The Final HERMES Data on g_1^p and g_1^n and their Impact on QCD Analyses

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Precise measurements of the spin structure functions of the proton and deuteron are presented in the kinematic range $0.0041<x<0.9$ and $0.26<Q^2<15$ GeV^2. These results base on a refined analysis and are corrected for radiative and detector smearing effects using an unfolding algorithm that accounts for kinematic migrations of events. The presently most precise determination of the spin structure function of the neutron is accomplished by combining the HERMES deuteron and proton data. Its behavior in the region $x<0.03$ does not support earlier conjecture of a dramatic drop-off of $g_1^n(x)$ for $x \rightarrow 0$, based on previous data.

These new HERMES data are used in an NLO QCD analysis of the inclusive world data including also new COMPASS deuteron and JLAB neutron data. In this analysis emphasis is put on the investigation of systematic uncertainties. The impact of the new data will be demonstrated.