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Spatial-temporal correlation analysis of MHD Turbulence at BMPL¹ CARLOS CARTAGENA-SANCHEZ, JOSH CARLSON, DAVID SCHAFFNER, Bryn Mawr College — The Bryn Mawr Experiment (BMX) is a newly constructed experiment at the Bryn Mawr Plasma Laboratory (BMPL). BMPL is investigating magnetic turbulent generated by injecting helicity with a magnetized coaxial gun source into a flux conserving cylindrical wind-tunnel. This presentation represents the studies of MHD turbulent properties at BMPL. Spatial-temporal correlation analysis of magnetic fluctuations is used to estimate outer and inner scales of the energy-cascade inertial range. With these estimates a magnetic Reynolds number is calculated. The spatial correlation scale is used as the outer scale. The Taylor microscale from Taylor hypothesized temporal correlations is used as the inner scale. Comparisons between Taylor hypothesized temporal correlation properties and spatial correlation properties are also presented.

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