

Studying the dynamics of particle-emitting sources in p-Pb and Pb-Pb collisions with ALICE at the LHC energies using femtoscopy

Saturday, 20 July 2024 17:19 (17 minutes)

Space-time properties of quark-gluon plasma (QGP), a state of matter with unbound partons produced in heavy-ion collisions, can be studied using femtoscopic correlations of particle pairs emitted after the hadronization.

In this talk, results of 1D and 3D femtoscopic analyses of identical charged kaon pairs are reported in p-Pb and Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV measured by ALICE. The multiplicity dependencies of 1D radii, compared to other collision systems at different energies, disfavor models suggesting similar evolution for matter created in small and large collision systems. The obtained 3D radii allowed to extract maximal emission times for kaons in a wide centrality range. It will be shown that a new 1D and 3D femtoscopic analysis of identical proton pairs in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.36$ TeV, recently collected by ALICE, can provide further understanding of the physical processes occurring in heavy-ion collisions.

Alternate track

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Session Classification: Heavy Ions

Track Classification: 07. Heavy Ions