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The Effects of Beam Geometry and Polarization on Two-Plasmon Decay Driven by Multiple Laser Beams R.W. SHORT, J.F. MYATT, J. ZHANG, Laboratory for Laser Energetics, U. of Rochester — It is now well established that in direct-drive geometries, two-plasmon decay (TPD) is a collective process, in which a given set of decay waves is driven by several laser beams.[1,2] The single-beam decay is maximized on a hyperbola in k space, so that maximum convective gain for the multibeam process occurs near the intersection of the hyperbolas corresponding to the beams involved. These hyperbolas intersect at the origin in k space, so TPD is most strongly driven in this region and can be absolute there. This small-k absolute instability is expected to dominate the linear phase of TPD growth, which is found to be consistent with Zakharov simulations.[3] This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944.

[1]C. Stoeckl *et al.*, Phys. Rev. Lett. **90**, 235002 (2003).
[2]D. T. Michel *et al.*, Phys. Rev. Lett. **109**, 155007 (2012).
[3]J. Zhang *et al.*, "Two-plasmon decay driven by multiple finite bandwidth laser beams," this conference.

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