



Contribution ID: 109

Type: Oral Presentation

Ionospheric Tomography over South Africa: comparison of MIDAS, ionosondes and GPS measurements

Tuesday, 8 July 2014 11:30 (20 minutes)

Abstract content
 (Max 300 words)
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This paper aims to show the results of an ionospheric tomography algorithm called Multi-Instrument Data Analysis (MIDAS) system over the South African region.

Recorded data from a network of around 53 Global Positioning System (GPS) receivers over the South African region was used as input for the inversion. The inversion was made for a few randomly selected days (12 April (autumn), 12 July (winter), 12 October (spring) and 12 December (summer)) representing different seasons of the year 2012. MIDAS reconstructions were validated by comparing NmF2 values predicted by MIDAS to those calculated from the four South African ionosonde stations. Good agreement was found between the two measurements with minimum and maximum root mean square errors (rmse) of 0.88 and 1.92 units respectively, and minimum and maximum coefficients of determination (r^2) of 0.90 and 0.96 respectively. Also, MIDAS reconstruction had greatest accuracy during the winter and summer months compared to the other seasons.

Apply to be considered for a student award (Yes / No)?

Yes

Level for award (Hons, MSc, PhD)?

MSc

Main supervisor (name and email) and his / her institution

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Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

No

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Session Classification: Space

Track Classification: Track D2 - Space Science