## Polarized Deuteron Structure Functions at Small $x$[1] ◇

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We investigate shadowing corrections to the polarized deuteron structure functions $g_1^d$ and $b_1$. In the kinematic domain of current fixed target experiments we observe that shadowing effects in $g_1^d$ are approximately twice as large as for the unpolarized structure function $F_2^d$. Furthermore, we find that $b_1$ is surprisingly large at $x < 0.1$ and receives dominant contributions from coherent double scattering.

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## Analytic Approximation to the GLAP Evolution of $F_2(x,Q^2)$ in the small-$x$ Region ◇

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We propose a systematic approximation scheme for solving GLAP evolution equations at small Bjorken-$x$. The approximate solutions interpolate smoothly between hard (singular as $x^{-(l+\lambda)}, \lambda > 0$) and soft (singular at most as $x^{-1}$) initial conditions and may be applied in a wide range of $Q^2$. The small-$x$ behaviour of $F_2^p(x,Q^2)$ which is extracted from a fit to HERA data agrees with results from a global fit.

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## Chiral-Odd Transversity Spin Structure Function $h_1(x)$ of the Nucleon in a Constituent Quark Model ◇

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We study the chiral-odd transversity spin-dependent quark distribution function $h_1(x)$ of the nucleon in a constituent quark model. The twist-2 structure functions, $f_1(x)$, $g_1(x)$ and $h_1(x)$ are calculated within the diquark spectator approximation. Whereas an inequality $f_1(x) > h_1(x) > g_1(x)$ holds with the interaction between quark and diquark being scalar, the axial-vector effective quark-diquark interaction, which contributes to the $d$-quark distribution, does not lead to such a simple relation. We find that $h_1(x)$ for the $d$-quark becomes somewhat smaller than $g_1^d(x)$, when we fix the model parameter to reproduce known other structure functions. We also include corrections due to the non-trivial structure of the constituent quark, which is modeled by the Goldstone boson dressing. This improves agreements of $f_1(x)$ and $g_1(x)$ with experiments, and brings further reduction of $h_1^d(x)$ distribution. Consequences for semi-inclusive experiments are also discussed.

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