

Characteristics of Magnetic Field Variations Observed by ETS-VIII during Magnetospheric Substorms

Naho Eto[1]; Kiyohumi Yumoto[2]; Kiyokazu Koga[3]; Takahiro Obara[4]; Akihiro Ikeda[5]; Shuji Abe[5]; Teiji Uozumi[6]; Yumoto Kiyohumi MAGDAS/CPMN Group[7]

[1] Earth and Planetary Sci., Kyushu Univ.; [2] SERC, Kyushu Univ.; [3] JAXA; [4] JAXA,ARD
; [5] SERC, Kyushu Univ.; [6] SERC, Kyushu Univ.; [7] -

In this study, we analyzed magnetic field variations observed by the geostationary satellite ETS-VIII (Engineering Test Satellite-VIII) during magnetospheric substorms. The field configuration quickly changes from tail-like to dipole-like after the explosive growth phase of magnetospheric substorms. The magnetic data from MAGDAS (MAGnetic Data Acquisition System) low-latitude station were used to identify the onset of magnetospheric substorms. At the onset of the magnetospheric substorms, Pi 2 magnetic pulsations occur globally in the magnetosphere. The analysis period covered over the entire 2008.

The following results are obtained;

(1) In the pre-midnight region (21 - 22 LT), the number of the dipolarization during the explosive growth phase of substorm could be identified. The time lags from Pi 2 onsets to the beginnings and endings of the explosive growth phase at the synchronous orbit ($T(\text{Pi } 2) - T(\text{beginnings})$ and $T(\text{Pi } 2) - T(\text{endings})$) are found to be shortest in this region.

(2) Around 23 LT, it is found that the magnetic polarity of D-component variations observed by ETS-VIII changed from negative to positive (Westward is positive sense.).

In the present paper, we will show the results comparing the magnetic field variations at ETS-VIII and MAGDAS low-latitude station with auroral images of Polar.