

QCD Matter in electromagnetic field

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We calculate color screening mass in a thermalized and magnetized QCD matter in the frame of resummed perturbation theory, without restriction to the strength of the magnetic field $|qB|$. Different from the Debye screening in classical electrodynamics, the quantization of the quark transverse momentum $p_{\perp}^2 = 2n_L|qB|$ in the external magnetic field with the integer n_L describing the Landau energy level is naturally embedded into the quark loop and in turn the screening mass. In this sense, we call the color screening as quantum screening. Our calculation comes back to the well-known results in the limits of weak and strong magnetic field.

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