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Effects of Early Time Stimulated Brillouin Backscatter on Recent NIF Ignition Experiments JOSEPH RALPH, JOHN MOODY, DEBRA CALLAHAN, DENISE HINKEL, OMAR HURRICANE, RICHARD TOWN, DAVID STROZZI, JOSE MILOVICH, BRUCE REMINGTON, LAURA BERZAK HOPKINS, EDWARD DEWALD, THOMAS DITTRICH, HYE-SOOK PARK, HARRY ROBEY, LAURENT DIVOL, PIERRE MICHEL, STEVEN ROSS, DAVID TURNBULL, SEBASTIEN LE PAPE, ROBIN BENEDETTI, BRIAN MACGOWAN, OTTO LANDEN, Lawrence Livermore National Laboratory, JOHN KLINE, Los Alamos National Laboratory, NIF TEAM, HED TEAM — Recent NIF ignition hohlraum experiments are focusing on two indirect-drive platforms, higher adiabat CH capsule implosions and high density carbon capsule implosions These designs require both a higher density hohlraum gas-fill as well as an early-time increase in laser power compared to the low adiabat CH designs. Experiments on these recent designs have shown backscatter within the first 2 ns of the laser pulse which is primarily Stimulated Brillioun Scatter (SBS). This SBS is observed from the outer laser cone beams incident near the laser entrance hole with very little SBS scatter from the inner cone beams. The backscattered power level reaches about 30% in some cases and is observed to be a function of the wavelength difference between the inner cones and the outer cones used to tune the implosion symmetry suggesting a dependence on early time cross beam energy transfer. We will present the backscatter results and discuss the implications of the scatter on capsule implosion behavior. This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under contract DE-AC52-07NA27344.

Joseph Ralph
Lawrence Livermore National Laboratory

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