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Analysis of the higher twist GTMD F_{31} for proton in the light-front quark-diquark model.

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In the light-front quark-diquark model (LFQDM), the higher twist generalized transverse momentum dependent distribution (GTMD) $F_{31}(x, \mathbf{p}_\perp^2, {}_\perp^2)$ for the proton has been analyzed. We have derived the GTMD overlap equation by the analysis of GTMD correlator, employing the light-front wave functions in both the scalar and vector diquark situations. With the relevant 2-D and 3-D figures, the behavior of GTMD $F_{31}(x, \mathbf{p}_\perp^2, {}_\perp^2)$ with variations in its variables has been illustrated. Further, on applying the transverse momentum dependent distribution (TMD) limit on GTMD $F_{31}(x, \mathbf{p}_\perp^2, {}_\perp^2)$, the expression of TMD $f_3(x, \mathbf{p}_\perp^2)$ has been obtained.

Submitted on behalf of a Collaboration?

Yes

Participate in poster competition?

No

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