

Quarkonia production in small systems with ALICE

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In pp collisions at LHC energies, the production of heavy quarks proceeds dominantly from the hard scattering of two gluons. These quarks then hadronise in either open heavy-flavour hadrons or quarkonia (e.g. J/ψ , Υ). The study of quarkonium production as a function of the charged-particle multiplicity, therefore, naturally links soft and hard processes that occur in the collision and allows one to study their interplay. While a linear increase of quarkonium production as a function of the charged-particle multiplicity can be reasonably well understood in the context of multi-parton interactions, the observation of deviations with respect to a linear increase requires a more detailed description of the collision and the inclusion of additional mechanisms such as collective effects, color reconnection or percolation.

The ALICE detector at the LHC measures quarkonium production down to zero transverse momentum in two rapidity ranges: at mid-rapidity in the di-electron decay channel using the central barrel and at forward rapidity in the di-muon decay channel using the muon spectrometer. In this contribution, we will present the production of quarkonia (J/ψ , Υ) as a function of the charged-particle multiplicity measured by ALICE in pp and p-Pb collisions. These results will be compared to the corresponding measurements performed for open heavy flavours, as well as to model calculations.

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