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Resonance production in Pb-Pb collisions measured with the ALICE experiments at the LHC

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Resonance production in Pb-Pb collisions measured with the ALICE detector at the LHC

V. Riabov for the ALICE Collaboration

Hadronic resonances are very useful in exploring various aspects of heavy-ion collisions. Due to their short lifetimes, yields of resonances measured via hadronic decay channels can be affected by particle rescattering and regeneration in the hadronic gas phase. The momentum dependence of rescattering and regeneration cross sections may also modify the observed momentum distributions of the reconstructed resonances. Resonances as hadrons with different masses and quark composition also contribute to the systematic study of in-medium parton energy loss at high transverse momentum and help to distinguish among different mechanisms responsible for particle production at intermediate momentum.

In this talk we present the most recent ALICE results on $\rho(770)^0$, $K^*(892)^0$, $\phi(1020)$, $\Sigma(1385)^\pm$, $\Lambda(1520)$ and $\Xi(1530)^0$ production in pp, p-Pb and Pb-Pb collisions at various collision energies including results from the latest Pb-Pb run at $\sqrt{s_{NN}} = 5.02$ TeV. The comprehensive set of resonance measurements is used to study strangeness production, the role of re-scattering and regeneration in the hadronic phase as well as particle production at intermediate and high transverse momentum. Production spectra, integrated yields, mean transverse momenta and particle ratios are presented, discussed and compared to model predictions and lower energy measurements.

Topic:

Topic: Heavy Ion Collisions and Critical Phenomena

Summary

Author: RIABOV, Viktor (Petersburg Nuclear Physics Institut (RU))

Presenter: RIABOV, Viktor (Petersburg Nuclear Physics Institut (RU))

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