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Kaon femtoscopy in STAR

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Properties of nuclear matter can be studied by relativistic heavy-ion collisions in high energy experiments like the STAR experiment. One of the methods to learn something about this matter is the femtoscopy, which relies on information carried by the particles produced in the collisions. Using correlation functions, the source parameters, such as space-time characteristics, are provided. The collisions produce mainly pions and therefore pion interferometry is a particularity useful tool. High statistics data sets from RHIC have also made it possible to study the strange particle correlations. The lightest strange particles are charged and neutral kaons. Kaons provide a cleaner probe of the particle-emitting region ascompared to pions because they are less affected by resonance decays and have smaller cross section with hadronic matter. Thanks to these properties, kaon correlation functions can be sensitive to the early stage of the collisions evolution and also provide different information about particle-emitting source.
On this poster, one-dimensional correlation functions of two-kaon system in Au+Au collisions at Beam Energy Scan energies measured by the STAR experiment at RHIC will be presented.

Collaboration name

STAR Collaboration

Track

Strangeness and Light Flavour

Primary author: PAWŁOWSKA, Diana (Warsaw University of Technology)

Presenter: PAWŁOWSKA, Diana (Warsaw University of Technology)

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