

Abstract Submitted  
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**Active Perturbations in the Outflow Region of the MRX Current Sheet**<sup>1</sup> J.A. BAUMGAERTEL, S. DORFMAN, B. MCGEEHAN, S. GERHARDT, H. JI, M. YAMADA, Center for Magnetic Self-Organization, Princeton Plasma Physics Laboratory — Electromagnetic fluctuations have been observed in the Magnetic Reconnection Experiment (MRX) in frequencies up to the lower hybrid frequency. These fluctuations may cause anomalous resistivity, which could increase the rate of magnetic reconnection. To characterize these fluctuations, a 1cm radius magnetic dipole antenna is used in the MRX current sheet to launch perturbations at a single frequency. Previous work partially characterized propagation in the direction normal to the reconnection plane. When detection is downstream with respect to the out of plane electron flow, the signal is enhanced above the vacuum value within the current sheet, whereas the signal detected upstream is often reduced below the vacuum value [1]. Current work explores propagation in the outflow direction where a signal that grows in time is often observed. Experiments and analysis are ongoing to investigate the cause and propagation characteristics of this perturbation as well as its effect on the reconnection process.

[1] S. Dorfman et. al., AIP Conf. Proc. 871, 306 (2006)

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Jessica Baumgaertel  
Princeton Plasma Physics Laboratory

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