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Stimulated Brillouin Scatter Reduction using Borated Gold Hohlraums on the National Ignition Facility[1] JOSEPH RALPH, DAVID STROZZI, RICHARD BERGER, PIERRE MICHEL, DEBRA CALLAHAN, DENISE HINKEL, LAURENT DIVOL, BRIAN MACGOWAN, FELICIE ALBERT, JOHN MOODY, Lawrence Livermore National Laboratory, NIF HOHLRAUM TEAM — New target platforms for indirect drive ignition on NIF are being introduced to improve capsule and hohlraum performance. A number of these targets show increased Stimulated Brillioun Backscattering (SBS) late in the laser pulse on the outer cone beams. This scattering reduces the laser power available for x-ray drive in an ignition hohlraum as well as poses a damage risk to the laser optics. We observe a factor of 5 reduction in the SBS power from outer cone beams by doping the Au hohlraum wall with 1.5 μm layer of 40% Boron in Au. The experiment used a room temperature Neopentane-filled ignition scale hohlraum and a 1 MJ, 370 TW laser pulse. The measured SBS backscatter from the outer cone beams on NIF is quantified temporally and spectrally. Comparing the measurements between a pure Au and a AuB hohlraum show approximately a 5x reduction in SBS power. Simulations show that the reduction is in the hohlraum wall plasma. A continuation of this study will extend the duration of the laser pulse to measure the time-dependence of the outer beam SBS. Experimental results from these experiments and detailed simulation results will be presented.

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