

Abstract Submitted
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Absolute Two-Plasmon Decay and Stimulated Raman Scattering in Direct-Drive Irradiation Geometries R.W. SHORT, A.V. MAXIMOV, J.F. MYATT, W. SEKA, J. ZHANG, Laboratory for Laser Energetics, U. of Rochester — Absolute stimulated Raman scattering (SRS) and two-plasmon decay (TPD) are analyzed and found to have comparable thresholds for recent OMEGA experiments, so that both may play a role in generating the half-harmonic emission observed in these experiments.¹ The scaling of the two instabilities with plasma parameters and irradiation and polarization geometries are analyzed and shown to be quite different. Longer scale lengths and higher temperatures favor SRS over TPD, while more-oblique angles of incidence favor TPD. Consequently, for multibeam irradiation, different beams may contribute preferentially to different instabilities. Examples relevant to recent experiments will be discussed. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944.

¹W. Seka *et al.*, Phys. Rev. Lett. **112**, 145001 (2014).

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