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Heavy flavour in high-energy nuclear collisions: results of transport calculations

Thursday, 6 July 2017 14:30 (30 minutes)

I will show how transport calculations, interfaced with a realistic hydrodynamic modeling of the background medium, allow one to provide predictions for momentum and angular distributions of heavy-flavour particles in high-energy nuclear collisions, to be compared eventually with experimental data (D/B-mesons and their decay products). The presence of a hot-deconfined medium (Quark-Gluon Plasma) in which the propagation (and final hadronization) of c and b quarks takes place leads to modifications of the final observables with respect to the proton-proton case. In my presentation I will focus on medium effects on transverse-momentum spectra (with low-pT particles pushed to moderate pT by the collective expansion of the medium and high-pT particles suffering energy-loss) and azimuthal distributions, the angular anisotropies (elliptic and triangular) of final-state particles reflecting the initial geometric asymmetry of the system produced in the collision. I will also show first results of full 3+1 simulations, dropping the approximation of longitudinal boost-invariance and allowing for the study of observables at forward rapidity.

Experimental Collaboration

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