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Type: **Poster Presentation**

Microscopic Charmonium Production from a Boltzmann+Langevin Approach

Tuesday, June 2, 2020 7:30 AM (1h 20m)

We calculate charmonium production in Ultrarelativistic Heavy-Ion Collisions (URHICs) within a semiclassical Boltzmann transport approach for the dissociation and regeneration of charmonium where open charm diffusion is explicitly accounted for. The diffusion of charm quarks is simulated using Langevin dynamics yielding time-dependent quark spectra which serve as input into the regeneration processes of charmonia. The dissociation/regeneration rates for charmonia and relaxation rate for charm quarks are calculated from the same charm-medium interaction. Relative to perturbative rates, a large K-factor (representing nonperturbative interaction strength) is required to account for the phenomenology of open charm observables, which we implement for both the heavy-quark relaxation rate in the Langevin simulation and for the charmonium reaction rates in Boltzmann simulation. Our approach thus establishes a consistent transport framework for the simultaneous evolution of open and hidden heavy flavor with microscopically calculated transport coefficients in both sectors. The first results of phenomenological applications are presented.

Collaboration (if applicable)

Track

Heavy Flavor and Quarkonia

Contribution type

Contributed Talk

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