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Spin effects in laser-induced electron-positron pair production

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Electron-positron pair production by an incident high-energy photon or a relativistic proton colliding with an intense laser field is considered. Our focus lies on the role played by the electron spin degree of freedom. A comparative study between production of Dirac versus Klein-Gordon pairs is performed [1,2] and a helicity analysis is carried out [3].

[1] S. Villalba-Chavez and C. Mueller, Phys. Lett. B 718, 992 (2013)

[2] T.-O. Mueller and C. Mueller, Phys. Lett. B 696, 201 (2011)

[3] T.-O. Mueller and C. Mueller, Phys. Rev. A 86, 022109 (2012)

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