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Bose–Einstein correlations of charged pions in Au+Au collisions at $\sqrt{s_{NN}} = 3$ GeV from UrQMD

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The method of correlation femtoscopy makes it possible to estimate the parameters of the particle-emitting region (radius of emission region, R , and correlation strength, λ). Measurement of femtoscopic radius dependence on transverse momentum of particle pairs, k_T , is an important tool for studying the dynamics of the emission process [1].

This work is devoted to the study of momentum correlations of identical pions produced in Au+Au collisions at $\sqrt{s_{NN}} = 3$ GeV using the UrQMD (Ultrarelativistic Quantum Molecular Dynamics) model [2, 3]. Three-dimensional femtoscopic analysis was performed as a function of k_T , rapidity and collision centrality. Physical implications will be discussed.

References:

[1] Lisa M.A. et al. Femtoscopy in relativistic heavy ion collisions: two decades of progress // Annu. Rev. Nucl. Part. Sci. – 2005. – V.55. – P.357.

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[3] Bleicher M. et al. Relativistic Hadron-Hadron Collisions in the Ultra-Relativistic Quantum Molecular Dynamics Model // J. Phys. G: Nucl. Part. Phys. – 1999. – V.25. – P.1859.

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