Abstract Submitted
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Material Strength on Quasi-isentropes JEFFREY NGUYEN, Lawrence Livermore National Laboratory, JEREMY R. PATTERSON, DANIEL ORLIKOWSKI, LOUIS P. MARTIN, NEIL C. HOLMES, LAWRENCE LIVERMORE NATIONAL LABORATORY COLLABORATION — We have recently performed experiments to study strength properties of aluminum on quasi-isentropes. The aluminum samples were initially shocked to a fixed state on the Hugoniot, then quasi-isentropically compressed and released isentropically. In these experiments, the strain rates on compression and release isentropes are nearly equivalent. We will discuss the details of the experiments and data and error analysis in deriving strength of aluminum. Recent advances in the functionally graded density impactor technology have made it possible for us to carry out these experiments with significantly reduced uncertainties. We will discuss these advances including reproducibility and planarity of the impactors. Methods to characterize these advances will be discussed. [1] Work performed under the auspices of the U.S. DOE at the University of California/Lawrence Livermore National Laboratory under contract W-7405-ENG-48.

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