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Study of non-extensive parameters in transverse momentum spectra of hadrons

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Since firstly proposed by C. Tsallis, the q-non-extensive statistics has been of great interest both experimentally and theoretically. One of the most important applications is the non-extensive effects on the transverse momentum (pT) spectra of both strange and non-strange particles in heavy-ion collisions, where it shows a power-law tail for the large pT range.

To clarify not only the experimental data but the non-extensive statistics itself, we investigate the latest pT spectra of various identified charged hadrons within different centralities in p+Pb collisions. With respect to the mass dependence and strangeness dependence as well, the corresponding fitting parameters are well analysed.

In this presentation we aim at understanding the non-extensive parameter q and the temperature T from fitting the different pT spectra using the Tsallis-Pareto formula. And the relations between them will be also demonstrated.

List of tracks

Freeze-out, hadronisation and statistical models

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