Spectral Energy Density in a Kerr Nonlinear Blackbody

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Abstract: In a Kerr nonlinear blackbody, bare photons with opposite wave vectors and helicities are bound into pairs and unpaired photons are transformed into a new kind of quasiparticle, the nonpolariton. The nonpolariton system constitutes free thermal radiation in the blackbody. The present paper investigates the spectral energy density of the thermal radiation. It is found that the spectral energy density of a Kerr nonlinear blackbody is larger than that of a normal blackbody.

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