Quark non-equilibrium molecular dynamics and particle production from SPS to RHIC energies

Stefan Scherer [a] Marcus Bleicher [a] Markus Hofmann [a]
Ludwig Neise [a] Horst Stoecker [a] Walter Greiner [a]

[a] *Institut fuer Theoretische Physik, J.W.Goethe Universitaet, D-60054 Frankfurt am Main, Germany*

Presented by: Stefan Scherer

Abstract

The quark-molecular-dynamics model describes quarks as classical point particles carrying a color charge and interacting via a linear increasing, confining potential. The time evolution of such a system of quarks yields colorless clusters which can be identified as hadrons. The model is applied to study the dynamics of relativistic heavy ion collisions collisions from CERN-SPS to RHIC energies. The non-equilibrium dynamics of hadronization and the loss of correlation among quarks is studied as a function of the collision energy.

Preprint submitted to Elsevier Preprint *20 December 2000*