



Abstract Details

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Title: IRI NmF2 numerical mapping based on the GPS/MET data

Abstract:

The International Reference Ionosphere (IRI) applies numerical methods to the measurements from a worldwide network of ~150 ground-based ionosondes and to represent global and monthly median behaviors of ionospheric layer parameters (foF2 and M3000 values). The weak points are the data compilation. Respect to space-based data, the Global Positioning System/Meteorology (GPS/MET) mission is the first experiment to use Earth orbiting satellite to receive multi-channel GPS carrier phase signals to demonstrate active limb sounding of the ionosphere. Using the Abel inversion through compensated total electron content (TEC) values, we have collected more than forty thousands of vertical profiles of the ionospheric electron density from April 1995 to Feb. 1997. The retrieved peak electron density (NmF2) results have been used to produce a numerical map representing the complex properties on a world-wide scale, including diurnal and geographic variations. The derived numerical map has been examined through the GPS/MET observations and compared to the ordinary CCIR and URSI maps.

Presentation Mode:

Keywords: GPS/MET experiment, total electron content, IRI model, Abel transformation

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