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Factorial Moments and Intermittency in pp Collisions at $\sqrt{s} = 13$ TeV KHADEEJAH ALGHADEER, Louisiana Tech University — Charged-particle multiplicity dependence on transverse momentum, pseudorapidity and the relationship between the mean transverse momentum and charged-particle multiplicity are presented for pp collisions at center of mass energy $\sqrt{s} = 13$ TeV with two different Monte Carlo event generators, Pythia 8 and Herwig++ 2.7.1, including studies of $t t'$ production. The results are achieved with charged particles with transverse momentum larger than 500 MeV and absolute pseudorapidity less than 3, in events with at least one charged particle, and in events at least six charged particles filling these kinematic requirements. In this paper, intermittency studies the distributions of particles and correlations of multiplicities of charged particles in one-dimensional phase space of rapidity is presented to analyze the dynamics of hadroproduction. Intermittency is an increase of factorial moments with decreasing bin size, where dynamical fluctuations are noticed. The dynamical correlations of many-particle systems are carried out at higher energies, where one cannot separate out lower-order correlations from higher-order correlations. The behavior of particle distributions call intermittent provide a strong test of QCD.

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