Abstract Submitted
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Low-Velocity Shock Ignition on the NIF K.S. ANDERSON, P.W. MCKENTY, T.J.B. COLLINS, J.A. MAROZAS, Laboratory for Laser Energetics, U. of Rochester, R. BETTI, Fusion Science Center and Laboratory for Laser Energetics, U. of Rochester — Shock ignition (SI)[1] has been proposed as a low-energy alternative path to ignition on the National Ignition Facility (NIF). Previously, a polar-drive SI capsule and pulse design was presented[2] for the NIF at a velocity of 3.05×10^7 cm/s—substantially higher than the velocities of typical SI designs ($\sim$2.4 to 2.7 $\times$ 10^7 cm/s). The motivation for the higher velocity was to improve margin in 1-D simulations. This target was shown to be sufficiently stable in 2-D simulations to the various sources of nonuniformity anticipated on the NIF, being most sensitive to imprinted perturbations from laser speckle. This paper reports on lower-velocity SI designs aimed at reducing the in-flight aspect ratio, thereby decreasing sensitivity to laser imprint. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944.

[1]R. Betti *et al.*, Phys. Rev. Lett. **98**, 155001 (2007).
[2]K. S. Anderson *et al.*, Phys. Plasmas **20**, 056312 (2013).

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