Abstract Submitted
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Optimization of the NIF Polar-Drive Ignition Point Design T.J.B. COLLINS, J.A. DELETTREZ, J.A. MAROZAS, K.S. ANDERSON, P.W. MCKENTY, A. SHVYDKY, Laboratory for Laser Energetics, U. of Rochester, D. CAO, J. CHENHALL, A. PROCHASKA, G. MOSES, U. of Wisconsin — Polar drive (PD)[1] allows one to conduct direct-drive–ignition experiments at the National Ignition Facility while the facility is configured for x-ray drive. A PD-ignition design has been developed[2] achieving high gain in simulations including single- and multibeam nonuniformities, and ice and outer-surface roughness. This design was optimized with *Telios* to reduce the in-flight aspect ratio (IFAR) and implosion speed, increasing target stability while maintaining moderately high thermonuclear gains.[3] With the recent advent of new numerical models treating the effects of nonlocal thermal transport and cross-beam energy transfer, the design has undergone a re-evaluation. Results describing the effects of these processes on the drive and implosion uniformity of the design and the overall target gain will be described. Optimization of both polar and azimuthal beam pointing angles has also been investigated using the optimizer *Telios*. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944.

[1]S. Skupsky *et al.*, Phys. Plasmas **11**, 2763 (2004).
[2]T. J. B. Collins *et al.*, Phys. Plasmas **19**, 056308 (2012).
[3]T. J. B. Collins, J. A. Marozas, and P. W. McKenty, Bull. Am. Phys. Soc. **57**, 155 (2012).

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