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Shock-Clump Interaction Studies in the Laboratory,* B.E. Blue, C.A. Back, J.F. Hund, *General Atomics,* J.M. Foster, P.A. Rosen, R.J.R. Williams, *AWE Comm.*, B.H. Wilde, M. Douglas, *LANL,* R. Carver, J. Palmer, P. Hartigan, *Rice U.,* J.F. Hansen, *LLNL*
– Large-scale directional outflows of supersonic plasma are driven by a wide variety of objects in the universe such as young stars, compact binaries, and supernovae. Typical models of the outflows assume simplistic geometries; however, images of most outflows show a much more complex structure that consists of multiple clumps and shocks with a variety of sizes. To bridge the gap between the complex system in space and the simplified models, controlled scaled experiments were performed to elucidate the physics of a shock progressing through a clumpy medium. This talk will present experiments on the Omega Laser in which a shock impacts density discontinuities in order to understand the perturbed shock structure as well as the evolution of the discontinuity in a localized area of a clumpy medium. We have obtained high-resolution radiographs that detail the temporal evolution of the shock and density discontinuity.

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