

The ionospheric mid-latitude nighttime electron density enhancement

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In this study, we investigated the ionospheric anomaly feature of the electron density enhancement at local summer nighttime around the geomagnetic mid-latitude region. This feature was discovered more than 50 years ago in the southern hemisphere, but its mechanisms are still unknown in detail till now. Recently, the global satellite measurements found that this feature extends over a much larger region between the South America and Antarctica. Furthermore, the similar feature of the electron density enhancement also were found around European and Northeast Asian regions in the northern hemisphere. To investigate the mechanism and the morphology of the ionospheric nighttime electron density enhancement at the geomagnetic mid-latitude region, the model simulations had been performed to compare with the satellite observations in the two hemispheres. The results will be shown in the presentation.