

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

Friday, July 19, 2024 6:10 PM (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  $\Upsilon$  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  $\tau_{th}$  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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