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System size and energy dependence of resonance production measured with ALICE

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Hadronic resonances with different lifetimes are very useful to probe the hadronic phase, the latest stage in the evolution of the system created in heavy-ion collisions. Due to their relatively short lifetimes compared to the duration of the hadronic phase, resonances are good candidates to investigate the interplay between particle rescattering and regeneration. In addition, the measurement of resonances having different masses and strangeness content can contribute to the understanding of strangeness production. Measurements of hadronic resonances $\rho(770)^0$, K*(892), $\phi(1020)$, $\Sigma(1385)^{\pm}$, $\Lambda(1520)$, $\Xi(1530)^0$ and $\Xi(1820)$ have been performed with the ALICE detector at the LHC in pp, p–Pb, Pb–Pb and Xe–Xe collisions at different energies. We report on the transverse momentum ($p_{\rm T}$) spectra and $p_{\rm T}$ integrated yields, complementing our observation with new results on $\Lambda(1520)$ in p–Pb collisions at $\sqrt{s_{\rm NN}} = 8.16$ TeV. In particular, ratios of $p_{\rm T}$ -integrated resonance yields to those of long-lived particles will be discussed as a function of multiplicity in all collision systems at different energies. A critical overview of these results will be given through comparisons to measurements from other experiments and theoretical models.

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Collaboration / Activity

ALICE

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