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Design Calculations for NIF Convergent Ablator Experiments R.E. OLSON, SNL, D.A. CALLAHAN, D.G. HICKS, O.L. LANDEN, S.H. LANGER, N.B. MEEZAN, B.K. SPEARS, K. WIDMANN, LLNL, J.L. KLINE, D.C. WILSON, LANL, R.D. PETRASSO, MIT, R.J. LEEPER, SNL — Design calculations for NIF convergent ablator experiments will be described. The convergent ablator experiments measure the implosion trajectory, velocity, and ablation rate of an x-ray driven capsule and are a important component of the U. S. National Ignition Campaign at NIF. The design calculations are post-processed to provide simulations of the key diagnostics -1) Dante measurements of 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 measurements of the imploded core. The simulated diagnostics will be compared to the experimental measurements to provide an assessment of the accuracy of the design code predictions of hohlraum radiation temperature, capsule ablation rate, implosion velocity, shock flash areal density, and x-ray bang time. Post-shot versions of the design calculations are used to enhance the understanding of the experimental measurements and will assist in choosing parameters for subsequent shots and the path towards optimal ignition capsule tuning. *SNL, LLNL, and LANL are operated under US DOE contracts DE-AC04-94AL85000. DE-AC52-07NA27344, and DE-AC04-94AL85000.

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