

Acceptance Tuning

Min Huang

9/2/2015

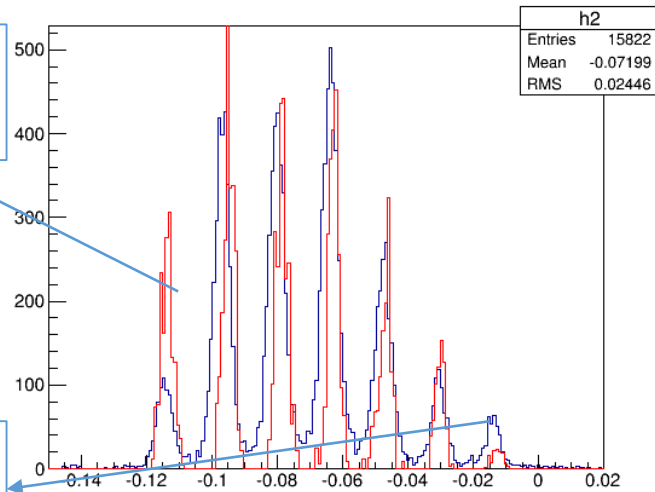
Acceptance Tuning

- Aperture cuts of the physical locations of magnets on the electron trajectories
- Adjusted these cuts to have better agreement between data and simulation

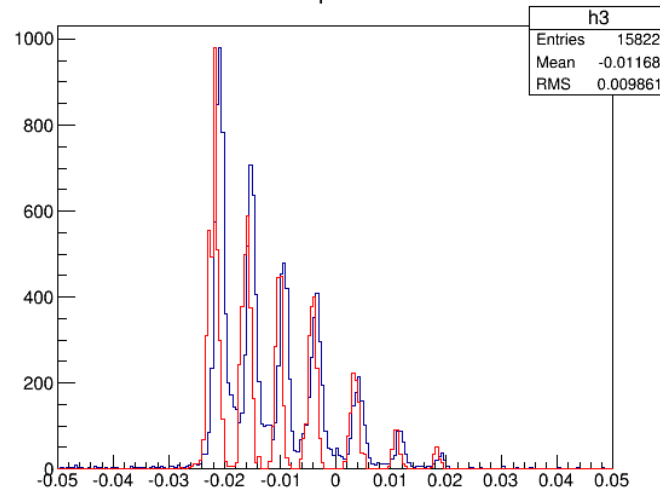
- 1.7 GeV 2.5T Trans
- Optics run
- Dilution run

