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Nuclear Modification of Dijet at EIC

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We study the nuclear modification for the large Bjorken-x dijet cross-section in eA deeply in-elastic scattering (DIS) process for electron-ion collider (EIC) kinematics. We use the generalized High-Twist approach in our calculation, which do not perform twist expansion. Under small longitudinal momentum transfer approximation, the nuclear modified cross section can be approximately factorize as large-x quark TMD distribution and small-x gluon TMD distribution. The nuclear modified dijet cross section contains Non-LPM terms, quark LPM terms and gluon LPM terms. The Landau-Pomercanchuk-Migdal (LPM) terms bring the non-linear nuclear size dependence for nuclear modification ratio of the large-x dijet.
The saturation effect can be included in the small-x gluon TMD distribution. We show that the jet pT dependence and the azimuthal angle dependence can help to locate the saturation scale Q_s. The nuclear modification ratio decreases with rapidity difference of the dijet increase. The initial quark pT broadening suppresses the nuclear modification ratio. The nuclear modification of the large-x dijet cross-section can probe the nucleon gluon TMD distribution and the jet transport coefficient.

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