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PNSWSH

Public Information Statement, Comment Request  
National Weather Service Headquarters Washington DC  
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From: Tim McClung  
Science Plans Branch Chief  
Office of Science and Technology

Subject: Soliciting Public Comments Through November 15, 2013,  
for Experimental LAMP Convection and Upgraded Lightning  
Products

The NWS is seeking user feedback on the experimental Localized Aviation Model Output Statistics Program (LAMP) Convection and Upgraded Lightning products through November 15, 2013.

The LAMP convection and lightning forecast guidance consists of probability forecasts and categorical forecasts (referred to as "potential") in 20-km grid boxes for 2-h periods in the 3-to 25-h range over the CONUS. Convection in a grid box is defined as the occurrence of either radar reflectivity of greater than or equal to 40 dBZ or at least one cloud-to-ground (CTG) lightning strike (or both) during the 2-h valid period. Lightning occurrence in a grid box is defined as at least one CTG lightning strike during the 2-h valid period. The categorical LAMP convection and lightning guidance consists of four objectively defined "potential" categories consisting of "no," "low," "medium," and "high."

The experimental LAMP convection and lightning guidance contains guidance on a 2.5 km Lambert Conformal grid covering the same expanse as the National Digital Forecast Database (NDFD) CONUS grid. Grids are generated hourly.

The LAMP convection guidance is a new product, while the LAMP lightning guidance has been upgraded and is proposed as a replacement for the current LAMP "thunderstorm" guidance. The name of the thunderstorm product will change from thunderstorm to lightning, and the resolution will change from 5-km to 2.5-km. In addition to the 2.5-km LAMP lightning guidance, the LAMP lightning guidance will also be sampled to a 5-km grid. The 4 category product will be converted to a Yes/No categorical product so as to continue to support users who are dependent on

the LAMP thunderstorm guidance, currently available on a 5-km grid and provides a Yes/No categorical product.

Objective scoring of the LAMP convection and lightning probabilities reveals substantial forecast skill and sharpness, and good reliability. For instance, the skill and sharpness of the convection and lightning probabilities are much better than that for current operational LAMP thunderstorm probabilities even though the convection/lightning and thunderstorm models have a similar design. The superior performance for convection and the upgraded lightning guidance is attributed to supplemental dynamical predictor input from the NCEP North American Mesoscale (NAM) model, as both LAMP (convection/lightning and thunderstorm) models use dynamical predictors from the large scale NCEP Global Forecast System (GFS). The NAM predictor input also provides additional spatial resolution.

More information about these products, as well as links to the data and images, can be found here:

[http://www.nws.noaa.gov/mdl/gfslamp/docs/cnvlgt\\_info.php](http://www.nws.noaa.gov/mdl/gfslamp/docs/cnvlgt_info.php)

The products are available in GRIB2 format at the following site:

[http://www.nws.noaa.gov/mdl/lamp/cnvlgt\\_downloads.php](http://www.nws.noaa.gov/mdl/lamp/cnvlgt_downloads.php)

With this proposal, the format of the LAMP text bulletin (AWIPS PIL of "LAV") will change. The LAMP lightning probabilities and four category guidance interpolated to stations will replace the thunderstorm probability and two category guidance in the LAMP text bulletin. The LAMP convection probabilities and four category guidance interpolated to stations will be added to the LAMP text bulletin. An example of the current LAMP bulletin compared to the proposed LAMP bulletin can be found here:

<http://www.nws.noaa.gov/mdl/gfslamp/docs/lavtxtdiff.php>

The new LAMP bulletins are available at the following site:

[http://www.nws.noaa.gov/mdl/gfslamp/lavlamp\\_cnvlgt.shtml](http://www.nws.noaa.gov/mdl/gfslamp/lavlamp_cnvlgt.shtml)

The LAMP lightning probability and four category guidance converted to the two category Y/N guidance will be interpolated to stations and will replace the thunderstorm probability and two category guidance in the LAMP BUFR message file. Therefore the format of the new lightning guidance will look the same as the format of the current thunderstorm guidance in the BUFR files so as to continue to support users who depend on this data and format. The Convection Guidance will be added to the BUFR file at a later time, and will be announced via a Technical Implementation Notice. The link for the BUFR data containing the upgraded lightning data will be made available on the information page URL above when available.

Users are encouraged to provide feedback on these experimental products by using the brief survey and comment form available online at:

<http://www.nws.noaa.gov/survey/nws-survey.php?code=LCULG>

If you have technical comments or questions, please contact:

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Links to the LAMP products and descriptions can found at:

<http://www.nws.noaa.gov/mdl/gfslamp/gfslamp.shtml>

National Public Information Statements are online at:

<http://www.weather.gov/os/notif.htm>

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