

R_{AA} and v_n : relativistic transport approach for charm and bottom toward a more solid phenomenological determination of $D_s(T)$

Friday 19 July 2024 18:10 (17 minutes)

Using an event-by-event Boltzmann transport approach with an hadronization via coalescence plus fragmentation, we investigate charm dynamics and the extension to bottom (b) quark dynamics providing predictions for R_{AA} and $v_{2,3}$ of B mesons comparing to the data by ALICE collaboration. A sizeable $v_{2,3}$ is found with important implications on bottomonium Υ production. The extension to b quark allows to investigate the mass dependence of $D_s(T)$ towards the infinite mass limit assumed in IQCD. We find a significant breaking of the scaling of thermalization time τ_{th} with MQ/T , entailing a D_s for $M \rightarrow \infty$ in agreement with the recent IQCD data with dynamical quarks. Furthermore, we extend our QPM approach to a more realistic model in which partonic propagators explicitly depend on quark momentum (QPMp). The QPMp improves the description of IQCD quark susceptibilities and entails a D_s with a stronger non-perturbative behaviour near to T_c which leads to a better agreement with the recent IQCD data.

Alternate track

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