

New Pi 2 Index Based on MAGDAS/CPMN Network Data

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At the onset of magnetospheric substorms, impulsive hydromagnetic oscillations with periods of 40-150 sec, so called Pi 2 magnetic pulsations, are excited globally in the magnetosphere. Our recent studies (Li et al., 2000, Yumoto et al., 2001, Uozumi et al., 2009) suggest that the main source of Pi 2 pulsations is the Substorm Current Wedge (SCW) formed during substorms (Yumoto, 2010).

To detect Pi 2 pulsations in real-time and classify these Pi 2s quantitatively, we are constructing a new Pi 2 index. First, Pi 2 pulsations are identified (1) by using data from low-latitude stations belonging to MAGDAS/CPMN (MAGnetic Data Acquisition System in the Circum-pan Pacific Magnetometer Network) mainly run by Kyushu University, and (2) in consideration of positive bays caused by SCWs based on our hypothesis. Then, we measure their onset times and magnitudes by using an objective method which we have newly invented this time.

At the meeting we will report our progress concerning our new Pi 2 index, i.e., in identifying Pi 2 times and magnitudes.