

Abstract Submitted  
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**Toggling between single and multi-beam effects on Stimulated Raman Scattering in a NIF hohlraum plasma**<sup>1</sup> J.D. MOODY, D.J. STROZZI, L. DIVOL, P. MICHEL, J. RALPH, R.L. BERGER, R.K. KIRKWOOD, H. ROBEY, O.L. LANDEN, S. LEPAPE, S. ROSS, B.J. MACGOWAN, E.A. WILLIAMS, S.H. GLENZER, LLNL, A. NIKROO, GA — We have developed a method for studying single and multi-beam laser-plasma interactions (LPI) in a NIF hohlraum plasma. This method utilizes toggling combinations of beams on and off during the time of high (partly saturated) stimulated Raman backscattering (SRS) and measuring the effects on the SRS. We find that during the high-intensity part of the laser pulse SRS saturates at about 10 – 20% reflectivity for single and multi-beam interactions. In addition, we can place limits on the cross-beam energy transfer and show that re-amplification is small due to multiple beam effects. Spectral measurements indicate that toggling beams creates a  $\leq 10\%$  change in the plasma temperature. These results are important for developing models of multi-beam interactions. We will describe the backscatter measurements and simple models used to constrain the multi-beam effects.

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