ID de Contribution: **241** Type: **Poster**

Dissociation of $q\bar{q}$ in the pre-equilibrium Glasma

mardi 4 juin 2024 18:48 (1 minute)

In high-energy heavy-ion collision experiments, the study of the pre-thermalization phase known as the Glasma and its subsequent evolution into the Quark-Gluon Plasma has revealed profound insights into Quantum Chromodynamics. The Glasma, arising from the collision of ultra-relativistic heavy ions, is characterized by highly non-equilibrium color fields and huge energy densities, significantly influencing the early-stage dynamics of the collision system. Heavy quarks and their states, being unique probes, play a crucial role in providing valuable insights into the properties of the evolving QCD medium and early-time dynamics. We, for the first time, investigate the interaction of $q\bar{q}$ states with the Glasma phase, particularly $c\bar{c}$ and $b\bar{b}$ using relativistic kinetic theory. We observe that there is a finite probability of dissociation of these states. An attractive potential, containing Coulomb-like and confinement-like terms, is used to model the strong attractive color force in the pairs, but the strong Glasma fields dominate over it, causing an increase in pair separation and subsequent dissociation. The observed finite probability of dissociation for these states reveals the intricate interplay between QCD dynamics and the suppression of $q\bar{q}$ states during the Glasma phase.

Auteurs principaux: Prof. RUGGIERI, Marco (University of Catania); Dr JAMAL, Mohammad Yousuf (Indian Institute of Technology Goa); Dr BHADURI, Partha Pratim (Variable Energy Cyclotron Center, Kolkata); Mlle -, Pooja (Indian Institute of Technology Goa); DAS, Santosh Kumar (Indian Institute of Technology Goa); Prof. GRECO, Vincenzo (University of Catania, INFN-LNS)

Orateurs: Prof. RUGGIERI, Marco (University of Catania); Mlle -, Pooja (Indian Institute of Technology Goa)

Classification de Session: Posters

Classification de thématique: Heavy-Flavours & Quarkonia