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The effect of laser intensity on fast electron beam divergence in solid density plasmas V.M. OVCHINNIKOV, L. VAN WOERKOM, R.R. FREEMAN, The Ohio State University, J.S. GREEN, R.G. EVANS, R. HEATHCOTE, K.L. LANCASTER, P.A. NORREYS, RAL, UK, K.U. AKLI, M.H. KEY, A.J. MACKINNON, A.G. MACPHEE, LLNL, F.N. BEG, J.A. KING, T. MA, UCSD, R. STEPHENS, GA, C. BELLEI, Z. NAJMUDIN, Imperial College, UK, J. WAUGH, University of York, UK, H. AZECHI, Osaka University, Japan, P. NILSON, W. THEOBALD, LLE, Rochester, N.C. LOPES, R. ONOFREI, J.R. DAVIES, Instituto Superior Tecnico, Lisbon — Metal foil targets were irradiated with 1 μm wavelength (λ) laser pulses of 5 ps duration and focused intensities up to $4 \times 10^{19} W cm^{-2}$, giving values of both $I\lambda^2$ and pulse duration comparable to those required for fast ignition inertial fusion. The divergence of the electrons accelerated into the target was measured using spatially resolved X-ray $K_\alpha$emission and from transverse probing of the plasma formed on the back of the foils. Comparison of the divergence with other published data will be presented along with 2D PIC simulations. Supported by DOE grants DE-FG02-05ER54834, DE-FG02-00ER54606, and W-7405-Eng-48 and STFC (UK).

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