

Abstract Submitted
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Investigation of High Z dopants to Mitigate Stimulated Raman Scattering in Gas Filled Hohlräume J.L. KLINE, D.S. MONTGOMERY, H.A. ROSE, S.R. GOLDMAN, LANL, D.H. FROULA, J.S. ROSS, LLNL, R.M. STEVENSON, AWE — Gas bag experiments at the Helen laser showed that the addition of a small amount of high Z dopant could significantly reduce Stimulated Raman Scattering (SRS). Understanding this mechanism could provide a method to mitigate stimulated Raman scattering energy losses in NIF ignition hohlraums. Efforts at Los Alamos National Laboratory have provided a theoretical basis for the reduction in SRS backscattered laser light. Thermal filamentation of the laser results in beam spray that in turn helps to reduce SRS. Since thermal effects depend strongly on Z^2 , a small amount of a high Z dopant, 1-2%, can have a large effect. Experiments are underway at the Omega laser to validate the theory by varying the amount of Xe dopant in neopentane gas filled hohlraums. Using a 3ω Transmitted Beam Diagnostic, the beam spray of an interaction laser beam can be monitored along with the SRS backscattered light as Xe dopant is added to the gas fill looking for a correlation between the two. Details of the experiments and the results will be presented.

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