

Strangeness in Quark Matter 2019



Contribution ID: 39

Type: **Contributed talk**

Relativistic Dissipative Hydrodynamics: Quasiparticle Description

Tuesday 11 June 2019 17:30 (20 minutes)

Relativistic Hydrodynamics has been very successful in describing the space-time evolution of hot and dense QCD matter created in high energy heavy ion collisions. We employ quasiparticle kinetic models to derive a causal theory of relativistic hydrodynamics which can incorporate any equation of state in a thermodynamically consistent framework. To this end, the phase space distribution function is modified either by introducing a temperature dependent mass or an effective fugacity. The effective mass model assumes an extra temperature dependent bag parameter which helps in restoring thermodynamic consistency. The effective fugacity model introduces a temperature dependent fugacity which shows promising results in the high temperature regime. We derive hydrodynamic transport coefficients and study the space-time evolution of QCD matter for purely longitudinal Bjorken expansion.

Collaboration name

Track

Hydrodynamics, chirality and vorticity

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Session Classification: Hydrodynamics, Chirality and Vorticity