

TRANSVERSE MOMENTUM FLUCTUATIONS IN NICA AND SPS ENERGY RANGE

Wednesday, 13 July 2022 10:20 (20 minutes)

Correlations between multiplicity of charge particles and mean transverse momentum were observed experimentally in p+p collisions from top SPS energy to LHC energy. The change in the correlation function's shape with collision energy was successfully described by the multi-pomeron exchange model as an interplay of string fusion and energy-momentum conservation [1]. Previously, it was shown that phenomenological resonance-to-strings transition leads to rapid changes in the magnitude of pt-n correlations at the NICA energy range [2]. The mean transverse momentum is sensitive to the initial energy density [3] and, therefore, its event-by-event fluctuations are strongly affected by the event (centrality) selection. In this contribution results of the pt-n correlations analysis [2] would be extended by Monte-Carlo simulations studies for the pt-n strongly intensive observables [4], pt cumulants [5] and two-particle pt correlation measures [6]. That would allow testing the influence of the resonance-to-string transition and the role of conservation laws of the given observables.

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3. E. V. Shuryak, Phys. Lett. B 423, 9 (1998).
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5. S. Bhatta, C. Zhang, and J. Jia, Phys. Rev. C 105 (2), 024904 (2022).
6. M. Cody et al., arXiv:2110.04884 [nucl-th].

The speaker is a student or young scientist

Yes

Section

1. Intermediate and high energies, heavy ion collisions

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Session Classification: Poster session