

Comparison of the $\pi^\pm K^\pm$ femtoscopy in Pb–Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV modeled with (3+1)D hydrodynamics + THERMINATOR 2 and iHKM

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Non-identical femtoscopy is sensitive to the two-particle pair source size (R) and the pair-emission asymmetry (μ). Here, we studied the dependence of R and μ on the centrality and pair transverse velocity (β_T). For this purpose, we modelled the femtoscopic correlations between all charged pion-kaon pairs in Pb–Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV using a) (3+1)D viscous hydrodynamics coupled with THERMINATOR 2 and b) the integrated Hydro-Kinetic Model (iHKM). The dependence of μ on the β_T is heavily modified by the interaction and rescattering of pions and kaons in the final state of the collisions. This phase is implemented in the iHKM but in THERMINATOR 2, an extra delay in kaon-emission is introduced to mimic it. We will show the predicted non-monotonic dependence of the μ on β_T can be used to constraint better the duration and impact of the hadron rescattering phase in ultra-relativistic heavy-ion collisions.

Alternate track

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Primary author: Dr CHAKRABORTY, Pritam (PL - Warsaw UT)

Presenter: Dr CHAKRABORTY, Pritam (PL - Warsaw UT)

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