

Poster: Measurements of HBT correlations and Lévy source parameters in Au+Au collisions at the STAR experiment

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To study the nature of the quark-hadron phase transition, it is important to investigate the space-time structure of the hadron emission source in heavy-ion collisions. Measurements of HBT correlations have proven to be a powerful tool to gain information about the particle emission region. In this study, Lévy fits were performed to the measured one-dimensional two-pion correlation functions in Au+Au collisions at $\sqrt{s_{NN}}=200$ GeV. The three extracted parameters are: the Lévy scale parameter, R , which is in connection with the physical size of the source, the correlation strength parameter, λ , and the Lévy exponent, α , which is related to one of the critical exponents (the correlation exponent η). It is important to investigate the dependence of these parameters on the average transverse mass, m_T , as well as on centrality and $\sqrt{s_{NN}}$. In this poster, we report the current status of the analysis of the extracted Lévy source parameters.