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Post Shot Simulations of NIF Convergent Ablator Experiments¹ R.E. OLSON, SNL, N.B. MEEZAN, D.G. HICKS, O.L. LANDEN, E.L. DEWALD, O.S. JONES, S.H. LANGER, D.A. CALLAHAN, LLNL, R.D. PETRASSO, A.B. ZYLSTRA, MIT — Post shot simulations of NIF convergent ablator experiments will be described. The experiments use a streaked radiograph of a backlit capsule implosion to measure the trajectory, velocity, remaining mass, and ablator rhoR and are an important component of the U. S. National Ignition Campaign. The integrated (capsule-in-hohlraum) post shot simulations use measured target parameters, measured laser input powers, measured time-resolved backscatter, and calculated cross-beam power transfer. The integrated calculations are post-processed to provide simulations of the key diagnostics, including: 1) Dante measurements of the hohlraum x-ray flux and spectrum; 2) streaked radiographs of the imploding ablator shell; 3) wedge range filter measurements of D-He3 proton output spectra; and 4) GXD images of the imploded core. The simulated diagnostics are compared to the experimental measurements to provide an assessment of the accuracy of the design code, to enhance understanding of the experiments, and to assist in choosing parameters for subsequent steps in the path towards optimal ignition capsule tuning.

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