

Open heavy flavor and J/psi at RHIC and LHC

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Heavy flavors are important probes to study the early phase of ultra-relativistic heavy ion collisions at RHIC and LHC. We present results on the production and space-time evolution of heavy quarks and J/psi in the quark gluon plasma within the partonic transport model Boltzmann Approach to MultiParton Scatterings (BAMPS). Heavy quarks interact with the medium via binary and radiative scatterings with running coupling and a more precise Debye screening which is derived from hard thermal loop calculations. We compare our results on the elliptic flow and nuclear modification factor not only to experimental data of heavy flavor electrons at RHIC, but also to LHC data of heavy flavor electrons, muons, D mesons and non-prompt J/psi. The latter two are in particular sensitive on the mass difference of charm and bottom quarks. Furthermore, results on J/psi suppression are reported for central and non-central collisions, taking cold nuclear matter effects and the dissociation as well as regeneration of J/psi in the quark-gluon plasma into account.

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