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Design of an Experiment to Test Three Color Tuning on NIF<sup>1</sup> DEBRA CALLAHAN, P.A. MICHEL, O.S. JONES, L. DIVOL, S.H. GLENZER, N.B. MEEZAN, L.J. SUTER, R.P.J. TOWN, LLNL, J.L. KLINE, LANL — In the 2009 NIC Campaign, we demonstrated symmetry tuning in NIF targets using crossbeam transfer [1,2]. By making small ( $\sim 1.5$ -8.5 A) changes to the wavelength of the outer cone relative to the inner cone, energy is transferred from outer to inner cone and changes the symmetry of the imploded capsule from oblate to round or prolate. We measured backscattered light on one of the inner cone beams (30 degree) and found that the backscatter did not change significantly as power was transferred to the inner cone. Subsequent analysis of the hot electron measurement suggests that the backscatter did increase on the 23.5 degree cone, which is not directly measured. Adding a third wavelength to the 23.5 degree cone will allow us to control the crossbeam transfer to the 23.5 and 30 degree cones independently. This talk will discuss the design of an experiment to test the energetics and symmetry implications of a third color.

S. H. Glenzer, et. Al., Science, 327, 1228 (2010).
P. Michel, et. Al, Phys of Plasmas, 17, 056305, (2010).

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