

Study of the hadron structure using the polarised Drell-Yan process at COMPASS

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The COMPASS experiment at CERN is one of the leading experiments studying the nucleon structure. Until 2012 the Parton Distribution Functions (PDFs) and the Transverse Momentum Dependent Parton Distribution Functions (TMDs) were extensively studied at COMPASS using Semi-Inclusive Deep Inelastic Scattering (SIDIS) measurements. In 2015 the data taking was dedicated to the study of the polarised Drell-Yan (DY) process. COMPASS scattered a negative pion beam of 190 GeV/c off a transversely polarised proton target, with the goal of accessing the TMDs of both hadrons (pions and protons) without any prior knowledge on fragmentation functions. The TMDs are determined from target polarisation (in)dependent azimuthal asymmetries, which in turn are extracted from pairs of oppositely charged muons coming from the polarised DY process. Since the DY data covers the same kinematic region of the SIDIS data, COMPASS has the unique opportunity to test the sign change of the Sivers TMD as predicted by QCD. Preliminary results of the DY analysis will be presented.

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