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Final results on the spin dependent structure function g_1^d from COMPASS

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The COMPASS experiment at CERN SPS has taken data with a polarised muon beam scattering off a polarised LiD target from 2002-2004. The same measurement was also performed in 2006 increasing the statistics by roughly a factor of two.

The new results from 2006 data on the longitudinal double spin asymmetry A_1^d on the spin dependent structure function g_1^d will be shown and compared to the previous results from 2002-2004. Using the combined data set the first moment of g_1^d is calculated. This quantity is used to calculate the singlet axial charge a_0 , which is equal to $\Delta\Sigma$ in the $\overline{\text{MS}}$ scheme. Using also the axial charges a_3 and a_8 the first moments of the quark helicity distributions are obtained. In addition the influence on the Bjorken sum rule will be discussed.

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