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Typ: Talk

Multiplicity dependence of quarkonium production in small systems with ALICE

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High-multiplicity measurements in pp and p-Pb collisions have revealed the presence of phenomena typically attributed to the creation of a quark-gluon plasma (QGP). Events with multiple parton-parton interactions (MPIs) have been proposed as one possible explanation of this observation. MPIs play a significant role in describing the soft component of the hadronic interactions, and at LHC energies also affect the production of heavy quarks. Multiplicity dependent quarkonium measurements in small systems are therefore crucial for studying the correlation between soft and hard components of high-multiplicity events, as well as to shed light on MPIs or any other possible underlying mechanisms. Moreover, excited quarkonia, more loosely bound than ground states, are more sensitive to any possible dissociation mechanisms taking place in the final state.

In this contribution, new published multiplicity dependent $\psi(2S)$ measurements, carried out at forward rapidity in pp and p-Pb collisions at $\sqrt{s} = 13$ TeV and $\sqrt{s_{NN}} = 8.16$ TeV, along with charmonium excited-to-ground state ratios, will be discussed. Similar measurements published recently for $\Upsilon(nS)$ states ($n = 1,2,3$), performed at forward rapidity in pp collisions at $\sqrt{s} = 13$ TeV, will be presented. The status of ongoing multiplicity dependent J/ψ measurements at midrapidity in pp and p-Pb collisions will also be shown. Results will be compared to available model calculations.

Experiment/Theory

ALICE

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Sitzung Einordnung: Parallel: Heavy Flavours & Quarkonia

Track Klassifizierung: Heavy flavor and quarkonia