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Mitigation of cross-beam energy transfer in direct-drive inertial-confinement-fusion implosions with enhanced laser bandwidth[1] JASON BATES, U.S. Naval Research Laboratory, JASON MYATT, JOHN SHAW, RUSSELL FOLLETT, University of Rochester, JAMES WEAVER, U.S. Naval Research Laboratory, ROBERT LEHMBERG, Research Support Instruments, Inc., STEPHEN OBENSCHAIN, U.S. Naval Research Laboratory — Cross-beam energy transfer (CBET) is a special category of stimulated Brillouin scattering in which two overlapping laser beams exchange energy by means of an ion acoustic wave in an under-dense expanding plasma [C.J. Randall *et al.*, Phys. Fluids **24**, 1474 (1981)]. CBET can cause the incident laser energy to be misdirected in direct-drive inertial-confinement-fusion (ICF) implosions, thereby reducing both the maximum ablation pressure achieved and the overall symmetry of the implosion [J.F. Myatt *et al.*, Phys. Plasmas **21**, 055501 (2014)]. One strategy for mitigating CBET may be to increase the bandwidth of the laser light, thereby disrupting the coherent wave-wave interactions underlying this resonant parametric process. In this presentation, we report on results of two-dimensional planar simulations performed with the code LPSE-CBET that demonstrate a significant reduction in CBET for bandwidths between 2 and 5 THz. Although large compared to OMEGA and NIF values (about 1 and 0.3 THz, respectively), it may be possible to reach such bandwidths with existing ICF lasers using a technique based on stimulated rotational Raman scattering [D. Eimerl *et al.*, Phys. Rev. Lett. **70**, 2738 (1993)], which is a subject that we also briefly discuss.

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