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Study the particle transverse-mementum spectra at LHC with nonextensive statistics

The hydro-dynamics inspired thermal approach - Blast-Wave (BW) model - implemented with non-extensive Tsallis statistics (TBW) has gained increasing interest in heavy-ion physics. With the come out of recent LHC results on particle production of various species, it is a good opportunity to use this approach to interpret the data. The pT spectra, from both p+p and Pb+Pb collisions, are systematically studied within TBW model, and compared to the RHIC results. Good agreement between the data and the fit is achieved over a broad kinetic range - 0-10 GeV/c for p+p collisions and 0-5 GeV/c for Pb+Pb collisions. A detailed fit to non-strange, single-strange and multi-strange particle species separately will be given. Together with the observations at lower energy, the physics implication of the particle production during the fireball evolution in heavy-ion collisions will be discussed.

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Track Classification: Collective Phenomena in High Energy Collisions