Contribution ID: **30** Contribution code: **POS-HF-01** Type: **Poster**

Ground and excited quarkonium states as probes of MPI in small systems with ALICE

Tuesday 14 June 2022 17:29 (1 minute)

Our understanding of hadronic collisions has been challenged by the intriguing observation of collective phenomena in events with high charged-particle multiplicity density in small systems. Such high multiplicities are expected in events with multiple parton-parton interactions (MPI). At the LHC, MPIs affect the production of heavy-quarks (charm and beauty), and the large statistics samples available allow for the study of quarkonium production in association with other particles as well as of their relation to the underlying event. In proton-proton (pp) collisions, the study of pair production of quarkonia in the same event, besides helping to disentangle among different production mechanisms, is sensitive to double-parton scattering. Multiplicity dependent studies of quarkonia are fundamental for investigating the correlations between soft and hard components of high-multiplicity events in small collision systems. In particular, excited quarkonium states, characterized by lower binding energies than the corresponding ground states, are more sensitive to any possible dissociation mechanism at play at high multiplicities.
In this contribution, new multiplicity dependent results of excited quarkonium states, such as ψ(2S), Υ(2S) and Υ(3S), reconstructed in pp and p-Pb collisions at forward rapidity, along with the corresponding excited-to-ground state ratios, will be presented. New measurements for J/ψ will be also discussed. These include the first measurement of J/ψ pair production in pp collisions at √s = 13 TeV, as well as the latest results on J/ψ production as a function of multiplicity at forward rapidity in pp collisions at √s = 5.02 and 13 TeV. The status of similar multiplicity dependent measurements at midrapidity in p-Pb collisions at $\sqrt{s_{NN}}$ = 5.02 will be shown. The comparison with available models will also be discussed.

Present via

Online

Primary author: EDER, Tabea Maria (Westfaelische Wilhelms-Universitaet Muenster (DE))

Presenter: EDER, Tabea Maria (Westfaelische Wilhelms-Universitaet Muenster (DE))

Session Classification: Poster

Track Classification: Heavy-flavor and Quarkonia