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Instability growth seeded by ablator material inhomogeneity in indirect drive implosions on the National Ignition Facility STEVEN HAAN, S.J. ALI, S.H. BAXAMUSA, P.M. CELLIERS, D.S. CLARK, A.L. KRITCHER, A. NIKROO, M. STADERMANN, J. BIENER, R. WALLACE, V. SMALYUK, H. ROBEY, C.R. WEBER, Lawrence Livermore National Lab, H. HUANG, H. REYNOLDS, L. CARLSON, N. RICE, General Atomics, J.L. KLINE, A.N. SIMAKOV, S.A. YI, Los Alamos National Lab — NIF indirect drive ablators (CH, Be, and high density carbon HDC) show hydrodynamic irregularity beyond that expected from surface features. Characterizing these seeds and estimating their growth is important in projecting performance. The resulting modulations can be measured in x-ray backlit implosions on NIF called Hydro Growth Radiography [Phys. Plasmas 24, 042706 (2017)], and on Omega with 2D velocimetry [S. Ali, invited talk, DPP2017]. This presentation summarizes the experiments for the three ablators, along with simulations thereof and projections of the significance for NIF. For CH, dominant seeds are photo-induced oxidation, which might be mitigated with alumina coating. For Be, perturbations result from Ar and O contamination. For HDC, perturbations are seeded by shock propagation around melt, depend on shock strength, and may constrain the adiabat of future HDC implosions. *Work performed under the auspices of the U.S. D.O.E. by Lawrence Livermore National Laboratory under Contract No. DE-AC52-07NA27344.

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