

Abstract Submitted  
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**Mix and hydrodynamic instabilities in indirect-drive ICF implosions on NIF**<sup>1</sup> V. A. SMALYUK, LLNL — Hydrodynamic instabilities are major factor in degradation of spherical implosions in inertial confinement fusion (ICF). Recent results and plans for measuring the seeds and growth of capsule hydrodynamic instabilities in all phases of indirect-drive ICF implosions will be presented. In the acceleration phase of implosions, instability growth of perturbations was measured by x-ray radiography. To understand the stability of the ablator-ice interface, mix between ablator and the fuel is being inferred using monochromatic Bragg crystal radiography. In the deceleration phase of implosions, the technique of using the self-emission from the capsule inner shell to “visualize” and quantify the perturbations and asymmetries near peak compression will be extended to layered DT implosions. In the recent experiments, the extent and evolution of perturbations seeded by capsule support “tents”, fill tubes, and low-mode asymmetries have been measured. The new developments in the area of instability seed mitigation will also be presented.

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