MATTER AND TECHNOLOGIES

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Simulation of intense field and QED effects in laser plasmas

This contribution aims to provide an overview of recent developments in a simulation of nonlinear quantum-electrodynamic effects in intense laser field interacting with electron-positron-photon plasma. In particular, we will present analysis of several experimental scenarios exploiting almost head on collision between laser pulses and electron or photon bunches. The dominating processes of nonlinear Compton scattering and laser assisted electron-poitron pairs production will be examined for deducing experimentally relevant signatures.

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