

NOUS41 KWBC 131830 AAA
PNSWSH

Service Change Notice 21-86 Updated
National Weather Service Headquarters Silver Spring MD
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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 November 16, 2022

Updated for November effective date.

Effective on or about Wednesday, November 16, 2022 at 1200 Coordinated
Universal Time (UTC), 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 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 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

A test data set from a cycle of the RAP and HRRR, each run with the aforementioned changes, is 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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NWS National Service Changes Notices are online at:

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

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