

Abstract Submitted  
for the DPP09 Meeting of  
The American Physical Society

**Development of a MW-Level EBW Heating and Current Drive Experiment on the MST**<sup>1</sup> JAY ANDERSON, University of Wisconsin, CARY FOREST, ANDREW SELTZMAN — The electron Bernstein wave experiment on MST is motivated by its potential to deposit heat and drive off-axis current in the RFP plasma. Positive results of emission, coupling and 100kW-level injection experiments compel the development of a new megawatt-level heating and current drive experiment. A 1.2 MW klystron which operates at 5.5 GHz has been selected as a transmitter. Construction is underway on an 80kV 40A IGBT-based modulated power supply to drive the tube, following the design and utilizing spare parts from the Los Alamos National Laboratory on a similar pulsed supply. A half-wavelength quartz window is designed and has been bench-tested, and a cylindrical molybdenum antenna will be used as the initial launching structure. This experiment is at higher frequency (shorter wavelength) than the previous MST injection experiments (3.6 GHz) and therefore the characteristic size of the antenna is reduced. This is favorable from the standpoint of small ports in the vacuum vessel and extension to multiple tubes and multiple antennas in the future. Initial coupling data from the molybdenum launcher are presented.

<sup>1</sup>Work supported by USDOE.

Jay Anderson  
University of Wisconsin

Date submitted: 15 Jul 2009

Electronic form version 1.4