Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Experimental studies of radiatively cooled supersonic plasma jets produced in wire array z-pinches[1] SERGEY LEBEDEV, F.A. SUZUKI-VIDAL, P. DE GROUCHY, G. SWADLING, M. BOCCHI, A. CIARDI, S.N. BLAND, Imperial College, S. BOTT, UCSD, G. BURDIAK, Imperial College, J.P. CHITTENDEN, G.N. HALL, A. HARVEY-THOMSON, Imperial College, A. FRANK, University of Rochester — We will present results of recent experiments with radiatively cooled supersonic plasma jets performed on the pulsed power MAGPIE facility (1.5MA, 250ns) at Imperial College. The jets are produced by the plasma ablated from the wires arranged in conical or radial configurations. Convergence of the flow on the axis of symmetry of the system produces plasma jets with dimensionless parameters (Mach number $\sim$20, cooling parameter $\sim$1) similar to those in proto-stellar jets, and the flow has high Reynolds number ($>10^5$). We will present measurements of the jet parameters obtained with laser and XUV diagnostics providing high spatial resolution, and will discuss how this set-up can be scaled to 20MA Z facility.

[1]This work was supported by the EPSRC Grant No. EP/G001324/1 and by the DOE under Cooperative Agreements No. DE-F03-02NA00057 and No. DE-SC-0001063.

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Date submitted: 21 Jul 2010 Electronic form version 1.4