Simulation of Stimulated Raman Scattering from Gas-filled Hohlraums

RICHARD BERGER, L. DIVOL, R.A. LONDON, D.H. FROULA, L.J. SUTER, P. MICHEL, S. DIXIT, S.H. GLENZER, Lawrence Livermore National Laboratory — A series of experiments performed at Omega Laser Facility have measured the stimulated Raman and Brillouin backscatter and beam spray of 351nm laser light from gas-filled hohlraums at electron densities from .06 $N_e$ to 0.13 $N_e$ and electron temperature about 3 keV. Experiments with similar plasma conditions were reported recently (Froula et al., Phys. Plasmas, 14, 055705, 2007 and Meezan, et al. ibid, 056304). The experiments were designed to have convective gains for SRS between 5 and 30. The gain was varied with the laser intensity and the fill density. Above .09 $N_e$ the simulated and measured backscatter is predominately SRS. PF3D simulations will be presented that compute the effects of SSD and polarization smoothing on the onset intensity for significant reflectivity ($R > 1\%$) as well as the intensity and density scaling of the scatter. The simulated and measured reflectivity and beam spray will be compared.

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