



High Energy Physics - Phenomenology

Pair Production from Asymmetric Head-on Laser Collisions

[Lance Labun](#), [Johann Rafelski](#)

(Submitted on 29 Jul 2011)

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.

Comments: 4 pages, 1 figure

Subjects: **High Energy Physics - Phenomenology (hep-ph)**;
Accelerator Physics (physics.acc-ph); Optics
(physics.optics)

Report number: CERN-TH-PH/2011-186

Cite as: [arXiv:1107.6026v1](#) [hep-ph]

Submission history

From: Lance Labun [[view email](#)]

[v1] Fri, 29 Jul 2011 17:18:46 GMT (16kb)

[Which authors of this paper are endorsers?](#)

Download:

- [PDF](#)
- [PostScript](#)
- [Other formats](#)

Current browse context:

hep-ph

[< prev](#) | [next >](#)

[new](#) | [recent](#) | [1107](#)

Change to browse by:

[physics](#)

[physics.acc-ph](#)

[physics.optics](#)

References & Citations

- [SLAC-SPIRES HEP](#)
([refers to](#) | [cited by](#))
- [NASA ADS](#)

Bookmark([what is this?](#))

