

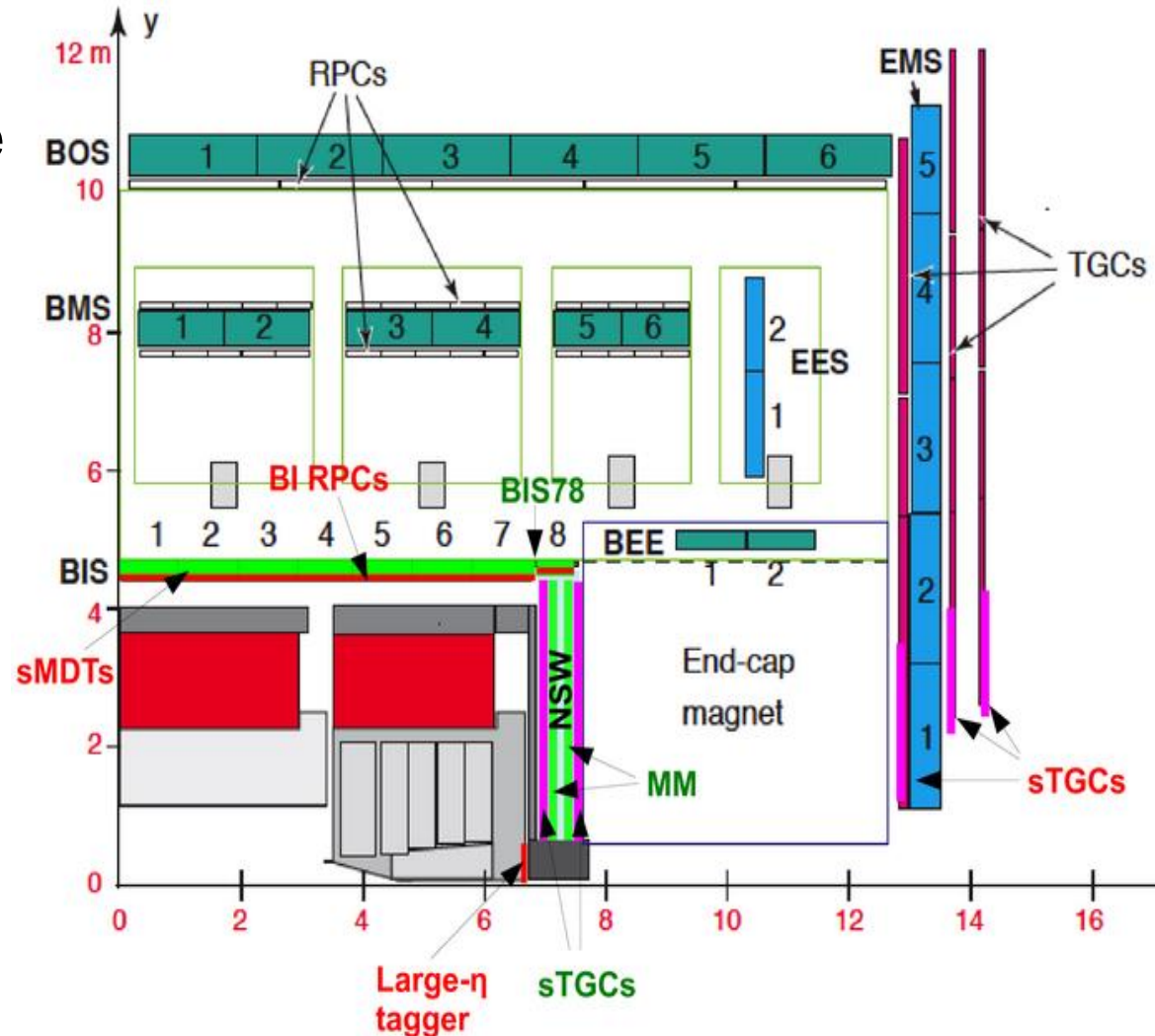
# MDT Phase-II Upgrade

Mitchell Kerver

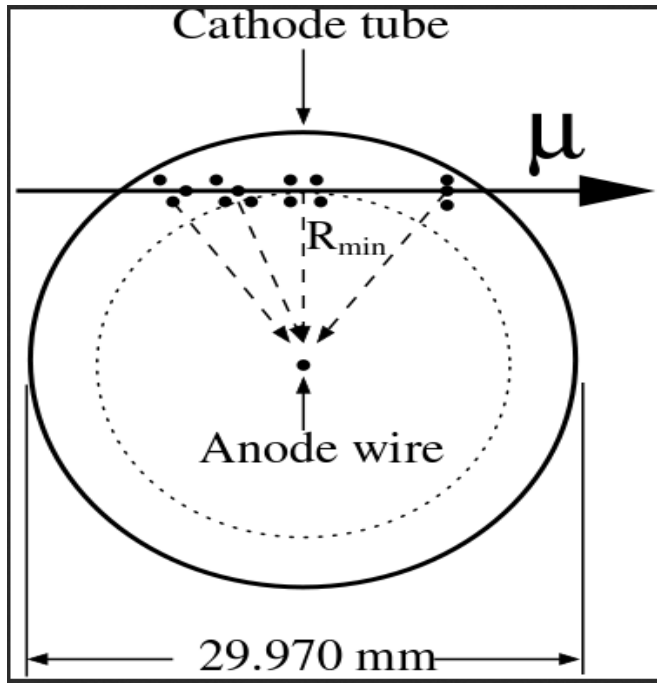


# ATLAS Muon Spectrometer

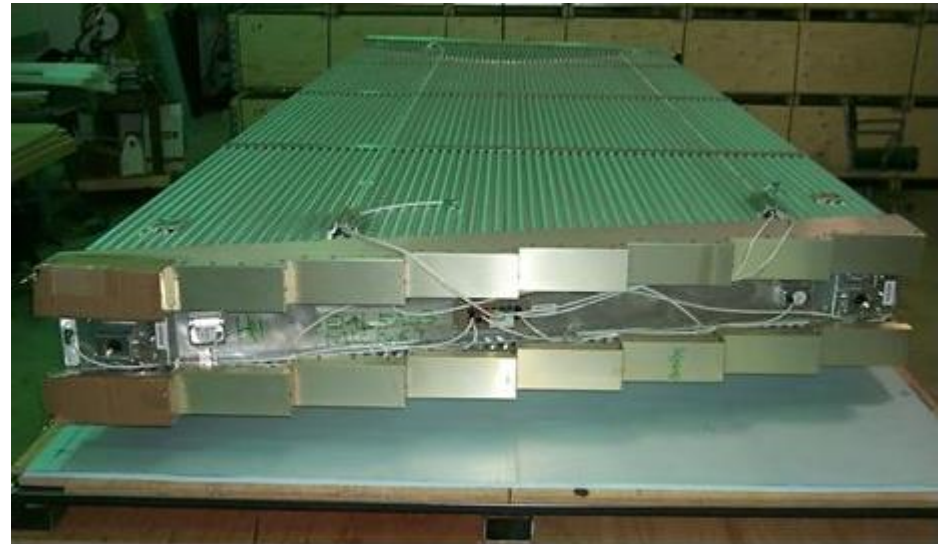
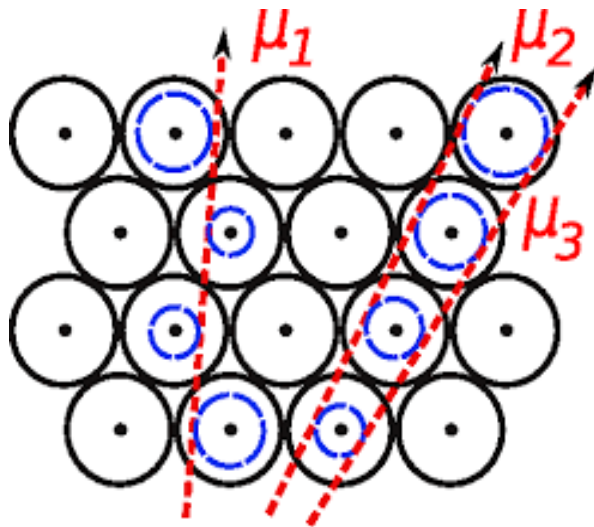
- Forms the outer layer of the ATLAS detector
- Contains several detector systems designed to measure momentum of muons and act as a trigger
- Part of the ATLAS Phase-II upgrade is replacing the readout electronics on the MDTs



