

**Statistical study of large-scale TIDs using the GEONET total electron content data**

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Large scale traveling ionospheric disturbances (LSTIDs) were statistically studied using total electron content (TEC) derived from the GPS earth observation network (GEONET) in Japan.

In the previous study, the damping rate of LSTIDs on September 22, 1999 was found to be the largest in the afternoon sector and the smallest in the night sector. This dependence of the damping rate on local time indicates that the dissipation of LSTIDs is mainly caused by the ion-drag effect that is proportional to the background TEC.

The propagation direction of the LSTIDs in the dawn sector was 10 degrees from south. This direction was inconsistent with the direction of LSTIDs which are believed to be affected by the Coriolis force.

More than thirty LSTIDs were identified during thirty-three months from April 1999 to December 2001 using GEONET data. Those LSTIDs had a tendency to be more dissipated at the dayside than at the nightside. This local time dependency is consistent with that in the event on September 22, 1999. We discuss the role of the ion-drag effect in the dissipation of LSTIDs with comparison between the damping rate of LSTIDs and the background TEC. The propagation direction of LSTIDs are also discussed.