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Scaling of stimulated Raman scattering with laser irradiation conditions in high-temperature halfraums* CARMEN CONSTANTIN, UC Davis, HECTOR BALDIS, UC Davis, LLNL, MARILYN SCHNEIDER, DENISE HINKEL, BRUCE LANGDON, LLNL, WOLF SEKA, RAYMOND BAHR, LLE, Rochester, SYLVIE DEPIERREAUX, CEA-DIF, France — Measured stimulated Raman scattering in subcritical plasmas at electron temperature above 10 keV show the dependence of Raman instability temporal behavior and reflectivity on the irradiation incidence angle, target size and laser beam conditioning. These plasmas are created in reduced-scale, high-Z hohlraums that represent novel platforms for studying material properties in high radiation temperature environments. To reach an optimal radiation performance, the mitigation of parametric instabilities that reduce laser energy coupling to the target is of crucial importance. The targets were irradiated using the OMEGA laser beams at Laboratory for Laser Energetics (Rochester, NY), at intensities up to $1x10^{16}$ W/cm^2, in 1 ns pulses of blue light (351 nm). The Raman spectra indicate the plasma is in regimes where the Bohm-Gross shifts are significant. Plasma parameters are inferred from these data and compared with simulations. **Work performed under the auspices of the U.S. Department of Energy by the Lawrence Livermore National Laboratory under Contract No. W-7405-ENG-48 and grant number DE-FG52-2005NA26017 (NLUF)

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