

Abstract Submitted
for the DPP17 Meeting of
The American Physical Society

Magnetized Target Fusion At General Fusion: An Overview

MICHEL LABERGE, PETER O'SHEA, MIKE DONALDSON, MICHAEL DELAGE, General Fusion, GENERAL FUSION TEAM — Magnetized Target Fusion (MTF) involves compressing an initial magnetically confined plasma on a timescale faster than the thermal confinement time of the plasma. If near adiabatic compression is achieved, volumetric compression of 350X or more of a 500 eV target plasma would achieve a final plasma temperature exceeding 10 keV. Interesting fusion gains could be achieved provided the compressed plasma has sufficient density and dwell time. General Fusion (GF) is developing a compression system using pneumatic pistons to collapse a cavity formed in liquid metal containing a magnetized plasma target. Low cost driver, straightforward heat extraction, good tritium breeding ratio and excellent neutron protection could lead to a practical power plant. GF (65 employees) has an active plasma RD program including both full scale and reduced scale plasma experiments and simulation of both. Although pneumatic driven compression of full scale plasmas is the end goal, present compression studies use reduced scale plasmas and chemically accelerated aluminum liners. We will review results from our plasma target development, motivate and review the results of dynamic compression field tests and briefly describe the work to date on the pneumatic driver front.

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Date submitted: 18 Jul 2017

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