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Strange and non-strange light-flavour hadron production in Pb-Pb and p-Pb collisions at LHC energies with ALICE

Tuesday 11 June 2019 15:00 (20 minutes)

The ALICE experiment is dedicated to the study of strongly interacting matter at the extremely high temperatures and energy densities reached at the LHC. Its excellent tracking and particle-identification capabilities allow characterising the hot nuclear matter via detailed measurements of particle production in nucleus-nucleus collisions. In addition, the study of proton-nucleus collisions provides a fundamental benchmark for initial state and cold nuclear matter effects.

During the LHC Run2, the ALICE collaboration recorded data from Pb–Pb and p–Pb collisions at the unprecedented energies of $\sqrt{s_{\rm NN}}$ = 5.02 and 8.16 TeV, respectively. Measurements of the production of light-flavour hadrons π, K, p, Λ, Ξ and Ω are reported.
Results are presented as a function of the collision centrality or multiplicity and include transverse momentum spectra, ratios of spectra, integrated yields and nuclear modification factors. Hydrodynamic model predictions are tested through comparison to the measured spectral shapes.

A systematic study of strangeness production is of fundamental importance for determining the thermal properties of the system created in ultra-relativistic heavy-ion collisions. In order to study strangeness enhancement, the measured particle yields are normalised to the yields of pions in the corresponding centrality or multiplicity classes. The results are compared to measurements
performed at lower energies, to different collision systems and to predictions from statistical hadronisation models.

Collaboration name

ALICE Collaboration

Track

Strangeness and Light Flavour

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