Abstract Submitted
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Shock-Ignition Studies in Planar Geometry on OMEGA M. HOHENBERGER, W. THEOBALD, S.X. HU, R. BETTI, T.R. BOEHLY, D.D. MEYERHOFER, T.C. SANGSTER, W. SEKA, C. STOECKL, B. YAAKOBI, Laboratory for Laser Energetics and Fusion Science Center, U. of Rochester, A. CASNER, CEA, DAM, DIF, X. RIBEYRE, G. SCHURTZ, CELIA — In the shock-ignition concept,[1] the gain in an inertial confinement fusion (ICF) experiment is enhanced compared to conventional hot-spot ignition through the separation of the fuel assembly and ignition stages. A strong, spherically converging shock of several hundred megabar is launched into the cold fuel assembly of an ICF target by a high-intensity laser spike of $\sim 10^{16}$ W/cm^2 at the end of the assembly pulse, igniting the fuel. We present results from recent OMEGA experiments in planar geometry studying the shock-ignition concept and strong shock generation in the presence of a pre-plasma. These experiments provide important data on backscattering, hot-electron generation, and shock strength at shock-ignition relevant intensities of up to $\sim 5 \times 10^{15}$ W/cm^2. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-08NA28302.

[1]R. Betti *et al.*, Phys. Rev. Lett. **98**, 155001 (2007).

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