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TECHNICAL IMPLEMENTATION NOTICE 05-33
NATIONAL WEATHER SERVICE HEADQUARTERS WASHINGTON DC
200 PM EDT WED APR 27 2005

TO: FAMILY OF SERVICES /FOS/ SUBSCRIBERS
NOAA WEATHER WIRE SERVICE /NWS/ SUBSCRIBERS
EMERGENCY MANAGERS WEATHER INFORMATION NETWORK /EMWIN/
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OTHER NWS CUSTOMERS...PARTNERS AND EMPLOYEES

FROM: PAUL HIRSCHBERG
CHIEF...SCIENCE PLANS BRANCH
OFFICE OF SCIENCE AND TECHNOLOGY

SUBJECT: UPGRADE OF THE NCEP GLOBAL FORECAST SYSTEM: EFFECTIVE MAY 31 2005

EFFECTIVE MAY 31 2005...BEGINNING WITH THE 1200 COORDINATED UNIVERSAL TIME /UTC/ RUN...THE NATIONAL CENTERS FOR ENVIRONMENTAL PREDICTION /NCEP/ WILL UPGRADE THE GLOBAL FORECAST SYSTEM /GFS/ TO IMPROVE ITS ACCURACY AND PRODUCTS.

THIS UPGRADE INVOLVES INCREMENTAL IMPROVEMENTS TO THE ANALYSIS AND FORECAST OF THE GFS. DETAILS OF THESE CHANGES INCLUDE:

ANALYSIS CHANGES:

- INCREASE HORIZONTAL RESOLUTION TO T382.
- ASSIMILATE AQUA AIRS AND AMSU-A BRIGHTNESS TEMPERATURES.
- MODIFY THINNING ALGORITHM FOR BRIGHTNESS TEMPERATURES.
- ADD SURFACE MICROWAVE EMISSIVITY MODEL OVER SNOW AND ICE.
- MODIFY BRIGHTNESS TEMPERATURE QUALITY CONTROL ALGORITHM TO CHECK FOR THE PRESENCE OF CLOUDS IN IR FIELDS OF VIEW.

FORECAST MODEL CHANGES:

- HORIZONTAL RESOLUTION INCREASED FROM T254 /~55 KM/ 64 LAYERS TO T382 /~35 KM/ 64 LAYERS FOR FORECAST HOURS 0-180.
- HORIZONTAL RESOLUTION INCREASED FROM T126 /~100 KM/ 42 LAYERS TO T190 /~70 KM/ 64 LAYERS FOR FORECAST HOURS GREATER THAN 180.
- ADDITION OF THE NOAH LAND SURFACE MODEL WITH FOUR SOIL LAYERS.
- NEW SEA ICE MODEL.
- REDUCED VERTICAL DIFFUSION.
- ENHANCED MOUNTAIN BLOCKING.

THIS UPGRADE WILL NOT CHANGE GFS PRODUCTS SENT OVER NOAAPORT. NCEP CENTRAL OPERATIONS /NCO/ IS CURRENTLY RUNNING A REAL-TIME PARALLEL RUN OF THE T382 GFS. RESULTS FROM THESE PARALLEL RUNS CAN BE VIEWED AT /USE LOWER CASE/:

[HTTP://WWW.NCO.NCEP.NOAA.GOV/PMB/NWPARA/ANALYSIS/](http://www.nco.ncep.noaa.gov/pmb/nwpara/analysis/)

FOR QUESTIONS CONCERNING THESE CHANGES...PLEASE CONTACT:

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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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