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Production and modification of hadronic resonances measured with ALICE

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Measurements of the production of short-lived hadronic resonances are used to probe the properties of the late hadronic phase in ultra-relativistic heavy-ion collisions. Since these resonances have lifetimes comparable to that of the produced fireball, they are sensitive to the competing effects of particle re-scattering and regeneration in the hadronic gas, which modify the observed particle momentum distributions and yields after hadronisation. Having different masses, quantum numbers and quark content, hadronic resonances carry a wealth of information on different aspects of ion-ion collisions, including the processes that determine the shapes of particle momentum spectra, strangeness production, and the possible onset of collective effects in small systems. We present the most recent ALICE results on $\rho(770)^0$, $K^*(892)$, $\phi(1020)$, $\Sigma(1385)^\pm$, $\Lambda(1520)$, $\Xi(1530)^0$ and $\Xi(1820)$ production at the LHC. They include measurements performed in pp, p-Pb and Pb-Pb collisions at different energies, as well as the results from the LHC Run 2 with Xe-Xe collisions at $\sqrt{s_{NN}} = 5.44$ TeV. Collision energy and multiplicity differential measurements of transverse momentum spectra, integrated yields, mean transverse momenta and particle yield ratios are discussed in detail. A critical overview of these results will be given through comparisons to measurements from other experiments and theoretical models.

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