Blast-wave analysis in Au-Au collisions at BRAHMS

Oana Ristea
for the **BRAHMS** Collaboration

The characteristics of the system formed in high energy heavy ion collisions at kinetic freeze-out can be explored by the analysis of transverse momentum distributions of the identified charged hadrons. An interesting phenomenon at this stage of the system evolution is the collective transverse expansion as it is entirely generated during the collision and therefore reflect the collision dynamics.

Due to its wide rapidity and p_T coverage, BRAHMS experiment has measured transverse momentum spectra for $\pi^{\pm}$, $K^{\pm}$, p and $\bar{p}$ produced in $\sqrt{s_{NN}} =$ 200 GeV Au-Au collisions at several rapidities from 0 to 3, from the last high statistics Au-Au data run.

We will present a study of blast-wave fits performed to the measured transverse momentum spectra as a function of rapidity and collision centrality. The rapidity dependence of the fit parameters, T_{fo} and β_T, indicates that away from midrapidity, the fireball apears to develop a weaker collective flow and freeze-out faster at higher temperature.

Aditional information could be extracted by comparison with different collision systems and energy and therefore the results are compared to lower energies and also with some preliminary results from Cu-Cu collisions.