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Single-Spin Asymmetry in J/ψ Production in Proton-Proton Collision

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Among the eight leading twist gluon TMDs, gluon Sivers function (GSF) has been the limelight in hadron physics. GSF is not yet known fully, though attempts have been made. The J/ψ production has been advertised to probe the gluon TMDs. In this talk, we present the calculation of single-spin asymmetry (SSA) in $pp^{\uparrow} \to J/\psi + X$ process to probe the unknown GSF within the generalized parton model (GPM) framework. The non-relativistic QCD (NRQCD) framework is employed for calculating color singlet and color octet states of J/ψ. Finally, we compare the unpolarized differential cross section with PHENIX and CDF data in the low P_T region.

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