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Service Change Notice 21-86 Updated
National Weather Service Headquarters Silver Spring MD
1030 AM EST Wed Nov 17 2021

To: Subscribers:
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From: Jason Levit
 Chief, Verification, Post-Processing, Product
 Generation Branch
 NCEP/Environmental Modeling Center

Subject: Updated: Unit Change for the Rapid Refresh (RAP) and High
Resolution Rapid Refresh (HRRR) Smoke Mass Density Output and Change to
Identification of the Height of the Level of Free Convection Parameter:
Effective December 21, 2021

Updated to indicate the new effective date of December 21, 2021.

Effective on or about December 21, 2021 with the 1200 Coordinated
Universal Time (UTC) cycle, the National Centers for Environmental
Prediction (NCEP) will make updates to the Rapid Refresh (RAP) and High
Resolution Rapid Refresh (HRRR) data via all transmission methods.

A) Changes to Smoke Output

The current smoke mass density output is in micrograms/m³, even though
the gridded binary version two (grib2) definition of the field denotes
kg/m³. The units of the output will be changed to kilograms/m³ to
match the grib2 definition of the mass density parameter. This affects
the following fields:

- Near-Surface smoke (mass density at 8 meters) found in the HRRR wrfnat,
wrfprs and wrfsfc files for both the contiguous U.S. (CONUS) and Alaska.
- Near-Surface smoke (mass density at 8 meters) found in the RAP wrfnat,
wrfprs, awp130pgrb, awp130bgrb, awip32, awp242, awp242b and awp243 files.
- Smoke on native levels (mass density on hybrid levels) found in the
HRRR wrfnat files (levels 1-50) for both CONUS and Alaska.
- Smoke on native levels (mass density on hybrid levels) found in the RAP
wrfnat, awp130bgrb and awp130pgrb files (levels 1-50).

B) Changes to Height of the Level of Free Convection (LFC)

The current level of free convection height field is labeled with a
missing vertical coordinate. This will be changed to '14' to match the
definition of the LFC.

- This parameter is found in the CONUS HRRR wrfnat, wrfprs and wrfsfc files.
- This parameter is found in the RAP awp130pgrb, awp32 and wrfprs files.

C) Test Data

On or around October 4, 2021, a test data set from a cycle of the RAP and HRRR, each run with the aforementioned changes, will be made available on <https://para.nomads.ncep.noaa.gov> for users to test their ability to ingest the model data following the implementation of the changes.

If you have any questions regarding this change, please contact:

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National Service Change Notices are online at:

<https://www.weather.gov/notification/>

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