

Abstract Submitted  
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**Plasma Dark Current in Plasma Wake Field Accelerators (PWFA)** ERDEM OZ, THOMAS C. KATSOULEAS, PATRIC MUGGLI, USC, CHRISTOPHER BARNES, FRANZ JOSEF DECKER, PAUL J. EMMA, MARK J. HOGAN, RASMUS ISCHEBECK, SLAC, DEVON K. JOHNSON, CHRIS CLAYTON, UCLA, RICHARD H. IVERSON, SLAC, WEI LU, UCLA, ROBERT H. SIEMANN, CHAN JOSHI, SLAC, WARREN MORI, UCLA, DIETER WALZ, SLAC, KEN MARSH, CHENGKUN HUANG, UCLA, PATRICK KREJCIK, SLAC, MIAOMIAO ZHOU, UCLA, CAOLIONN O'CONNELL, SLAC, SUZHI DENG, USC, UNIVERSITY OF SOUTHERN CALIFORNIA COLLABORATION, STANFORD LINEAR ACCELERATOR CENTER COLLABORATION, UNIVERSITY OF CALIFORNIA LOS ANGELES COLLABORATION — Evidence of particle trapping has been observed in a beam driven Plasma Wake Field Accelerator (PWFA) experiment, E164X, conducted at the Stanford Linear Accelerator Center. Trapped electrons are observed when the wake field amplitude is above a certain threshold. Trapped electrons in plasma accelerators are the equivalent of the dark current in RF accelerators. Calculations show that the trapping threshold is lower in the case of a plasma field ionized by the electron bunch itself than in a pre-ionized plasma. Experimental and simulation results will be presented.

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