUS ACCUMULATING SNOW IN THE  
NAM DURING SPRING/SUMMER
- FIX BUG IN THE ROUTINE THAT DETERMINES CATEGORICAL WEATHER  
TYPE RESULTING IN A SLIGHT CHANGE IN THE CATEGORICAL  
PRECIPITATION TYPE FOR SOME GRID POINTS

IN ADDITION RADAR ECHO TOP HEIGHT IS BEING ADDED TO ALL NAM

OUTPUT GRIDS CONTAINING SIMULATED RADAR REFLECTIVITY AVAILABLE ON THE NCEP OR NWS FTP SERVERS. THE RADAR ECHO TOP HEIGHT WILL NOT BE ADDED TO THE PRODUCTS DISSEMINATED VIA THE SBN/NOAAPORT WHICH ARE AVAILABLE IN AWIPS.

DATA DELIVERY TIMING WILL NOT BE IMPACTED BY THIS IMPLEMENTATION. EXPECT A 0.1 TO 0.5 PERCENT INCREASE IN DATA VOLUME FOR GRIDS TO WHICH RADAR ECHO TOP WILL BE ADDED.

USERS SHOULD ENSURE THEIR DECODERS ARE FLEXIBLE AND ARE ABLE TO ADEQUATELY HANDLE CHANGES IN CONTENT ORDER...PARAMETER FIELDS CHANGING ORDER...CHANGES IN THE SCALING FACTOR COMPONENT WITHIN THE PRODUCT DEFINITION SECTION /PDS/ OF THE GRIB FILES AND ALSO VOLUME CHANGES. THESE ELEMENTS MAY CHANGE WITH FUTURE NCEP MODEL IMPLEMENTATIONS. NCEP WILL ATTEMPT TO ALERT USERS TO THESE CHANGES BEFORE IMPLEMENTATION.

FOR MORE DETAILS ABOUT CHANGES TO NCEP/S MESOSCALE MODELS PLEASE SEE /USE LOWERCASE/

[HTTP://WWW.EMC.NCEP.NOAA.GOV/MB/MBPPL/ERIC.HTML#TAB4](http://www.emc.ncep.noaa.gov/mb/mbppl/eric.html#tab4)

FOR QUESTIONS REGARDING THESE MODEL CHANGES...PLEASE CONTACT:

GEOFF DIMEGO  
NCEP...MESOSCALE MODELING BRANCH  
CAMP SPRINGS MARYLAND  
301-763-8000 X 7221  
GEOFF.DIMEGO@NOAA.GOV

OR

ERIC ROGERS  
NCEP...MESOSCALE MODELING BRANCH  
CAMP SPRINGS MARYLAND  
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NWS NATIONAL TECHNICAL IMPLEMENTATION NOTICES ARE ONLINE AT /USE LOWERCASE/:

[HTTP://WWW.NWS.NOAA.GOV/OS/NOTIF.HTM](http://www.nws.noaa.gov/os/notif.htm)

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