

Abstract Submitted  
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**View Factor Study of 3D Low-Mode Asymmetries in Inertial Confinement Fusion Implosions**<sup>1</sup> CHRISTOPHER YOUNG, DANIEL CASEY, LAURENT MASSE, BRIAN MACGOWAN, ALASTAIR MOORE, OTTO LANDEN, PRAV PATEL, NATHAN MEEZAN, DEBRA CALLAHAN, Lawrence Livermore National Laboratory — Inertial confinement fusion (ICF) experiments at the National Ignition Facility (NIF) seek to drive a spherical deuterium-tritium target to high temperatures and pressures. Fusion performance is significantly affected by the symmetry of the radiation environment produced inside the cylindrical hohlraum enclosure driven by 192 laser beams. Presently, full 3D ICF radiation-hydrodynamic calculations with sufficient resolution are very computationally expensive, limiting their utility. To rapidly assess the impact of drive asymmetry induced by laser power imbalance and hohlraum engineering features, we employ a view factor model [1]. The calculated low mode drive asymmetries are coupled with a Green's Function model of the capsule response [2] and results are compared against experimental data across a range of NIF experiments. [1] J. J. MacFarlane, *J. Quant. Spectr. Rad. Transfer*, 81, 287 (2003) [2] L. Masse, APS DPP Abstract TI3.004 (2018)

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Christopher Young  
Lawrence Livermore National Laboratory

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