

Study on the global occurrence characteristics of Pc2 pulsation with the 10Hz data of the MAGDAS9 system

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Geomagnetic field disturbance observed on the ground is affected by the space weather phenomena such as magnetic storms and auroral substorms. Recent research shows that the Pc2 pulsation of which frequency range 5-10 seconds is observed at the inner magnetosphere as EMIC wave that is associated with the high-energy process activated O^+ during magnetic disturbance.

By using 10Hz sampling MAGDAS data, we found that the Pc2 type pulsation are simultaneously observed from high to middle-and-low latitudinal region during a magnetic storm time substorm. Also, we found that such global Pc2 pulsations have the local time distribution peaked at 6LT and during 11-15LT local noon time and the mainly enhanced at March-July. This occurrence characteristics is different from that of Pc1 pulsation that previous research reports.

In this presentation, we will report the preliminary results of observational analysis of Pc2 pulsation by using MAGDAS network. We also discuss the comprehensive approach for understanding global coupling process among inner magnetosphere and high-middle-low latitude to the equatorial region by using FM-CW radar data, PWING induction magnetometer data, and the geo-space environment data from the ERG satellite.

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