High Energy Physics - Phenomenology

Pair Production from Asymmetric Head-on Laser Collisions

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We evaluate particle production in highly asymmetric head-on collisions of lasers pulses due to non-perturbative coherent action of many photons. We obtain the yield of electron-positron pairs, which is controlled by the photon content of the weaker pulse, and show that the wavelength of the weaker pulse and the momentum asymmetry determine laboratory energy of the produced particles.

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