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Spike morphology in supernova-relevant hydrodynamics experiments[1] C. DI STEFANO, C.C. KURANZ, R.P. DRAKE, M.J. GROSSKOPF, C.M. KRAULAND, D.C. MARION, B. FRYXELL, A. BUDDE, University of Michigan, J.F. HANSEN, General Atomics, J. KNAUER, University of Rochester, D. ARNETT, University of Arizona, T. PLEWA, Florida State University — This presentation describes experiments performed on the Omega and Omega EP lasers exploring the 3D Rayleigh-Taylor instability at a blast-wave-driven interface. The laser irradiates a plastic disk and creates a planar blast wave, which then crosses the interface between the disk and a lower-density foam, inducing the Rayleigh-Taylor instability. The plastic disk has an intentional pattern machined at the plastic/foam interface. This seed perturbation is three-dimensional with a basic structure of two orthogonal sine waves with a wavelength of 71 μm and amplitude of 2.5 μm. Interface structure has been detected under these conditions using x-ray radiography, and some of the resulting data will be shown. Current experiments are further examining the features of the unstable interface using proton radiography.

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