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The effect of light sea quark symmetry breaking on polarized nucleus and sum rules

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The polarized structure functions of ^3He and ^3H nuclei are calculated in NLO approximation, considering and disregarding the light sea quark symmetry breaking. We employ the polarized structure function of the nucleons within the nucleus extracted from our two recent analyses on polarized DIS data and on polarized DIS+SIDIS data. Since the data of the second analysis cover a bigger range of Bjorken variable, both $\text{SU}(2)$ and $\text{SU}(3)$ symmetry breaking is considered within the analysis. Then we calculate and compare the polarized structures of nuclei extracted from both scenarios. Also the Bjorken and ELT sum rule is calculated using the moments of structure functions. Finally, it is observed that most of the results of the phenomenological model with symmetry breaking are better compatible with the experimental results and predictions.

In-person participation

No

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