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New results on quark helicity distributions and gluon polarization from the COMPASS experiment at CERN

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The new results on quark helicity distributions and on gluon polarization Delta_G/G from the COMPASS experiment will be presented. COMPASS is polarized DIS experiment using polarized muons with an energy of 160 GeV scattered off a polarised deuteron and proton targets. Quark helicity distributions are obtained from inclusive and semi-inclusive reactions from 2002-2004 and 2006 deuteron data and from 2007 proton data. The gluon polarisation Delta_G/G is determined from photon-gluon fusion (PGF)events. Two methods based on LO QCD approximation are used to extract PGF events: the selection of open-charm events via observation of D0 and D* mesons or a pairs of high-pT hadrons. The open-charm result is obtained from the data collected in 2002-2006 and it is updated with additional charm contributions. For these contributions a new method of the signal strength parameterization based on a neural network classification is used. The high-pT hadron pair result is obtained from 2002-2004 data using a new method of accounting for background processes.

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