

# Valence quark polarization from COMPASS

*Tuesday 17 April 2007 14:20 (20 minutes)*

A first evaluation of the polarized valence quark distribution  $\Delta u_v(x) + \Delta d_v(x)$  from the COMPASS experiment (CERN/SPS) is presented. The data were collected by COMPASS in the years 2002–2004 using a 160 GeV polarized muon beam scattered off a large polarized  $^6\text{LiD}$  target and cover the range  $1 < Q^2 < 100 (\text{GeV}/c)^2$  and  $0.006 < x < 0.7$ . The analysis is based on the difference asymmetry,  $A^+(h^+ - h^-)$ , for hadrons of opposite charges. This approach gives a direct access to the valence quark helicity distributions because fragmentation functions cancel out in LO QCD, so that the expression for the difference asymmetry is given by the ratio of polarized to unpolarized valence quark distributions. Due to this very weak sensitivity to uncertainties coming from the fragmentation, the results derived from  $A^+(h^+ - h^-)$  can be used as a crosscheck for those obtained from single hadron asymmetries as in the SMC and HERMES analyzes.

**Author:** KORZENEV, Alexander (Mainz University)

**Presenter:** KORZENEV, Alexander (Mainz University)

**Session Classification:** Spin Physics

**Track Classification:** Spin Physics