

Abstract Submitted
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Surface Magnetics on the HIT-SI Experiment J.S. WROBEL, T.R. JARBOE, B.A. NELSON, R.J. SMITH, B.T. STEWART, University of Washington — An array of 96 surface magnetic probes sensitive to the poloidal and toroidal B field are embedded in the HIT-SI spheromak equilibrium flux conserver, a 12.7mm thick chromium copper alloy shell with an L/R time of 100ms. An extensive calibration campaign has been completed to correct for the frequency dependent attenuation of the magnetic field by the shell and provide plasma edge field measurements over a 10Hz-200kHz bandwidth. The system is expected to provide several important results: 1) A measurement of the non-Taylor part of the equilibrium which may reveal details of the small scale, high frequency magnetic relaxation process. 2) A measurement of the MHD mode amplitudes and evolution in the equilibrium region. 3) Provide insight into injector effects which are important for future injector designs. Comparison of experimental vector field results to computational simulations will explore the dominant physics involved in steady inductive helicity injection current drive. Analysis, progress and methods will be presented.

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