Optics Run

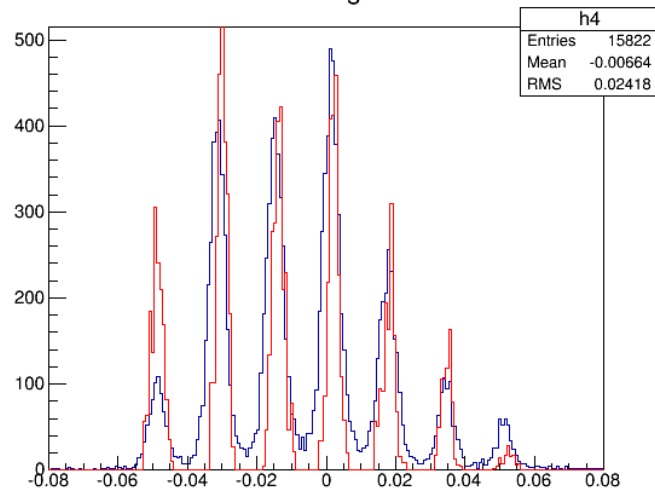
theta



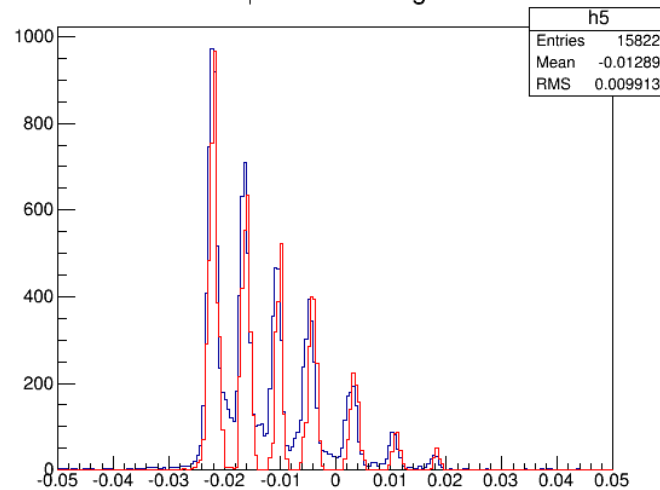
phi



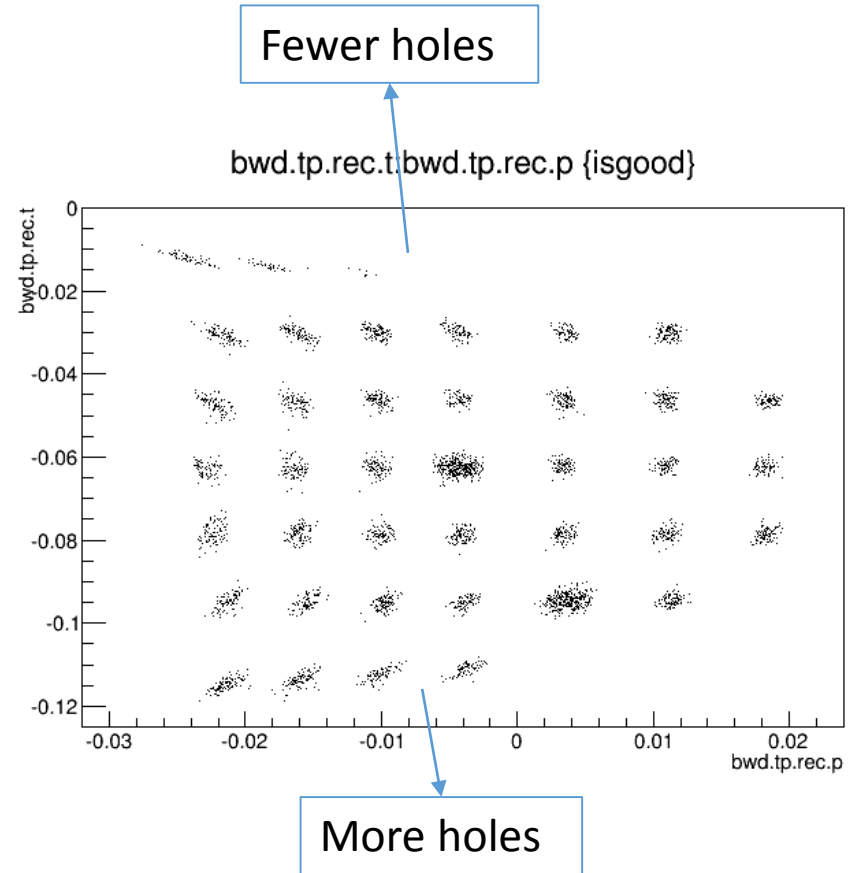
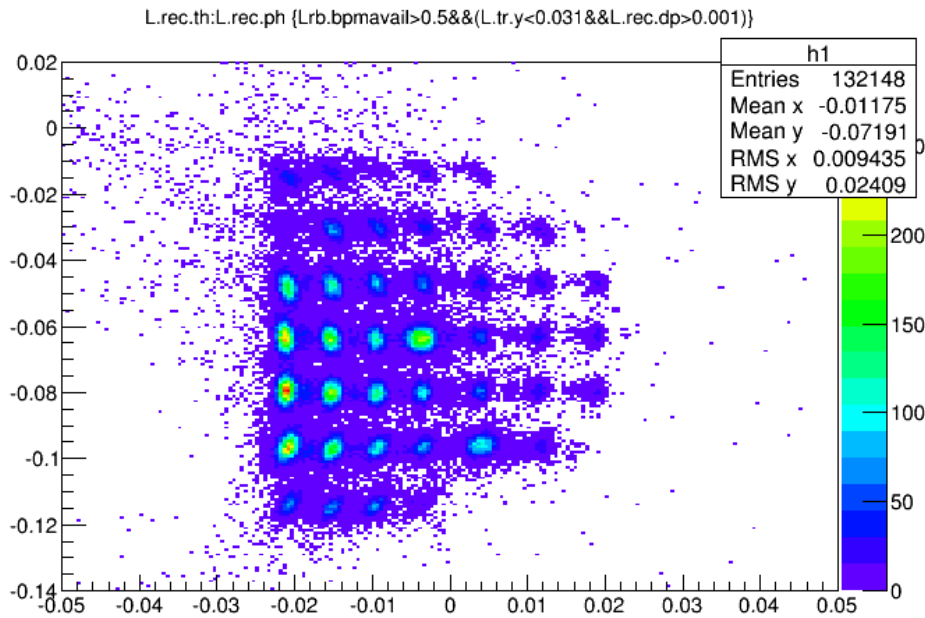
theta no tg field



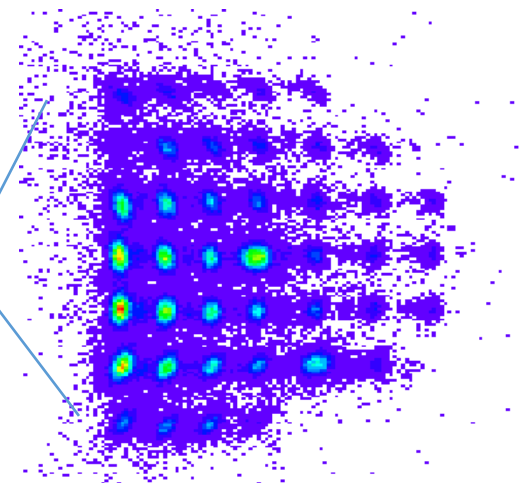
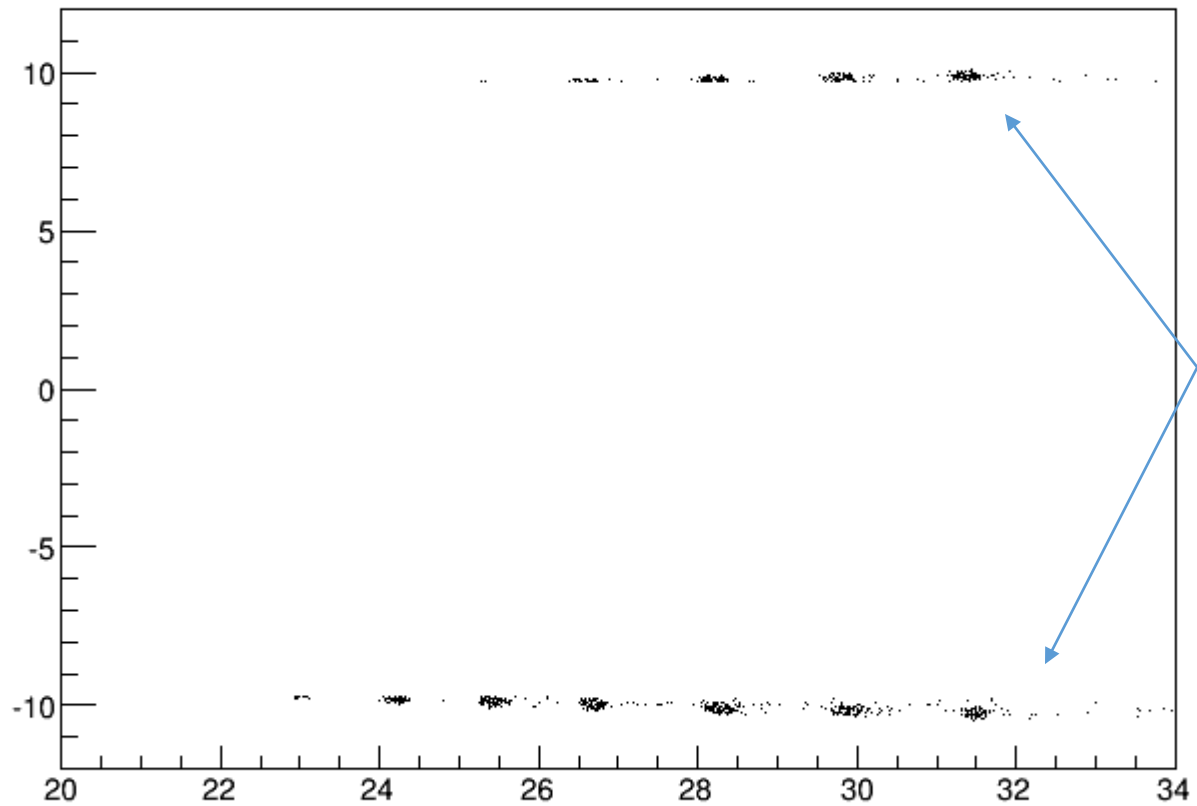
ϕ before drifting



