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Study of non-statistical fluctuations in high energy nuclear collisions

Content :

An attempt is made to disentangle the presence of non-statistical fluctuations in multiparticle production in relativistic nuclear collisions. For this modified multifractal moments for the experimental and simulated data are calculated. Behaviors of mass exponents and generalized dimensions have also been investigated for both the data sets. The study reveals that the modified multifractal moments increase with decreasing pseudorapidity bin size and exhibit a power-law behaviour, which suggests the presence of self-similarity in multiplicity fluctuations in each case. The results of the analysis are in conformity with the theoretically predicted behavior of multifractality.

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