



Contribution ID: 513

Type: Poster

J/ ψ polarization measurement at forward rapidity in pp collisions at $\sqrt{s} = 13.6$ TeV with ALICE at the LHC

Charmonium production in ultra-relativistic collisions is an essential probe for understanding the deconfined phase of QCD matter. The study of the production mechanism of charmonium states in pp collisions provides an opportunity to constrain both perturbative and non-perturbative aspects of QCD dynamics. In this context, measurement of charmonium polarization provides valuable insights into the underlying production mechanisms and discriminates between the various theoretical predictions. In this contribution, we will present the inclusive J/ ψ polarization measurement via the dimuon decay channel ($J/\psi \rightarrow \mu^+\mu^-$) at forward rapidity ($2.5 < y < 4.0$) in pp collisions at $\sqrt{s} = 13.6$ TeV with ALICE using the muon spectrometer. This analysis is based on the high statistics data collected by ALICE in the LHC Run 3.

Category

Experiment

Collaboration (if applicable)

ALICE Collaboration

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Session Classification: Poster session 2

Track Classification: Heavy flavor & quarkonia