

A STUDY OF TIDAL INFLUENCE ON THE TOPSIDE IONOSPHERE AT MIDDLE AND LOW LATITUDES BY MEANS OF DEMETER, DMSP AND TIMED/SABER DATA

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French micro-satellite DEMETER (*Detection of Electro-Magnetic Emissions Transmitted from Earthquake Regions*) was launched on June 29 2004 at near circular Sun synchronous orbit (SSO) with 98° inclination at 710-730km initial height with approximate local time of the orbital ascending node $\sim 2230\text{LT}$. Meanwhile, DMSP-F13, F15 are on orbit operation since 1994 and 1999 onto circular SSO with 96° inclination at $\sim 830\text{-}840\text{km}$ with ascending node local time $\sim 1745\text{LT}$ and $\sim 2130\text{LT}$. While TIMED is launched on December 7 2001, all these satellites cover prolonged period of observations (2004-2005) used here to study wavenumber (WN4) longitudinal structures in the topside ionosphere in conjunction to the TIMED/SABER observations at E-region heights. Plasma probe data from DEMETER and DMSP-F13, F15 satellites show remarkable WN4 longitudinal structures in ion density and temperature at the topside equatorial ionosphere during equinox seasons of August 2004-October 2005. Simultaneous statistics of TIMED/SABER T_n data corresponding to the E-region and below are taken to estimate the tidal structures, which may be a source of the WN4 wavelike distribution observed in the topside ionosphere.

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