

Abstract Submitted
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Effects of Wire Ablation on Foam Targets in Wire Array Z-pinches J.B.A. PALMER, AWE, S.N. BOTT, S.C. BLAND, S.V. LEBEDEV, J.P. CHITTENDEN, G. HALL, F. SUZUKI, Imperial College London, D.J. AMPLEFORD, Sandia National Laboratories, J. RAPPLEY, Imperial College London, M. SHERLOCK, CCLRC Rutherford Appleton Laboratory, M.G. HAINES, Imperial College London — Cylindrical foam targets can be placed on the axis of wire array z-pinches, in particular Dynamic Hohlraum (DH) and Double Ended Drive Hohlraum (DEDH); Z-pinch configurations used for ICF experiments on Z, Sandia National Laboratory. Precursor plasma produced by array wires prior to array implosion is accelerated to the axis and impacts the foam target. This can modify the target prior to the implosion of the wire array. Kinetic pressure and thermal heating of the foam are two mechanisms that will affect the foam. Experiments have been performed with non-imploding wire arrays on the 1 MA MAGPIE generator at Imperial College London. Over-massed arrays injected precursor plasma into the array for the duration of the current pulse; absence of the x-ray pulse an imploding array emits permits radiography of the array axis. The entire width of the array has been radiographed for the first time. Diagnostics included point-projection radiography with x-pinches and x-ray emission framing cameras. Results show ablation of low-density plasma from the foam surface and compression of the foam by precursor pressure.

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