Two-pion Bose-Einstein correlations in Au+Au collisions at $\sqrt{s_{NN}} = 3$ GeV in the STAR experiment

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The correlation femtoscopy technique makes it possible to estimate the geometric dimensions and lifetime of the particle emission region after the collision of ions. Measurements of the emission region characteristics not only at midrapidity, but also at the backward (forward) rapidity can provide new information about the source and make it possible to impose constraints on the heavy-ion collision models.

This work is devoted to revealing the dependence of the spatial and temporal parameters of the emission region of identical pions in Au+Au collisions at $\sqrt{s_{NN}} = 3$ GeV on the fixed-target program of the STAR experiment. The extracted femtoscopic radii ($R_{\text{out}}$, $R_{\text{side}}$, $R_{\text{long}}$, $R_{\text{out-long}}^2$) and the correlation strength, $\lambda$, are presented as a function of collision centrality, pair rapidity and transverse momentum. Physics implications will be discussed.