

Modeling of the Jovian thermosphere and ionosphere

Chihiro Tao[1]; Hitoshi Fujiwara[1]; Hiroshi Fukunishi[1]; Yukihiro Takahashi[1]; Ryuho Kataoka[2]

[1] Dept. of Geophysics, Tohoku Univ.; [2] NICT

The Jovian thermosphere and ionosphere play an important role in the coupled magnetosphere-ionosphere-thermosphere system. In this system, the electric current is mainly driven in the ionosphere/thermosphere and this ionospheric current is connected to current in the magnetosphere through field-aligned current. In order to investigate the energetics and dynamics of the coupled system, we are developing a new numerical model of the Jovian thermosphere and ionosphere. The global distribution of neutral wind is obtained using three-dimensional equation of motion. The calculated wind system is found to be strongly dependent on the Coriolis force, which is produced by high-speed rotation of Jupiter.