

Abstract Submitted
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Probing quark-gluon interactions with transverse polarized scattering¹ OSCAR RONDON, University of Virginia, RSS [RESONANCES SPIN STRUCTURE] COLLABORATION — Transverse polarized inelastic scattering extends the power of the electromagnetic interaction as a probe of nucleon dynamics beyond the leading order regime explored with longitudinally polarized DIS. The latter revealed the surprising result of the “spin defect” in the quark contribution to the nucleon spin, obtained from measurements of the leading twist g_1 spin structure function (SSF). In transverse polarized scattering, the twist-3 g_2 SSF contributes at the same order as g_1 , so interactions between quarks and gluons can be studied, opening a window on the mechanisms of confinement. In this talk I will report the results of Jefferson Lab’s Resonances Spin Structure (RSS) experiment measurement of the moments of g_2 and the d_2 twist-3 quark matrix element at a four-momentum transfer of 1.3 GeV^2 . The extension of RSS physics by the related JLab Spin Asymmetries of the Nucleon Experiment - SANE, that covers the momentum transfer range from 2.5 to 6.5 GeV^2 , will be reviewed.

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