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Laser-Driven Shock-Timing Experiments in Planar CH and Cryogenic Deuterium Targets E. VIANELLO[1], T.R. BOEHLY, J.E. MILLER[2], R.S. CRAXTON, V. GONCHAROV, I. IGUMENSHEV, D.D. MEYERHOFER[3], Laboratory for Laser Energetics, U. of Rochester, D.G. HICKS, P.M. CELLIERS, LLNL
— Direct-drive inertial-confinement-fusion target designs use multiple shocks to stabilize and condition the imploding shell. The strength and timing of these shocks are critical to optimization of target designs. We present results from experiments on planar CH and cryogenic D_2 targets that use two 100-ps pulses to produce two shocks at various conditions. The velocity profiles of these shocks (from VISAR) and self-emission are used to investigate the coupling of multiple beams to the targets and to validate the ability of hydrodynamic codes to simulate multiple, laser-driven shocks. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC03-92SF19460, the University of Rochester, and the New York State Energy Research and Development Authority. The support of DOE does not constitute an endorsement by DOE of the views expressed in this article.

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