

XXV International Baldin Seminar on High Energy Physics Problems
"Relativistic Nuclear Physics and Quantum Chromodynamics"



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on High Energy Physics Problems
Relativistic Nuclear Physics & Quantum Chromodynamics
September 18 - 23, 2023, Dubna, Russia

Contribution ID: 50

Type: **not specified**

Identical Pion Interferometry from Au+Au Collisions at $\sqrt{s_{NN}} = 3.2, 3.5, \text{ and } 3.9 \text{ GeV}$ in the STAR Experiment at RHIC

Friday, 22 September 2023 09:40 (20 minutes)

Two-pion interferometry provides access to the spatial and temporal size, shape and evolution of their sources created in heavy ion collisions and hence offers strong constraints for the theoretical models.

In this work, we will report the measurement of correlation strength (λ) and femtoscopic radii (R_{out} , R_{side} , R_{long} , $R_{\text{out-long}}$) extracted from the two-pion correlation function in Au+Au collisions at $\sqrt{s_{NN}} = 3.2, 3.5,$ and 3.9 GeV . The dependences of these parameters on pair transverse momentum, pair rapidity, collision centrality, and collision energy will be presented and their physics implications will be discussed.

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Session Classification: Parallel: Relativistic heavy ion collisions