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Service Change Notice 25-04
National Weather Service Headquarters Silver Spring MD
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From: Bruce Entwistle, Chief
Aviation and Space Weather Services Branch

Subject: Operational Deployment of the Global Total Electron Content (GloTEC) Ionosphere Model: Effective on or about February 18, 2025

On or about February 18, 2025, the National Weather Service (NWS) Space Weather Prediction Center (SWPC) in Boulder, CO will operationally deploy the Global Total Electron Content (GloTEC) ionosphere model located at:

https://www.swpc.noaa.gov/products/glotec-experimental

The final product will be available at:

https://swpc-drupal.woc.noaa.gov/products/glotec

The current operational products of North America Total Electron Content (NATEC) ionosphere model and US Total Electron Content (USTEC) are no longer being supported and will be replaced by GloTEC.

NATEC and USTEC products were previously found here:

https://www.swpc.noaa.gov/products/north-american-total-electron-content

https://www.swpc.noaa.gov/products/north-american-total-electron-content-us-region

The Total Electron Content (TEC), TEC uncertainty, TEC recent trend, and empirical orthogonal function (EOF) products provided by the legacy NATEC and USTEC have been discontinued. GloTEC will produce an equivalent set of image products, daily animations, and a global TEC data product available in a daily NetCDF file, which is appended every 10 minutes. A file in ASCII GeoJSON format that contains TEC values will also be provided in the same cadence. Global TEC is provided on a 2.5 degree latitude by 5 degree longitude grid. Additional information can be found in the Data tab on the experimental GloTEC page. Data are accessible at this link:

https://services.swpc.noaa.gov/experimental/products/glotec/

The GloTEC ionosphere model was developed at SWPC. It is a real-time data assimilation system based on the Gauss-Markov Kalman Filter. The model ingests ground-based and space-based slant TEC measurements to estimate 3-dimensional electron density. The electron density is integrated vertically to produce TEC products for the Continental United States, North America, and the globe.

For more information about the GloTEC model, please review the product description document at this link:

https://nsdesk.servicenowservices.com/api/g_noa/nwspc/res2/430996c2970f56508881bb7de053af03

Questions on the GloTEC model can be directed to:

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National Service Change Notices are online at:

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

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