

Joint 20th International Workshop on Hadron Structure and Spectroscopy and 5th workshop on Correlations in Partonic and Hadronic Interactions



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Transverse-Spin Dependent Azimuthal Asymmetries in COMPASS Drell-Yan data

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The investigation of Transverse-Spin Dependent Azimuthal Asymmetries in the Drell-Yan process provides a key insight into the spin-dependent structure of nucleons, particularly testing the restricted universality of Transverse-Momentum Dependent Parton Distribution Functions. During the 2015 and 2018 data-taking periods, the COMPASS Collaboration at CERN measured the $\pi^- p \rightarrow \mu^+ \mu^- X$ reaction, using a 190 GeV/c pion beam and a transversely polarized NH_3 target. This analysis examines Transverse Spin Asymmetries in the Drell-Yan process, introducing a new weighting method in which the asymmetries are weighted by powers of the transverse momentum of the dimuon system relative to the beam direction. This approach allows for the direct extraction of specific k_T^2 moments of the Transverse-Momentum Dependent Parton Distribution Functions. The combined results from these measurements will be presented.

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