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Principal Quasi-Isentropes of Several Materials to Multi-Megabar Pressure from Analysis of Magnetically Driven Ramp Compression Data JEAN-PAUL DAVIS, MATTHEW MARTIN, MARCUS KNUDSON, Sandia National Laboratories — Quasi-isentropic ramp-wave experiments promise accurate equation-of-state (EOS) data in the solid phase at relatively low temperatures and multimegabar pressures. In this range of pressure, isothermal diamond-anvil techniques have limited pressure accuracy due to reliance on theoretical EOS of calibration standards, thus accurate quasi-isentropic compression data would help immensely in constraining EOS models. Multi-megabar ramp compression experiments using the Z Machine at Sandia as a magnetic drive with stripline targets have been performed on tantalum, copper, gold, beryllium, molybdenum, and aluminum metals as well as lithium fluoride crystal. Much of the data from these experiments are analyzed using a single-sample inverse Lagrangian approach. This technique, and the quantification of its uncertainties, will be described in detail. Results will be presented for selected materials, with comparisons to independently developed EOS. *Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

Jean-Paul Davis
Sandia National Laboratories

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