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Single transverse-spin asymmetry for D -meson production in semi-inclusive deep inelastic scattering ZHONGBO KANG, JIANWEI QIU, Iowa State University — We study the single-transverse spin asymmetry for open charm production in the semi-inclusive lepton-hadron deep inelastic scattering. We calculate the asymmetry in terms of the QCD collinear factorization approach for D mesons at high enough $P_{h\perp}$, and find that the asymmetry is proportional to the twist-three tri-gluon correlation function in the proton. With a simple model for the tri-gluon correlation function, we estimate the asymmetry for both COMPASS and eRHIC kinematics, and discuss the possibilities of extracting the tri-gluon correlation function in these experiments. The SSA for open charm production in pp collision at RHIC is also discussed.

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