

Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

Three-Dimensional Numerical Investigation of Oblique Laser Irradiation of Planar Targets J.A. DELETTREZ, W. SEKA, D.H. FROULA, T.J.B. COLLINS, Laboratory for Laser Energetics, U. of Rochester, M.M. MARINAK, LLNL — The two-plasmon-decay (TPD) instability from multiple overlapped beams has been shown to depend on the overlapped beam intensity.¹ Recent analysis indicates that the gain increases with the angular tilt of the group of beams participating in the TPD process.² This dependence on tilt affects the TPD gain in polar-drive³ implosions in which one or more rings are pointed away from the target radial direction. Experiments will be performed on planar targets that will be tilted with respect to the beam axis to evaluate the TPD. Simulations with the 3-D code *HYDRA*⁴ will provide the conditions near the quarter-critical surface needed in the TPD analysis of the experimental results. The results of the simulations, including ray-trace information at the quarter-critical surface, will be presented. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-08NA28302.

¹C. Stoeckl *et al.*, Phys. Rev. Lett. **90**, 235002 (2003).

²R. W. Short, this conference.

³S. Skupsky *et al.*, Phys. Plasmas **11**, 2763 (2004).

⁴M. M. Marinak *et al.*, Phys. Plasmas **8**, 2275 (2001).

J.A. Delettrez
Laboratory for Laser Energetics, U. of Rochester

Date submitted: 13 Jul 2011

Electronic form version 1.4