

Azimuthal asymmetries in back-to-back J/psi-jet and J/psi-photon production at the EIC

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We present a calculation of the azimuthal asymmetries in back-to-back production of J/psi-jet and J/psi-photon at the future electron-ion collider (EIC). We use NRQCD to estimate the J/psi production, and assume TMD factorization for the back-to-back kinematics. We show that these asymmetries will be useful for probing the gluon TMDs, like the linearly polarized gluon TMD, in unpolarized scattering, and gluon Sivers function, when the proton is transversely polarized. We give estimates of the upper bound of the asymmetries, as well as using different parametrizations of the gluon TMDs. We investigate the effect of TMD evolution on the asymmetry.

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