

Analysis of Geosynchronous Magnetopause Crossings 2

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To examine the dependence of magnetopause motions on solar wind conditions, we analyzed 2 Geosynchronous Magnetopause Crossing (GMC) events. One was observed on Mar. 10, 1998. It was the Bz type event which was caused by the strong continuous southward IMF. The other on Sep. 22, 1999, was the Pd type event caused by enhancement of the solar wind dynamic pressure.

We estimated average speeds of the earthward motion of magnetopause. The speeds were 1.9 km/s in the Bz type event, and 8.5 in the Pd type event.

We calculated the southward IMF flux and compared them with the equatorward shifts of open/close boundary detected by SuperDARN and DMSP. The ratios of the flux to the shift were about 4.5 Wb/(m deg) in the Bz type and about 4.3 in the Pd type.