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## On the $\sin \phi_R$ azimuthal asymmetry single longitudinal-spin asymmetry in dihadron production in SIDIS

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We study the single longitudinal-spin asymmetry of dihadron production in semi-inclusive deep inelastic scattering process in which the transverse momentum of the final-state hadron pairs is integrated out. In Particular, we investigate origins of the  $\sin \phi_R$  azimuthal asymmetry for which we take into account the coupling of the twist-3 distributions  $h_L$  and the dihadron fragmentation function (DiFF)  $H_{1,ot}^{sphericalangle}$  as well as the coupling of the helicity distribution  $g_1$  and the twist-3 DiFF  $\tilde{G}^{sphericalangle}$ . To this end The unknown twist-3 dihadron fragmentation function  $\tilde{G}^{sphericalangle}$  is calculated in a spectator model which is successful in describing the dihadron production in unpolarized process. We estimate the  $\sin \phi_R$  asymmetry of dihadron production in SIDIS at the kinematics of COMPASS and compare it with the preliminary COMPASS data. In addition, we make a prediction on the  $\sin \phi_R$  asymmetry at the typical kinematics of future EIC. Although the asymmetry is dominated by the  $h_L H_1^{sphericalangle}$  term, we find that the contribution from the  $g_1 \tilde{G}^{sphericalangle}$  term should also be taken into account in certain kinematical region.

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