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Study of J/ψ production with jet activity in $p+p$ collisions at $\sqrt{s} = 200$ GeV with the STAR experiment

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The production mechanism of quarkonia in $p+p$ collisions involves both the perturbative and non-perturbative QCD processes and is a topic of active investigation. Quarkonium production from Color Singlet Model and Color Octet Mechanism is expected to result in different jet activities, i.e., the number of jets associated with quarkonium creation, due to different numbers of emitted hard partons. Therefore, the study of J/ψ production with respect to jet activity could potentially be used to differentiate between the different production mechanisms.

In this talk, we will present the first measurement of the J/ψ production cross section as a function of jet activity in $p+p$ collisions at $\sqrt{s} = 200$ GeV from the STAR experiment. These results are compared to the PYTHIA calculations, and physics implications will be discussed.

Submitted on behalf of a Collaboration?

Yes

Participate in poster competition?

Primary authors: Mr HUANG, Hao (NCKU); Prof. YANG, Yi (National Cheng Kung University (TW)); Mr WANG, Yu-Tang (NCKU)

Presenter: Prof. YANG, Yi (National Cheng Kung University (TW))

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