Charm Quark Equilibration at Ultrarelativistic Energies

Tuesday 22 May 2018 10:00 (15 minutes)

At ultrarelativistic heavy-ion collisions, a new state of matter, the quark-gluon plasma (QGP) is created. For highest collision energies, recent lattice QCD data provide the opportunity to explore Charm quark equilibration in the early QGP phase. We propose a new method to determine the Charm quark equilibration temperature and volume from second and fourth order net-Charm susceptibilities together with experimentally measured multiplicity fluctuations. Furthermore, we present first perturbative results for the second and fourth order Charm quark susceptibilities and their ratio.

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Session Classification: A12: High Energy Physics

Track Classification: High Energy and Particle Physics