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Accessing linearly polarized gluon TMD in back-to-back J/ψ and jet production at the EIC

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We present a calculation of the $\cos 2\phi$ azimuthal asymmetry in $e\ p \rightarrow e\ J/\psi\ Jet\ X$, where $J/\psi - Jet$ pair is almost back-to-back in the transverse plane, within the framework of the generalized parton model (GPM) and assuming TMD factorization. This probes the Weisz{\"a}ker-Williams type linearly polarized gluon distribution. We calculate the asymmetry using non-relativistic QCD (NRQCD) for the production of J/ψ incorporating both color singlet and color octet contributions. We study the dependence of the asymmetry on the parametrizations of the gluon TMDs used, as well as the impact of TMD evolution on the asymmetry. We present numerical estimates in the kinematical regions to be accessed by
the future EIC.

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