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Rapidity distributions of $\pi^{\pm}$, $K^{\pm}$ and p ($\bar{p}$) in p+p and d+Au collisions at 200 GeV

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The rapidity density dN/dy of produced particles is strongly related to the energy density in a collision system. Net-proton rapidity distribution are related to the baryon transfer process (stopping). The measurement of the rapidity densities in various collision systems, like p+p, d+Au collisions are presented. The scaling of the rapidity density by the number of participants ($\langle N_{\rm part} \rangle$) involved in different types of collisions may reveal different physics at mid-rapidity and forward rapidities, e.g. comparison of the net-proton rapidity density in the central Au+Au collisions with smaller control systems such as d+Au and p+p could help us understand the baryon transport in these systems. Rapidity densities of identified charged hadrons ($\pi^{\pm}, K^{\pm}$ and p ($\bar{p}$)) and net-protons measured by the BRAHMS experiment in different systems are compared to each other and to model predictions.

References

[1] W. Busza and R. Ledoux *Anu. Rev. Nucl. Part. Sci.* , **36**, (1988) 119;
[2] F. Videbaek and Ole Hansen, *Phys. Rev. C*, **52**, (1995) 2684;
[3] Rachid Nouicer1 for the PHOBOS Collaboration, *J. Phys. G*, **30**, (2005) S1133
[4] Stephen E. Vance, Miklos Gylassy, Xin-Nian Wang, *Phys. Lett. B*, **443**, (1998) 45;
[5] Zi-Wei Lin and Che Ming Ko, *Phys. Rev. C*, **68**, (2003) 054904;
[6] Jean-Paul Blaizot and François Gelis, *Nucl. Phys .A*, **750**, (2005) 148.