Optics Run

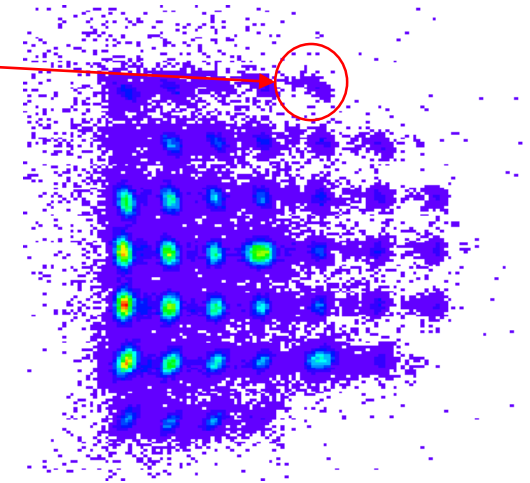
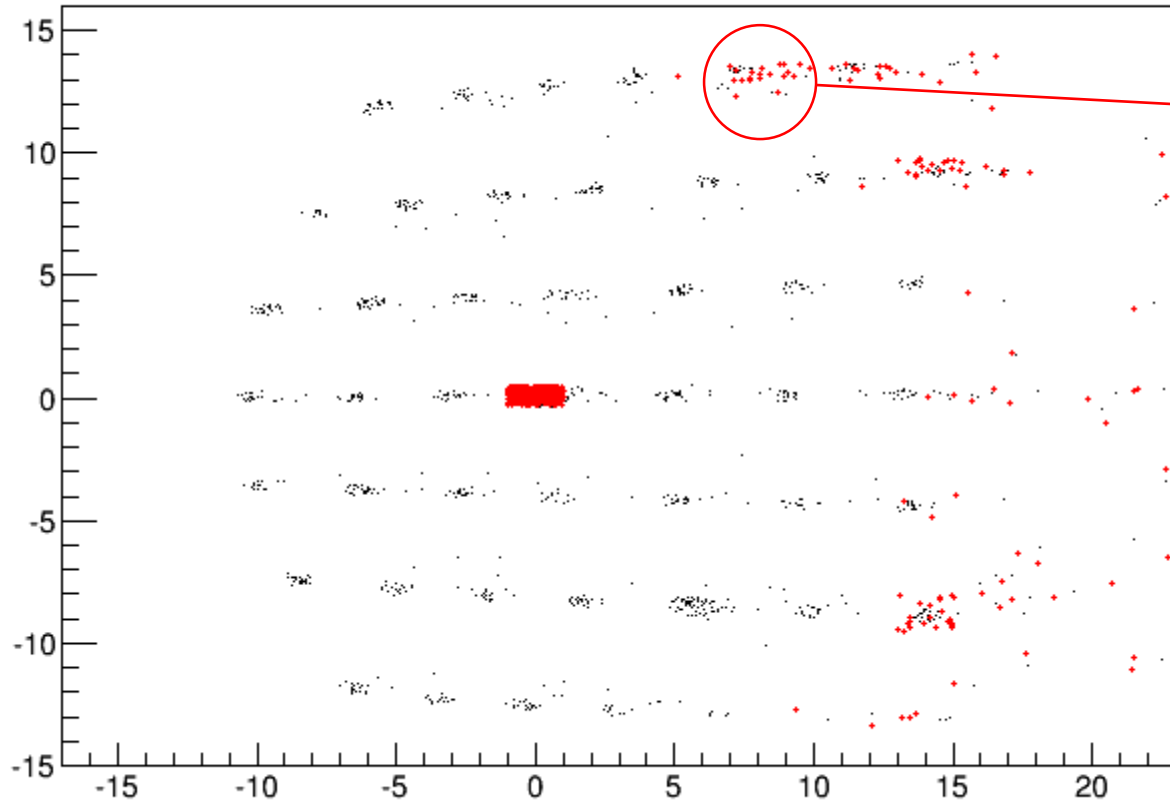


