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Scalings in a Plasma Wakefield Accelerator IAN BLUMENFELD, F.J. DECKER, M.J. HOGAN, R. ISCHEBECK, R. IVERSON, N. KIRBY, R. SIEMANN, D. WALZ, SLAC, C.E. CLAYTON, C. HUANG, C. JOSHI, W. LU, K.A. MARSH, W.B. MORI, M. ZHOU, UCLA, T.C. KATSOULEAS, P. MUGGLI, E. OZ, USC, E167 COLLABORATION — High gradient acceleration of electrons has recently been achieved in meter scale plasmas at SLAC. Results from these experiments show that the wakefield is sensitive to parameters in the electron beam which drives it. In the experiment the bunch lengths were varied systematically at constant charge. Here we investigate the correlation of peak beam current to the wake amplitude. The results are compared to simulation.

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