

## **Study of ionospheric trough at mid-latitude : KOMPSAT-1 observations**

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Electron density measurement from the KOMPSAT-1, which was launched on December 21, 1999 into 685 km altitude sun-synchronous polar orbit with the descending node at 22:50 local time (LT), are examined to study the ionospheric trough at mid-latitude. The characteristics of ionospheric trough like the location and strength are investigated depending on the magnetic Kp index, taken as a proxy for the level of geomagnetic disturbance. During geomagnetic disturbances the electric fields and particle populations which characterize the auroral region expand equatorward, and their effects are felt at previously sub-auroral latitudes. Intense convection electric fields appear in the expanded auroral oval and are responsible for density depletion and ionospheric trough formation due to the effects of enhanced recombination.