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Review of recent direct gluon polarization measurements

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Starting with the discovery of EMC that quarks are not the only building blocks of the nucleon spin its structure has been a topic of intense studies for numerous experiments. With precision measurements of quark and gluon polarisations by SMC, HERMES, COMPASS, STAR and PHENIX collaborations we are closing to an answer. The quark contribution is already determined with good accuracy and results of determination of the gluon contribution will be presented hereafter. However this does not solve the puzzle of the nucleon spin and impact of partons orbital motion is actively pursued in Deeply Virtual Compton Scattering (DVCS) experiments at Jefferson Laboratory and COMPASS.

While precise asymmetry measurements from polarised colliders (RHIC) provide input for global NLO QCD fits with great success, more direct measurements of gluon polarisation are possible with fixed target experiments. Both HERMES and COMPASS collaborations have performed such measurements in several channels. These results provide important contribution as they are independent of assumptions about behaviour of Δg outside of the measured region.

Hereafter we review the recent results of gluon polarization measurements which finally indicate a small but non zero gluon contribution to the nucleon spin with focus on fixed target experiments.

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