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PNSWSH

Technical Implementation Notice 13-16, Amended  
National Weather Service Headquarters Washington DC  
705 AM EDT Fri Jul 19 2013

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

Subject: Amended to postpone Hybrid Single-Particle Lagrangian  
Integrated Trajectory (HYSPLIT) update date to  
Tuesday, July 30, 2013 due to the delay in the  
transition of the NCEP production suite to the WCOSS  
supercomputer.

Amended to set the final effective date to July 30, 2013

Effective on or about Tuesday, July 30, 2013, beginning with the  
1200 Coordinated Universal Time (UTC) run, the National Centers  
for Environmental Prediction (NCEP) will upgrade the HYSPLIT  
modeling system including smoke, dust and volcanic ash.

The NOAA Air Resources Laboratory HYSPLIT subversion number 339  
will be implemented as NCEP version 7.0.0 on NCEP's new Weather  
and Climate Operational Supercomputing System (WCOSS), scheduled  
to become the operational machine on July 30, 2013. A separate  
TIN will be issued announcing the operational switch to the  
WCOSS system. In the event that switch date is changed, this TIN  
will be modified to reflect that change in implementation date.

Forecasts from the updated HYSPLIT model were made available  
through a parallel feed from WCOSS starting around June 19,  
2013. The smoke and dust HYSPLIT GRIB products from the parallel  
feed are disseminated via the NCEP website:

<http://www.emc.ncep.noaa.gov/mmb/aq/hysplit/grib/>

and the products will be displayed through NCEP's website:

<http://www.emc.ncep.noaa.gov/mmb/aq/hysplit/web/html/#picture>

Current operational HYSPLIT model will continue providing  
forecasts through NCEP Central Computing System (CCS) until the  
WCOSS machine goes live on July 30, 2013. At that time updated

WCOSS smoke and dust predictions will be distributed through

<ftp://tgftp.nws.noaa.gov/SL.us008001/ST.opnl/DF.gr2/DC.ndgd/GT.aq/AR.conus/>

<ftp://tgftp.nws.noaa.gov/SL.us008001/ST.opnl/DF.gr2/DC.ndgd/GT.aq/AR.alaska/>

<ftp://tgftp.nws.noaa.gov/SL.us008001/ST.opnl/DF.gr2/DC.ndgd/GT.aq/AR.hawaii/>

and displayed at

<http://airquality.weather.gov/>

The scientific enhancements include the following:

- Improved wet removal by reducing in-cloud particle wet removal coefficient, allowing wet removal to occur only when both precipitation and clouds are defined in the same grid cell, and turned off precipitation field spatial interpolation
- revised horizontal puff dispersion rate to be more consistent with particle dispersion
- set Kanthar-Clayson vertical mixing parameterization as default
- maximum plume rise limits relaxed
- fires pre-processor modified for daily emission cycling

The model has been tested with these updates for all HYSPLIT applications at NCEP. Overall the results showed generally similar results, except for simulations of the wet deposition from the Fukushima nuclear power plant incident of 2011, in which significant improvements occurred.

There are no changes to existing products or their contents.

More details about the HYSPLIT are available at:

<http://www.ready.noaa.gov/HYSPLIT.php>

For questions regarding these updated predictions, please contact:

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NWS National Technical Implementation Notices are online at:

<http://www.nws.noaa.gov/os/notif.htm>

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