

Cold Nuclear Matter effects on J/ψ production with extrinsic transverse momentum

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{\small \it Workshop on Nuclear Parton Distribution Functions, LAPTH Annency, Feb. 22 - 23, 2010}

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\centerline{\Large \bf Cold Nuclear Matter effects on  $J/\psi$  production}
\centerline{\Large \bf with extrinsic transverse momentum}

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We study the Cold Nuclear Matter (CNM) effects on J/ψ production, whose understanding is fundamental to evaluate the Quark Gluon Plasma or Hot Nuclear Matter effects. Two CNM effects are of particular importance: the shadowing of the initial parton distributions (PDF) due to the nuclear environment and the nuclear absorption of the $c\bar{c}$ -pair. Recent theoretical works~\cite{CSM-upgrade,Upsilon-LHC,next-paper-JPhi} have emphasized that the production mechanism of the J/ψ is not {it via} a $2 \rightarrow 1$ Drell-Yan like process. This modifies the way to compute the nuclear shadowing~\cite{first-extrinsic-paper}. We will present our results in dA and AA collisions at RHIC energy~\cite{first-extrinsic-paper}, using several parametrizations of the nuclear PDF~\cite{paper-nPDF-comparison,second-extrinsic-paper}, and including the p_T -dependence of CNM effects up to intermediate values of p_T , which are not accessible in the usual studies.

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\bibliographystyle{unsrt}

\begin{thebibliography}{6}

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\end{thebibliography}

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