

Abstract Submitted
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Hydrodynamic Simulations and Optical Diagnosis of a Long-Scale-Length Channeling Experiment on OMEGA EP R.S. CRAXTON, W. THEOALD, W. SEKA, S. IVANCIC, G. LI, C. REN, D. WEINER, Laboratory for Laser Energetics, U. of Rochester — An experiment is planned for OMEGA EP to investigate the channeling concept proposed for fast ignition. A long-scale-length plasma is first produced using long-pulse OMEGA EP beams and then irradiated with a tightly focused, high-intensity, short-pulse (~ 100 ps) “channeling” beam. An optical probe will be employed to characterize the long-scale-length plasma using the grid image refractometry¹ technique and the channel formed in the underdense plasma using schlieren imaging. Two-dimensional hydrodynamic simulations using *SAGE* will be presented, together with ray-tracing simulations of the optical diagnostics using *SAGE* profiles adjusted to include the channel predicted by particle-in-cell simulations. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-08NA28302.

¹R. S. Craxton *et al.*, Phys. Fluids B **5**, 4419 (1993).

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