# Monitored Drift Tubes

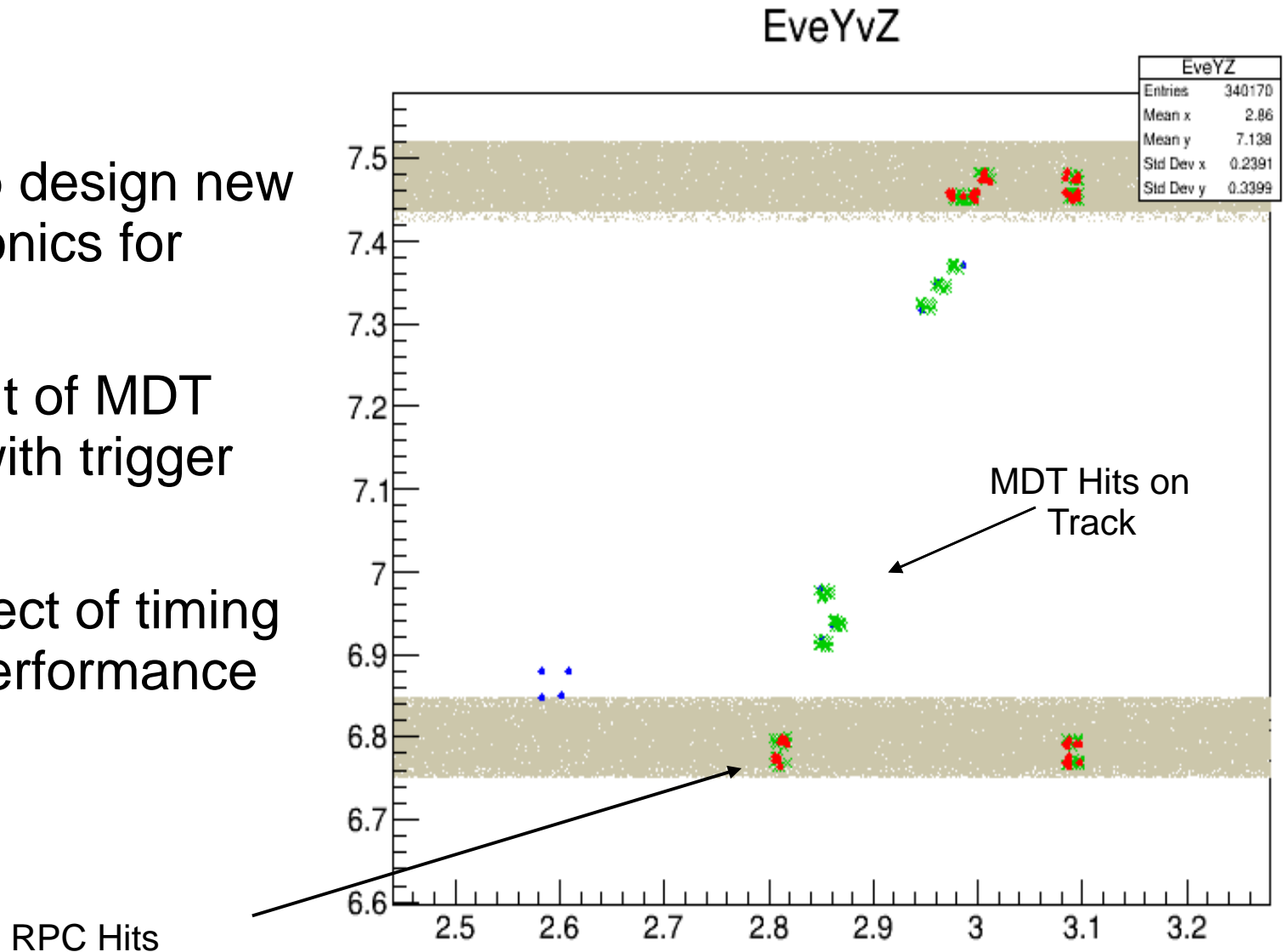


- Muon passes through tube and ionizes gas
- Ions drift to charged wire and provide hit signal
- An algorithm uses several hits to reconstruct muon track information



