Abstract Submitted
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Improving Hohlraums for High Foot Implosions[1] D. E. HINKEL, L. F. BERZAK HOPKINS, T. MA, J. E. RALPH, F. ALBERT, L. R. BENEDETTI, P. M. CELLIERS, T. DOEPPNER, C. S. GOYON, N. IZUMI, L. C. JARROTT, S. F. KHAN, Lawrence Livermore Natl Lab, J. L. KLINE, Los Alamos Natl Lab, A. L. KRITCHER, Lawrence Livermore Natl Lab, G. A. KYRALA, Los Alamos Natl Lab, S. R. NAGEL, A. E. PAK, P. PATEL, M. D. ROSEN, J. R. RYGG, M. B. SCHNEIDER, Lawrence Livermore Natl Lab, D. P. TURNBULL, Lab. for Laser Energetics, C. B. YEAMANS, D. A. CALLAHAN, O. A. HURRICANE, Lawrence Livermore Natl Lab — Analysis of High Foot implosions show that performance has been limited by the radiation drive environment, i.e., the hohlraum. Demonstrated here is that improvements in the radiation environment result in an enhancement in implosion performance. This is accomplished by using a longer, larger case-to-capsule ratio hohlraum at lower gas fill density. At fixed laser energy, High Foot implosions driven with this hohlraum have achieved a 1.4 x increase in stagnation pressure, with an accompanying relative increase in fusion yield of 50%. Low mode asymmetries are still present, however, and are most likely a consequence of poor inner beam propagation through the hohlraum to the wall. Presented here are results from these High Foot implosions, as well as analyses of inner beam propagation, and additional hohlraum improvements that further ameliorate the implosion.

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