

Abstract Submitted
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Drift

Chamber Construction for COMPASS-II Upgrade MICHAEL DAUGHERITY, Abilene Christian University — COMPASS-II at CERN is preparing to make the world's first spin-dependent Drell-Yan (DY) measurement using a 190 GeV π^- beam on a transversely polarized target. DY processes are ideally suited to probe quark distributions using an elementary interaction and no uncertainties from fragmentation. These processes will primarily originate from fusion of valence quarks, where the \bar{u} quark from the pion interacts with the u quark. This program provides the first ever test of the fundamental prediction that the sign of the u quark Sivers function is opposite for DY and SIDIS. To enable this measurement, a new drift chamber named DC5 is being constructed at Old Dominion University based on the existing COMPASS DC4 chamber by CEA-Saclay and two recent prototypes built at the University of Illinois. DC5 is 2.88 by 2.48 meters and consists of 8 anode planes with 256 sense wires evenly spaced at a 4mm distance from the field wires. The four tilted planes each have an additional 64 sense wires to provide complete coverage in the corners of the detector, making a total of 2304 sense and 2312 field wire with respective diameters of 20 and 100 μm . This presentation will cover the details of the construction project and integration of DC5 into the COMPASS-II spectrometer.

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