

11th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



Beitrag ID: 108

Typ: Talk

heavy quark momentum diffusion coefficient in the hydrodynamizing plasma from effective kinetic theory

Mittwoch, 29. März 2023 14:20 (20 Minuten)

We compute the heavy quark momentum diffusion coefficient using effective kinetic theory for a system going through bottom-up isotropization until approximate hydrodynamization. We find that when matching the nonthermal diffusion coefficient to the thermal one for the same energy density, the observed deviations throughout the whole evolution are within 30% from the thermal value. When matching for other quantities we observe considerably larger deviations. We also observe that the diffusion coefficient in the transverse direction dominates at large occupation number, whereas for an underoccupied system the longitudinal diffusion coefficient dominates. While the ratio of the diffusion coefficients does not follow the usual hydrodynamical attractor, we observe the emergence of a limiting weak coupling attractor governed by bottom-up scaling.

Experiment/Theory

Theory/Phenomenology

Affiliation

University of Jyväskylä

Hauptautor: PEURON, Jarkko (University of Jyväskylä)

Co-Autoren: Dr. KURKELA, Aleksi (University of Stavanger); Dr. KIRILL, Boguslavski (Vienna university of Technology); LINDENBAUER, Florian (TU Wien); Prof. LAPPI, Tuomas (University of Jyväskylä)

Vortragende(r): PEURON, Jarkko (University of Jyväskylä)

Sitzung Einordnung: Parallel: Heavy Flavours & Quarkonia

Track Klassifizierung: Heavy flavor and quarkonia