

# Collision energy dependent Levy analysis of Bose-Einstein correlation functions in Au+Au collisions at PHENIX

The RHIC beam energy scan program allows us to investigate the phase-diagram of QCD matter. The nature of the quark-hadron transition can be studied through analyzing the space-time structure of the hadron emission source. One of the best tools to gain information about the source is the measurement of Bose-Einstein or HBT correlations of identical bosons. In our latest measurements, we utilize Levy-type sources to describe the measured correlation functions. One of the source parameters, the index of stability  $\alpha$  is related to one of the critical exponents (the so-called correlation exponent  $\eta$ ), so it may yield information on the nature of the quark-hadron phase transition, particularly it may shed light on the location of the critical endpoint on the phase-diagram. In this poster we report the current status of the analysis of the Levy source parameters (the intercept parameter  $\lambda$ , the index of stability  $\alpha$ , and the scale parameter  $R$ ) as a function of transverse momentum and beam energy in Au+Au collisions at  $\sqrt{s_{NN}} = 15, 19, 27, 39, 62$  and 200 GeV.

## Preferred Track

Correlations and Fluctuations

## Collaboration

PHENIX

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