

Characteristics of Dayside Pi 2 Pulsations Observed MAGDAS/CPMN Stations

Mina Sakai^{1*}, Naoko Horikawa¹, Teiji Uozumi², Shuji Abe², Kiyohumi Yumoto²

¹Department of Earth and Planetary Sci., ²Space Environ. Res. Center, Kyushu Univ.

At the onset of magnetospheric substorms, impulsive hydromagnetic oscillations with periods of 40-150 sec, so called Pi 2 magnetic pulsations, occur globally in the magnetosphere. Pi 2 pulsations have been studied since 1950s and phenomenological description of Pi 2 pulsations is being established. However, the studies are almost concerning nightside Pi 2 pulsations and dayside Pi 2 pulsations have not been studied so much, because in dayside, Pi 2 pulsations may fail to observe caused by Pc 3 pulsations which have the same period range as Pi 2 pulsations (Olson.,1999), and the amplitudes of high latitude Pi 2 pulsations are smaller than that in nightside(Li et al.,2000). We aim to develop the morphology of dayside Pi 2 pulsations globally and give the solution of the generation and propagation mechanisms of Pi 2 pulsations.

Space Environment Research Center, Kyushu University, has MAGDAS/CPMN (MAGnetic Data Acquisition System in the Circum-pan Pacific Magnetometer Network) stations along the 210-degree magnetic meridian. In the present paper, we examine latitudinal and local time dependence of H-component amplitude of Pi 2 pulsations occurred in dayside (06-18LT) using 21 stations (GM Lat.=-45.72-69.92) along 210-degree magnetic meridian, where data from ANC station(G.lat.=-11.77,G.lon.=-77.15,dip lat.=0.74) are used to confirm nightside Pi 2 pulsations statistically. It is found that the dayside Pi 2 shows a peak amplitude at the magnetic equator in the midday (10-14 LT), other peaks at mid- and high-latitude (GM Lat.=60-70) in the morning (06-12LT) and at mid latitude (GM Lat.=50) after the sunrise 08-10LT. We will also analyze the D-component dayside Pi 2 same as the H-component.