

Abstract Submitted  
for the DPP10 Meeting of  
The American Physical Society

**Electron temperature and density fluctuations during improved confinement plasmas** E. PARKE, University of Wisconsin-Madison, H.D. STEPHENS, D.J. DEN HARTOG, J.A. REUSCH, Y.M. YANG, W.S. HARRIS, A.F. FALKOWSKI, C.P. KASTEN — We plan to present initial results of Thomson scattering measurements of  $T_e$  and  $n_e$  fluctuations associated with electrostatic transport during improved confinement plasmas (PPCD). Recent upgrades to the MST Thomson scattering diagnostic have allowed detailed measurements of electron temperature fluctuations in a variety of plasmas. For example, previous studies have mapped temperature fluctuations to magnetic perturbations, observing remnant island structures between sawteeth events in standard plasmas. Electron temperature fluctuations have also been shown to decrease significantly during PPCD plasmas and it is thought that electrostatic fluctuations may dominate transport. Further upgrades to the Thomson diagnostic may enable absolute density measurements, and the planned addition of a fast laser system will improve maximum time resolution from 25 kHz to 250 kHz. These capabilities will allow investigations into correlated  $T_e$  and  $n_e$  fluctuations associated with electrostatic transport. This work supported by the USDoE.

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Date submitted: 23 Jul 2010

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