



Contribution ID: 184

Type: Oral Presentation

Using the Ultra-relativistic Quantum Molecular Dynamics (UrQMD) model to extract the thermal conductivity transport coefficient of hadron gas.

Wednesday, 27 June 2018 10:40 (20 minutes)

Thermal conductivity of hadron matter is studied using a microscopic transport model, which can support the newly Large Hadron Collider (LHC) energy of up to $\sqrt{s} = 14$ TeV, namely the Ultra-relativistic Quantum Molecular Dynamics (UrQMD). The molecular dynamics simulation is performed for a system of light mesons species (pions, rhos, Kaons) in a box with periodic boundary conditions. Equilibrium state is investigated by studying chemical equilibrium and thermal equilibrium of the system. Particle multiplicity equilibrates with time, and the energy spectra of different light mesons species have the same slopes and common temperatures when thermal equilibrium is reached. Thermal conductivity transport coefficient is calculated from the heat current - current correlations using the Green-Kubo relations.

Please confirm that you have carefully read the abstract submission instructions under the menu item "Call for Abstracts" (Yes / No)

yes

Consideration for student awards
Choose one option from those below.
N/A Hons MSc PhD

MSc

Supervisor details
If not a student, type N/A.
Student abstract submission requires supervisor permission: please give their name, institution and email address.

Azwinndini Muronga
Nelson Mandela University
Azwinndini.Muronga@mandela.ac.za

Primary author: Mr NEMAKHAVHANI, Thendo Emmanuel (University of Johannesburg)

Co-author: Prof. MURONGA, Azwinndini (Nelson Mandela University)

Presenter: Mr NEMAKHAVHANI, Thendo Emmanuel (University of Johannesburg)

Session Classification: Theoretical and Computational Physics

Track Classification: Track G - Theoretical and Computational Physics