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Transverse target spin asymmetries on a proton target at COMPASS - on behalf of the COMPASS collaboration

Saturday, July 18, 2009 9:00 AM (25 minutes)

Three distribution functions are needed to fully describe the nucleon at leading twist: the unpolarized distribution function q(x), the helicity distribution function $\Delta q(x)$ and the transversity spin distribution function $\Delta_T q(x)$. Transversity and transverse momentum-dependent parton distribution functions (TMDs) are been measured in semi-inclusive deep inelastic scattering (SIDIS) by using a a transversely polarized target at the COMPASS experiment. COMPASS is a fixed target experiment at the CERN M2 beamline, which provides a 160 GeV/c polarized μ^+ beam. In the years 2002-2004 COMPASS has collected data with the ^{6}LiD target polarization oriented transversely with respect to the muon beam direction for about 20% of the running time, to measure these transverse spin effects. In 2007, COMPASS has used for the first time a proton NH_3 target with the data taking time equally shared between longitudinal and transverse polarization of the target. The Collins and Sivers asymmetry from the 2007 run will be presented and commented here; furthermore an overview of the results obtained with a deuteron target will also be given.

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