Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

Hybrid-PIC Algorithms for Simulation of Large-Scale Plasma Jet Accelerators[1] CARSTEN THOMA, DALE WELCH, Voss Scientific, LLC, PLASMA SIMULATION TEAM — Merging coaxial plasma jets are envisioned for use in magneto-inertial fusion schemes as the source of an imploding plasma liner. An experimental program at HyperV is considering the generation of large plasma jets (length scales on the order of centimeters) at high densities (10^{16}-10^{17} cm^{-3}) in long coaxial accelerators. We describe the Hybrid particle-in-cell (PIC) methods implemented in the code LSP for this parameter regime and present simulation results of the HyperV accelerator. A radiation transport algorithm has also been implemented into LSP so that the effect of radiation cooling on the jet mach number can be included self-consistently into the Hybrid PIC formalism.

[1]Work supported by U.S. Department of Energy, Office of Fusion Energy Science (OFES).

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Date submitted: 19 Jul 2009 Electronic form version 1.4