

# Recent $J/\psi$ measurements at the PHENIX experiment

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Quarkonium is an ideal probe to explore the properties of QCD. Unlike Large Hadron Collider (LHC) measurements, quarkonium production at the Relativistic Heavy Ion Collider (RHIC) has different production mechanisms, can access different kinematic phase space and may experience different medium densities/temperatures. The PHENIX experiment has collected a large  $J/\psi \rightarrow \mu^+\mu^-$  data set within its unique pseudorapidity region of  $1.2 < |\eta| < 2.2$  in  $p + p$ ,  $p + A$  and  $A + A$  collisions at  $\sqrt{s} = 200$  GeV. We will present the latest results of 1) event multiplicity dependent forward  $J/\psi$  and  $\psi(2S)$  production in  $p + p$  collisions; and 2) forward  $J/\psi$  flow in Au+Au collisions. Comparison with other RHIC and LHC measurements and latest theoretical calculations will be discussed. These PHENIX results will help improving the understanding of charmonium production mechanisms, the role of multi-parton interactions and the charmonium regeneration in the QGP.

## Alternate track

1. Strong Interactions and Hadron Physics

## I read the instructions above

Yes

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**Session Classification:** Heavy Ions

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