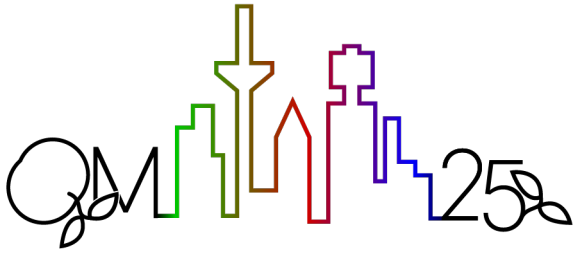

Contribution ID: **767** Type: **Poster**

Pion femtoscopy with Lévy sources in Au+Au collisions at STAR

Exploring the space-time extent of particle production is an important goal of heavy-ion physics and efforts have been made in order to understand the underlying physics behind the experimental observations of non-Gaussian source distributions. In experiments, femtoscopic (momentum) correlations are utilized to gain information about the space-time geometry of the particle emitting source. In this talk we present recent two-pion femtoscopic measurements performed by the STAR experiment, at $\sqrt{s_{NN}} = 3.2$, 3.9, 7.7, 14.5, 19.6, 27, 54.4, and 200 GeV, and their description with calculations based on Lévy-distributed sources. The obtained results indicate how the source shape changes with collision energy, centrality and transverse momentum dependence of the source parameters. The comparison of data to Monte-Carlo simulations at these energies is also discussed. We furthermore discuss the implications of this comparison on various stages of the evolution, and in particular, the explanation of the non-Gaussian nature of the 3D correlations at $\sqrt{s_{NN}} = 200$ GeV.

Category

Experiment

Collaboration (if applicable)

STAR

Author: CSANAD, Mate (Eotvos University, Budapest)

Presenter: CSANAD, Mate (Eotvos University, Budapest)

Session Classification: Poster session 1

Track Classification: Correlations & fluctuations