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Multibeam Laser–Plasma Interactions Lead to Localized Interaction Regions W. SEKA, W. THEOBALD, J.F. MYATT, R.W. SHORT, R.E. BAHR, Laboratory for Laser Energetics, U. of Rochester, R. NORA, R. BETTI, Laboratory for Laser Energetics and Fusion Science Center, U. of Rochester — Spherical high-intensity laser–plasma interaction experiments on OMEGA with and without smoothing by spectral dispersion show evidence of stimulated Brillouin and Raman scattering and two-plasmon decay in the corona at or below $n_c/4$. The multibeam nature of the interaction and its symmetry requirements automatically lead to localized interaction regions that may influence energy deposition and drive uniformity. The localized nature of these processes manifests itself in scattered-light images and spectra in various wavelength regimes. We will present experimental evidence for these processes supported by hydrodynamic and laser–plasma interaction simulations. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944 and the Office of Fusion Energy Sciences Number DE-FG02-04ER54786.

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