

Abstract Submitted
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Long Scalelength Plasmas for LPI Studies at the Nike Laser¹ J. L. WEAVER, J. OH, J. W. BATES, A. J. SCHMITT, D. M. KEHNE, M. F. WOLFORD, S. P. OBENSCHAIN, V. SERLIN, U. S. Naval Research Laboratory, R. H. LEHMBERG, Research Support Instruments, R. K. FOLLETT, J. G. SHAW, J. F. MYATT, P. W. MCKENTY, LLE/Univ. of Rochester, M. S. WEI, H. REYNOLDS, J. WILLIAMS, General Atomics, F. TSUNG, UCLA — Studies of laser plasma instabilities (LPI) at the Nike laser have mainly used short pulses, small focal spots, and solid plastic (CH) targets that have yielded maximum gradient scalelengths below 200 microns. The current experimental effort aims to produce larger volume plasmas with 5-10x reduction in the density and velocity gradients as a platform for SBS, SRS, and TPD studies. The next campaign will concentrate on the effects of wavelength shifting and bandwidth changes on CBET in low density (5-10 mg/cm³) CH foam targets. This poster will discuss the development of this new LPI target platform based on modelling with the LPSE code developed at LLE. The presentation will also discuss alternative target schemes (e.g. exploding foils) and improvements to the LPI diagnostic suite and laser operations; for example, a new set of etalons will be available for the next campaign that should double the range of available wavelength shifting. Upgrades to the scattered light spectrometers in general use for LPI studies will also be presented.

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