

Abstract Submitted  
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**High  $\beta$  Plasma Turbulence Studies on the Big Red Ball** RACHEL SASSELLA, DOUGLASS ENDRIZZI, CARY FOREST, University of Wisconsin - Madison, WISCONSIN PLASMA PHYSICS LABORATORY (WIPPL) TEAM — Recent and upcoming experiments on the Big Red Ball (BRB) explore the regime of  $\beta \gg 1$  for collisionless turbulence. High  $\beta$  plasmas are an area of active study critical to understanding astrophysical phenomena like the solar wind. Prior experiments on BRB examined the magnetic fluctuations between magnetized high- $\beta$  flux ropes. Measurements of the turbulence power spectrum suggested preferential ion heating, which will be investigated further using a local ion doppler spectroscopy probe. Experimental parameters will be expanded to examine energy partitioning between the magnetic field and electron and ion species as a function of  $\beta$ . A second upcoming turbulence experiment involves the collision of a fast compact toroid with a conducting grid intended to shred the CT into smaller eddies. Preliminary measurements and correlations between density, temperature, and magnetic fields will be presented. The design and construction of probes capable of making these measurements in BRB-specific plasmas will also be shown.

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