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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  
CHIEF...SCIENCE PLANS BRANCH  
OFFICE OF SCIENCE AND TECHNOLOGY

SUBJECT: NAM/DGEX MODIFICATIONS: EFFECTIVE NOVEMBER 3 2009

EFFECTIVE NOVEMBER 03 2009...BEGINNING WITH THE 1200 COORDINATED UNIVERSAL 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 GEOSTATIONARY ORBITING ENVIRONMENTAL SATELLITE /GOES/ LOOKALIKE BRIGHTNESS TEMPERATURES AND IMPROVED UPPER LEVEL RELATIVE HUMIDITY /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 FILE TRANSFER PROTOCOL /FTP/ SERVERS. THE RADAR ECHO TOP HEIGHT WILL NOT BE ADDED TO THE PRODUCTS DISSEMINATED VIA THE SATELLITE BROADCAST NETWORK /SBN//NOAAPORT WHICH ARE AVAILABLE IN THE ADVANCED WEATHER INTERACTIVE PROCESSING SYSTEM /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 GRIDDED BINARY /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 LOWER CASE/:

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

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

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NCEP...MESOSCALE MODELING BRANCH  
CAMP SPRINGS MARYLAND  
301-763-8000 X 7221  
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OR

ERIC ROGERS  
NCEP...MESOSCALE MODELING BRANCH  
CAMP SPRINGS MARYLAND  
301-763-8000 X 7227  
[ERIC.ROGERS@NOAA.GOV](mailto:ERIC.ROGERS@NOAA.GOV)

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

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

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