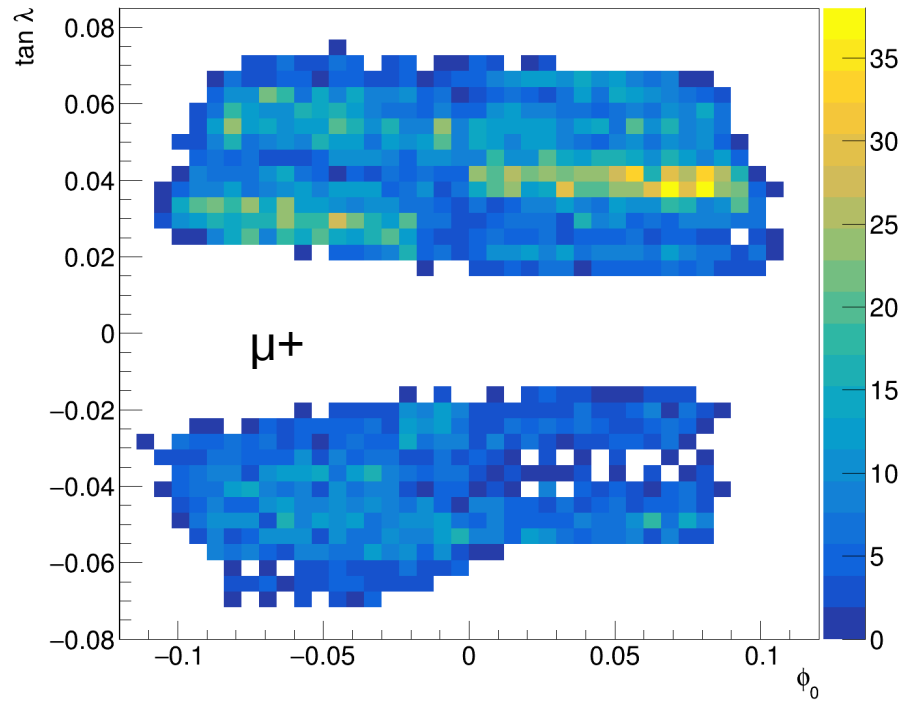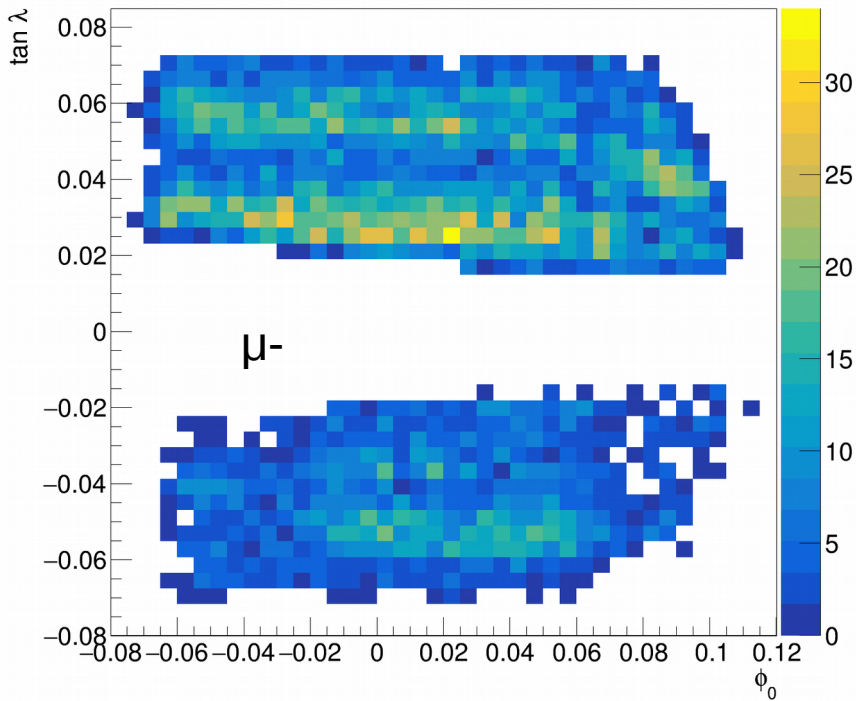# Tracking Single Muon MC

Cameron Bravo (SLAC)

