

# Medium-scale traveling ionospheric disturbance observed with SuperDARN and GPS

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Using GPS data taken from Geographical Survey Institute of Japan and International GPS Service and IGS (International GPS Service) SCIGN (Southern California Integrated GPS Network), CORS (Continuously Operating Reference Stations) in 2002, we had investigated the longitudinal dependence of TEC perturbations associated with MSTID (Medium-Scale Traveling Ionospheric Disturbances). The result indicated that there was no longitudinal dependence of MSTID parameters such as direction of propagation, horizontal wavelength and horizontal velocity. In this study, using data of SuperDARN (Super Dual Auroral Radar Network) deployed in the polar region and IGS in 2001, we investigated the characteristics (propagation direction, horizontal wavelength and horizontal velocity) of MSTID observed at high latitude. We observed MSTID on January 1, 2001 by the Goose Bay radar [53.32N, 60.46W] and the GPS receivers installed at [41.5N, 71.3W], [42.6N, 71.49W], [41.67N, 70.0W]. Analyzing the Goose Bay radar data, we investigated the MSTID which propagated southward. The typical velocity and horizontal wavelength of MSTID observed with SuperDARN was 250 m/s and 300 km, respectively. Using three GPS receivers, we investigated drift velocity of MSTID. The drift velocity was 250 m/s.

In this presentation, we will show the latitudinal dependence of MSTID parameters such as occurrence rate and horizontal velocity.