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Quarkonium production as a function of multiplicity in pp collisions with ALICE

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The production of quarkonium, a bound state of a heavy quark (charm or bottom) and its corresponding antiquark, can be decomposed in a hard-scale perturbative production of the quark-antiquark pair, and its subsequent hadronization into the bound state which can only be described by non-perturbative models, such as NRQCD. In hadronic collisions, the underlying event activity, usually quantified in terms of charged-particle multiplicity density, is mainly determined by soft particle production processes. By correlating measurements of quarkonium production and event activity in small systems, we can learn more about the interplay between hard and soft processes. In particular, such measurements are crucial to better understand how both scales are differently affected by mechanisms such as gluon saturation or Multiple Partonic Interactions. They allow one to investigate as well the possible formation of a deconfined medium in high-multiplicity pp collisions.

In this presentation, we will discuss the latest measurements carried out by the ALICE collaboration in pp collisions, at several center-of-mass energies and rapidity ranges, of quarkonium production as a function of charged-particle multiplicity. Both quantities were normalised to their corresponding average value. Results will be compared with available theoretical models.

Submitted on behalf of a Collaboration?

Yes

Participate in poster competition?

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