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COMPASS results on the transverse spin asymmetry in identified dihadron production in SIDIS

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The parton distribution function $h_1^q(x)$ of a transversely polarized quark q inside a transversely polarized nucleon, is chiral-odd and therefore not accessible in inclusive deep-inelastic scattering. It can however be observed in semi-inclusive deep-inelastic scattering (SIDIS) in combination with another chiral-odd function, for instance the dihadron interference fragmentation function (DiFF) $H_1^{\langle q}$. The 160 GeV/c polarized muon beam of CERN's M2 beamline allows COMPASS to investigate transverse spin effects using polarized solid-state targets. In this contribution an overview of COMPASS results for the azimuthal asymmetry in identified dihadron production is given. Pions and kaons were identified by a RICH detector. Recently, the full set of this asymmetry from the COMPASS data on the deuteron and the proton target became available. All data, including early data sets, were analyzed using the same methods and requirements. The results are compared to model predictions and HERMES data. Furthermore an extraction of the transversity distribution function $h_1(x)$ for u and d quarks was carried out with this full data set.

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