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Numerical Evaluation of Sub-tangential Focusing in OMEGA Target Implosions P.W. MCKENTY, R.S. CRAXTON, A. SHVYDKY, F.J. MARSHALL, J.A. MAROZAS, S. SKUPSKY, D.D. MEYERHOFER, R.L. MCCRORY, Laboratory for Laser Energetics, U. of Rochester — Crossed beam energy transfer (CBET) in direct-drive implosions[1,2] removes energy from incoming laser light, lowering the laser energy reaching the target, and reducing overall target performance. One mitigation strategy is the use of sub-tangential beam focusing to reduce the energy flowing around the target. This reduction decreases the seed energy for CBET. This focusing can lead to higher levels of long-wavelength illumination nonuniformity and can reduce the effective beam overlap that leads to decreased smoothing of single-beam, short-wavelength nonuniformities The effect of sub-tangential focusing is investigated for several OMEGA target designs, including cryogenic and room-temperature capsules. The results of 2-D *DRACO* simulations evaluating the effects of various levels of sub-tangential focusing on target performance, including laser absorption, neutron yield, fuel areal density, and core asymmetry, 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.

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