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First analysis of world polarized SIDIS data with small-x helicity evolution

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We use small-x helicity evolution equations to analyze the world polarized DIS and Semi-inclusive DIS (SIDIS) data. After successfully describing the g_1 structure function extracted from polarized DIS, we extend this analysis to the small-x g_1^h structure function measured in polarized SIDIS. The fit is performed through a Monte-Carlo analysis within the JAM global framework. Combining the DIS and SIDIS data we are able to extract the individual helicity PDFs for both the light quarks and light anti-quarks. The advantage of our approach is that our evolution predicts the small-x behavior of these helicity distributions, allowing for a precise extrapolation of our helicity PDFs to smaller values of x, in the region that cannot be accessed experimentally. This brings us one step closer to resolving the proton spin problem.

Submitted on behalf of a Collaboration?

No

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