

Abstract Submitted
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Hohlraum Design for a High Foot, High Adiabatic Implosion on NIF¹ D. CALLAHAN, D. HINKEL, O. HURRICANE, B. REMINGTON, L. BERZAK HOPKINS, E. DEWALD, T. DITTRICH, T. DOEPPNER, S. LEPAPE, T. MA, J. MOODY, H.-S. PARK, J. RALPH, J. SALMONSON, LLNL, J. KLINE, LANL — We recently began a campaign on NIF to test capsule performance for a higher adiabat design. The higher adiabat is achieved by using a higher power in the foot of the laser pulse, which produces a stronger first shock. The higher power in the foot presents some challenges and opportunities for the hohlraum design. In particular, the higher foot causes more capsule ablation early in the pulse. This increases the margin against hydrocoupling, which occurs when pressure waves launched from the laser-heated hohlraum gas impact the capsule, and allows the use of a higher hohlraum fill density compared to the low foot design. Higher fill density results in less wall motion during the pulse. The higher foot also increases risk for hot electrons generated by the 2wp instability in the window. This talk will summarize hohlraum performance for the high foot design.

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