



## **Inter-Hemispheric Asymmetry in Nitric Oxide 5.3 $\mu\text{m}$ Radiative Cooling During Geomagnetic Storm Events**

Tikemani Bag

NATIONAL ATMOSPHERIC RESEARCH LABORATORY GADANKI, CHITTOOR, India (tiku.bag@gmail.com)

The Nitric Oxide (NO) radiative emission at 5.3 $\mu\text{m}$  is one of the dominating cooling agents in the Earth's atmosphere. It is even more important during the geomagnetic storm events due to huge deposition of energy at the high latitude region. The NO 5.3 $\mu\text{m}$  emission undergoes a significant enhancement in response to the energy deposition and subsequent heating (Joule/Particle) during the geomagnetic storm period. We study the TIMED-SABER measurement of NO 5.3 $\mu\text{m}$  radiative emission during a few geomagnetic storm events between  $\pm 55^\circ$  geographic latitudes. One of the events that occurred during 7-12 November 2004 (Dst=-374 nT) is analyzed in details. The responses of other storms are compared with it. All the events show a clear hemispheric asymmetry. The present study also shows that the hemispheric asymmetry does not strongly depend on the strength of the geomagnetic storm. We also study the behavior of NO volume emission rate (VER) during the geomagnetic storm periods. The NO VER shows an enhancement and equatorward movement with descending peak altitude. We try to explore the different aspects, causes and factors influencing the hemispheric asymmetry.