

Azimuthal dependence of R_{AA} at forward rapidities in BRAHMS

R. Karabowicz

Division of Hot Matter Physics, M. Smoluchowski Institute of Physics
Jagiellonian University, Kraków, 30059, Poland
r.karabowicz@if.uj.edu.pl

Little dependence on rapidity of the nuclear modification factor in Au+Au collisions at the top RHIC energy is still not well understood [1]. Large suppression of high- p_T particles at mid-rapidity is attributed to parton energy loss in the strongly interacting dense medium. It is of great importance to identify the mechanisms responsible for the small value of R_{AA} observed at large rapidities. Flow analysis at BRAHMS shows similar values of ν_2 in mid-rapidity and forward rapidity regions [2]. This results suggest common mechanisms underlying the observed suppression in the wide rapidity range, which leads to the conclusion that QGP extends up to $|y| \approx 3$. Alternative approaches focus on growing role of the initial state effects such as existence of the Color Glass Condensate (CGC) in the incoming nuclei or leading-twist perturbative-QCD shadowing.

Using information recently made available in BRAHMS about the reaction plane orientation the in- and out-of-plane nuclear modification factors at forward rapidity will be presented. R_{AA} azimuthal correlation will solve the dispute about the mechanisms of the suppression for $|y| \leq 3$.

References

- [1] D. Röhrich
- [2] H. Ito for the BRAHMS Collaboration