

Abstract Submitted
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Radiation Hydrodynamics Simulations of Radiative Shear Experiments at the National Ignition Facility¹ XIYA WEI, MATTHEW TRAN-THAM, University of Michigan, KIRK ADLER FLIPPO, CARLOS DI STEFANO, Los Alamos National Laboratory, ERIC JOHNSEN, CAROLYN KURANZ, University of Michigan — The Shock/Shear platform was developed at LANL to study turbulent mixing in high-energy-density systems. By using a radiative shock, we seek to develop a similar experiment, which explores effects of a radiation on the developing structure of the experiment. The shock tube containing a solid plastic ablator and various types of foam is irradiated by halfraum that will drive either a radiative shock or adiabatic shock into the foam material. The radiation hydrodynamic code, Hyades, was used to scope the experiment. We show the results of a parameter study to determine an optimal experiment design by varying the foam material (CRF and SiO₂), the foam density, and ablator thickness. Our simulations provide plasma parameters under which a successful experiment is possible.

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