

Abstract Submitted  
for the DPP11 Meeting of  
The American Physical Society

**Magnetized Target Fusion: Improving the plasma target**<sup>1</sup> T. INTRATOR, Los Alamos Natl Lab, FOR MAGNETIZED TARGET FUSION COLLABORATION — Magneto Inertial Fusion (MIF) inertial adiabatic compression of a plasma fuel target takes advantage of embedded magnetic field to reduce thermal conduction and enhance alpha-particle heating. Magnetized Target Fusion (MTF) is a subset of MIF, requiring target plasma formation plus ejection into a solid flux conserving compressor shell or liner that implodes and compresses a plasma target. The liner has much larger mass than the compressed fuel, which increases the dwell time because it scales as the square root of the total mass. It appears possible to exceed the typical figure of merit  $\eta \cdot G > 10$  which is the product of (high) driver efficiency  $\eta$  and (small) fusion gain  $G$ . We describe our efforts to improve the plasma target lifetime by using plasma guns. We also show recent data including experimental engineering test shots in a collaboration with Kirtland Air Force Research Laboratory to realize a physics demonstration of MTF.

<sup>1</sup>DOE, Office of Science, Office of Fusion Energy Sciences, under LANS Contract No. DE-AC52-06NA25396

T. Intrator  
Los Alamos Natl Lab

Date submitted: 14 Jul 2011

Electronic form version 1.4