

Abstract Submitted  
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**Fusion from liner driven implosions of Field Reversed Configurations**<sup>1</sup> STEPHEN SLUTZ, MATTHEW GOMEZ, Sandia National Laboratories — MagLIF experiments have demonstrated the basic principles of Magneto-Inertial Fusion. We present another approach using AutoMag liners to form and implode Field Reversed Configurations. External coils provide an initial bias magnetic field and the reverse field is then supplied by an AutoMag liner, which has helical conducting paths imbedded in an insulating substance. Experiments have demonstrated that AutoMag can generate magnetic fields greater than 30 Tesla within the liner. The fuel needs to be heated to 1-2 eV so that the initial bias field is partially frozen in. This can be done without a laser using radio frequency heating. We have performed 2D Radiation MHD simulations of the formation and implosion of an FRC on the Z machine, which indicate that DT yields greater than 30 kJ and plasma temperatures greater than 5 keV should be possible. We present an analytic model, which predicts the gain should scale with the implosion kinetic energy as  $E_k^{1/3}$  and thus experiments on accelerators delivering only 1 MA should be interesting.

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