

PHENIX results on three particle Bose-Einstein correlations in $\sqrt{s_{NN}} = 200$ GeV Au+Au collisions

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Bose-Einstein correlations of identical hadrons reveal information about hadron creation from the sQGP formed in ultrarelativistic heavy ion collisions. The measurement of three particle correlations may in particular shed light on hadron creation mechanisms beyond thermal/chaotic emission. In this talk we show the status of PHENIX measurements of three pion correlations as a function of momentum differences within the triplets. We analyze their shape through the assumption of Levy sources and a proper treatment of the Coulomb interaction within the triplets. We determine Levy parameters R , α and λ_3 , which give source size, shape and correlation strength, respectively. The λ_3 encodes information about hadron creation mechanism, together with two particle correlation strength λ_2 . From a consistent analysis of two- and three-particle correlation strength we may be able to establish an experimental measure of thermalization and coherence in the source.

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