Abstract Submitted
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Shock-Ignition Studies on OMEGA M. HOHENBERGER, W. THEOBALD, K.S. ANDERSON, R. BETTI, D.D. MEYERHOFER, C. STOECKL, Laboratory for Laser Energetics and Fusion Science Center, U. of Rochester, A. CASNER, CEA, X. RIBEYRE, G. SCHURTZ, CLIA, U. of Bordeaux — Recent theoretical work[1] has shown that the gain in an inertial confinement fusion (ICF) experiment can be significantly increased through separation of the compression and ignition stage by launching a strong, spherically convergent shock at the end of a compression pulse. This scheme, referred to as *shock ignition*, reduces the energy required for ignition compared to "conventional" ICF or fast ignition. Through potentially relaxed requirements for the ignitor-shock spherical symmetry, it can be carried out in a polar-drive configuration and is therefore applicable to the National Ignition Facility. The results of a series of spherical and planar-target experiments on OMEGA to study the shock-ignition technique and to infer the shock strength, hot-electron generation, and light reflectivity at the high intensities relevant to shock ignition will 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.

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

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