

# WPCF 2023 - XVI Workshop on Particle Correlations and Femtoscopy & IV Resonance Workshop 2023



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## Two-particle interferometry with Lévy-stable sources in $\sqrt{s_{NN}} = 200$ GeV Au+Au collisions at STAR

*Monday, 6 November 2023 12:50 (25 minutes)*

Measurements of femtoscopic correlations in high-energy heavy-ion collisions aim to unravel the space-time structure of the particle-emitting source (the quark-gluon-plasma). Recent results indicate that the pion pair-source exhibits a power-law behavior and can be described well by a Lévy distribution. In this study, Lévy fits were performed to the measured one-dimensional two-pion correlation functions in Au+Au collisions at  $\sqrt{s_{NN}}=200$  GeV. The three extracted source parameters are the Lévy scale parameter,  $R$ , which relates to the size of the source, the correlation strength parameter,  $\lambda$ , and the Levy exponent,  $\alpha$ , which characterizes the power-law tail of the source. In this talk, we report the current status of the analysis of the extracted Lévy source parameters and present their dependence on average transverse mass,  $m_T$ , and on centrality.

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**Session Classification:** Day 1 - Morning