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Heavy quark dynamics in a strongly magnetized quark-gluon plasma

We present a calculation of the heavy quark transport coefficients in a quark-gluon plasma under the presence of a strong external magnetic field, within the Lowest Landau Level (LLL) approximation. In particular, we apply the Hard Thermal Loop (HTL) technique for the resummed effective gluon propagator, generalized for a hot and magnetized medium. Using the derived effective HTL gluon propagator and the LLL quark propagator we analytically derive the full results for the longitudinal and transverse momentum diffusion coefficients as well as the energy losses for charm and bottom quarks beyond the static limit. We also show numerical results for these coefficients in two special cases where the heavy quark is moving either parallel or perpendicular to the external magnetic field.

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