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Investigating the soft and hard limits in transverse momentum spectra in pp collisions

The transverse momentum spectra and their multiplicity dependence serve as key tools for extracting parameters to be compared with theoretical models. Over the past decade, the scientific community has extensively studied the possibility of a system analogous to quark-gluon plasma, predicted in heavy nuclei collisions, also existing in collisions involving light nuclei and protons. We have reanalysed the data published by the ALICE Collaboration at the LHC. We present the dependence of the mean transverse momenta obtained in the soft and soft+hard (mixed) parts. Finally, we also discuss possible refinements of the analyses concerning the use of statistical parameters of higher order, aimed at a more detailed way of comparing the models with data.

References:

[1] G. Bíró, L. Serkin, G. Paic, G. G. Barnaföldi, arXiv:2403.07512

Category

Theory

Collaboration (if applicable)

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