

Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Plasma-Jet Magneto-Inertial Fusion Burn Calculations¹ JOHN SANTARIUS, University of Wisconsin — Several issues exist related to using plasma jets to implode a Magneto-Inertial Fusion (MIF) liner onto a magnetized plasmoid and compress it to fusion-relevant temperatures [1]. The poster will explore how well the liner's inertia provides transient plasma confinement and affects the burn dynamics. The investigation uses the University of Wisconsin's 1-D Lagrangian radiation-hydrodynamics code, BUCKY, which solves single-fluid equations of motion with ion-electron interactions, PdV work, table-lookup equations of state, fast-ion energy deposition, pressure contributions from all species, and one or two temperatures. Extensions to the code include magnetic field evolution as the plasmoid compresses plus dependence of the thermal conductivity on the magnetic field.

[1] Y.C. F. Thio, et al., "Magnetized Target Fusion in a Spheroidal Geometry with Standoff Drivers," in *Current Trends in International Fusion Research*, E. Panarella, ed. (National Research Council of Canada, Ottawa, Canada, 1999), p. 113.

¹Research funded by the DOE Office of Fusion Energy Sciences, grant DE-FG02-04ER54751.

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Date submitted: 16 Jul 2010

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