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Femtoscopic Measurements for Shape-engineered Events in Au+Au Collisions at STAR

Tuesday, 15 May 2018 19:10 (30 minutes)

Femptoscopic measurements allow access to the spatio-temporal characteristics of the systems produced in relativistic heavy-ion collisions. This poster presents new measurements of the two-pion HBT radii $\mathrm{R_{out}}$, $\mathrm{R_{side}}$ and $\mathrm{R_{long}}$ have been made for shape-engineered events by the STAR experiment. Shape selection was accomplished via cuts on the distributions of the second-order flow vector Q_2 \cite{timmins}\cite{lacey}. Selected events, characterized with larger magnitudes of Q_2, indicate a systematic decrease for R_{long} and R_{out} with little, if any, change for R_{side}. Results obtained as a function of collision centrality and average pair transverse momentum (k_T) will be presented for the full range of the Au+Au beam energy scan ($\sqrt{s_{NN}} = 7.7 - 200$ GeV). The implications of these results for expansion dynamics of the collision systems will be discussed.

References
[1] J. Schukraft, A. Timmins, and S. A. Voloshin, Phys. Lett. B719, 394 (2013).
[2] Roy. A Lacey, et. al., J.Phys. G 43 (2016) no.10, 10LT01, arXiv:1311.1728.

Content type

Experiment

Collaboration

STAR

Centralised submission by Collaboration

Presenter name already specified

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