

Laser-induced high-energy processes

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Laser-driven relativistic quantum dynamics is discussed in bound and dissociated atomic systems [1] and then focused to situations where particles are accelerated to high energies and rendered to collide with optimized energy and efficiency.

Special emphasis in such situations is placed on muon pair generation [2] and on electron-positron pair creation in the presence of nuclei [3] and in laser-driven plain vacuum [4].

Various issues of nuclear quantum optics [5] and ultra-short pulse generation beyond attoseconds [6] are also briefly addressed.

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