

Abstract Submitted  
for the DPP05 Meeting of  
The American Physical Society

**Comparison of Measured and Simulated MSE Signals of a Tearing Mode**<sup>1</sup> M.A. MAKOWSKI, C.T. HOLCOMB, R.J. JAYAKUMAR, Lawrence Livermore National Laboratory, R.J. LA HAYE, General Atomics, D.P. BRENNAN, MIT, M. DOWNES, Drexel U. — Spatially resolved magnetic field fluctuations associated with tearing modes have been observed with the fast MSE diagnostic on the DIII-D tokamak. The interpretation of the measurements is complicated by the fact that the spatial resolution of the diagnostic varies with channel, being better on the edge channels than the core channels. This combined with the relatively narrow spatial structure of the mode may explain the result that the observed fluctuation amplitude is stronger on the edge channels than on the core channels, despite the fact that the location of the island is in the core. We have developed a model of a tearing mode and performed integrals of the mode fields over the viewing volume to arrive at a synthetic signal for comparison with measurements. The effect of the varying spatial resolution is then evaluated for the different channels. Results of these calculations will be presented

<sup>1</sup>Work supported by US DOE under W-7405-ENG-48 and DE-FC02-04ER54698.

T.S. Taylor  
General Atomics

Date submitted: 21 Jul 2005

Electronic form version 1.4