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Estimation of the isotopic spin influence on femtoscopic correlations of identical pions in Au+Au collisions in the UrQMD model

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One of the main aims of relativistic nuclear physics is the search for signs of formation, quantitative evaluation and description of nuclear matter properties under extreme conditions. The characteristic of the system created as a result of heavy-ion collisions can be explored via spatial and temporal parameters obtained using the method of correlation femtoscopy. At low energies, the size of the particle emission region is affected by the isotopic spin. Studies of isospin effects on the reaction dynamics can provide a clearer estimate of the temporal characteristics of the particle emission processes.

In this report, the results on the measurements of femtoscopic correlations will be presented for identical pions produced in Au+Au collisions at $\sqrt{s_{NN}} = 3$ GeV using the UrQMD (Ultrarelativistic Quantum Molecular Dynamics) model. The influence of the initial system isospin on the femtoscopic parameters is demonstrated and the implementation for experiments is discussed.

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