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Evaluation of the Revolver Ignition Design at the National Ignition Facility Using Polar-Direct-Drive Illumination P.W. MCKENTY, T.J.B. COLLINS, J.A. MAROZAS, E.M. CAMPBELL, Laboratory for Laser Energetics, U. of Rochester, K. MOLVIG, M. SCHMITT, LANL — The direct-drive ignition design *Revolver*[1] employs a triple-shell target using a beryllium ablator, a copper driver, and an eventual gold pusher. Symmetric numerical calculations indicate that each of the three shells exhibit low convergence (~ 3 to 5) resulting in a modest gain ($G \sim 4$) for ~ 1.7 MJ of incident laser energy. Studies are now underway to evaluate the robustness of this design employing polar direct drive (PDD) at the National Ignition Facility. Integral to these calculations is the leveraging of illumination conditioning afforded by research done to demonstrate ignition for a traditional PDD hot-spot target design.[2] Two-dimensional simulation results, employing nonlocal electron-thermal transport and cross-beam energy transport, will be presented that indicate ignition using PDD. A study of the allowed levels of long-wavelength perturbations (target offset and power imbalance) not precluding ignition will also be examined. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944.

[1]K. Molvig *et al.*, Phys. Rev. Lett. **116**, 255003 (2016).
[2]T. J. B. Collins *et al.*, Bull. Am. Phys. Soc. **59**, 150 (2014).

V.N. Goncharov
Laboratory for Laser Energetics, U. of Rochester

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