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Photon radiation by rotating systems in magnetic field.

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Experimental observations indicate that quark-gluon plasma produced in heavy-ion collisions has high vorticity and is subject to an intense magnetic field. We present a study of the photon radiation by a charged fermion rotating with the plasma in a constant magnetic field \mathbf{B} . The angular velocity of rotation is assumed to be much smaller than the inverse magnetic length, which allows us to ignore the effects of the causal boundary. Using the exact solution of the Dirac equation, we calculated the spectrum and intensity of electromagnetic radiation. The rotation significantly impacts the radiation intensity and is relevant to the relativistic heavy-ion phenomenology. The presentation is partially based on *Phys.Rev.D* 107 (2023) 5, L051901.

Category

Theory

Collaboration (if applicable)

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