

Unintegrated gluon distributions in the BGK saturation model

Thursday 18 July 2024 17:15 (15 minutes)

We evaluate the unintegrated gluon distribution of the proton starting from a parametrization of the color dipole cross section including Dokshitzer–Gribov–Lipatov–Altarelli–Parisi (DGLAP) evolution and saturation effects. To this end, we perform the Fourier-Bessel transform of $\sigma(x, r)/\alpha(r)$. At large transverse momentum of gluons we match the so-obtained distribution to the logarithmic derivative of the collinear gluon distribution. We check our approach by calculating the proton structure function $F_L(x, Q^2)$ finding good agreement with HERA data.

References

Phys. Lett. B 835 (2022) 137582.

Alternate track

I read the instructions above

Yes

Primary authors: Dr ŁUSZCZAK, Agnieszka (Cracow University of Technology & DESY Hamburg); ŁUSZCZAK, Marta; SCHAEFER, Wolfgang

Presenter: ŁUSZCZAK, Marta

Session Classification: Strong interactions and Hadron Physics

Track Classification: 06. Strong Interactions and Hadron Physics