

Heavy-quark Langevin dynamics and single-electron spectra in nucleus-nucleus collisions

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The stochastic dynamics of heavy quarks in the fireball produced in heavy-ion collisions is followed through numerical simulations based on the Langevin equation. The R_{AA} and v_2 of c and b quarks, hadrons and single-electrons is studied. The transport coefficients are evaluated treating separately the contribution of soft and hard collisions. The initial heavy-quark spectra are generated according to NLO-pQCD, accounting for nuclear effects through recent nPDFs. The evolution of the medium is obtained from the output of two hydrocodes (ideal and viscous). The heavy-quark fragmentation into hadrons and their final semileptonic decays are implemented according to up to date experimental data. A comparison with RHIC data for non-photon electron spectra is given. Some scenarios of interest for LHC are also explored.

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