fwd.septum.ex.y:fwd.septum.ex.x {fwd.id.plane==7}



Blocked events

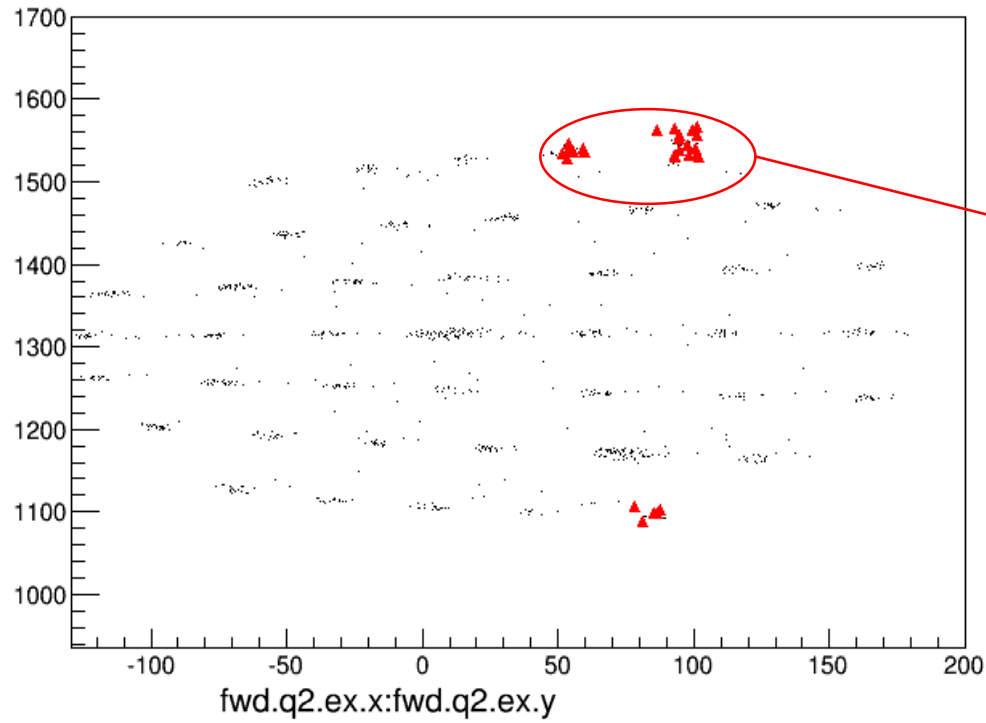
fwd.q1.ex.x:fwd.q1.ex.y



All events

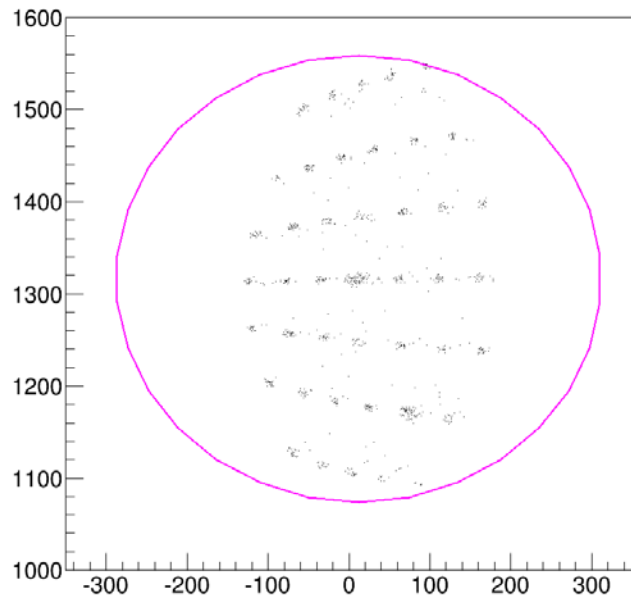
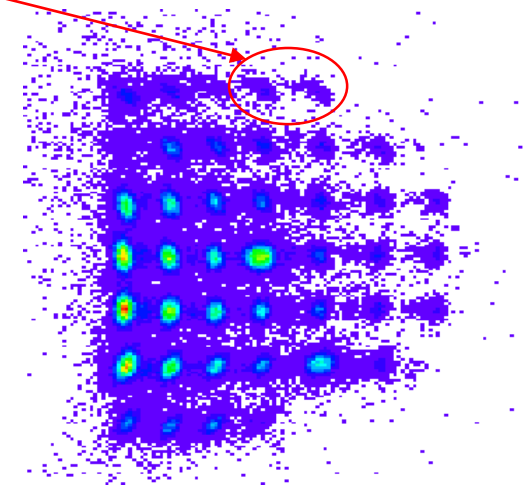
Blocked events

fwd.q2.ex.x:fwd.q2.ex.y

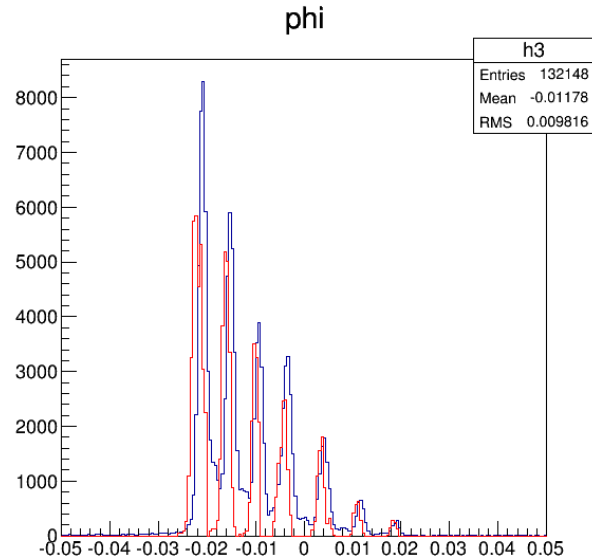
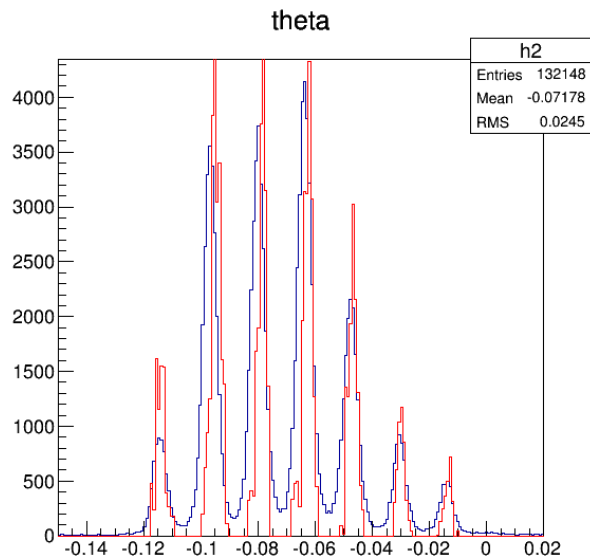
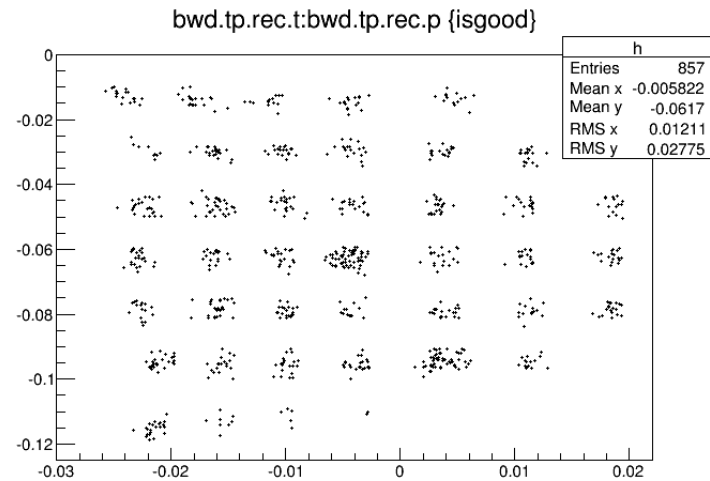
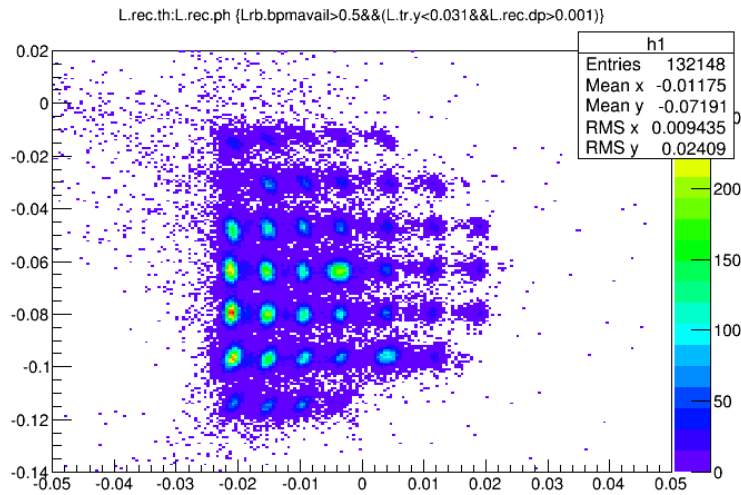


