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Modeling Crossed-Beam Energy Transfer in Implosion Experiments on OMEGA I.V. IGUMENSHCHEV, D.H. EDGELL, V.N. GONCHAROV, J.A. DELETTREZ, A.V. MAXIMOV, J.F. MYATT, W. SEKA, A. SHVYDKY, Laboratory for Laser Energetics, U. of Rochester — Scattered-light measurements in direct-drive-implosion experiments on the OMEGA Laser System indicate enhanced light scattering in comparison with radiative-hydrodynamic simulations that include inverse bremsstrahlung as the primary absorption mechanism of the laser light. Beam-to-beam energy transfer caused by stimulated Brillouin scattering (SBS) is likely responsible for the reduction in absorbed energy at the end of drive pulses in OMEGA implosions. We have developed a simplified model for crossed-beam energy transfer that accounts for the propagation and coupling of multiple laser beams and associated plasma waves in spherically symmetric plasmas. This model has been implemented in the radiative-hydrodynamic code *LILAC*, demonstrating effects of SBS in implosion experiments on OMEGA. 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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