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Non-identical particle correlation analysis in the presence of non- femtoscopic correlations

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Femtoscopic correlations of two non-identical particles have a unique feature, differentiating them from "traditional" identical particle correlations, of being sensitive to the difference in average emission position of the two particle types. For pion-kaon pairs the femtoscopic signal arises from Coulomb interaction between particles. Its strength is comparable to the magnitude of effects of non-femtoscopic origin. We identify main sources of these background correlations as real "physics" correlations coming from elliptic flow. We propose a robust method to estimate them and account for their influence in the femtoscopic analysis of experimental data. We validate the proposed correction method on a data sample generated with the THERMINATOR 2 model and provide a recipe for experimentalists.

List of tracks

Femtoscopy at RHIC and LHC: links to QGP physics

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