

Abstract Submitted
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Time evolution of self-generated electromagnetic fields around imploding ICF capsules F.H. SEGUIN, C.K. LI, MIT, M. MANUEL, J.R. RYGG, J.A. FRENJE, N. SINENIAN, D. CASEY, R.D. PETRASSO, MIT, R. BETTI, O.V. GOTCHEV, J.P. KNAUER, F.J. MARSHALL, D.D. MEYERHOFER, T.C. SANGSTER, V.A. SMALYUK, LLE — The behavior of electromagnetic fields generated by laser-plasma interactions during the direct-drive implosion of ICF capsules has been studied with time-gated, monoenergetic-charged-particle radiography at the OMEGA laser facility. Images with complementary information were recorded simultaneously with 15-MeV protons, 3-MeV protons, and 3.6-MeV alpha particles. Details of the time evolution of the fields' spatial structures and magnitudes and their possible connections with specific hydrodynamic and/or laser-plasma-interaction instabilities will be discussed. This work was performed in part at the LLE National Laser User's Facility (NLUF), and was supported in part by US DOE, LLNL, LLE and the Fusion Science Center at Univ. Rochester. *Currently at LLNL.

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