IDENTIFIED PARTICLE NUCLEAR MODIFICATION FACTORS AT RAPIDITY 2 - 3.8 IN AU+AU COLLISIONS AT $\sqrt{s_{NN}}$=200 GEV

C. Ristea[a] for the BRAHMS Collaboration

[a]The Niels Bohr Institute, University of Copenhagen
Blegdamsvej 17, 2100 Copenhagen, Denmark, *ristea@nbi.dk*

One of the most interesting phenomena observed at RHIC is the strong suppression of the high p_T hadrons measured in central $Au + Au$ reactions, relative to $p + p$ collisions or large centrality spectra scaled by the number of binary collisions [1].
At forward rapidity, the relative contributions due to jet quenching, recombination or gluon saturation are yet to be understood. The baryons do in contrast to the mesons not show suppression in the intermediate p_T range of 2-4 GeV/c. This is likely related to Cronin and parton recombination effects [2]. In the forward region where the initial parton density is not so large, the exponential shape of the spectra could be related to the particle production from thermal partons only. Hydrodynamic calculations with initial gluon distribution from the Color Glass Condensate could also reproduce the multiplicity distribution, centrality and rapidity dependence of the nuclear modification factor in $Au + Au$ collisions at $\sqrt{s_{NN}}$=200 GeV [3].
The BRAHMS experiment has carried out measurements over broad range in rapidity, both for $Au + Au$ and $p + p$ collisions at 200 GeV. In this talk, we shall present p_T spectra for different event centralities (minimum bias spectra for $p + p$) in narrow rapidity ranges ($\pm$ 0.1), for midrapidity and off-midrapidity (up to 3.8), for charged hadrons as well as for identified particles. Most of these measurements are unique in heavy ions collisions. Nuclear modification factor R_{AA} for directly identified baryons and mesons, as well as for inclusive charged hadrons, at rapidities from 0 to 3.8 will be shown and discussed.

References

[1] I. Arsene et. al, BRAHMS Collaboration, *Nucl. Phys.* **A757**, 1-27, 2005.
[2] R. Hwa and C.B. Yang, *nucl-th*/0512075.
[3] T. Hirano and Y. Nara, *nucl-th*/0404039.