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The proton spin-dependent structure function g2 at low Q2

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Measurements of the nucleon spin-dependent structure functions have provided powerful tools to test the validity of effective theories of Quantum Chromodynamics (QCD). The neutron spin structure functions, gn1 and gn2, and the proton spin structure function, gp1, have been measured over a wide kinematic range. However, the proton spin structure function, gp2, is mostly unknown. Recently an experiment (E08-027, also named G2P) is carried out at Jefferson Lab in Hall A to measure the proton g2 structure function in the low momentum transfer region covering 0.02 < Q2 < 0.20(GeV2). In this kinematic region, this experiment allows us to extract the generalized longitudinal-transverse spin polarizability (δ LT) in order to provide benchmark test to the Chiral Perturbation Theory (χ PT), and also to test the Burkhardt-Cottingham sum rule at low Q2. The details of the experiment and the preliminary results will be presented.

Presenter: ZHANG, Jixie (University of Virginia) **Session Classification:** Helicity

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