



MMS High-Resolution Observations of Kinetic Processes in the Magnetopause Reconnection Layer

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The primary objective of the MMS mission is to explore and understand the fundamental plasma physics of magnetic reconnection. The mission provides unprecedented particle and field measurements at extremely high sampling rates by four spacecraft. Such measurements have enabled quantitative studies of ion and electron physics in the reconnection layer. In this talk, we will report observations of electron-scale plasma and field structures in the reconnection layer. Highlights of the findings include (1) filamentary electron-scale currents in the reconnection exhaust and near the X-line, (2) electron heating in the vicinity of the reconnection X-line, and (3) reconnection in ultra-thin current sheets.