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Transport coefficients of heavy quarkonia comparing with heavy quark coefficients

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We discuss the transport coefficients of heavy quarkonia moving in high temperature QCD plasmas. The thermal width and mass shift for quarkonia are closely related to the momentum diffusion coefficient and its dispersive counterpart for heavy quarks, respectively. For quarkonium at rest in plasmas, the longitudinal gluon part of the color-singlet self-energy diagram is sufficient to determine the leading-log thermal width, whereas the momentum dependence is obtained from the transverse gluon channel. Using the quarkonium-gluon effective vertex derived from the Bethe-Salpeter amplitude with the dipole interaction, we discuss the damping rate and mass shifts of slowly moving quarkonia and compare with the corresponding coefficients of heavy quarks.

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Category

Theory

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