

Abstract Submitted
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Wiring of Drift Chamber 5 for COMPASS¹ LACEY MEDLOCK,
Abilene Christian University — COMPASS is a fixed-target experiment at CERN and the first ever to examine polarized Drell-Yan events, which may help illuminate how the quark angular momentum contributes to the spin of the proton. The Drell-Yan events are produced using a 190 GeV pion beam on a proton target. In order to detect the muon pairs, a drift chamber was integrated into the COMPASS spectrometer, replacing an older straw chamber. The chamber consists of 23 parallel frames measuring 2.94 m by 2.54 m. Eight of those frames are anode frames with 20 micron sense wires and 100 micron field wires supplying voltage and relaying the signal received, with a total of 4616 wires. The wires are soldered very precisely in order to ensure high positional accuracy and to prevent arcing, as the wires are 4 mm apart. The wired frames are constructed such that there are four frames measuring horizontal and vertical position, and the remaining four frames measure with a ten degree offset in either the x or y direction to give a higher positional accuracy. To ensure detection accuracy and chamber longevity, the wires had to undergo many different tests, including electrical conductivity, tension testing, and alignment checking.

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