All events

Blocked events

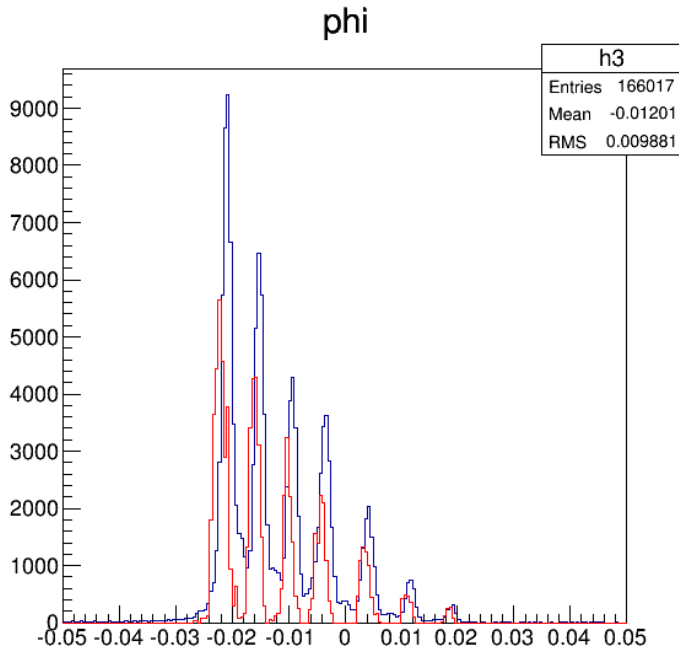
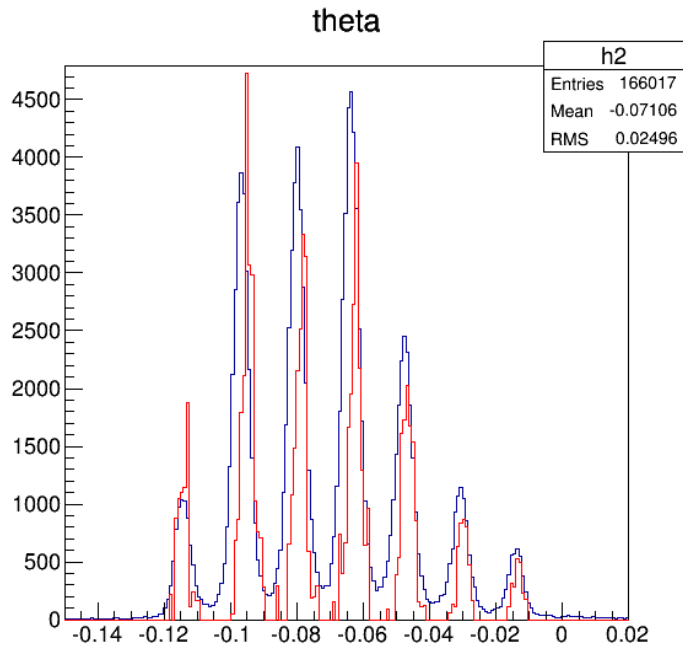


Results after adjusting apertures



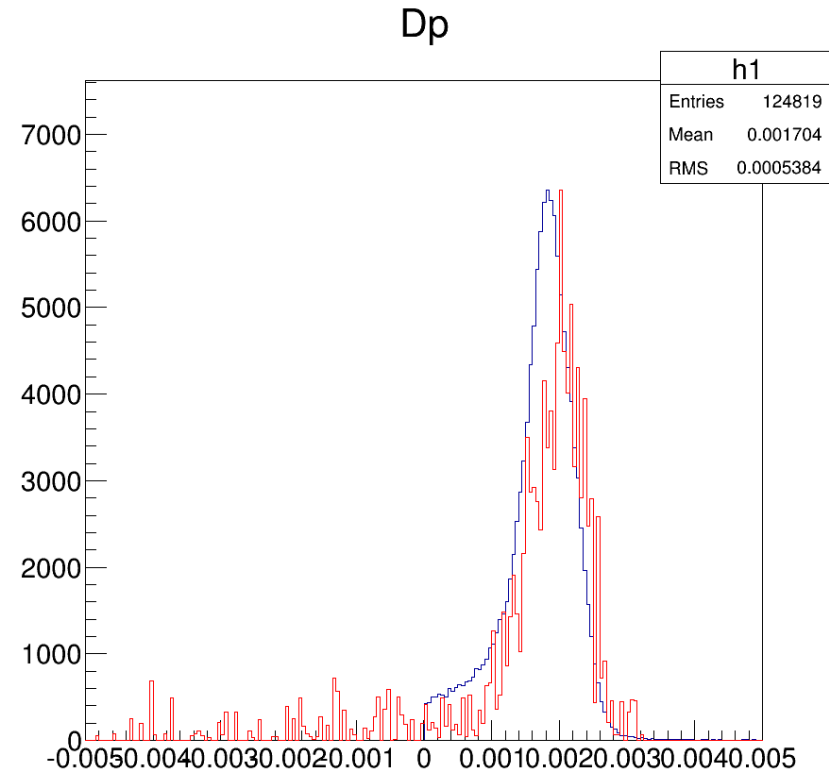
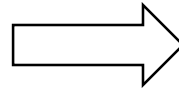
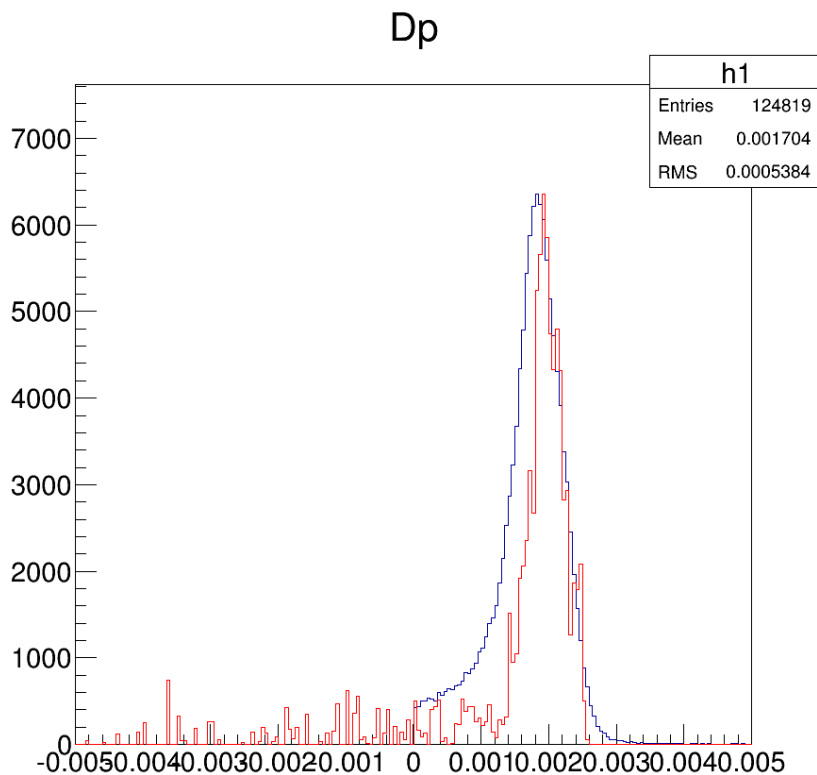
Resolutions

