

Abstract Submitted
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Techniques for Enhancing Implosion Performance on High-Foot Ignition Capsules on NIF¹ T. R. DITTRICH, O. HURRICANE, L. F. BERZAK HOPKINS, D. A. CALLAHAN, D. CLARK, S. W. HAAN, D. E. HINKEL, T. MA, A. NIKROO, A. E. PAK, H. S. PARK, J. D. SALMONSON, C. R. WEBER, Lawrence Livermore Natl Lab — Two options that have the potential to improve implosion performance in the High-Foot series of ignition capsules on NIF [1] will be presented. The first option explores changing the shape of the x-ray drive to include a 4th and even a 5th shock in the implosion. According to simulations, these extra shocks improve the configuration of the assembled fuel and lead to improved confinement and performance. A “ramp compression” between the foot of the drive and the main pulse is also investigated. The second option studies the effect of increasing the Si dopant in a thin-shell capsule. NIF shot N150211 produced relatively high fusion yield (7.6E15 neutrons) but may have suffered from shell burn through. Increasing the Si dopant may delay this burn through yet preserve high implosion velocity. [1] O. A. Hurricane, et al., Nature, 506, 343 (2014).

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Thomas Dittrich
Lawrence Livermore Natl Lab

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