

Statistical characteristics of nighttime MSTIDs observed by an airglow imager over subtropical site Yonaguni (19.3N dip)
Statistical characteristics of nighttime MSTIDs observed by an airglow imager over subtropical site Yonaguni (19.3N dip)

VISWANATHAN, Lakshmi narayanan^{1*}; SHIOKAWA, Kazuo¹; OTSUKA, Yuichi¹; SAITO, Susumu²
VISWANATHAN, Lakshmi narayanan^{1*}; SHIOKAWA, Kazuo¹; OTSUKA, Yuichi¹; SAITO, Susumu²

¹Solar Terrestrial Environment Laboratory, Nagoya University, Nagoya, Japan, ²Electronic Navigation Research Institute, Tokyo, Japan

¹Solar Terrestrial Environment Laboratory, Nagoya University, Nagoya, Japan, ²Electronic Navigation Research Institute, Tokyo, Japan

The nighttime medium-scale travelling ionospheric disturbances (MSTIDs) are frequently observed in the mid-latitude ionosphere. They very often moves toward the southwest direction in the northern hemisphere with phase fronts aligned along the northwest to the southeast. However they do not extend to the equatorial latitudes and are rarely sighted at dip latitudes below 15°. In this study we investigate the characteristics of MSTID features observed over Yonaguni (24.5°N, 123.0°E; 19.3°N dip latitude), Japan with all-sky imaging of OI 630.0 nm airglow emission. We selected two year period for analysis in which one year corresponds to the solar minimum conditions and another year corresponds to solar maximum conditions. It is found that the MSTIDs occur more frequently during solar minimum conditions. The observed range of wavelengths, phase speeds and directions of MSTIDs are similar to those observed at typical mid-latitude sites. On many occasions the phase fronts of the observed MSTIDs do not extend over the whole field of view of imager indicating that some process hinders their extension to further lower latitudes. Herein, we also investigate the possible reason for the disappearance of phase fronts when they reach lower latitudes.

キーワード: medium-scale travelling ionospheric disturbances, OI 630.0 nm airglow
Keywords: medium-scale travelling ionospheric disturbances, OI 630.0 nm airglow