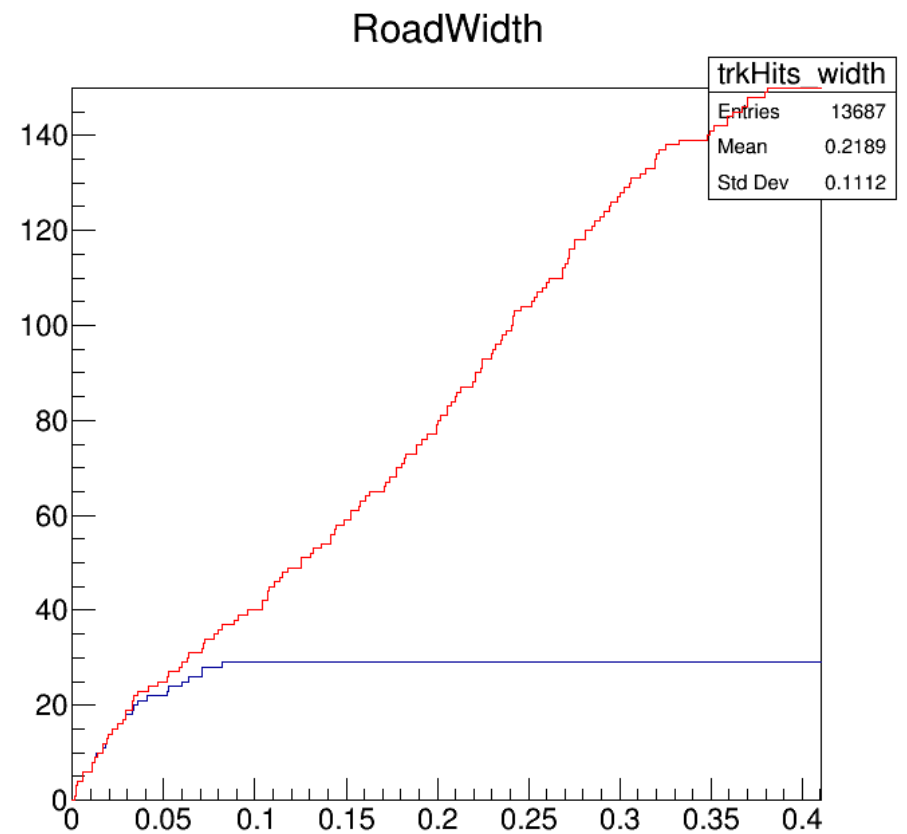
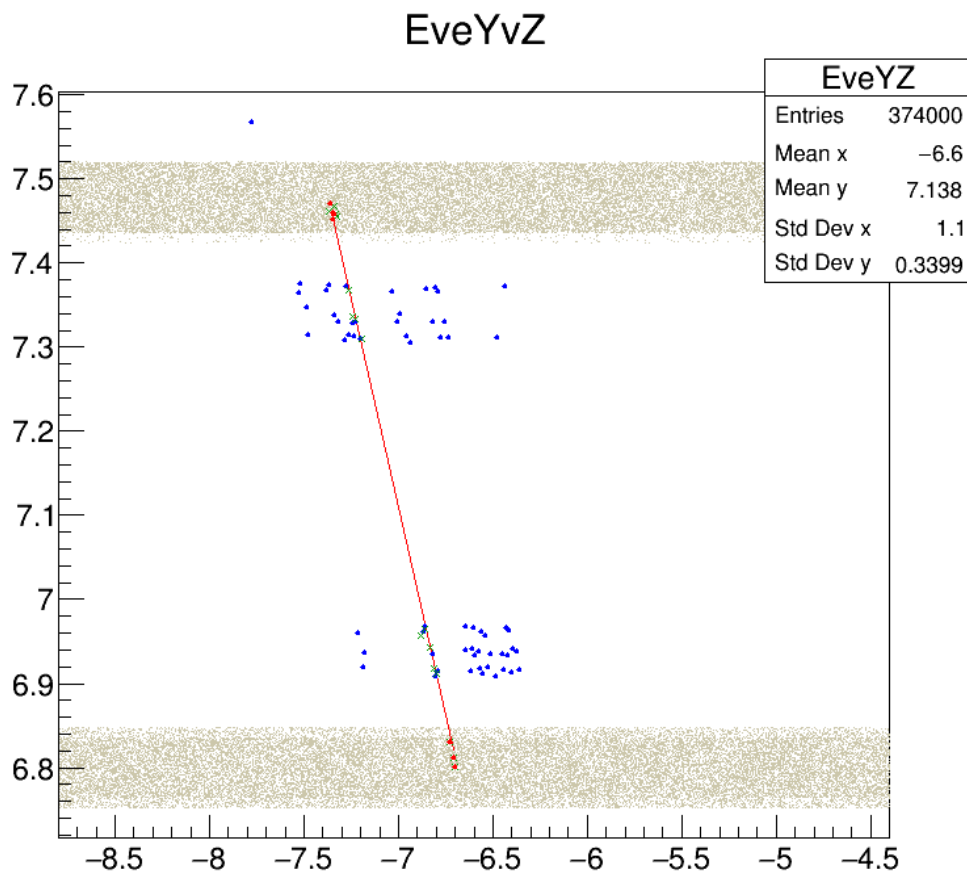
# My Role

- Studies to help design new readout electronics for MDT data
- Look at amount of MDT hits matched with trigger hits
- Look at the effect of timing precision on performance



# Part 1

- Look at number of mdt hits in a road around track segment
- Find a better ntuple to replace MuonCalibration ntuple



# Part 2

- Use “toy simulation” to look at segment fitting in MDTs
- Looking at the effect the timing precision has on the spatial resolution of segment fitting

