

Abstract Submitted  
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**Compression of a stationary FRC plasma by an imploding Xenon plasma liner**<sup>1</sup> GEORGE VOTROUBEK, JOHN SLOUGH, MSNW, LLC — The Plasma Liner Compression (PLC) Experiment is designed to explore the creation of a magnetized high energy density (HED) plasma via plasma liner compression of a magnetized plasmoid. The magnetized plasmoid employed in this experiment is the Field Reversed Configuration (FRC) plasma, a simply connected, high-beta, compact toroid. The closed poloidal field of the FRC inhibits thermal losses as the object is compressed, which in turn reduces the compression required to reach fusion conditions. In the PLC experiment, a stationary FRC target is created by merging two theta-pinch FRCs formed on opposite sides of a cylindrical chamber and accelerated toward the center. The center of the experiment is comprised of a larger cylindrical chamber where a Xenon plasma liner is formed within a few centimeters of the vacuum wall. The source FRCs collide, merge and become stationary in the high vacuum region interior to the Xenon liner. The plasma liner is then imploded via high voltage theta-pinch coils, compressing and heating the magnetized plasmoid. Dynamics of liner formation, FRC target formation, and liner-on-FRC compression results will be discussed.

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