

Abstract Submitted
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Investigation of the interaction pulse in nested wire array z-pinches¹ D.J. AMPLEFORD, C.A. JENNINGS, M.E. CUNEO, C. DEENEY, Sandia National Laboratories, S.N. BLAND, S.V. LEBEDEV, S.C. BOTT, G.N. HALL, F. SUZUKI, J.P. CHITTENDEN, Imperial College London — Radiation pulse shaping is vital for z-pinch driven ICF concepts. One method to achieve such pulse shaping is to use the foot pulse generated by the interaction between two nested wire arrays. We present data from experiments investigating this interaction pulse on the MAGPIE generator (1MA, 240ns) at Imperial College London. On MAGPIE, the current through the inner array is suppressed by enhancing its inductance, leading to a similar current fraction to that observed on the Z-generator. In these experiments time gated imaging of photon energies $>30\text{eV}$ indicates that radiation is emitted as leading bubbles of the imploding outer array reach and pass the inner array. Experiments using novel configurations to eliminate possible heating mechanisms will also be discussed, and data will be compared to simulations from the Gorgon 3D MHD code.

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