Abstract Submitted
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**An investigation of the time dependence of crossed beam energy transfer at the National Ignition Facility (NIF)**[1] E.A. WILLIAMS, P.A. MICHEL, D.E. HINKEL, R.L. BERGER, A.B. LANGDON, Lawrence Livermore National Laboratory — The recent energetics campaign [1] conducted at the NIF in Fall, 2009 successfully employed crossed beam energy transfer [2] to achieve symmetry of the imploding capsule. In this laser-plasma interaction, two crossing light waves share an ion acoustic wave, and energy is transferred to the wave with the lower frequency in the frame of the plasma. In addition, plasma flows Doppler shift each beam's frequency. The amount of energy transferred from one set of beams to another is not directly measured, but rather is inferred from x-ray images of the target [3]. Radiation-hydrodynamics simulations of targets are then performed [4] that infer the amount of energy transfer required to match the measured symmetry. Here we investigate the time dependence of the crossed beam energy transfer and assess mechanisms such as saturation by kinetic effects and momentum deposition for plasma conditions expected in NIF experiments. [1] N. B. Meezan *et al.,* Phys. Plasmas **17**, 056304 (2010). [2] P. Michel *et al.,* Phys. Plasmas **17**, 056305 (2010). [3] G. Kyrala, invited talk, this conference. [4] R. P. J. Town, invited talk, this conference.

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