

Abstract Submitted
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New results on spin structure functions at very low momentum transfers from Hall B in Jefferson Lab KRISHNA ADHIKARI, Mississippi State University — In this talk, I will present new results from the Jefferson Lab's EG4 experiment with CLAS detector, which measured the double polarized cross section difference on NH₃ and ND₃ (with both electron beam and targets longitudinally polarized) down to $Q^2 = 0.02 \text{ GeV}^2$. From this high precision, and low momentum transfer data, the spin structure g_1 and its moments are extracted. The new results help us shed more light on the nucleon spin structure in the region of quark-confinement as well as in the transition region between hadronic and partonic degrees of freedom by providing data to test various predictions for moments of structure functions from sum rules and QCD based effective theories such as Chiral Perturbation Theory (χ PT) as well as from phenomenological models. At very low momentum transfers ($Q^2 \rightarrow 0$), the first moment (Γ_1) of structure function g_1 is constrained by the GDH sum rule and its χ PT extensions, which makes measurements of g_1 in this region uniquely interesting.

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