Abstract Submitted
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"Green's function" approach & low-mode asymmetries[1] LAURENT MASSE, DAN CLARK, JAY SALMONSON, STEVE MACLAREN, TAMMY MA, SHAHAB KHAN, JESSE PINO, JO RALPH, C. CZAJKA, ROBERT TIPTON, OTTO LANDEN, LLNL, GEORGES KYRALA, LANL, 2 TEAM, 1 TEAM — Long wavelength, low mode asymmetries are believed to play a leading role in limiting the performance of current ICF implosions on NIF. These long wavelength modes are initiated and driven by asymmetries in the x-ray flux from the hohlraum; however, the underlying hydrodynamics of the implosion also act to amplify these asymmetries. The work presented here aim to deepen our understanding of the interplay of the drive asymmetries and the underlying implosion hydrodynamics in determining the final imploded configuration. This is accomplished through a synthesis of numerical modeling, analytic theory, and experimental data. In detail, we use a Green's function approach to connect the drive asymmetry seen by the capsule to the measured inflight and hot spot symmetries. The approach has been validated against a suite of numerical simulations. Ultimately, we hope this work will identify additional measurements to further constrain the asymmetries and increase hohlraum illumination design flexibility on the NIF. The technique and derivation of associated error bars will be presented.

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