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Optical backscatter measurements to study laser plasma interactions on NIF J. MOODY, P. DATTE, K. KRAUTER, E. BOND, R. HIBBARD, P. MICHEL, B.J. MACGOWAN, S.H. GLENZER, L. SUTTER, N. MEEZAN, R. LONDON, J.L. KLINE, K. WIDMANN, L. DIVOL, J. JACKSON, LLNL, C. NIEMANN, UCLA, S. VERNON, NSTech — We describe measurements of backscattered light from NIF targets under a variety of laser conditions. These measurements will initially be used to validate the point design hohlraum and select phase plates for the ignition experiments. Backscatter measurements are made on two separate groups of 4 beams (a quad). One quad is 30 ° from the hohlraum axis and the other at 50 °. The backscatter measurement utilizes a full aperture backscatter system (FABS) to measure light backscattered into the final focus lens of each beam in the quad and a near backscatter imager (NBI) to measure light backscattered outside of the beam quad. Both instruments must work in conjunction to provide spectrally and temporally resolved backscattered power. We describe the measurements, analysis, and comparison with simulations. This work was performed under the auspices of the U.S. Department of Energy by University of California, Lawrence Livermore National Laboratory under Contract W-7405-Eng-48.

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