

Abstract Submitted  
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**Mix and instability growth seeded at the inner surface of CH-ablator implosions on the National Ignition Facility<sup>1</sup>** S.W. HAAN, P.M. CELLIERS, G.W. COLLINS, C.D. ORTH, D.S. CLARK, P. AMENDT, B.A. HAMMEL, H.F. ROBEY, Lawrence Livermore National Laboratory, H. HUANG, General Atomics — Mix and hydro instability growth are key issues in implosions of ignition targets on NIF. The implosions are designed so that the amplitude of perturbations is thought to be determined by initial seeds to the hydrodynamic instabilities, amplified by an instability growth factor. Experiments have indicated that growth factors can be calculated fairly well, but characterizing the initial seeds is an ongoing effort. Several threads of investigation this year have increased our understanding of growth seeded at the CH/DT interface. These include: more detailed characterization of the CH inner surface; possible other seeds, such as density irregularities either from fabrication defects or arising during the implosion; experiments on the Omega laser measuring velocity modulations on shock fronts shortly after breaking out from the CH, which can seed subsequent growth; and the possible significance of non-hydrodynamic effects such as plasma interpenetration or spall-like ejecta upon shock breakout. This presentation describes these developments, the relationships between them, and their implications for ignition target performance.

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