

Abstract Submitted  
for the DPP05 Meeting of  
The American Physical Society

**Validation of MH4D Code Modifications Using HIT-SI Experimental Results** GEORGE MARKLIN, THOMAS JARBOE, Plasma Science and Innovation Center, University of Washington, Seattle, Washington 98195 — This poster will report on progress to validate recent modifications to the resistive MHD code MH4D<sup>1</sup> by doing simulations of the HIT-SI<sup>2</sup> experiment at the University of Washington. An unstructured tetrahedral mesh was constructed to closely match the geometry of the experiment using the mesh generation code T3D<sup>3</sup>. Simulations will start from an initial RFP-like Taylor State in one injector and will follow the plasma dynamics as the injector flux reconnects to form closed internal flux. These initial simulations will attempt to answer two important questions which can be compared to experimental results: (1.) How high must the injector current to flux ratio be driven to initiate the reconnection process; and (2.) How high does the Lundquist number,  $S$ , have to be in order to get build up of closed internal flux. Comparisons will also be made of predicted magnetic field structure to probe and flux loop measurements.

<sup>1</sup>S. Vadlamani, et. al., this meeting.

<sup>2</sup>T. R. Jarboe, et. al., this meeting.

<sup>3</sup>D. Rypl, <http://power2.fsv.cvut.cz/~dr/t3d.html>

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Date submitted: 24 Jul 2005

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