



## **Dynamics of the Earth's magnetotail observed by Magnetospheric Multiscale (MMS)**

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In the Earth's night-side magnetosphere, a major energy conversion process takes place associated with magnetic reconnection leading also to large-scale reconfiguration of the magnetotail. An important consequence of the magnetotail reconnection is the narrow fast plasma jet (known as bursty bulk flow), which contribute energy transport toward inner magnetosphere. Interaction with the reconnection jets and the Earth's dipole field lead to acceleration of particles. In this way magnetotail reconnection and instabilities in the near-Earth current sheet have large-scale consequences as manifested during substorms and play important roles in the momentum and energy transport in the night-side magnetosphere. The Magnetospheric Multiscale (MMS) launched in March 2015 traversed the near-Earth magnetotail with apogee 12 RE during the first two years and 25 RE afterwards. This provides a unique opportunity to study detailed structures of the thin reconnection current sheets as well as the dynamic thin boundaries of the reconnection jets down to the electron scale for the first time. In this presentation, we high-light in-situ observations of the near-Earth magnetic reconnection and associated boundary events based on multi-point analysis of the high-time resolution plasma and electric and magnetic field measurements from MMS.