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Modeling Cross-Beam Energy Transfer for Polar-Drive Experiments D.H. EDGELL, P.B. RADHA, V.N. GONCHAROV, I.V. IGUMENSHCHEV, J.A. MAROZAS, J.F. MYATT, W. SEKA, D.H. FROULA, Laboratory for Laser Energetics, U. of Rochester — Direct-drive experiments on the National Ignition Facility require use of the nonspherically symmetric, indirect-drive beam layout. In polar-drive (PD), the power and pointing of the cylindrically symmetric NIF beams are optimized to uniformly implode a capsule. As beams refract in the coronal plasma, cross-beam energy transfer (CBET) can cause laser energy to "bypass" the high-absorption region of the plasma near the critical surface. The effect of CBET is modeled for PD implosions on OMEGA and the NIF. Three-dimensional paths and crossings of all beams are calculated using *DRACO*-predicted plasma profiles. CBET is modeled for each of the beam rings. The equatorial third ring suffers the most from CBET, but the reduction in total absorption ($\sim$10%) is similar to the 60-beam symmetric illumination case on OMEGA. Scattered-light measurements and predictions from the CBET modeling show good agreement for PD in OMEGA.
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