A Large-Area Planar Drift Chamber for the COMPASS Experiment at CERN

The large-area planar Drift Chamber 5 (DC05) was constructed in 2014 and 2015 at the University of Illinois and Old Dominion University to replace an aging detector in COMPASS at CERN. It was assembled at CERN and installed to the large angle spectrometer of COMPASS during the spring of 2015. It has a sense-wire to sense-wire pitch of 8 mm, an active area of approximately 249x209 cm^2, and an expected position resolution of 200-250 microns. Drift Chamber 5 includes 8 views, 4 of which measure coordinates in the horizontal and vertical axes as well as 4 views which measure $\pm$ 10 degrees about the horizontal axis for increased multiplicity ambiguity. COMPASS successfully collected Drell-Yan data in 2015 with DC05 included and DC05 is an important part of the COMPASS spectrometer for the 2016 and 2017 Generalized Parton Distribution runs. By comparing particle tracks reconstructed using COMPASS detectors with hits registered in DC05, the resolution and efficiency of DC05 are being determined to evaluate the performance of this drift chamber.