
SM23A-05: Flux transfer events observed in the dayside magnetopause by MMS mission

Tuesday, 11 December 2018

14:28 - 14:40

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Flux transfer events (FTE) have been interpreted to be results from transient magnetic reconnection and can be observed in the vicinity of the Earth's magnetopause, as well in other planets. FTE acts as a flux tube connecting the magnetosheath to the magnetosphere allowing the transference of particles, energy and momentum in both sides magnetopause. Their main signatures in satellite data are bipolar variation in the magnetic field component normal to the magnetopause, centered in an enhanced magnetic field strength. Other signatures such as pressure imbalance, bulk flow jets, and particle anisotropy distribution can be observed inside the those structures. We surveyed FTEs observed by MMS on the vicinity of the magnetopause (from $x = 0$ to $13R_E$ and $y = -12$ to $12R_E$). Taking advantage of the MMS tetrahedron configuration we will employed timing analysis to determine the FTEs direction of motion and scale lengths. We will present information about occurrence related with IMF clock angle and other parameters, amplitude of the perturbations induced by the FTEs in the environment magnetic field and plasma; characteristic time and structure scale size. Using data from ACE, Wind and Artemis we can evaluate which is the best solar wind monitor for each FTE observed and then employ the appropriated lag time corresponding to FTE location and magnetic field orientation. The objective is to investigate the mechanisms of generation of FTEs comparing characteristics of the events observed on the dayside region and on the magnetopause flanks determining the motion and speed of FTEs.

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