

Studying QCD production mechanisms and medium effects on quarkonia formation with ALICE

Friday, 19 July 2024 17:36 (17 minutes)

Charmonia is a valuable tool to investigate nuclear matter under extreme conditions, particularly in the strongly interacting medium formed during heavy-ion collisions. At the LHC energies, the regeneration process has been found to significantly impact the observed charmonium characteristics. In particular, the $\psi(2S)$ production relative to J/ψ is a physical observable with strong discriminating power between the possible regeneration scenarios in Pb–Pb collisions. Additionally, the study of quarkonium production in proton–proton collisions represents a reference for interpreting results obtained in Pb–Pb collisions and it is a key measurement to distinguish among the quarkonium production models in pp and p–Pb systems. In this contribution, preliminary findings of the double ratio of $\psi(2S)$ -to- J/ψ and the inclusive J/ψ yield in pp collisions at a center-of-mass energy of $\sqrt{s}=13$ TeV measured by the ALICE Collaboration will be presented and compared with existing model calculations.

Alternate track

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Session Classification: Heavy Ions

Track Classification: 07. Heavy Ions