Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Probe Measurements on the HyperV Plasma Gun[1] S.J. MESSER, F.D. WITHERSPOON, R. BOMGARDNER, A. CASE, M.W. PHILLIPS, D. VAN DOREN, HyperV Technologies Corp. — Final diagnostic measurements are underway on the HyperV plasma gun prior to installation on the Maryland Centrifugal eXperiment (MCX). These measurements will help understand penetration of the plasma jet through the MCX magnetic field. We describe both magnetic and pressure probe data. A downstream fast pressure probe confirms a steep increase in mass density coincident with the arrival of a luminous front. An array of fixed magnetic induction probes are installed in the pinch section. These are used to investigate the current and electromagnetic structures during the final phase of the plasma jet formation and acceleration. Both sets of probe data are compared to the jet's visible emissions and measurements of gun current and voltage. We also outline the design of new movable magnetic probes and access ports for optical diagnostics, to be located in the main acceleration section of the gun.

[1]Work supported by the U.S. DOE Office of Fusion Energy Sciences

Sarah Messer
HyperV Technologies Corp.

Date submitted: 22 Jul 2007 Electronic form version 1.4