Abstract Submitted
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Rayleigh Taylor Instability Growth in NIC Capsules with Engineered Defects[1] K.J. PETERSON, Sandia National Labs, B.A. HAMMEL, L.J. SUTER, D.S. CLARK, D.R. FARLEY, O.L. LANDEN, H. SCOTT, Lawrence Livermore National Laboratory, K. MORENO, General Atomics, R.A. VESEY, M.C. HERRMANN, C.W. NAKHLEH, Sandia National Labs, I. GOLOVKIN, Prism Computational Sciences, S.P. REGAN, R. EPSTEIN, Laboratory for Laser Energetics — In order to achieve thermonuclear burn and energy gain in ICF capsules, the growth of hydrodynamic instabilities must be understood and controlled. Experiments are planned to measure time dependent hydrodynamic instability growth of engineered defects on the surface of NIC capsules using x-ray radiography. We will present an analysis of synthetic radiography from 2D and 3D HYDRA simulations with various x-ray drive fluxes and show how these results will be used to assess code predictions of instability growth and mix. We will also discuss how these results correlate with capsule performance and observables from hot spot self emission imaging and Ge spectroscopy.

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