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Predicting mix in NIF layered capsule implosions[1] S.V. WEBER, B.A. REMINGTON, H.-S. PARK, V.A. SMALYUK, D.S. CLARK, B.A. HAMMEL, O.S. JONES, M.H. KEY, N.B. MEEZAN, S.T. PRISBREY, B.K. SPEARS, LLNL
— Layered capsule implosion experiments on the National Ignition Facility (NIF) in 2012 have sought to improve performance by varying capsule dopant fraction, ablator thickness, DT ice layer thickness, laser power rise rate, and peak laser power. Ablator mix into the hotspot, which can be inferred from the stagnation hotspot x-ray emission, neutron yield, and ion temperature, was seen to vary greatly. Simulated growth of perturbations on ablator and ice surfaces increases with increasing peak laser power and ablator dopant fraction and decreases with ablator and ice thickness. Simulated predictions and sensitivities, especially of ablator mix into the hot spot, will be compared to experimental results.

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