



## **Simulated East-west differences in F-region peak electron density at Far East mid-latitude region**

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In the present work, using Three-Dimensional Theoretical Ionospheric Model of the Earth in Institute of Geology and Geophysics, Chinese Academy of Sciences (TIME3D-IGGCAS), we simulated the east-west differences in F-region peak electron density (NmF2) at Far East mid-latitude region. We found that, after removing the longitudinal variations of neutral parameters, TIME3D-IGGCAS can better represent the observed relative east-west difference (Rew) features. Rew is mainly negative (West NmF2 > East NmF2) at noon and positive (East NmF2 > West NmF2) at evening-night. The magnitude of daytime negative Rew is weak at local winter and strong at local summer, and the daytime Rew show two negative peaks around two equinoxes. With the increasing of solar flux level, the magnitude of Rew mainly become larger, and two daytime negative peaks slight shifts to June Solstice. With the decreasing of geographical latitude, Rew mainly become positive, and two daytime negative peaks slight shifts to June Solstice. Our simulation also suggested that the thermospheric zonal wind combined with the geomagnetic field configuration play a pivotal role in the formation of the ionospheric east-west differences at Far East midlatitude region.