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Cross-Beam Energy Transfer Mitigation Strategy for Polar Drive at the National Ignition Facility J.A. MAROZAS, T.J.B. COLLINS, P.W. MCKENTY, J.D. ZUEGEL, P.B. RADHA, F.J. MARSHALL, W. SEKA, D.T. MICHEL, M. HOHENBERGER, Laboratory for Laser Energetics, U. of Rochester — Cross-beam energy transfer (CBET) causes two-beam energy exchange via stimulated Brillouin scattering,[1] which reduces absorbed light and implosion velocity, alters time-resolved scattered-light spectra, and redistributes absorbed light. These effects reduce target performance in symmetric direct-drive and polar-drive (PD) experiments on the OMEGA Laser System and the National Ignition Facility (NIF). The CBET package (*Adaawam*) incorporated into the 2-D hydrodynamics code *DRACO* is an integral part of the 3-D ray-trace package (*Mazinisin*). The CBET exchange occurs primarily over the equatorial region in PD, where successful mitigation strategies concentrate. Detuning the initial laser wavelength ($\mathrm{d}\lambda_0$) reduces the CBET interaction volume, which can be combined with spot-shape alterations. Employing opposed $\pm\ \mathrm{d}\lambda_0$ in each hemisphere offers the best single CBET mitigation option. The current NIF layout can be used to test detuning by altering the NIF PD repointing strategy while maintaining adequate symmetry. Simulations (2-D *DRACO)* predict measurable results: shell trajectory and shape and scattered-light spectrum and distribution. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944.

[1]C. J. Randall, J. R. Albritton, and J. J. Thomson, Phys. Fluids **24**, 1474 (1981).

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