

STUDY OF FRACTALITY DUE TO PARTICLE PRODUCED IN HEAVY ION COLLISIONS AT HIGH ENERGIES

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Abstract

In this paper the fractal nature of the multiparticle production system in the relativistic nuclear collisions has been studied by using the method of scaled factorial moments (SFMs). Although the Random Alpha - Cascade model was introduced by Bialas and Peschanski first for multiparticle production in nucleus - nucleus collisions at ultra high energies, but here we have computed some new results for this model and find a good agreement between the theoretical model and experimental data. The complete analysis has been made for the experimental data sets of $^{28}\text{Si}+\text{AgBr}$ collisions at two different energies 14.6A GeV and 4.5A GeV respectively and also one data set of $^{12}\text{C}+\text{AgBr}$ collisions at energy of 4.5A GeV.

Keywords: Global features in relativistic heavy ion collisions, particle correlations, and fluctuations.

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