

Probing the Spin Structure of the Nucleon: Recent Results and Upcoming Measurements of SSF and their moments at JLab

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The last several years of Jefferson Lab's 6-GeV physics program saw a wealth of nucleon spin structure measurements run across several Halls. In particular, E06-014 (d_2^n) in Hall A (polarized neutron), and E07-003 (SANE) in Hall C (polarized proton) took advantage of significant advances in target design and new/upgraded large solid angle detector packages to run precision measurements of neutron and proton spin structure functions (SSFs) over a broad range in x and Q^2 during the 6 GeV era. These measurements of g_1 , g_2 , spin asymmetries A_1 , A_2 and the associated higher twist reduced matrix element d_2 are fundamentally coupled to quark-gluon interactions and transverse momentum of the quarks in the nucleon, and are among the cleanest higher twist observables we can access. Those now-final data on the neutron and proton will be revisited, and upcoming measurements that exploit JLab's 12-GeV upgrade will be presented.

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