



## **Equatorial Magnetic Reconnection Lines during Northward IMF Conditions**

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Reconnection at the Earth's magnetopause is the mechanism by which magnetic fields in different regions change topology to create open magnetic field lines that allow energy and momentum to flow into the magnetosphere. The location of the reconnection line at the magnetopause depends on the conditions of the solar wind, especially the direction of the interplanetary magnetic field (IMF). Dayside equatorial region locations of reconnection during southward IMF have been inferred from global ionospheric images and studies based on incident ion beams in the cusp and boundary layer of the magnetopause. For such conditions the most likely location is along the line of Maximum Magnetic Shear crossing the magnetopause (for large IMF  $B_y$  cases) or along the high latitude antiparallel reconnection region (for large IMF  $B_x$  or  $B_z$  cases). The same studies have also revealed a poleward of the cusp reconnection line for northward IMF conditions.

In this study we discuss several cusp crossings by the Polar satellite during conditions with a weak northward IMF component for which cusp ion-energy dispersion profiles typical for a equatorial dayside reconnection line have been observed. This dayside reconnection location during northward IMF conditions is also inferred from magnetopause crossings of the Double-Star satellites.