

Abstract Submitted
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High-Explosive Shock Compression of Aluminum through Smooth and Corrugated Interfaces¹ J.D. MOLITORIS, Lawrence Livermore National Laboratory, R.G. GARZA, W.M. HOWARD, H.G. ANDRESKI, L.D. CROUCH, THE ENERGETIC MATERIALS CENTER, LAWRENCE LIVERMORE NATIONAL LABORATORY TEAM² — Detonating HMX based energetic materials were used to shock compress Aluminum. The primary diagnostic on these experiments was a new high-resolution radiography system that obtained a set of time sequence images of the dynamic process. X-Ray material penetration was sufficient to image density structure in the shocked material in addition to shock propagation and overall material deformation. As this diagnostic typically has 25 ns temporal resolution and spatial resolution of less than 1 mm, a high level of detail was obtained. The corrugated interface experiments show perturbation growth at the interface and internal density structure that will be discussed in terms of the Sakharov viscosity technique. This work was performed under the auspices of the U. S. Department of Energy by the Lawrence Livermore National Laboratory under contract No. W-7405-ENG-48.

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