# Global Observables in pp, pA and AA Interactions at Relativistic and Ultra-Relativistic Energies

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**Abstract**

*Abstract:* The baryon number asymmetry measured at midrapidities in heavy ion collisions is substantially enhanced by multiple interactions. Both theoretical and experimental work indicate a significant baryon stopping as has been observed also in recent experiments at AGS and SPS energies. We study in detail theoretical predictions for baryon stopping in high energy collisions from AGS to RHIC energies and beyond. As a tools for our investigation theoretical models HIJING/$B\ \bar{B}$ and RQMD are used. We show that an improved version of model containing a new baryon junction mechanism, allows to describe the bulk of particle production and, in particular, baryon stopping and part of the observed enhancement of strange baryons. Based on comparison with new data from PHOBOS collaboration, the energy dependence of the charged multiplicity per participant nucleon, is shown to be a good observables to differentiate between soft (hadronic) and hard (pQCD) inspired models especially at full RHIC c.m. energy and beyond. A detailed analysis of predictions of HIJING/$B\,\bar{B}$ and RQMD v2.4 for pp, pAu and AuAu is performed at 200A GeV. Results for anisotropic directed and elliptic flow as predicted, from soft RQMD v2.4 physics, are also presented.

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