

Combined effect of penetration electric field and thermospheric wind disturbance on positive ionospheric storms

Hidekatsu Jin[1]; Takashi Maruyama[1]

[1] NICT

Since positive ionospheric storms cause errors in satellite positioning and navigation, it is important to investigate mechanism for increase in the ionospheric content quantitatively. Positive storms have been known to occur due to an eastward electric field that penetrates from the inner magnetosphere and due to disturbed thermospheric wind circulation. On the other hand, the positive ionospheric storm drivers are frequently observed to occur one after another or almost simultaneously during severe ionospheric storms. In this study, we discuss synergistic effect of the penetration electric field and disturbed thermospheric wind through numerical simulations and case studies.