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Measurements of Surface Magnetic Fields Driven by Refluxing Electrons in OMEGA EP Experiments A. DAVIES, D. HABERBERGER, A.A. SOLODOV, D.H. FROULA, Laboratory for Laser Energetics, U. of Rochester, L. CEURVORST, U. of Oxford, P.A. NORREYS, U. of Oxford and Rutherford Appleton Laboratory — A polarimeter was used to measure the field strength, spatial extent, and temporal evolution of magnetic fields generated around the focus of an intense ($I \approx 9 \times 10^{18}$ W/cm^2) 100-ps OMEGA EP laser pulse. The interaction of the laser with solid Cu targets was probed using the 4ω diagnostic system.[1] The magnetic field was observed to expand radially from the focal point along the target surface as a coronal plasma forms. The laser–plasma interactions were modeled using *OSIRIS* particle-in-cell and *LSP* hybrid model simulations. Initial results suggest that the magnetic field is generated by electrons traveling near the speed of light spreading radially from the interaction point. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944.

[1]A. Davies *et al.*, "Polarimetry Diagnostic on OMEGA EP Using a 10-ps, 263-nm Probe Beam," submitted to Review of Scientific Instruments.

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