POLARIZATION EFFECTS IN THE PHOTON-INDUCED PROCESS OF ELECTRON-POSITRON PAIR CREATION IN A MAGNETIC FIELD, STUDIED IN THE ULTRA-QUANTUM-MECHANICAL APPROXIMATION

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S u m m a r y

The photon-induced process of electron-positron pair creation in a strong homogeneous magnetic field, provided that the polarization of particles is arbitrary, has been considered. The polarization of a photon is described in terms of the well-known Stokes parameters, and the relevant probabilities of the process turn out to have simple analytical expressions, which allows us to analyze the polarization and spin effects. A substantial influence of the linear polarization of a photon on the spin orientations of electrons and positrons has been demonstrated.