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Public Information Statement 23-13
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From: Brent Gordon
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 NWS/NCEP Space Weather Prediction Center

Subject: Soliciting Public Comment on the Upgrade of the Whole Atmosphere
 Model-Ionosphere Plasmasphere Electrodynamics Model (WAM-IPE)
 Forecast System (WFS) to Version 1.2 through March 24, 2023

The Space Weather Prediction Center (SWPC) at the National Centers for Environmental Prediction (NCEP) is working towards upgrading the Whole Atmosphere Model-Ionosphere Plasmasphere Electrodynamics Model (WAM-IPE) Forecast System (WFS) with some minor changes in the previous concept of operations (CONOPS1) and including an additional concept of operations (CONOPS2) in summer 2023.

The proposed WFS upgrade includes the following:

An improved relationship between Kp/F10.7 and solar wind parameters for the forecast portion will be implemented, which is expected to improve the model specification from CONOPS1 beyond when observed space weather drivers are available, especially during periods of increased solar activity.

The proposed CONOPS2 will ingest real-time solar wind parameters to support a nowcast system in order to capture rapid changes in the ionosphere and thermosphere due to the sudden onset of geomagnetic storms. The nowcast will be reinitialized every six hours to include the latest forcing from the lower atmosphere.

Output from both CONOPS will be made available on the NOAA Operational Model Archive and Distribution System (NOMADS). Product files are currently tarred hourly, and with this upgrade, we propose to make the individual post-processed files available as they are generated. The 3D outputs will remain at a 10-minute cadence, while the 2D outputs will be available at a 5-minute cadence. The domain properties and included variables will remain the same.

Please send comments on the science aspects of the proposed upgrade to:

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For questions on the dataflow aspects, please contact:

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The NWS will evaluate all comments to determine whether to proceed with this upgrade. If approved, a Service Change Notice will be issued, providing a minimum 30-day notice of the implementation date.

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