Contribution ID: **291**   Type: **Poster**

Non perturbative effect in charm diffusion and flow from Gribov-Zwanziger approach

Tuesday 24 September 2024 18:10 (20 minutes)

Due to the longer relaxation time of heavy quarks compared to light quarks in the quark-gluon plasma, the non-equilibrium information is expected to be retained in the final momentum distribution of heavy flavors, making them suitable probes of the strongly interacting system. Using the Gribov-Zwanziger prescription to model the infrared behavior of QCD, we study the momentum diffusion coefficient κ of the charm quark and its dependence on both the medium temperature and the heavy quark momentum. We will also discuss the role played by the modified IR behavior in computing the diffusion coefficient. The scaled momentum diffusion coefficient is found to increase with momentum and decrease with the temperature. Finally, we implement this diffusion coefficient in the LIDO transport model and apply it to phenomenology and compare to open-charm R_{AA} and v_2 data.

Category

Theory

Collaboration

Authors: QIN, Guangyou (Institute of Particle Physics and Key Laboratory of Quark and Lepton Physics (MOE), Central China Normal University, Wuhan, Hubei, 430079, China); KE, Weiyao (Institute of Particle Physics and Key Laboratory of Quark and Lepton Physics (MOE), Central China Normal University, Wuhan, Hubei, 430079, China); ZHU, Xueqiang (Central China Normal University, Wuhan, Hubei, 430079, China)

Presenter: ZHU, Xueqiang (Central China Normal University, Wuhan, Hubei, 430079, China)

Session Classification: Poster Session

Track Classification: 3. Heavy quarks and quarkonia