

Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Status of the Madison Plasma Dynamo Experiment JOHN WALLACE, MIKE CLARK, ROCH KENDRICK, CARY FOREST, University of Wisconsin - Madison — Construction is underway to build a new experimental facility for investigating self-generation of magnetic fields in plasma and a broader range of flow driven MHD instabilities. The Madison Plasma Dynamo Experiment (MPDX) consists of a 3 meter diameter spherical vacuum chamber lined with a series of high strength neodymium permanent magnet rings in a cusp confinement geometry which provides for a large, unmagnetized and hot plasma. Plasma will be produced by a combination of lanthanum hexaboride cathodes and electron cyclotron heating. The plasma will be stirred from the magnetized edge via electrode and ExB flows. This poster will (1) give an overview of the physics goals and required plasma parameters, (2) describe the engineering design of the facility including laboratory infrastructure, vacuum chamber, diagnostics, and heating systems, and (3) give a status report on the construction schedule. The construction is being funded by the NSF Major Research Instrumentation program.

John Wallace
University of Wisconsin

Date submitted: 16 Jul 2010

Electronic form version 1.4