

Weighted transverse spin asymmetries in 2015 COMPASS Drell–Yan data

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In 2015 at the COMPASS experiment at CERN a pion beam with momentum of 190 GeV/c interacted with a transversely polarised NH₃ target. Muon pairs produced in the Drell–Yan process were detected. In addition to the extraction of the transverse spin asymmetries (TSAs) from this data, a complementary analysis of the TSAs weighted by powers of the dimuon momentum q_T has been done and will be presented in this talk. In the transverse momentum dependent parton distribution functions (TMD PDFs) formalism, the q_T -weighted TSAs can be interpreted in terms of products of the TMD PDFs of the beam pion and transversely polarised target proton, unlike the conventional TSAs, which are interpreted as their convolutions. This allowed us to make a straightforward comparison with the expectation based on the weighted Sivers asymmetry measured in the SIDIS process. Information on the Boer–Mulders function of the pion have also been obtained and will be presented.

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