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Influence of the nonextensivity on the transport properties of a magnetized hot QCD medium

This work focuses on the influence of the nonextensivity on the transport properties related to charge and heat in a magnetized hot QCD medium. We have determined the electrical conductivity, Hall conductivity, thermal conductivity and Hall-type thermal conductivity using the nonextensive Tsallis framework within the kinetic theory approach. The deviation of the nonextensive parameter q from 1 in the Tsallis distribution function expresses the degree of the nonextensivity. The nonextensive Tsallis framework is beneficial to use, because the matter produced in heavy ion collisions is not exactly in the locally equilibrated state, rather it may slightly deviate from being in that state. It is observed that the abovementioned transport coefficients from their counterparts at q = 1 get enhanced. The presence of magnetic field further increases the deviations of the transport coefficients from their respective equilibrated values, whereas these deviations get decreased at finite chemical potential. Present work is also extended to explore the effect of the nonextensivity on the elliptic flow.

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