Gluon Transverse Momentum Distributions in a spectataor model

We develop a light-front spectator model for a proton that incorporates the gluonic degree of freedom, where the active parton is a gluon, and the remaining is seen as a spin-$\frac{1}{2}$ spectator of an effective mass. The light front wave functions of the proton state are built using a soft wall AdS/QCD prediction and parameterized by fitting the gluon unpolarized parton distribution function to the NNPDF3.0nlo data set. Further we calculate the T-even gluon transverse momentum dependent parton distributions (TMDs) by using the overlap representation of the LFWFs.

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