

Abstract Submitted  
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**Plasma-Jet Convergence Calculations**<sup>1</sup> JOHN SANTARIUS, University of Wisconsin — Converging plasma jets may be able to reach the regime of high energy density plasmas (HEDP,  $\sim 10^{11} \text{ J m}^{-3}$ ). If plasma jets can be used for magneto-inertial fusion (MIF) [1], the resulting heating by fusion products might generate even higher energy density plasmas. This poster reports the results of using the UW's 1D Lagrangian, rad-hydro, fusion code BUCKY to investigate two cases of converging plasma jets formulated in Ref. 2. The BUCKY code solves single-fluid equations of motion with ion-electron interactions, PdV work, table-lookup equations of state, fast-ion energy deposition, and one or two temperatures. Extensions to the code include magnetic field evolution as the plasmoid compresses, B-field pressure, plus dependence of the thermal conductivity on the magnetic field. Some parametric explorations are also reported.

[1] Y.C. F. Thio, et al., "Magnetized Target Fusion in a Spheroidal Geometry with Standoff Drivers," in Current Trends in Int'l Fusion Research, E. Panarella, ed. (NRC-Canada, Ottawa, Canada, 1999), p. 113.

[2] R. Samulyak, P. Parks, and L. Wu, "Spherically Symmetric Simulation of Plasma Liner Driven Magnetoinertial Fusion," Physics of Plasmas 17, 092702 (2010).

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John Santarius  
University of Wisconsin

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