

Fireball fragmentation and rapidity correlations of protons

We investigate proton rapidity correlations for a fireball that fragments due to non-equilibrium effects at the phase transition from deconfined to hadronic phase. Such effects include spinodal fragmentation in case of first order phase transition at lower collision energies and cavitation due to sudden rise of the bulk viscosity at the crossover probed at LHC and the RHIC. The study is performed on samples of artificial events generated by means of Monte Carlo generator DRAGON. Correlation function in relative rapidity appears to be a sensitive probe of fragmentation. Resonance decays make the strength of the correlation even stronger.

Correlation function is compared with experimental results from experiments at collision energies of few GeV per nucleon.

We demonstrate that there is no principal disagreement between the generated and the experimental correlation functions.

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