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Quarkonium measurements in small systems at the LHC

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At the LHC energies Multiple Parton Interactions (MPI) are expected to affect not only processes involving soft particle production, but also the hard momentum scales relevant for the production of heavy quarks, such as charm and beauty. Quarkonium measurements in high-multiplicity proton-proton (pp) collisions can shed light on the role of MPI at such hard momentum scales, as well as on the interplay between hard and soft particle production mechanisms.

In this contribution we will discuss the latest results from LHC collaborations on quarkonium production measurements as a function of the charged particle multiplicity in small systems. In particular we will focus on results in pp collisions for center-of-mass energies ranging from 2.76 TeV to 13 TeV and based on multiplicity estimators covering different pseudorapidity regions, in several rapidity and transverse momentum ranges of quarkonium states. Similar measurements in p-Pb collisions at center-of-mass energies of $\sqrt{s_{NN}} = 5.02$ and 8.16 TeV will also be shown. We will discuss these results together with models that implement MPI and some other different theoretical calculations.

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