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**Dynamic Shock Compression of Copper to Multi-Megabar Pressure**[1] T.A. HAILL, M.D. FURNISH, L.L. TWYEFFORT, C.L. ARRINGTON, R.W. LEMKE, M.D. KNUDSON, J.-P. DAVIS, Sandia National Laboratories
— Copper is an important material for a variety of shock and high energy density applications and experiments. Copper is used as a standard reference material to determine the EOS properties of other materials. The high conductivity of copper makes it useful as an MHD driver layer in high current dynamic materials experiments on Sandia National Laboratories Z machine. Composite aluminum/copper flyer plates increase the dwell time in plate impact experiments by taking advantage of the slower wave speeds in copper. This presentation reports on recent efforts to reinstate a composite Al/Cu flyer capability on Z and to extend the range of equation-of-state shock compression data through the use of hyper-velocity composite flyers and symmetric planar impact with copper targets. We will present results from multi-dimensional ALEGRA MHD simulations, as well as experimental designs and methods of composite flyer fabrication.

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