

Abstract Submitted
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3D Resistive MHD Modeling of Wire Array Z-Pinches¹ CHRIS JENNINGS, Sandia National Laboratories, Albuquerque, New Mexico, 87185 USA, JERRY CHITTENDEN, Blackett Laboratory, Imperial College, London SW7 2BW, U.K, THOMAS SANFORD, Sandia National Laboratories, Albuquerque, New Mexico, 87185 USA, ANDREA CIARDI, Observatoire de Paris, (LUTH), 92195 Meudon, France — We present 3D resistive MHD calculations of the implosion of high wire number arrays on the Z generator at Sandia National Laboratories. We demonstrate full circumference calculations of the implosion of 300 wire tungsten arrays. To access the high resolutions required to adequately resolve discrete initial wires in these arrays we present details of a highly parallel finite volume MHD code for the solution of resistive MHD across a locally refineable Cartesian grid. Furthermore, using a R-Phi-Z wedge shaped geometry we perform calculations of the implosion of nested wire arrays stagnating onto foam liners, to examine possible mechanisms for the origin of an observed axial asymmetry seen in the X-ray radiation obtained from Dynamic Hohlraum experiments.

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