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Electromagentic probes in magnetized hot QCD plasma

The polarization effects of a strongly magnetized quark-gluon plasma are studied at finite temperature. It is found that a background magnetic field can have a strong effect on the photon and dilepton emission rates. It affects not only the total rate but also the angular dependence. In particular, the Landau-level quantization leads to a nontrivial momentum dependence of the photon/dilepton ellipticity coefficient on transverse momentum. It is proposed that the anisotropy of the photon and dilepton emission may serve as indirect measurements of the magnetic field.

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