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Quarkonia production and excited state suppression in pp and p-Pb with ALICE

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Quarkonia are considered a distinguished tool to study the strongly-interacting medium formed in ultra-relativistic heavy-ion collisions. However, their production is also sensitive to initial state effects such as the modifications of the parton distribution functions (PDF) in the nucleus or the gluon saturation at low Bjorken- x . These phenomena are typically studied using proton-nucleus (p-A) collisions where their effects are considered to be the dominant. Moreover, quarkonium measurements in high-multiplicity proton-proton (pp) collisions can shed light on the role of Multiple Parton Interactions (MPI) which are expected to be relevant for the production of heavy quarks at the LHC energies.

In this contribution, the latest quarkonium measurements performed by the ALICE Collaboration in pp and p-Pb collisions will be presented. Final results on the nuclear modification factor for $\psi(2S)$, $\Upsilon(1S)$ and $\Upsilon(2S)$, measured at forward and backward center-of-mass rapidities in p-Pb collisions at $\sqrt{s_{NN}} = 8.16$ TeV will be shown, with a focus on the new centrality dependent $\psi(2S)$ results. A broad collection of multiplicity-dependent quarkonium measurements in pp collisions at $\sqrt{s} = 13$ TeV at mid- and forward-rapidity will be also presented. This includes, among others, recent results on the inclusive $\psi(2S)$ and bottomonium production at forward rapidity. The current theoretical interpretation of the various results will be also discussed.

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