

Abstract Submitted  
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**Developing absolute shock wave equation of state measurements on the NIF<sup>1</sup>** PETER CELLIERS, D. E. FRATANDUONO, A. LAZICKI, R. A. LONDON, Lawrence Livermore National Laboratory, S. BRYGOO, CEA, France, D. C. SWIFT, F. COPPARI, M. MILLOT, J. L. PETERSON, N. B. MEEZAN, A. FERNANDEZ-PANELLA, D. J. ERSKINE, S. ALI, G. W. COLLINS, Lawrence Livermore National Laboratory — The National Ignition Facility provides an unprecedented capability to generate ultra-high pressure planar shock waves (around 10 TPa) in solid samples. We are currently fielding impedance match equation of state (EOS) experiments to determine the shock Hugoniot of various samples relative to EOS standards, such as aluminum and quartz. However, the equations of state of the standards at multi-TPa shock pressures are not yet well-established. Absolute techniques are needed to provide the data needed to establish the Hugoniot of the standards, and also to measure the state of a sample directly. We are pursuing several approaches using absolute techniques. These approaches will be discussed.

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