Abstract Submitted
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Thermal and Kinematic Equation-of-State Experiments Using Decaying Shock Waves J.E. MILLER[1], T.R. BOEHLY, A. MELCHOIR[2], D.D. MEYERHOFER[3], Laboratory for Laser Energetics, U. of Rochester, P.M. CELLIERS, J.H. EGGERT, D.G. HICKS, LLNL — Thermal (temperature) measurements have been related to kinematic properties (pressure, density, and internal energy) over a wide range of pressures using decaying shocks. Unsupported laser-generated shocks from OMEGA are launched into a transparent material, and the evolution of the shock velocity and self-emission from the shock are measured. Using an absolutely calibrated pyrometer for the temperature and the known principal Hugoniot for the material, the shock velocity is related to the kinematic and thermal properties of the material. The relationship between these measurements and material models will be discussed. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-92SF19460.

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