

Abstract Submitted
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Design of the optical backscatter diagnostic for laser plasma interaction measurements on NIF J.D. MOODY, P. DATTE, E. NG, K. MAITLAND, W. HSING, B.J. MACGOWAN, D.H. FROULA, P. NEUMAYER, L. SUTTER, N. MEEZAN, S.H. GLENZER, R.K. KIRKWOOD, L. DIVOL, S. ANDREWS, J. JACKSON, A. MACKINNON, I. JOVANOVIĆ, R. BEELER, L. BERTOLINI, M. LANDON, S. ALVAREZ, T. LEE, LLNL, P. WATTS, NS-Tech — We describe the design of the backscatter diagnostic for NIF laser-plasma interaction (LPI) studies. It will initially be used to validate the 280 eV point design hohlraum and select phase plates for the ignition experiments. Backscatter measurements are planned for 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 2 instruments for each beam quad. The full aperture backscatter system (FABS) measures light backscattered into the final focus lens of each beam in the quad. The near backscatter imager (NBI) measures light backscattered outside of the beam quad. Both instruments must work in conjunction to provide spectrally and temporally resolved backscatter power. We describe the design of the diagnostic and its capabilities as well as plans for calibrating it and analyzing the resulting data. 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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