Field Reversed Configuration (FRC) Formation Studies with Variable Magnetic Geometry

G.A. WURDEN, T.P. INTRATOR, P.E. SIECK, R.J. CORTEZ, W.J. WAGANAAR, Los Alamos National Laboratory — FRX-L has been recently rebuilt with conical theta pinch coils, fast cusp coils, and a translation/capture coils. We report on studies of optimizing the formation of FRC’s in the 4 degree conical theta pinch region, while doing parameter scans of the adjacent fast cusp coil B fields, and downstream translation coils. The visible interferometer is configured for 7 chords, and is located at the exit of the theta coil region, for quantitative density information. Filtered visible light fibers provide positional information, while sets of B-dot and flux loop probes yield excluded flux. This work is supported by the Office of Fusion Energy Sciences, and DOE/LANL contract DE-AC52-06NA25396.