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Analysis of the Tsallis distribution and it's applicability to high energy physics

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Abstract content
 (Max 300 words)

The region of soft collisions in nucleon-nucleon interactions occurs in the region of non-perturbative QCD. As such, there are numerous phenomenological models present which attempt to describe various aspects of these collisions. The transverse momenta, distributions for charged particles at $\sqrt{s} = 900\text{GeV}$, and K and ϕ particles at $\sqrt{s} = 7\text{TeV}$, for p-p collisions obtained from the ALICE experiment at the LHC were fitted using the Tsallis distribution using three parameters, namely T , q and R . The fits performed to these sets of data were found to be extremely satisfactory. However for Pb-Pb collisions the Tsallis distribution did not perform as well due to the necessity to incorporate hydrodynamical considerations related to heavy-ion collisions, which are not incorporated in the distribution.

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