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Some Interesting Aspects of Multiparticle Production in 900 GeV proton-proton Collisions at Large Hadron Collider

Content :

For investigating some interesting characteristics such as multiplicity-, pseudorapidity- and transverse momentum distributions of the particles produced in proton-proton collisions at 900 GeV, data collected by the ALICE detector is analyzed. Possibility of the occurrence of non-statistical fluctuations in terms of the phenomenon of intermittency have also been looked into by determining the scaled factorial moment, F_q , and intermittency index, ϕ_q . These aspects are studied using a sample which is comprised of 27000 minimum bias events; an attempt is made to investigate these features in different multiplicity intervals also. The variation of the logarithmic values of the factorial moments as a function of the pseudorapidity window has been studied. Additionally, variations of generalized dimension, D_q with order of the moments q and presence of non-thermal phase transitions are studied.

Collaboration :

ALICE

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