

Abstract Submitted  
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**Construction of a double Langmuir probe to measure fluctuating ion saturation current as a proxy for density fluctuations in the Bryn Mawr MHD Experiment**<sup>1</sup> CAT SLANSKI, DAVID SCHAFFNER, CARLOS CARTAGENA-SANCHEZ, LEAH BAKER, MAISE SHEPARD, FARIHA TAMBOLI, Bryn Mawr College — A double Langmuir probe is constructed for the evaluation of density in the turbulent plasmas generated by the coaxial magnetized plasma gun source of the Bryn Mawr Magnetohydrodynamic Experiment (BMX). The plasma within the BMX system is injected as magnetic helicity into a long, flux-conserving cylindrical chamber where a dense and extensive array of ports allow access to probe diagnostics such as magnetic pickup coils and this double Langmuir probe. The probe is comprised of tantalum rods set in 1/8th inch alumina. Steady bias voltage is supplied by six 1100mF capacitors in parallel. Density fluctuation spectra are discerned via measurements procured with a high-bandwidth current monitor of the double probe's ion saturation current. These spectra are compared to fluctuations in the magnetic field spectra.

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