Japan Geoscience Union Meeting 2010
(May 23-28 2010 at Makuhari, Chiba, Japan)

PEM025-P13 Room:コンベンションホール Time: May 26 17:15-18:45

Comparison of ionospheric equivalent slab thickness with bottomside digisonde profile at mid-latitudes

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A comparison of the diurnal and seasonal variations in the ionospheric equivalent slab thickness (tau) and bottomside slab thickness (B0) is presented bases on the observation during high solar activities at a mid latitude station, Wuhan (114.4E, 30.6N). The investigated data include foF2, hmF2, B0, B1 and TEC are derived from the measured ionogram and GPS receiver over Wuhan from April 1999 to March 2000, respectively. he rsults show that tau and B0 are highly/weakly correlated during the day/night, respectively. Furthermore, a comprehensive discussion of the relation between tau, B0, and hmF2 for the geomagnetic storm event is provided in this investigation.

Keywords: equivalent slab thickness, Ionospheric dynamics, B0, GPS, mid-latitudes