Abstract Submitted
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Shock-Ignition Target Designs for OMEGA R. NORA, R. BETTI, K.S. ANDERSON, W. THEOBALD, Laboratory for Laser Energetics, U. of Rochester, G. SCHURTZ, M. LAFON, X. RIBEYRE, CELIA, A. CASNER, CEA — Shock-ignition designs of cryogenic targets on OMEGA are presented. The targets are designed to be an 83-μm DT shell with a 10-μm plastic ablator and outer radius of 430 μm being driven by 25 kJ of laser energy in a triple-picket design. Using the triple-picket laser design makes it possible for the OMEGA Laser System to maximize the energy on target while shaping the adiabat to reduce the growth of Rayleigh–Taylor instabilities. One-dimensional simulations using the hydrodynamic code *LILAC* indicate the cryogenic target achieves neutron yields of 4.6 $\times$ 10^{13} and areal densities of 450 mg/cm^3. Two-dimensional *DRACO* simulations, including ice roughness and multimode laser-imprint perturbations, will also be presented. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement Nos. DE-FC52-08NA28302 and DE-FC02-04ER54789.

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