

Abstract Submitted
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Impact of load geometry on plasma formation and radiative properties of Z-pinches at stagnation¹ V.L. KANTSYREV, A.S. SAFRONOVA, A.A. ESAULOV, UNR, A.L. VELIKOVICH, NRL, L.I. RUDAKOV, Icarus Inc., A.S. CHUVATIN, Ecole Polytechnique, K.M. WILLIAMSON, M.F. YILMAZ, G.C. OSBORNE, M.E. WELLER, I. SHRESTHA, V.V. SHLYAPTSEVA, UNR — The double planar wire array (DPWA) is the best x-ray radiator at 1 MA [V. Kantsyrev *et al.*, HEDP 5 (2009), in press]. To improve its radiative performance by reducing the MRT instability growth rate, Al, brass and W DPWAs were skewed to produce initial axial magnetic field B_z . The diagnostics included x-ray devices and laser shadowgraphy. Experiments on 1.6 MA Zebra generator at UNR and MHD modeling have shown that B_z mitigated the MRT instability in the precursor. The stagnation starts in the middle of the A-K gap, and more uniform plasma column with a higher temperature T_e is formed compared to a standard DPWA. The yield and power were comparable with standard DPWA. Highest yield and power were for W and brass, respectively. Feasibility of the x-ray pulse shaping was demonstrated in experiments. Research plans are discussed.

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