

High latitude magnetopause current sheet during an IMF B_y dominated period

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On Mar. 23, 2002, Cluster crossed the magnetopause current sheet when it traveled outbound in the northern hemisphere. During that time period, the Interplanetary Magnetic Field (IMF) B_z component was near zero and the B_y component dominated. The geometry of the magnetic field preferred antiparallel B_y reconnection. Cluster observed bipolar signatures in the magnetic field which are consistent with Hall effects in the reconnection process. The evolution of the ion pitch angle distribution may indicate that ions carry the Hall current. We will present evidence that indicates energetic particles can be trapped in the high latitude magnetopause current sheet.