

Abstract Submitted  
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**Probing Nucleon Structure in Drell-Yan and J/Psi production at COMPASS**<sup>1</sup> APRIL TOWNSEND, University of Illinois at Urbana-Champaign, COMPASS COLLABORATION — COMPASS is a fixed target experiment in the North Area of CERN. One of the primary goals of its broad physics program is to study the transverse momentum dependent (TMD) parton distribution functions (PDFs) that describe the spin structure of nucleons. To extract observables related to TMD PDFs, COMPASS uses both Semi-Inclusive Deep Inelastic Scattering (SIDIS) and the Drell-Yan (DY) process. Results related to the quark Sivers functions are especially interesting, as these functions are expected to change sign between SIDIS and DY. Here we focus on the DY portion of the COMPASS program. In 2015 and 2018, COMPASS collected DY data by scattering a negative pion beam off a transversely polarized ammonia target. The most recent COMPASS results agree with the predicted sign flip of the Sivers function between SIDIS and DY. During the DY runs, COMPASS also recorded many J/Psi events. Single-spin asymmetries in J/Psi production may give access to the gluon Sivers function and may improve our understanding of the J/Psi production mechanism. The reconstruction of raw experimental and Monte-Carlo data, necessary to perform physics analysis, was primarily realized exploiting the parallel computing resources of the Blue Waters supercomputer at NCSA and the Frontera supercomputer at TACC.

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