- Added in bpm resolutions and VDC position/angle resolutions
- Bpma 0.2mm, bpmb 0.4mm
- VDC x,y 1.5mm, theta 2mr, phi 0.6mr

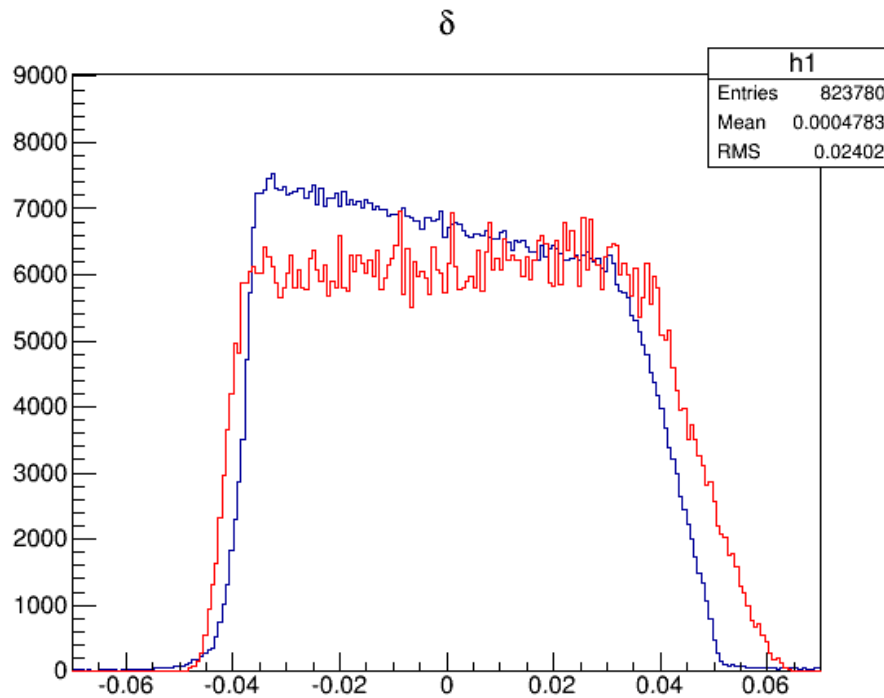


Resolutions

- Added in bpm resolution and VDC position/angle resolutions
- Bpma 0.2mm, bpmb 0.4mm
- VDC x,y 1.5mm, theta 2mr, phi 0.6mr



