
Contribution ID: **150** Type: **Oral Presentation**

# Black aurora studies in the ionosphere.

*Wednesday, 5 July 2017 11:10 (20 minutes)*

Black auroras are small regions of reduced optical emissions, embedded in the much brighter diffuse background aurora. They are usually seen drifting eastward during the substorm recovery phase, post-magnetic midnight. Although several theories have been proposed to explain the decrease in precipitating electron flux in these localised regions, the underlying mechanism is as yet unknown. This phenomenon has been studied before using optical observations. Uniquely, we study the black aurora using the EISCAT incoherent scatter radar in Tromso, Norway, in conjunction with dual-wavelength optical observations at 427.8 and 844.6 nm. From these data, the characteristic electron energy inside and outside the black aurora can be estimated. First results are presented here.

## Summary

First results are shown of characteristic energies of both inside and outside the black aurora using optical and radar methods. Future work using satellite data are also discussed.

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

Yes

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

PhD

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

M.J. Kosch

mkosch@sansa.org.za

SANSA Space Science

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

No

**Primary author:** Ms NEL, Amore (SANSA)

**Co-author:** Prof. KOSCH, Mike (SANSA Space Science)

**Presenter:** Ms NEL, Amore (SANSA)

**Session Classification:** Space Science

**Track Classification:** Track D2 - Space Science