

## Measurement of upper-atmospheric neutral wind derived from multi-station persistent meteor train imaging

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Upper atmospheric neutral wind could be measured by using rocket-released TMA trail with multiple-site ground observations, however, it has a limitation that only the neutral wind along the rocket trajectory can be measured. Here, we present the result of mesoscale upper-atmospheric neutral wind

derived from multiple-station persistent meteor train imagings at a night of Leonid meteor storm on 2001.

Observations of persistent meteor trains are limited because of the extreme rarity of the phenomenon, however, on Nov. 19, 2001, we could successfully obtain 43 simultaneous multi-site observations of persistent meteor trains owing to the meteor train observation (METRO) campaign.

The altitudinal distribution of persistent trains has already been investigated statistically (Yamamoto, 2005). Simultaneous multi-site observations of meteor trains with high spatial and temporal resolution are used to determine the altitudinal distribution of persistent trains for 10 events in the Leonid night. Averaged upper and lower altitude of 10 train examples showed 100 km and 87 km, while the average central altitude was 93 km.

In this talk, we will report the results of upper-atmospheric wind measurement derived from persistent meteor trains, as tracers, in mesosphere and lower thermosphere. The 10 cases of persistent meteor trains were distributed on the region between Chubu district of Japan and East seashore/offing of Kanto and Tohoku district. Upper-atmospheric neutral wind feature in mesoscale will be discussed.

Reference: Altitudinal Distribution of 20 Persistent Meteor Trains: Estimates Derived from METRO Campaign Archives, Masa-yuki Yamamoto, Masayuki Toda, Yoshihiro Higa, Kouji Maeda, and Jun-ichi watanabe, *Earth, Moon, Planets*, 2005, in press (already published electronically).