

Cluster-CPMN/MAGDAS conjunction study of Pi2 waves in the inner magnetosphere

Hideaki Kawano[1]; Shinichi Ohtani[2]; Teiji Uozumi[3]; Shuji Abe[4]; Kentarou Kitamura[5]; Yoshimasa Tanaka[6];
Kiyohumi Yumoto[7]; Yumoto Kiyohumi MAGDAS/CPMN Group[8]

[1] Earth and Planetary Sci., Kyushu Univ.; [2] JHU/APL; [3] SERC; [4] Space Environ. Res. Center, Kyushu Univ.; [5] NICT;
[6] ROIS; [7] Space Environ. Res. Center, Kyushu Univ.; [8] -

<http://denji102.geo.kyushu-u.ac.jp/denji/staff/kawano/kawano.html>

In this paper we study Pi2 events simultaneously monitored by the Cluster spacecraft and ground magnetometers that belong to either or both of CPMN (Circum-pan Pacific Magnetometer Network) and MAGDAS (MAGnetometer Data Acquisition System). In particular, we focus on cases in which Cluster was located in the inner magnetosphere.

So that Cluster and CPMN/MAGDAS are located close in longitude, we have selected Pi2 events for which Cluster was located within the magnetic-longitude range of 180-240 deg, because the distributions of CPMN and MAGDAS magnetometers are thick around the 210 deg magnetic meridian. We have also selected, as a first step, events which took place between 13:00 UT and 17:00 UT, so that the 210 deg magnetic meridian was located near midnight (i.e., 24:00 LT). Among thus found events, we have further selected Pi2 events for which Cluster was located in the inner magnetosphere.

We examine thus found Pi2 events. The features seen in the data include the following. The latitude coverage of Cluster is wider than past satellites, and the amplitudes of the waves (within the frequency range of Pi2) observed by Cluster appear to show a strong latitude dependence. This is consistent with the latitude dependence of ground Pi2 waves. We are also addressing the propagation of the Pi2 signal in the inner magnetosphere, by using the ground Pi2 signal as a key reference.