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Results on longitudinal spin physics at COMPASS

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The COMPASS experiment at the CERN SPS has taken data for deep inelastic scattering of polarised muons on a polarised NH_3 target in 2007 and 2011 and on a polarised LiD target in 2002-2004 and 2006.

We will present our new results on the longitudinal double spin asymmetry A_1^p and the spin-dependent structure function g_1^p obtained from the 2011 data set. These results are used in a NLO QCD fit to the world data to obtain the polarised parton distributions. Also an update on our results on the Bjorken sum rule, connecting the integral of the non-singlet spin-dependent structure function with the ratio of the weak coupling constants, will be given.

Direct access to the gluon polarisation is possible via the photon gluon fusion process in semi-inclusive deep inelastic scattering. This process is studied using the p_T dependence of charged hadron asymmetries. The latest results indicate a positive gluon polarisation in the kinematic region of COMPASS.

Author: WILFERT, Malte Christian (Johannes-Gutenberg-Universitaet Mainz (DE))

Presenter: WILFERT, Malte Christian (Johannes-Gutenberg-Universitaet Mainz (DE))

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