



Comparison of electron density profile from CHAMP GPS radio occultation data with CHAMP PLP and ionosonde measurements during the Halloween event in 2003

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Electron density profile was retrieved from CHAMP GPS radio occultation measurements during the Halloween event in 2003. The Halloween event on 28-30 October in 2003 was a very strong magnetic storm. The calibrated TEC (Total Electron Content) and onion peeling method were used to retrieve the vertical electron density profiles. The electron density profiles were compared with the electron densities from CHAMP PLP (Planar Langmuir Probe) and ground-based ionosonde measurements. The CHAMP PLP can provide the in-situ electron density measurements at its orbit altitude and ionosonde can provide vertical profile of electron density at 100 - 300 km altitude. We will discuss the sources of the electron density variation during the period of the super geomagnetic storm in the mid-latitude.