

## **J/Psi production and correlation in p+p and R\_{AA} at high-pt in Au+Au collisions**

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The  $c\bar{c}$  bound state  $J/\psi$  provides a unique tool to probe the properties of the hot dense medium produced in heavy-ion collisions, but to date its production mechanism is not understood clearly either in heavy-ion collisions or in hadron-hadron collisions. Measurement of  $J/\psi$  production at high  $p_T$  is particularly interesting since at high  $p_T$  the various models give different predictions. Besides, high  $p_T$  particles are widely used to study the parton-medium interactions in heavy-ion collisions. The previous high- $p_T$   $J/\psi$  measurements in  $p + p$  and Cu+Cu collisions at RHIC published by the STAR collaboration found several interesting things, though constrained by limited statistics and system size.

In this talk, we will present the new measurement of  $J/\psi \rightarrow e^+e^-$  production at large  $p_T$  range ( $0 < p_T < 10$  GeV/c) at mid-rapidity ( $|y| < 1$ ) in  $p + p$  and Au+Au collisions at 200 GeV. The datasets are from RHIC year 2009  $p + p$  and 2010 Au+Au runs with significantly reduced material, the newly installed full TOF, and high data acquisition rates.  $J/\psi$   $p_T$  spectra and nuclear modification factors from low to high  $p_T$  will be discussed to understand its production mechanism and medium modifications. The  $J/\psi$ -hadron azimuthal angle correlation in  $p + p$  collisions will be presented to disentangle  $B$ -mesons contributions to inclusive  $J/\psi$  and study  $J/\psi$  hadronization mechanism.

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