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Evaluation of Wavelength Detuning to Mitigate Cross-Beam Energy Transfer Using the Nike Laser P.W. MCKENTY, J.A. DELETTREZ, J.A. MAROZAS, Laboratory for Laser Energetics, U. of Rochester, J. WEAVER, S. OBENSCHAIN, A. SCHMITT, Naval Research Laboratory — Cross-beam energy transfer (CBET) has become a serious threat to the overall success of polar-drive–ignition experiments. CBET redirects incident laser light before it can be absorbed into the target, thereby degrading overall target performance. CBET is particularly effective over the equator of the target, which is hydrodynamically very sensitive to such losses. A promising solution uses laser wavelength detuning between beams to break the resonance between them and reduce energy transfer. Testing this process for direct drive has been limited because of the lack of sufficient detuning capabilities. However, the Naval Research Laboratory's Nike laser has the capability of providing a wide range of detuning between its main drive and backlighter beams. This paper explores the design of an experimental platform on Nike to directly evaluate the benefit of frequency detuning in mitigating CBET. 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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