

# Influence of spin on radiation spectrum of electrons in the field of powerful lasers and oriented crystals at high energies

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We study theoretically the spin contribution to the radiation spectrum of electrons (positrons) moving in the field of peta-Watt lasers and in oriented crystals (OC) at energies up to several TeV. Experiments in this this energy region are proposed to be carried out at the LHC accelerator in the near future [1]. In OC the effect has experimentally been studied in CERN two decades ago for above hundred GeV electrons [2]. For laser radiation sources (LRS) such experiments are not possible at present time due to the technical problems. Within the frame of the quasiclassical approach [3] (see also [4, 5]) we derive the high energy limit of the photon spectrum in the constant field approximation, which, in contrast with results of other authors, is free from the artificial divergence in the spin term and gives the absolute value for spectral properties. We show that that for fixed electron energy the spin contribution is stronger in the case of LRS than in the case of OC.

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