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Hadronic resonances as probes of the fireball evolution in heavy-ion collisions at the LHC

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Hadronic resonances provide valuable observables for the properties of the hot and dense hadronic phase of the fireball created in heavy-ion collisions, since their lifetimes, of the order of few fm/c, are comparable to the time span between the chemical and kinetic freeze-outs, which characterize the latest stage of the fireball evolution. Re-scattering of decay products and regeneration via pseudo-elastic hadron scattering can alter their yields from the values that would be measured in elementary (pp) collisions and those that would be expected from statistical particle-production models. The relative strengths of re-scattering and regeneration, as well as the temperature and lifetime of the hadronic phase, can be studied through measurements of resonance yields and their ratios to the yields of long-lived hadrons. An overview of recent results on resonance production from the ALICE experiment is presented for pp, p-Pb, and Pb-Pb collisions and compared with results at lower energy from the STAR experiment and with statistical model predictions.

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