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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 July 6, 2016

Amended to change the date from to be determined (TBD) to July 6, 2016.

Effective Wednesday, July 6, 2016, 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 File Transfer Protocol (FTP) servers will change.

Science Upgrades:

- No scientific enhancements to the smoke and dust products were made.
- 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 Global Forecast System (GFS) at 1525, 3050, 4550, 6100, 9100, 12200, and 15200 m above ground level (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, Semisopchnoi, Shishaldin, Spurr, Trident, Ugashik-Peulik, Veniaminof, Westdahl and Wrangell.

Expected Benefits:

- Improved Volcanic Ash predictions for ash in and near areas of precipitation. Ash well-above clouds and precipitation will not be affected.
- Consistent Gridded Binary Version Two (GRIB2) smoke/dust output file name structure.
- New Volcanic Ash trajectories products for user (NWS, United States Geological Survey (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/>

The smoke directory and file name formats will change:

Contiguous U.S. (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

Additional files will be available:

The forecast duration HYSPLIT-formatted North American Mesoscale (NAM) CONUS Nest files will be extended from 24-hours to 48-hours 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, 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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<https://www.weather.gov/notification/archive>

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