

Abstract Submitted
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Evolution of shock through a void in foam Y. KIM, J. M. SMIDT, T. J. MURPHY, M. R. DOUGLASS, B. G. DEVOLDER, J. R. FINCKE, D. W. SCHMIDT, T. CARDENAS, S. G. NEWMAN, C. E. HAMILTON, T. J. SEDILLO, Los Alamos National Laboratory, LOS ALAMOS, NM 87544 TEAM — Marble implosion is an experimental campaign intended to study the effects of heterogeneous mix on fusion burn. A spherical capsule is composed of deuterated plastic foam of controlled pore (or void) size with tritium fill in pores. As capsule implosion evolves, the initially separated deuterium and tritium will mix, producing DT yields. Void evolution during implosion is of interest for the Marble campaign. A shock tube, driven by the laser at Omega, was designed to study the evolution of a shock through a foam-filled “void” and subsequent void evolution. Targets were comprised of a 100 mg/cc CH foam tube containing a 200-m diameter, lower density doped foam sphere. High-quality, radiographic images were obtained from both 2% iodine-doped in plastic foam and 15% tin-doped in aerogel foam. These experiments will be used to inform simulations.

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