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Deuteron Spin Structure function g_1 at low Q^2 KRISHNA ADHIKARI, SEBASTIAN KUHN[1], Old Dominion University, CLAS COLLABORATION — The spin structure function $g_1(x, Q^2)$ and its moments provide crucial information on the internal structure of the nucleon. At low momentum transfer Q^2, one can study the transition from partonic (quark-gluon) to hadronic (nucleonic) degrees of freedom and test effective theories based on QCD, for instance Chiral Perturbation Theory (ChPT). As Q^2 goes to zero, the first moment of g_1 is constrained by the GDH sum rule and its ChPT extensions, which makes measurements of g_1 in this region uniquely interesting. As part of the large program of spin structure function measurements with CLAS at Jefferson Lab, the EG4 experiment measured the cross section difference between electron beam and proton/deuteron target spins parallel and antiparallel to each other (and the beam direction) down to small scattering angles (approx. 7 degrees). From these differences, g_1 can be extracted, with minimal model uncertainties, down to Q^2 as low as 0.01 GeV^2. We will give a brief overview of the experiment and its analysis, and present first preliminary results on the deuteron spin structure function $g_{1d}(x, Q^2)$.

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