



Contribution ID: 835

Type: Poster

Heavy quark dynamics in a strongly magnetized quark-gluon plasma

Friday 8 April 2022 14:04 (4 minutes)

We have explored [1] 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 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. From our most general beyond the static limit result, we have successfully traced back the previously explored [2] static limit expressions for the heavy quark transport coefficients in a strongly magnetized medium.

[1] A. Bandyopadhyay, J. Liao and H. Xing, [arXiv : 2105.02167 [hep-ph]]

[2] K. Fukushima, K. Hattori, H. U. Yee and Y. Yin, Phys. Rev. D 93, (2016)

Primary author: BANDYOPADHYAY, Aritra

Co-authors: LIAO, Jinfeng (Indiana University); XING, Hongxi (South China Normal University)

Presenter: BANDYOPADHYAY, Aritra

Session Classification: Poster Session 3 T11_4

Track Classification: Heavy flavors, quarkonia, and strangeness production