

Abstract Submitted  
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**Sheath field dynamics from time-dependent acceleration of laser-generated positrons**<sup>1</sup> SHAUN KERR, ROBERT FEDOSEJEVS, University of Alberta, ANTHONY LINK, JACKSON WILLIAMS, JAEBUM PARK, HUI CHEN, Lawrence Livermore National Laboratory — Positrons produced in ultraintense laser-matter interactions are accelerated by the sheath fields established by fast electrons, typically resulting in quasi-monoenergetic beams [1]. Experimental results from OMEGA EP show higher order features developing in the positron spectra when the laser energy exceeds one kilojoule [2]. 2D PIC simulations using the LSP code were performed to give insight into these spectral features. They suggest that for high laser energies multiple, distinct phases of acceleration can occur due to time-dependent sheath field acceleration. The detailed dynamics of positron acceleration will be discussed. [1] Chen et al., PRL 105, 015003 (2010). [2] Chen et al., PoP 22, 056705 (2015).

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