Single Muon MC

- Studying using hps-java for readout and reconstruction of MC

  - Simple single muon sample made

  - Cone aimed at detector from global origin

  - 1.1 GeV initial momentum

  - Slic and hps-sim appear to agree well so far

- Using "pulser trigger" for readout to avoid trigger bias

  - Fixed small bug in rate calculation

  - Added feature to adjust phase of trigger wrt muons

- Using PhysicsRun2016FullReconMC.lcsim for reconstruction

  - Must open up timing cuts to get any 3D hits

  - After some tinkering, got a bunch of tracks

Tracking

- Top has nearly twice the tracks as the bottom!
- In the bottom we see more tracks with positive phi0 than negative
- Something seems wrong

Single Muon MC 3D Hits
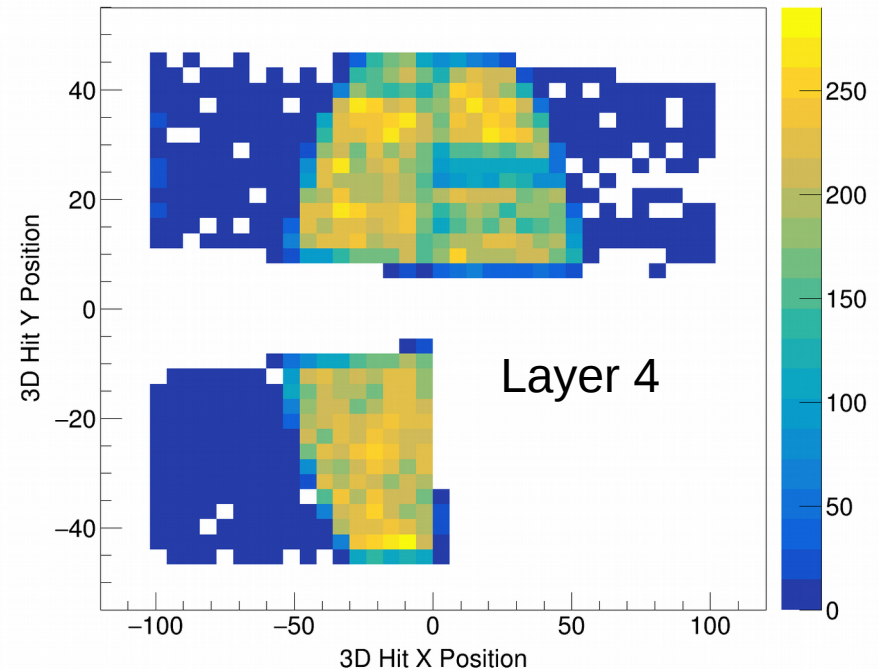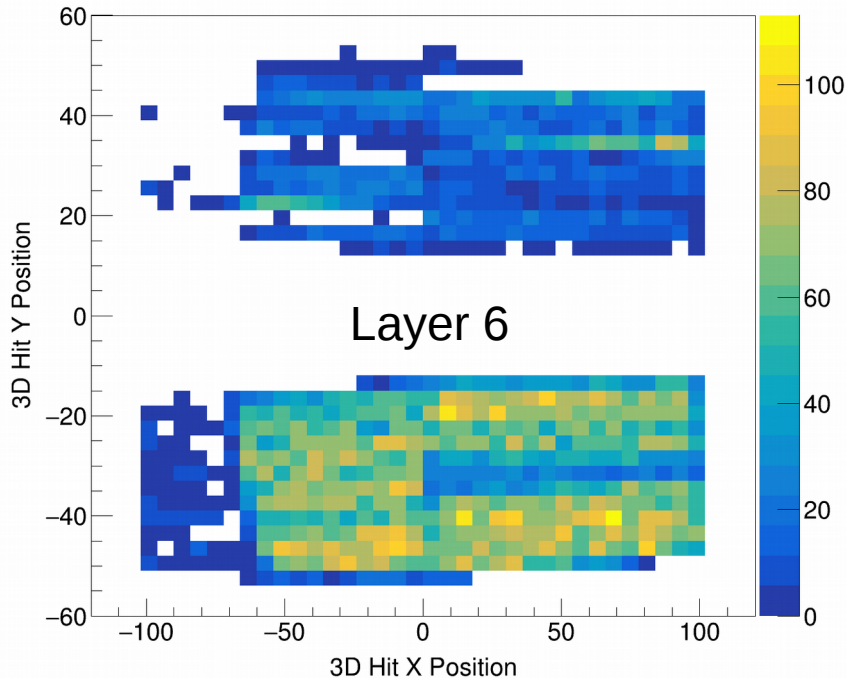
- Both plots are for positive muons
- Layer 5 is missing a few hits in lower left quadrant
- Layer 1 is missing a lot of hits in the the lower half
- The way these look seems to be highly dependent on trigger timing
- More digging has lead me to believe they are dropped during cross building