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Suppression of gluon polarization in angular asymmetries

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First we perform a phenomenological analysis of the $\cos 2\phi$ azimuthal asymmetry in virtual photon plus jet production induced by the linear polarization of gluons in unpolarized pA collisions. Employing a small-x model input distribution, the asymmetry is found to be strongly suppressed under TMD evolution, but still remains sufficiently large to be measurable in the typical kinematical region accessible at RHIC or LHC at moderate photon virtuality, whereas it is expected to be negligible in Z/W-jet pair production at LHC. We also investigate the energy evolution of the dipole type T-odd gluon TMDs inside a transversely polarized hadron, which unify at small x. The preliminary results shows that these TMDs are also suppressed under TMD evolution.

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