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COMPASS Measurements of Asymmetry Amplitudes in the Drell-Yan Process Observed from Scattering Pions off a Transversely Polarized Proton Target

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In 2015 the COMPASS collaboration at CERN studied the Drell-Yan process with a 190 GeV/c π^- beam on a transversely polarized ammonia target. From single-spin asymmetries COMPASS was able to determine amplitudes related to the proton Sivers, transversity and pretzelosity transverse momentum dependent (TMD) distributions. The most notable of these TMDs is the Sivers function which has semi-universality and is predicted to change sign between the Drell-Yan and semi-inclusive deep inelastic scattering (SIDIS) processes. COMPASS has previously measured a non-zero Sivers amplitude from SIDIS and therefore COMPASS offers a unique opportunity, with a similar experimental setup and kinematic domain, to definitely conclude on the sign change between the Drell-Yan and SIDIS processes. The data analysis and results of the 2015 Drell-Yan COMPASS data taking will be presented in this talk.

Experimental Collaboration

Presenter: Mr HEITZ, Robert (University of Illinois)

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