

A two-spacecraft study of transient magnetopause reconnection: model results and comparison with in situ and ionospheric observations

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We revisit an example of transient magnetic reconnection at the dayside magnetopause on February 11th, 1998, observed by Geotail and Equator-S. Phan et al. (2000) studied bi-directional jets associated with this event and inferred the length of the reconnection line. Pinnock et al. (2003) used measurements of the SuperDARN high-frequency radar network to calculate the reconnection electric field for this event from ionospheric observations. Here we complement this work by examining a set of in situ observations of FTEs at Geotail and Equator-S with a reconstruction method based on an inverse model of compressible Petschek-type magnetic reconnection. This independent method uses magnetic field observations as input data to calculate the reconnection electric field. The model results are compared with above mentioned studies of the same event.