Abstract Submitted
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Development of Shock-Timing Techniques for the National Ignition Facility T.R. BOEHLY, M.A. BARRIOS, D.E. FRATANDUONO, T.C. SANGSTER, D.D. MEYERHOFER, Laboratory for Laser Energetics, U. of Rochester, P.M. CELLIERS, D. MUNRO, G.W. COLLINS, O.L. LANDEN, LLNL, R.E. OLSON, SNL — To optimize the drive for ignition targets on the National Ignition Facility, initial experiments will use surrogate targets to measure the timing and strength of shocks produced by that drive. These targets use an ignition-style capsule fitted with a deuterium-filled re-entrant cone embedded in that shell. The shocks are observed in flight through a transparent window using optical diagnostics. We report on OMEGA experiments that are scaled and designed to validate this shock-timing technique using both open geometry and hohlraum targets with embedded cones, by quantifying and mitigating the effects of preheat by hard-x-ray hohlraum emission on the inner capsule surface, deuterium column, and window. This work was supported by U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-92SF19460.

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