

Abstract Submitted
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An analytic solution to LO coupled DGLAP evolution equations for $F_2^{\gamma p}(x, Q^2)$ and $G(x, Q^2)$ PHUOC HA, Towson University — We have analytically solved the leading-order Dokshitzer-Gribov-Lipatov-Altarelli-Parisi (DGLAP) equations for the Q^2 evolution of the structure function $F_2^{\gamma p}(x, Q^2)$ and the gluon distribution $G(x, Q^2)$ using very efficient Laplace transform techniques. Employing the initial distributions $F_2^{\gamma p}(x, Q_0^2)$ and $G(x, Q_0^2)$ fixed by a global fit to the HERA combined data on deep inelastic ep scattering and the very small non-singlet MSTW2008LO distributions at the initial energy Q_0^2 , we have calculated the evolved proton structure function $F_2^{\gamma p}(x, Q^2)$ and compared our results with the HERA combined data.

Phuoc Ha
Towson University

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