

Abstract Submitted
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Multiple diagnostic characterization of FRC plasmas for Magnetized Target Fusion A.G. LYNN, University of New Mexico, K. YATES, B.S. BAUER, S. FUELLING, University of Nevada, G.A. WURDEN, Los Alamos National Laboratory, C. GRABOWSKI, Air Force Research Laboratory, J.F. CAMACHO, S.K. COFFEY, NumerEx LLC — Magnetized Target Fusion (MTF) is an innovative approach for a relatively fast and cheap path to the production of fusion energy that utilizes magnetic confinement to assist in the compression of a hot plasma to thermonuclear conditions by an external driver. Work on the FRCHX experiment at the Shiva Star pulsed power facility studies the field-reversed configuration (FRC) as the target plasma. Recent work has focused on improving FRC lifetime and better understanding FRC behavior with varying parameters. We discuss data collected from multiple diagnostics to illustrate FRC behavior during formation, translation, and capture tests conducted in preparation for future compression experiments. Among others, observations of impurities from visible spectroscopy and temperature bounds from filtered x-ray diode data will be presented.

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