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Nucleon Spin Structure from Experiments using the Drell-Yan Process

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In spite of its apparent simplicity, the Drell-Yan process continues to attract increasing levels of interest both in experiment and theory. Spin dependent Drell-Yan scattering provides unique access to transverse momentum dependent distribution functions of the nucleon, while the parton structure of unstable mesons can be probed from the unpolarized Drell Yan case.

Drell-Yan scattering mediated by photons or Z-bosons is currently being studied through collider experiments at LHC and RHIC, as well as through measurements with fixed target spectrometers at FNAL and CERN. Future experiments in Europe (CERN, JINR), Japan (JPARC) and the USA (FNAL, RHIC) are also being planned. The complementarity of this wide range of measurements will be discussed.

Early experimental results on Drell-Yan dilepton angular distributions will be revised in line with their modern interpretations. Recent results from STAR on polarized Drell-Yan and LHC experiments on unpolarized Drell Yan will be discussed. Finally, first preliminary results from COMPASS measurements of pion induced Drell-Yan off a transversely polarized proton target will be presented.

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