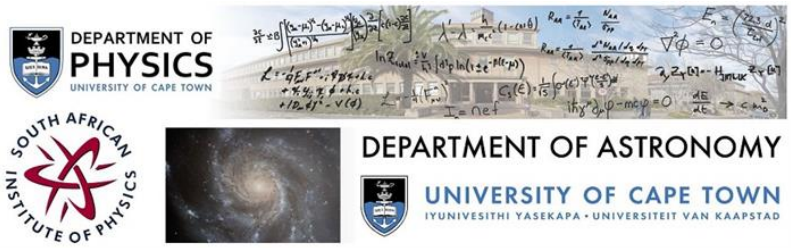
SAIP2016



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Thermospheric neutral density observations by radar

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Abstract :

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.

Award :
No

Level :
N/A

Supervisor :
N/A

Paper :
No

Permission :
Yes

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