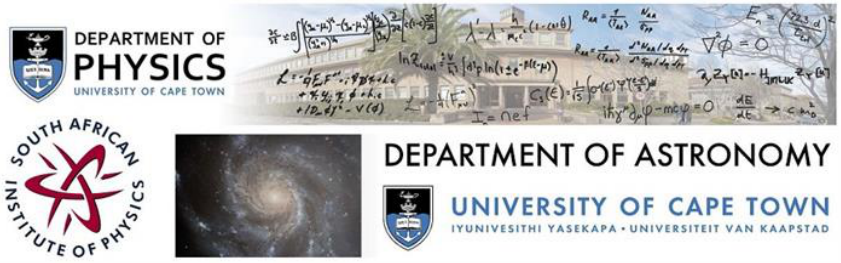

Contribution ID: **123** Type: **Oral Presentation**

Ionospheric Disturbances During Geomagnetic Storm at SANAE

Wednesday, 6 July 2016 10:00 (20 minutes)

Abstract content
   (Max 300 words)
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It has been reported by many studies that the ionosphere responds differently to different geomagnetic storms depending on their magnitude and time of occurrence.
During geomagnetic storms the polar plasma dynamics can influence the middle and low latitude ionosphere via travelling ionospheric disturbances (TIDs).
TIDs are a wave-like electron density disturbances caused by atmospheric gravity waves propagating in the ionosphere.
The aim of this study is to investigate the ionospheric responses to the storm of 15th July 2012 using total electron content (TEC) and scintillations
measurements derived from
Global Positioning System (GPS) receiver as well as superDARN relative power at SANAE station and super-DARN convection map.
TEC results show that this storm had positive storm effect on the ionosphere (i.e. increase in TEC), which commenced in the main phase of the storm
and lasted for approximately 8 hours.
Both TEC and superDARN power measurements show presence of a TID with period of 39 minutes and amplitude of ˜ 0.6 TECU between 12:00 and 16:00 UT.
SuperDARN convection map indicates that this TID was caused by instabilities moving at around 200 m/s brought by the heat gradient in the plasma
around 9:40 magnetic local time (MLT).

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