

Abstract Submitted  
for the DPP12 Meeting of  
The American Physical Society

**Optimal Liner Material for Near Term Magnetized Liner Fusion Experiments**<sup>1</sup> STEPHEN SLUTZ, Sandia National Laboratories — Substantial fusion yields are predicted with existing pulsed power machines driving cylindrical liner implosions with preheated and magnetized deuterium-tritium [S.A. Slutz et al Phys. Plasmas 17, 056303 (2010)]. Experiments are planned using the Z accelerator to drive these implosions. However, the peak current, the laser heating energy, and the applied magnetic field will be less than optimal. We present simulations which show, that under these conditions, the yield can be improved significantly by decreasing the density of the liner material, e.g. Lithium substituted for Beryllium. Furthermore, the simulations show that decreasing the liner density allows the use of very low aspect ratio ( $R/\Delta R$ ) liners, while still obtaining interesting yields. Low aspect ratio liners should be more robust to the Rayleigh-Taylor instability.

<sup>1</sup>Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contra

Stephen Slutz  
Sandia National Laboratories

Date submitted: 23 Jul 2012

Electronic form version 1.4