Contribution ID : 86

Entropy scaling from chaotically produced particles in p+p collisions at LHC energies

Content :

Empirical relations like scaling laws, derivable from experimental data, provide invaluable insight to multiparticle production processes in high energy p+p (pbar) collisions. After the failure of KNO scaling in the post ISR energy regime, a new scaling variable, “the information entropy”, was shown to restore the scaling behaviour up to the highest available collider energy, $\sqrt{s}$ = 900 GeV, before LHC. In this paper we have shown that the scaling of the information entropy of the chaotically produced particles, is valid up to recently available data from p+p collisions at $\sqrt{s}$ = 2.36 TeV obtained by ALICE experiment. Results from Monte Carlo simulation model PYTHIA have also been compared with the experimental findings at various available energies in pre and post LHC era. The simulated results are in agreement with the experimental ones in the full range of energies analyzed.

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Session classification : --not yet classified--

Track classification : --not yet classified--

Type : --not specified--