Dilution Run

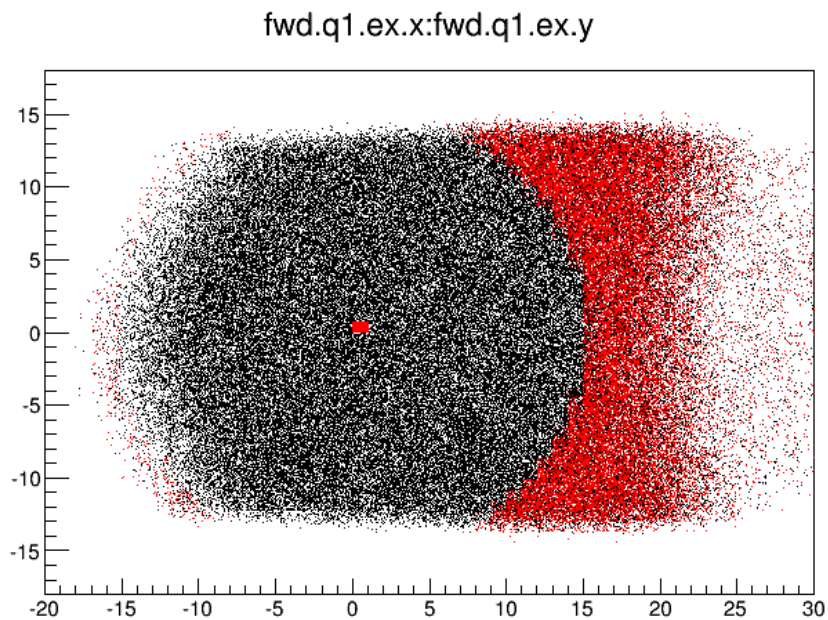


#4423

Data: blue

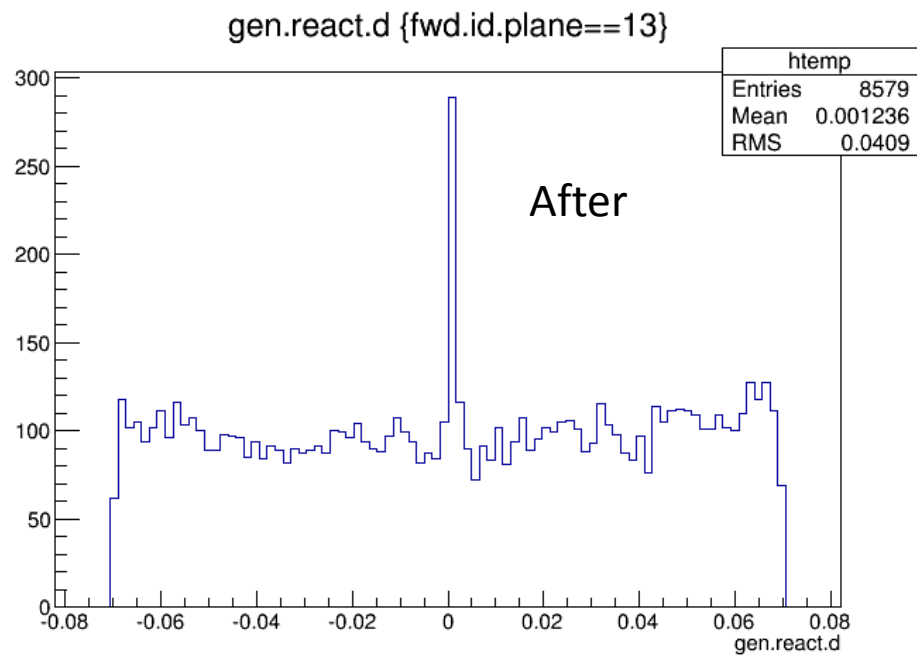
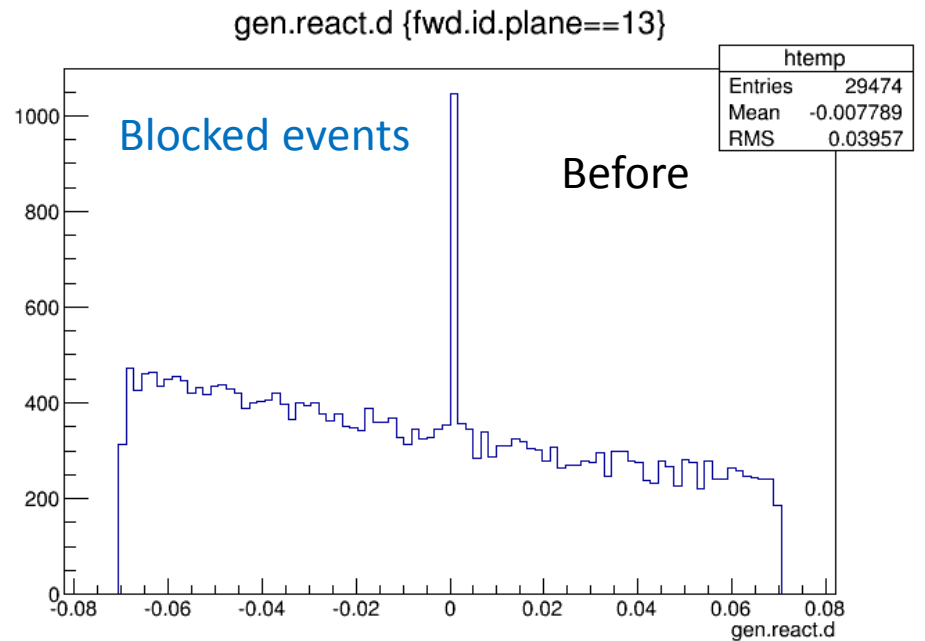
Simu: red

Simulation and
data have different
slopes

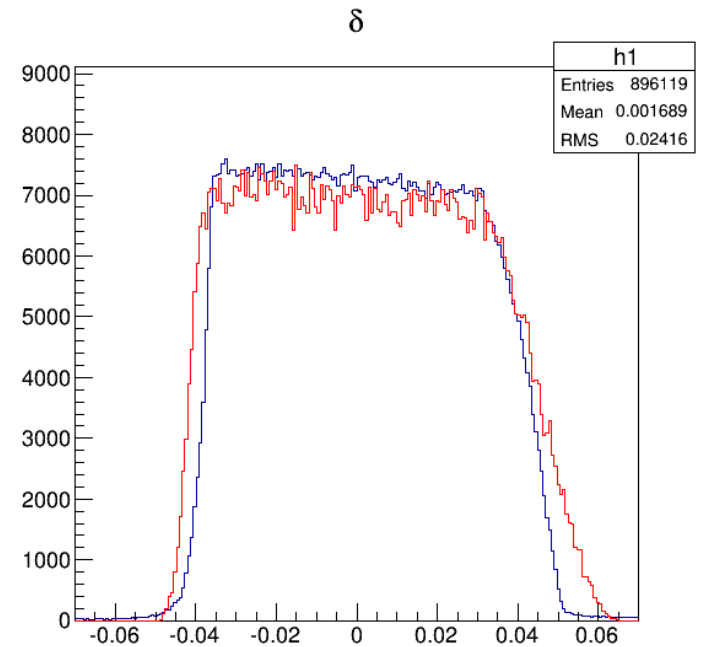
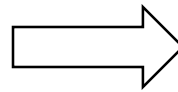
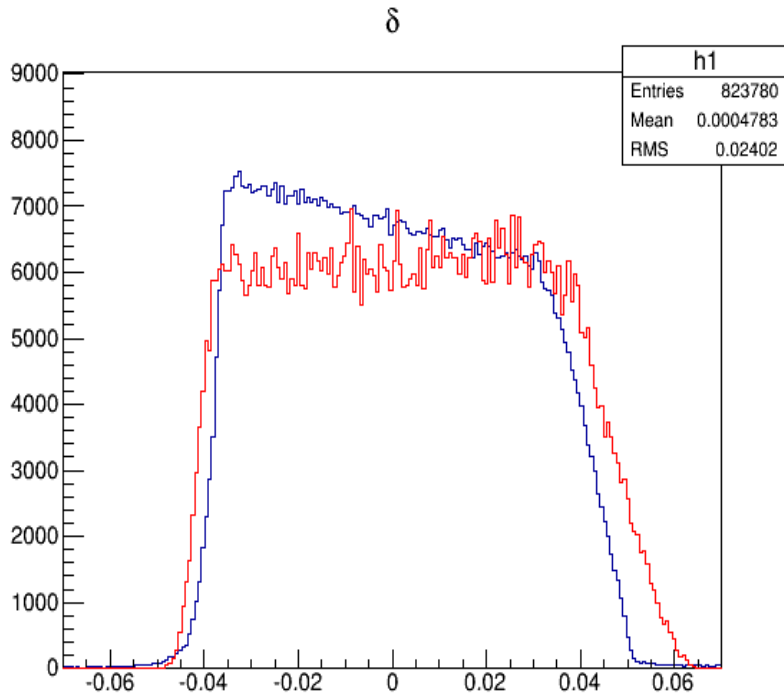


