Japan Geoscience Union Meeting 2012
(May 20-25 2012 at Makuhari, Chiba, Japan)

PEM13-09 会場:103 時間:5 月 22 日 11:45-12:00

State of the magnetotail during disturbed and calm neutral sheet crossings
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Magnetotail neutral sheet crossings were identified for the Cluster tail seasons since 2001. Neutral sheet crossings were divided to calm and disturbed crossing according to the number of neutral sheet passes during the crossing. Single neutral sheet crossings are called calm and multiple crossings are defined to be disturbed crossings. The year-to-year variation of calm and disturbed crossings are analyzed and the role of different solar wind drivers (e.g. high-speed streams and interplanetary coronal mass ejections) will be studied. The state-of-the magnetotail is analyzed during different crossings by using plasma sheet velocity, total pressure and (JxB)x. The x-component of the cross product of total current and magnetic field characterizes the stress level of the magnetotail during the crossing. Furthermore, we compare the magnetotail disturbances to the geomagnetic activity at auroral and equatorial latitudes during the neutral sheet crossings.

キーワード: Magnetotail, Neutral sheet, plasma sheet, space weather, substorms, storms
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