



Contribution ID: 265

Type: Poster

Fully dynamic simulations of heavy ion collisions in a pQCD-based partonic transport model

Thursday, August 16, 2012 4:00 PM (2 hours)

We present fully dynamic simulations of central and non-central heavy ion collisions at LHC and at RHIC energies within the perturbative QCD-based partonic transport model BAMPS (Boltzmann Approach to Multi-Parton Scatterings). We focus on the simultaneous investigation of bulk properties, such as elliptic flow, viscosity and thermalization, and of high- p_T observables, such as jet quenching.

The model incorporates binary interactions of gluons and quarks based on pQCD cross sections in small angle approximation as well as $2 \leftrightarrow 3$ processes based on the Gunion-Bertsch matrix element. We discuss symmetry properties of the radiative Gunion-Bertsch matrix element and compare to the exact result by Berends et al. The implications on the interaction rates and the dynamics of the medium are explored. We investigate the thermalization and viscosity of the medium, the elliptic flow as well as the nuclear modification of high- p_T particles in Au+Au collisions at RHIC energies and in Pb+Pb collisions at LHC energies.

Author: FOCHLER, Oliver (Goethe-Universität Frankfurt)

Co-authors: GREINER, Carsten (University of Frankfurt); UPHOFF, Jan (Goethe University Frankfurt); XU, Zhe (Department of Physics, Tsinghua University)

Presenter: FOCHLER, Oliver (Goethe-Universität Frankfurt)

Session Classification: Poster Session Reception

Track Classification: Global and collective dynamics