

Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

Preparing to compress a Field Reversed Configuration target for Magnetized Target Fusion¹ T.P. INTRATOR, G.A. WURDEN, R. RENNEKE, L.A. DORF, M. FARRELL, T.K. GRAY, S.C. HSU, Los Alamos National Laboratory, A.G. LYNN, M. GILMORE, University of New Mexico, C. GRABOWSKI, E.L. RUDEN, J. DEGNAN, Air Force Research Laboratory, T. AWE, R. SIEMON, Univ. Nevada — We summarize the our physics motivation for magnetized (MTF) target fusion and outline our engineering progress. A high pressure field reversed configuration (FRC) is shown that suits the MTF target and physics premises. Adiabatic MTF plasma compression should fall between magnetic and inertial fusion conditions. The small theta pinch FRC + Liner experiment (FRX-L) is designed to attain sufficient lifetime for MTF, at high pressure, with minimum pulsed power infrastructure. Small size begets large toroidal electric field for the formation FRC and initial shock heating followed by additional desirable ohmic heating prior to translation. Anomalously large resistivity is observed. FRX-L has demonstrated high target FRC plasma pressure ($T > 300$ eV, $n_e > 5 \times 10^{22} \text{ m}^{-3}$) of 20-30 atmospheres. Design and implementation details are shown for a series of FRC translation and implosion on plasma experiments.

¹Office of Fusion Energy Sciences & DOE/LANL DE-AC52-06NA25396.

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Date submitted: 19 Jul 2006

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