Contribution ID: **51** Type: **Oral Presentation**

Multi-instrument observations of spread F irregularities over South Africa

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<p>An ionospheric eight year study (2001-2008) over South Africa (SA) was conducted using ionosonde data observed by DPS-4 digisondes with a time resolution of 10, 15 and 30 minutes from Madimbo, Grahamstown and Louisvale. Spread F (SF) characterized by ionograms is observed when the pulses returned from the F region of the ionosphere are of longer duration than the transmitted signals. Separate occurrence of horizontal and vertical spreading of the returned echoes from the ionosphere are classified as range spread F (RSF) and frequency spread F (FSF) respectively. The overlap of echoes of range and frequency spreading can occur simultaneously giving rise to mixed SF (MSF). These types of SF show a seasonal, solar cycle and diurnal patterns over this midlatitude region. These variational patterns were obtained by viewing the ionograms from the ionosondes manually using the SAO Explorer. The diurnal pattern of SF peaks between 23:00 UT and 00:00 UT for all seasons and types of SF in 2001 and 2005, except during autumn and spring (for RSF) in 2001. The % occurrence of both MSF and FSF tends to increase with decreasing sunspot number (SSN). The MSF and FSF occurrence maximum are most frequent during the winter months in 2007 and 2006 respectively.

Level (Hons, MSc,
   PhD, other)?

MSc

Consider for a student
   award (Yes / No)?

Yes

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

No

Primary author: Mr AMABAYO, Emirant Bertillas (SANSA Space Science and Rhodes University)

Co-authors: Dr PIERRE, Cilliers (SANSA Space Science); Dr LEE-ANNE, Mckinnell (SANSA Space Science and Rhodes University)

Presenter: Mr AMABAYO, Emirant Bertillas (SANSA Space Science and Rhodes University)

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