

Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

GARFIELD Computer Program Simulation of the COMPASS Drift Chamber 5¹ SEUNG JOON OH, Univ of Illinois - Urbana — COMPASS is a nuclear physics experiment at the Super Proton Synchrotron (SPS) at CERN. The purpose of COMPASS is the study of hadron structure and hadron spectroscopy with high intensity muon and hadron beams. To further study the Drell-Yan process in scattering pion beams off polarized proton targets, COMPASS requires sophisticated tracking devices to determine the trajectory of scattered charged muon pairs. The University of Illinois at Urbana-Champaign is currently constructing the Drift Chamber 5 (DC5) to replace old straw-tube tracking detectors in the COMPASS spectrometer. DC5 is composed of 8 layers of anode and 13 layers of cathode frames made out of G10, a fiberglass-epoxy composite. The high rates for the Drell-Yan measurement require a small drift cell and precise mechanical tolerances have to meet in order to achieve good position resolution. GARFIELD simulations were carried out to study the impact of mechanical tolerances on the drift chamber performance in particular the position resolution that can be reached. The details of the DC5 GARFIELD simulation and results for signal development and position resolution will be presented.

¹UIUC COMPASS group

Seung Joon Oh
Univ of Illinois - Urbana

Date submitted: 25 Jul 2014

Electronic form version 1.4