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High-Pressure Ramp EOS Measurements on the NIF DAYNE FRATANDUONO, SUZANNE ALI, TOM ARSENLIS, DAVID BRAUN, ANGELA COOK, JON EGGERT, JIM MCNANEY, AMALIA FERNANDEZ PANELLA, DAMIAN SWIFT, RAY SMITH, Lawrence Livermore National Laboratory, LAWRENCE LIVERMORE NATIONAL LABORATORY TEAM — Ramp compression experiments have opened a path toward the measurement of extreme states of compression for solid-state materials on lasers, pulsed power, and gas guns. The National Ignition Facility (NIF) at Lawrence Livermore National Laboratory offers a unique capability to study solid-state materials under these extreme conditions. Using the NIF facility, we have recently made great advancements measuring the isentrope many materials. The ramp compression experiments on the NIF have demonstrated the ability to accurately measure the stress-density response of metals (Fe, Al, Cu and Pt) and insulators (LiF) to pressures in excess of 8 Mbar. I will present the recent advancements in the pursuit of understanding the EOS of warm dense matter and close with future plans for HED EOS experiments on the NIF. This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

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