

Abstract Submitted
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Low-Mode Asymmetry due to Polarization Smoothing in OMEGA Implosions DANA EDGELL, RUSSELL FOLLETT, JOSEPH KATZ, DAVID TURNBULL, DUSTIN FROULA, Laboratory for Laser Energetics, University of Rochester — Distributed polarization rotators smooth laser speckle by splitting each OMEGA beam into two nearly co-propagating beams with orthogonal polarization. On target, the focal spots of these two beams are offset by $\sim 90^\circ$. The polarizations are balanced near the center of the intersection of the overlapping spots but not at the edges. Cross-beam energy transfer effects in these linearly polarized regions can significantly degrade the symmetry of absorbed energy and overall performance in an implosion. Predicted distributions of scattered light from an implosion are compared to measurements on multiple detectors where asymmetries of the order of tens of percent are commonly observed. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0003856.

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