

Abstract Submitted
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Platform for absolute measurement of the compression of deuterium along isentropes to multi-TPa pressures¹ P. M. CELLIERS, A. FERNANDEZ-PANELLA, Lawrence Livermore National Laboratory, S. BRYGOO, CEA/DAM Bruyeres-le-Chatel, France, D. C. SWIFT, S. ALI, S. W. HAAN, M. MILLOT, J. H. EGGERT, D. E. FRATANDUONO, Lawrence Livermore National Laboratory — Equation of state models for deuterium and other light elements have traditionally been tested experimentally along Hugoniot, primarily the principal Hugoniot. The compression path of DT fuel in inertial confinement fusion (ICF) follows isentropes to very high density, where little experimental data measuring the compression exist. We are developing an experimental platform to compress deuterium along isentropes similar to the ICF paths using the National Ignition Facility. Our approach combines spherical geometry with multi-shock reverberation to achieve near isentropic compression to multi-TPa pressures that is diagnosed with radiographic techniques. Our plan is to measure compression paths relevant to current ICF platforms. We will describe details of the approach and preliminary data.

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