

Abstract Submitted  
for the DPP05 Meeting of  
The American Physical Society

**Diagnosing the Magnetic Structure of the Sustained Spheromak Experiment** HILLARY CUMMINGS, University of Wisconsin-Madison, CARLOS ROMERO TALAMAS, DAVID HILL, HARRY MCLEAN, REG WOOD, Lawrence Livermore National Laboratory, SSPX TEAM — Unlike in traditional fusion devices, SSPX plasmas are confined by a magnetic field that is predominately generated by the plasma itself. The process by which plasma creates and changes the magnetic field is complicated and therefore makes it difficult to know its exact structure everywhere in the plasma at any point in time. This poster describes three different methods of studying the magnetic structure of the experiment; using edge probes in conjunction with Corsica- an equilibrium fitting code, imaging the plasma with a high-speed intensified CCD camera, and inserting an array of magnetic probes internal to the plasma. The research was performed under appointment to the Fusion Energy Sciences Fellowship Program and supported by US DOE. This work was performed under the auspices of the U.S. Department of Energy by University of California Lawrence Livermore National Laboratory under contract No. W-7405-Eng-48.

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Date submitted: 26 Aug 2005

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