Abstract Submitted
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Shock Induced Melting Behavior of Eutectic Systems[1] CHRIS ADAMS, Los Alamos National Laboratory — Under equilibrium conditions, melting in multi-phase alloy systems is accompanied by short-range diffusion at inter-phase boundaries. The degree to which diffusion contributes to shock induced melting in simple eutectic systems is still an open question. While there exists a considerable body of previous work on shock induced melting in single phase systems, there has been much less work performed on multiphase systems. We will present the results of a series of gas-gun recovery experiments performed over a range of shock loading conditions, illustrating our observations of shock induced deformation and melting behavior in cast and thermo-mechanically processed Ag-Cu simple eutectic samples. Assessments of the shock wave profiles, shock states achieved, and sound speeds at pressure will be discussed in conjunction with pre-and post-shot microstrucural characterization of thermo-mechanically processed pre-shot and recovered materials.

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