

Abstract Submitted
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High-Frequency Electron Temperature Fluctuations in MST E. PARKE, D.J. DEN HARTOG, L.A. MORTON, J.A. REUSCH, University of Wisconsin-Madison and the Center for Magnetic Self Organization in Laboratory and Astrophysical Plasmas — The behavior of electron temperature fluctuations at frequencies above tearing mode frequencies (20 kHz) is of interest for a wide range of plasma conditions in the MST reversed field pinch. The MST Thomson scattering system is capable of measurements at high effective frequencies, and we present preliminary measurements of correlated and uncorrelated fluctuations. During improved confinement plasmas, magnetic-fluctuation-driven transport is reduced. To determine the importance of electrostatic or other transport mechanisms, a large ensemble of two-time-point T_e measurements has been collected. Time separations of the measurements vary (1-10 μ s), allowing access to fluctuations over a wide range of frequencies. Observations of TAE-like and EPM-like modes during neutral beam injection show correlated density fluctuations at high frequencies. We plan to correlate an ensemble of electron temperature measurements with magnetic signals for similar discharges, and compare the spatial structure and fluctuation amplitudes with those obtained from density fluctuation measurements. This work is supported by the U. S. DOE and NSF.

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