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Study of systematic uncertainty in measurement of neutral pion yield in Ag+Ag collisions at 1.23 A GeV beam energy

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Measurement of π0 yield is an important part of analysis of heavy ion collisions data. The momentum and angular distributions of π0 provide information about thermodynamic properties of the hadronic matter right after the chemical and kinetic freez-out. Also these measurements play an important role in reducing the systematic uncertainties in study of dilepton spectra. The decay π0 ⟶ γγ has 99% branching ratio and thus provides the best statistics for such analysis. The Ag + Ag data at the beam energy 1.23 A GeV have been studied. The events with centrality 0-30 % were selected for the analysis. The procedure of π0 yield determination is discussed in this talk. It includes calibration of the involved detector, its acceptance and efficiency corrections. Particular attention is paid on studying the systematic uncertainty of these measurements.

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