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COMPASS results on transverse spin asymmetries in two-hadron production in SIDIS

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For each quark flavour three independent parton distribution functions (PDF) are necessary to describe the nucleon at twist-two level, the quark distribution $f_1(x)$, the helicity distribution $g_1(x)$ and the transversity distribution $h_1(x)$. The transversity distribution function is chiral-odd and therefore is not accessible in deep inelastic scattering (DIS). However, $h_1(x)$ can be observed in semi-inclusive DIS in combination with another chirally odd function like the two-hadron interference fragmentation function (IFF) in two-hadron production, which is the subject of this contribution. The 160 GeV/c polarized μ^+ beam of CERN's M2 beamline allows COMPASS to investigate the spin structure of the nucleon using polarized solid state targets. After taking the first data on a transversely polarized proton target NH_3 in 2007, a full year of data taking followed in 2010 to increase precision. In this contribution the latest results from the 2010 data for the azimuthal asymmetries in two-hadron production are presented, as well as the corresponding results on a polarized deuteron target ^6LiD from the data taken in the years 2002-2004. An extraction of $h_1(x)$ via a coupling to the two-hadron IFF has been carried out for the 2007 data.

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