#### **SAIP2016**



Contribution ID: 183

Type: Oral Presentation

#### Thermospheric neutral density observations by radar

Wednesday, 6 July 2016 15:20 (20 minutes)

## Abstract content <br> &nbsp; (Max 300 words)<br><a href="http://events.saip.org.za/getFile.py/a target="\_blank">Formatting &<br>Special chars</a>

Radars are sensitive to backscatter from the ionosphere, i.e. the charged component of the upper-atmosphere, and are normally completely insensitive to the thermosphere, i.e. the dominant neutral component of the upper-atmosphere. Manipulation of the ion-momentum equation permits the ion-neutral collision frequency to be estimated and hence from this the neutral density. We show examples for two basic geometries: (1) Parallel to the magnetic field using incoherent scatter radar, and (2) Perpendicular to the magnetic field using coherent scatter radars. Applications include the long-term trend due to climate change and the short-term variability due to solar storms.

Apply to be<br> considered for a student <br> &nbsp; award (Yes / No)?

No

Level for award<br>&nbsp;(Hons, MSc, <br> &nbsp; PhD, N/A)?

N/A

Main supervisor (name and email)<br>and his / her institution

N/A

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

No

# Please indicate whether<br>this abstract may be<br>published online<br>(Yes / No)

Yes

Primary author: Prof. KOSCH, Michael (SANSA)

**Co-authors:** Ms SARNO-SMITH, Lois (University of Michigan); Dr RIETVELD, Mike (EISCAT Scientific Association); Prof. YEOMAN, Tim (University of Leicester); Dr OGAWA, Yasunobu (National Institute of Polar Research); Dr YAMAZAKI, Yosuke (Lancaster University)

**Presenter:** Prof. KOSCH, Michael (SANSA)

Session Classification: Space Science

Track Classification: Track D2 - Space Science