Contribution ID: **397** Type: **Poster Presentation**

Investigating the effect of atmospheric dymanics on HF propagation

Thursday, 14 July 2011 17:00 (2 hours)

<p>HF propagation involves transmission and reception of radio signals within a frequency range of 3 – 30 MHz. It finds applications in a number of communication fields such as international short wave broadcasting, mobile telephone systems, radio navigation and operation of radar systems. However, it depends on the ionosphere which is constantly varying mainly due changes in the neutral atmosphere which are a consequence of atmospheric dynamics. In this paper, we investigate the effect of atmospheric dynamics on High Frequency (HF) propagation using the co-located radars at SANSA Space Science (19.2o E, 34.4o S), Hermanus, South Africa. These radars include the HF Doppler radar, Ionosonde, Global Positioning System (GPS) receiver and GPS Ionospheric Scintillation Total Electron Content (TEC) Monitor (GISTM). HF propagation results from the HF Doppler radar are presented. The comparison of results of the HF Doppler radar with other radars is also included. Results show that radio communication is affected by atmospheric dynamics which results into signal fading or at worst signal loss.

Level (Hons, MSc,
   PhD, other)?

MSc

Consider for a student
   award (Yes / No)?

Yes

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

Yes

Primary author: Ms ATHIENO, Racheal (South African National Space Agency (SANSA) Space Science)

Co-author: Dr MCKINNELL, Lee-Anne (South African National Space Agency (SANSA) Space Science)

Presenter: Ms ATHIENO, Racheal (South African National Space Agency (SANSA) Space Science)

Session Classification: Poster2

Track Classification: Track D2 - Space Science