

Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Axial velocity measurements of plasma plumes in the Bryn Mawr Magnetohydrodynamic Experiment (BMX)¹ LEAH BAKER, DAVID SCHAFFNER, CARLOS CARTAGENA-SANCHEZ, FARIHA TAMBOLI, CAT SLANSKI, MAISE SHEPARD, Bryn Mawr College — Using a two-point correlation method, the axial velocity of turbulent plasma launched into a flux-conserving chamber by a magnetized coaxial plasma gun can be determined. Magnetic field measurements are made using an array of pickup coils inserted radially into the chamber and arrayed axially. The velocities for multiple shots were calculated using known separation distance between probes and a delay time computed from the position of the peak of the cross-correlation function of magnetic fluctuations of the adjacent probes. The distributions of velocities for multiple shots was determined for multiple shots and scanned for time periods within a shot and axially away from the source.

¹This work is supported by the NSF-DOE Partnership in Basic Plasma and by an NSF CAREER Award

Leah Baker
Bryn Mawr College

Date submitted: 12 Jul 2019

Electronic form version 1.4