Abstract Details

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Title: Ionospheric Tomography of Reference GPS/MET Experiment through Model

Abstract:

In earlier works, we have implemented the Multiplicative Algebraic Reconstruction Technique (MART) to reconstruct and compare two-dimensional ionospheric structures from measured TECs through the receptions of the GPS-to-LEO signals, the NNSS-to-ground signals, ar both of the systems. The retrieved electron density profiles from tomographic reconstruction shows more reasonable results than the c vertical profiles retrieved by the Abel transformation and being in mo agreement in peak electron density to nearby ionosonde measuremer However, expect for specified overhead ionosphere above the ground validation systems, e.g. ionosondes, it is difficult to obtain the true ionosphere used to verify determined electron density structures and improve tomography inverse techniques and/or algorithms. In this pa simulate the GPS-to-LEO TEC measurements through the IRI model b integrating electron densities along the straight ray paths betwee GPS and LEO satellite positions, which are obtained within the real GI experiment. Contiguous tomographic images have been derived by th algorithm within the reference GPS/MET experiment and then be ve by the true reference ionosphere from the IRI model.

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