

Femtoscopic analysis of identical charged kaons in Pb–Pb collisions at 5.02 TeV with ALICE

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Femtoscopy is an important tool for studying space–time properties of the emission sources created in heavy-ion collisions such as spatial sizes, evolution duration, collective flow effects, etc. The importance of kaon femtoscopy is to check different model scenarios that work equally well for pions. In this contribution, we present the results of femtoscopic analysis of identical charged-kaon correlations in Pb–Pb collisions at 5.02 TeV. The results of one- and three-dimensional analyses show that the kaon femtoscopic radii are smaller for more peripheral collisions and decrease with increasing of transverse momentum. According to hydrokinetic models, it might be explained by the radial expansion of the emission source. Comparison between the obtained three-dimensional radii and the integrated Hydro Kinetic Model calculations for two particularization temperatures obtained from two different Equations of State has been performed. The one-dimensional radii are compared with the same results for other colliding systems, Pb–Pb at 2.76 TeV, p–Pb at 5.02 TeV and pp at 7 TeV, as a function of event multiplicity to check whether they have the common trend or not. Another important result of this analysis is the extraction of the maximal emission times for kaons in a wide centrality range (from 0 to 90%).

The speaker is a student or young scientist

Yes

Section

1. Intermediate and high energies, heavy ion collisions

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