Abstract Submitted
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Experimental investigation of hohlraum energetics in ignition targets[1] S.A. MACLAREN, J.H. HAMMER, H.-S. PARK, M.B. SCHNEIDER, P.M. CELLIERS, D.A. CALLAHAN, D.E. HINKEL, M.L. KERVIN, B.R. MADDOX, R.E. MARRS, R.P. TOWN, K. WIDMANN, M.J. WILSON, B.E. YOXALL, LLNL — In indirect-drive inertial fusion, x-ray drive generated in the hohlraum is transported and coupled to the ablator, generating the hydrodynamic drive that implodes the capsule. This combination of transport and coupling determines the implosion velocity, which must be sufficiently high to heat the deuterium-tritium (DT) "hot spot" to fusion temperatures as well as strongly compress the surrounding cold DT fuel. To date, implosion velocities of ignition capsules measured at the National Ignition Facility (NIF) have been consistently lower than those predicted by baseline simulations. Two new types of NIF experiments have been carried out to investigate this discrepancy. These experiments seek to separate the effects of x-ray transport within the hohlraum from the ignition capsule ablator's response to the drive. Results of these experiments are compared with simulation.

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