

Abstract Submitted
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Beam-energy dependence of spatial and temporal characteristics of shape-selected events in Au+Au collisions at the Relativistic Heavy Ion Collider(RHIC) BENJAMIN SCHWEID, Stony Brook University — Newly measured two-pion Hanbury Brown and Twiss (HBT) radii have been made for shape-engineered events using data from the STAR experiment. These correlations leverage the HBT effect to allow investigation into how shape-engineering manifests itself within the spatial and temporal characteristics of the systems produced in relativistic heavy-ion collisions. Measureable changes in the HBT radii R_{out} , R_{side} and R_{long} due to shape-engineering would be indicative of a change in the expansions dynamics of the system—ultimately helping to link initial state shape with final state measurements. Shape selection was accomplished via cuts on the distributions of the second-order flow vector Q_2 ¹. 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).

¹J. Schukraft, A. Timmins, and S. A. Voloshin, Phys.Lett. B719, 394 (2013)

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