

Abstract Submitted
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Cross-Beam Energy Transfer Driven by Incoherent Laser Beams with Frequency Detuning A. MAXIMOV, J.F. MYATT, R.W. SHORT, I.V. IGUMENSHCHEV, W. SEKA, Laboratory for Laser Energetics, U. of Rochester — In the direct-drive method of the inertial confinement fusion (ICF), the coupling of laser energy to target plasmas is strongly influenced by the effect of cross-beam energy transfer (CBET) between multiple driving laser beams.¹ The laser–plasma interaction (LPI) model of CBET is based on the nonparaxial laser light propagation² coupled with the low-frequency ion-acoustic-domain plasma response. Common ion waves driven by multiple laser beams play a very important role in CBET. The effect of the frequency detuning (colors) in the driving laser beams is studied and it is shown to significantly reduce the level of common ion waves and therefore the level of CBET. The differences between the LPI-based CBET model and the ray-based CBET model used in hydrocodes³ are discussed. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944.

¹J. F. Myatt *et al.*, Phys. Plasmas **21**, 055501 (2014).

²A. V. Maximov *et al.*, Phys. Plasmas **11** 2994 (2004).

³I. V. Igumenshchev *et al.*, Phys. Plasmas **19**, 056314 (2012).

A. Maximov
Laboratory for Laser Energetics, U. of Rochester

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