

Abstract Submitted
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A Drift Chamber to Measure Charged Particles at COMPASS-II¹

ROBERT HEITZ, University of Illinois at Urbana-Champaign, COMPASS COLLABORATION — A new drift chamber (DC05) will be constructed to replace two tracking detector stations based on straw tubes, ST02 and ST03 in the COMPASS spectrometer. DC05 uses the designs from DC04, a previous drift chamber designed at CEA-Saclay, France, but adds the addition of more wires for improved acceptance. In addition to more wires DC05 will also change its front end electronics using a new pre-amplifier-discriminator chip (CMAD). DC05 consists of 8 layers of anode planes and 21 layers of G-10 material frames carrying cathode planes and gas windows. The wires are orientated with two layers in the vertical x-direction, two layers in the horizontal y-direction, two layers offset +10deg of the vertical x-direction, and two layers offset -10deg of the vertical x-direction. The wires in parallel directions are offset half a pitch to resolve left-right ambiguities. The purpose for different wire orientations is to reconstruct the 3D space particle trajectory to fit a particle track. Each layer of wires is covered on the top and bottom by a cathode plane of carbon coated mylar. All these layers are sandwiched between two steel stiffening frames for support and noise reduction. A future drift chamber, DC06, is also being designed based off of DC05.

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