

Abstract Submitted
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Signature of Spontaneous Particle Production in Converging Laser Pulses¹ LANCE LABUN, JOHANN RAFELSKI, The University of Arizona
— Spontaneous production of electron-positron pairs by a strong electromagnetic field may soon be observed using high intensity lasers. For two noncollinear laser pulses, we demonstrate how to determine and manipulate the energy of produced pairs. When the laser pulses converge at a small angle, pairs are emitted in high energy bunches in a direction separate from both laser pulses. This result provides an unmistakable signature of the non-perturbative production process and suggests a new avenue for development of high energy electron and/or positron beams.

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