Contribution ID: **71** Type: **Poster**

Understanding photon TMDs with light front wavefunction

Tuesday 24 September 2024 18:10 (20 minutes)

We have calculated all the T-even photon transverse momentum dependent parton distribution functions (TMDs) using light front wave function. For this work, we have considered photon as a Fock-state of quark antiquark pair. All the 9 T-even TMDs have been presented in the overlap and explicit form of light front wave function. We have found that our result arecoming similar to basic light front quantization (BLFQ) result. Only 3 TMDs are non-zero for the case of real photon, while there are 7 for virtual photon.
We have also presented the unpolarized real photon parton distribution functions (PDFs) in our calculations.

Category

Theory

Collaboration

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Session Classification: Poster Session

Track Classification: 2. High momentum hadrons and correlations