



Contribution ID: 1006

Type: Poster

New insights into the analytic structure of correlation functions via kinetic theory

The way a relativistic system approaches fluid dynamical behavior can be understood physically through the signals that will contribute to its linear response to perturbations. What these signals are is captured in the analytic structure of the retarded correlation function. The non-analyticities can be grouped into three types based on their dimension in the complex frequency plane. Using kinetic theory in the (momentum dependent) relaxation time approximation I show how one can calculate their corresponding signals. In the most general case of a system with quasi-particles that have a continuum of thermalization rates, a non-analytic region appears. To calculate its signal, I introduce the *non-analytic area density* that describes the properties of this region. Further, to take into account the ambiguity present in signal analysis, following from manipulations of the non-analyticities, I will identify two specific choices called *pictures* with interesting analytic properties and compare in what scenarios each picture is most useful.

Category

Theory

Collaboration (if applicable)

Author: BRANTS, Robbe

Presenter: BRANTS, Robbe

Session Classification: Poster session 2

Track Classification: New theoretical developments