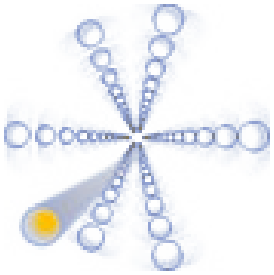

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Effective Mass of a Photon in Strong Fields

Monday, 6 October 2014 15:00 (15 minutes)

An effective mass of photon in a strong magnetic field of the same order or more than the Schwinger critical field is investigated. Obtained expressions include the singular terms with the root divergence at the thresholds of electron and positron creation on Landau levels. In high-energy range, when the number of thresholds is large, the quasiclassical approach is used. In this region the effective mass of photon and the radiation mass of created electron and positron can become much more than the bare mass. Then, for the particles involved in the process, we use the well-known Schwinger equation for the charged particles and the Dyson equation for the photon.

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