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PNSWSH

Technical Implementation Notice 16-05 Amended
National Weather Service Headquarters Washington DC
250 PM EDT Mon Jun 6 2016

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From: Timothy McClung
Chief Operating Officer
NWS Office of Science and Technology Integration

Subject: Amended: Hybrid Single-Particle Lagrangian Integrated
Trajectory (HYSPLIT) Model Update
Effective date July 6, 2016

Amended to change the date from TBD to July 6, 2016

Effective Wednesday, July 6, beginning with the 1200 Coordinated Universal Time (UTC) run, the National Centers for Environmental Prediction (NCEP) will upgrade the HYSPLIT modeling system that produces operational predictions of wildfire smoke and dust from dust storms as well as volcanic ash. The output file names on the NCEP ftp servers will change.

- Science Upgrades

1. No scientific enhancements to the smoke and dust products were made.

2. For volcanic ash, the wet deposition technique was modified. The new wet deposition technique has been shown to give improved deposition results when there is precipitation for an analogous application (particulate from the Fukushima Nuclear Power Plant), and hence is expected to also apply to volcanic ash.

New volcanic ash trajectory products will be generated:

6 hour forward trajectories from the GFS at 1525, 3050, 4550, 6100, 9100, 12200, and 15200 m AGL for each of these volcanoes in Alaska:

Akutan, Aniakchak, Atka, Augustine, Churchill, Cleveland, Dutton, Gareloi, Great Sitkin, Griggs, Hayes, Iliamna, Kaguyak, Kanaga, Kasatochi, Katmai, Mageik, Makushin, Martin, Novarupta, Okmok, Pavlof, Pavlof Sister, Redoubt, Seguam, Semisopochnoi, Shishaldin, Spurr, Trident, Ugashik-Peulik, Veniaminof, Westdahl, and Wrangell.

- Expected Benefits

1. Improved Volcanic Ash predictions for ash in and near areas of precipitation. Ash well-above clouds and precipitation will not be affected.

2. Consistent GRIB2 smoke/dust output file name structure

3. New Volcanic Ash trajectories products for user (NWS, USGS) requirements

- File name changes

The files found under this operational server will change:

<http://www.ftp.ncep.noaa.gov/data/nccf/com/hysplit/prod/>
<ftp://ftp.ncep.noaa.gov/pub/data/nccf/com/hysplit/prod/>

1. The smoke directory and file name formats will change:

CONUS GRIB2 directory and files:

/smoke.yyyymmdd -> /smokecs.yyyymmdd

smoke.t06z.grib2_pbl.1hr_227 -> smokecs.t06z.pbl.1hr_227.grib2

smoke.t06z.grib2_sfc.1hr_227 -> smokecs.t06z.sfc.1hr_227.grib2

Alaska GRIB2 files:

smokeak.t06z.grib2ak_pbl.1hr_198 ->

smokeak.t06z.pbl.1hr_198.grib2

smokeak.t06z.grib2ak_sfc.1hr_198 ->

smokeak.t06z.sfc.1hr_198.grib2

Hawaii GRIB2 files:

smokehi.t06z.grib2hi_pbl.1hr_196 ->

smokehi.t06z.pbl.1hr_196.grib2

smokehi.t06z.grib2hi_sfc.1hr_196 ->

smokehi.t06z.sfc.1hr_196.grib2

2. Additional files will be available:

The forecast duration HYSPLIT-formatted NAM CONUS Nest files will be extended from 24-h to 48-h with the following files:

hysplit.yyyymmdd/hysplit.tCCz.namsf24.CONUS

hysplit.yyyymmdd/hysplit.tCCz.namsf30.CONUS

hysplit.yyyymmdd/hysplit.tCCz.namsf36.CONUS

hysplit.yyyymmdd/hysplit.tCCz.namsf42.CONUS, where CC=00,06,12, or 18 and yyyymmdd is year, month, day.

For some meteorological situations, there may be improved HYSPLIT dispersion guidance using NAM CONUS Nest predictions for longer times (up to 48 hours) into the forecast.

- Parallel data

Forecasts from the updated HYSPLIT model will be made available

through a parallel feed starting in late February, 2016. The HYSPLIT smoke GRIB2 products for all three domains, CONUS (continental US), Alaska and Hawaii and dust for CONUS from the parallel feed are disseminated via the NCEP website:

<http://para.nomads.ncep.noaa.gov>

The products for smoke and dust will be displayed through:

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

- Current operational HYSPLIT model will continue providing forecasts through:

<ftp://ftp.ncep.noaa.gov/pub/data/nccf/com/hysplit/>

<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/>

Graphical display for smoke and dust at:

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

Display for Volcanic ash at:

<http://weather.noaa.gov/fax/wafsash.shtml>

<http://www.aviationweather.gov/iffdp/volc>

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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