

Seasonal and North-South Hemispheric Asymmetry of Dayside Pi2 Pulsations at Low Latitudes

*Akihiko Ueda¹, Shun Imajo²

1. Kyoto University, 2. Data Analysis Center for Geomagnetism and Space Magnetism, Graduate School of Science, Kyoto University

Although dayside Pi2 pulsations are considered to be generated by ionospheric currents, the effect of ionospheric conductivity variations have not been understood. To clarify this effect, we statistically analyzed ~2000 Pi2 events from observed at Kakioka (KAK) in Japan (Northern Hemisphere) and Charters Towers (CTA) in Australia (Southern Hemisphere) over a three-year period from 2012 to 2014. For the selected events, the H and D amplitudes were calculated, and the mean and median values of these quantities were obtained for each month and each local time. The D amplitude and D/H amplitude ratio near the dawn terminator started to increase from earlier local times in the summer hemisphere, while those near the dusk terminator started to increase from earlier local times in the winter hemisphere. These characteristics can be explained by the opposite sense deflection of the ionospheric current on the day side and the field-aligned currents on the night side. Also, the H amplitude on the dayside is larger in the summer hemisphere than in the winter hemisphere. The present results suggest that seasonal variation of conductivity affect on seasonal variation of characteristics of dayside Pi2.

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