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Effect of Ambient Medium Inhomogeneity on Jet Evolution B.E. BLUE, S.G. GLENDINNING, T.R. DITTRICH, Lawrence Livermore National Laboratory — Experimental studies of hydrodynamic instabilities of interfaces related to inertial confinement fusion often utilize low-density foams. A detailed understanding of these instabilities necessitates an accurate knowledge of the materials in which they are evolving. Theoretical predictions and simulations of these instabilities often assume the foam to be a continuous solid medium. However, the foams are not a solid material; rather they are porous with cell sizes ranging from nanometers to microns. An experiment was performed on the OMEGA Laser to measure the temporal evolution of hydrodynamic jets into foams with the same density but different cell sizes. A 1 ns 5.5 kJ laser pulse was used to drive a 20 Mbar shock into an Al target backed by a 100 mg/cm^3 foam. An RF foam with 100 nm cell size was tested against a CH foam with 2 μm cell size. Snapshots of the jet's evolution were recorded with point-projection radiography at two different times. Results and simulations of the experiment will be presented. This work is performed under the auspices of the U. S. DOE by Lawrence Livermore National Laboratory under Contract No. W-7405-ENG-48.

Brent Blue
Lawrence Livermore National Laboratory

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