

Abstract Submitted  
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**Experimental Studies of LPI Mitigation Via Enhanced Laser Bandwidth at the Nike Laser**<sup>1</sup> J. WEAVER, D. KEHNE, J. OH, A. SCHMITT, J. BATES, S. OBSCHENAIN, NRL, R. LEHMBERG, RSI, Inc., R. FOLLETT, Univ. of Rochester, J. WILLIAMS, General Atomics — Experiments at the Nike laser facility have demonstrated that the laser output spectrum can be broadened from an intrinsic 1 THz bandwidth to almost 5 THz with stimulated rotational Raman scattering (SRRS) after the final amplifier. A near term objective of this research is to utilize this new capability to demonstrate reduced growth of laser plasma instabilities (LPI) due to the increased bandwidth. This poster will discuss the current experimental platform used to study backscattered light in long scale length plasmas. Comparison of these results to simulations using FASTrad3D [Gardner, Phys. Plasmas (1998)] and LPSE [Myatt, Phys. Plasmas (2017)] will be used to guide a new set of experiments to examine cross-beam energy transport (CBET) with enhanced laser bandwidth. The next experiments are being planned to use low-density foam targets and will incorporate the use of a grid image refractometer (GIR) diagnostic [Oh, Rev. Sci. Instru. (2015)] to determine plasma conditions during the peak of the interaction pulses.

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