

4<sup>th</sup> International Conference on

# ATOMIC AND NUCLEAR PHYSICS

October 26-27, 2018 | Boston, USA

## Quantum electrodynamics processes in the interaction of high-energy particles with atoms

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The recently developed method of employing quasiclassical Green's functions in solving the Dirac equation for various external field configurations has provided a breakthrough insight into the fundamental quantum electrodynamics processes whereby high-energy particles interact with atoms. I review recent results, exact in the atomic field parameters, on the cross sections for the electron-positron high-energy photoproduction, the single bremsstrahlung cross section for relativistic electrons and muons in the atomic field, double bremsstrahlung cross sections, electroproduction of bound and unbound pair. In many cases, the calculations are performed in the quasiclassical approximation with the inclusion of the first-order quasiclassical correction.

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