Abstract Submitted
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Foam-lined hohlraums at the National Ignition Facility CLIFF THOMAS, Lawrence Livermore Natl Lab — Indirect drive inertial confinement fusion (ICF) is made difficult by hohlraum wall motion, laser backscatter, x-ray preheat, high-energy electrons, and specular reflection of the incident laser (i.e. glint). To mitigate, we line the hohlraum with a low-density metal foam, or tamper, whose properties can be readily engineered (opacity, density, laser absorption, ion-acoustic damping, etc.). We motivate the use of low-density foams for these purposes, discuss their development, and present initial findings. Importantly, we demonstrate that we can fabricate a 200-500 um thick liner at densities of 10-100 mg/cm3 that could extend the capabilities of existing physics platforms. The goal of this work is to increase energy coupled to the capsule, and maximize the yield available to science missions at the National Ignition Facility. This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

Cliff Thomas
Lawrence Livermore Natl Lab

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