Light-Cone 2024: Hadron Physics in the EIC era



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A new kind of TMDs inspired by the factorization theorem

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We introduce and explore a new type of k_{\perp} -dependent functions. The existence of this kind of TMDs has been stemmed from the factorization theorem and they are initiated by the interactions encoded in the corresponding correlators. In contrast to the well-known transverse momentum dependent function, the new functions can be associated with the collective alignment of quark spin vectors. Moreover, the new functions are sensitive to the transverse motion of partons inside hadrons, which are linked to the spin alignment of partons.

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