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Non-prompt J/ψ production as a function of multiplicity in pp collisions at $\sqrt{s} = 13$ TeV with ALICE

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The study of the production of non-prompt J/ψ originating from the decay of beauty hadrons, besides allowing to isolate the prompt J/ψ cross section from the inclusive J/ψ cross section, can be used to estimate open beauty-hadron production. Heavy-flavour particle production in pp collisions as a function of charged-particle multiplicity could provide insight into the processes occurring in the collision at the partonic level, as well as the interplay between the hard and soft mechanisms in particle production.

In this contribution, measurements of the non-prompt J/ψ fraction as a function of charged-particle pseudorapidity density ($dN_{\text{ch}}/d\eta$) in pp collisions at $\sqrt{s} = 13$ TeV with ALICE are reported. J/ψ mesons are reconstructed at midrapidity ($|y| < 0.9$) in the dielectron decay channel. Events are classified based on the charged-particle multiplicity at midrapidity ($|\eta| < 1$). The multiplicity reach is seven times larger than the average charged particle multiplicity of inelastic collisions, thanks to the usage of high-multiplicity triggered events. The measurement of the fraction of non-prompt J/ψ is performed via unbinned maximum likelihood fit down to $p_{\text{T}} = 1$ GeV/c. The status of the prompt and non-prompt J/ψ yield extraction as a function of $dN_{\text{ch}}/d\eta$, both normalized to the corresponding multiplicity integrated quantities, will also be shown.

Collaboration (if applicable)

ALICE

Category

Experiment

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