

Abstract Submitted
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Evaluation of Wavelength Detuning to Mitigate Cross-Beam Energy Transfer Using the Nike Laser P.W. MCKENTY, J.A. MAROZAS, Laboratory for Laser Energetics, U. of Rochester, J. WEAVER, S.P. OBENSCHAIN, A.J. SCHMITT, NRL — Cross-beam energy transfer (CBET) has become a serious threat to the overall success of direct-drive experiments, and especially for polar-direct-drive (PDD) ignition experiments. CBET redirects incident laser light before it can be absorbed into the target, thereby degrading overall target performance. CBET is particularly detrimental over the equator of the target, which is hydrodynamically very sensitive to such losses in the PDD configuration. A promising solution uses laser wavelength detuning between beams to shift the resonance, thereby reducing the interaction cross section between them. Testing this process for direct drive is now underway at the Nike laser at the Naval Research Laboratory. Calculations evaluating the effect CBET has on the scattered-light signals indicate such an experiment will demonstrate the benefits of wavelength detuning for direct-drive implosions. Two-dimensional simulation results will be presented, predicting the effect for both spherical and cylindrical experiments. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944.

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