All events

Blocked events

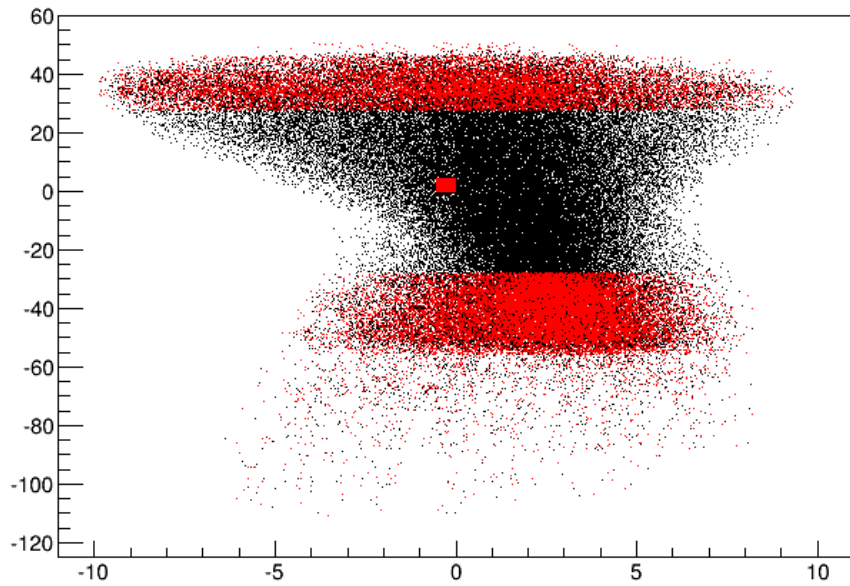


Dilution Run

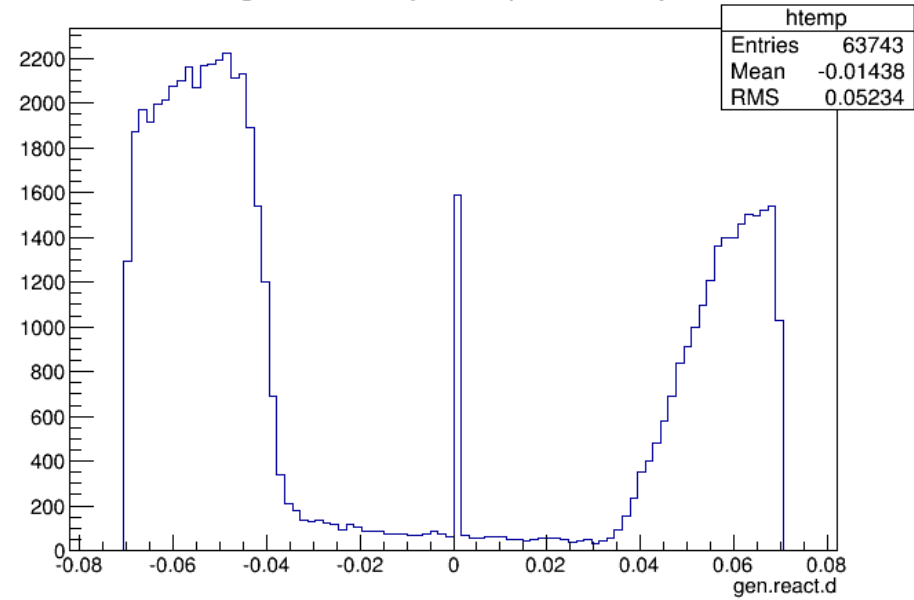


Simulation a little wider...

fwd.q3.ex.x:fwd.q3.ex.y

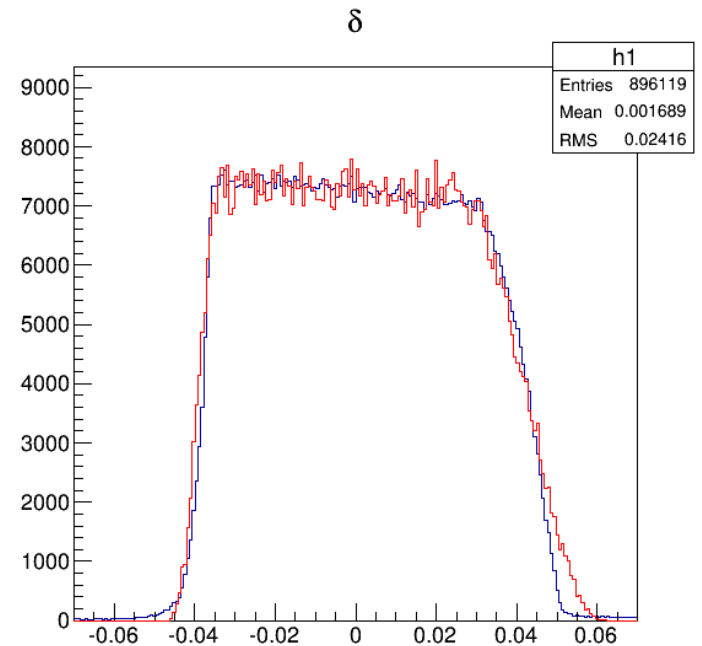
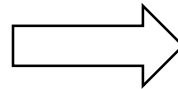
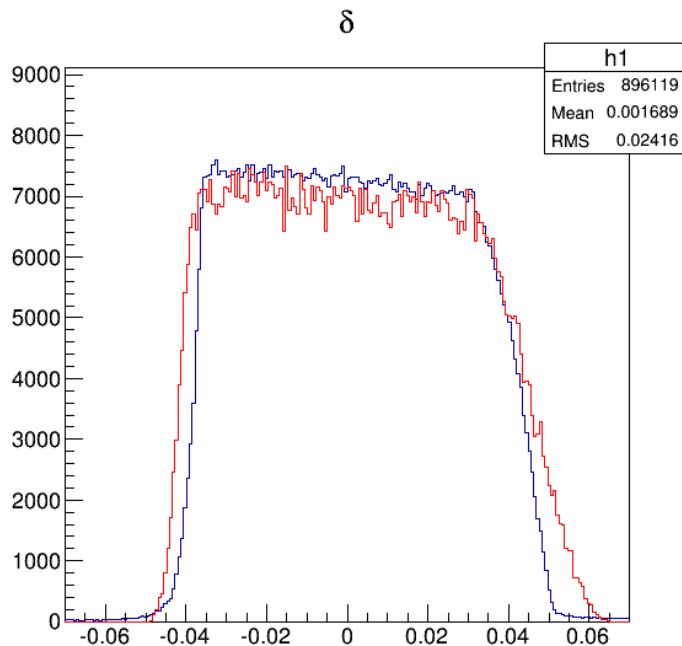


gen.react.d {fwd.id.plane==29}



Blocked events

Dilution Run



Summary

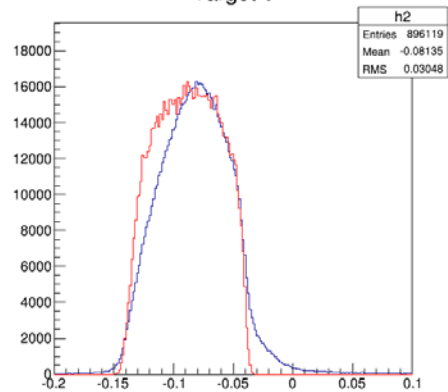
Acceptance (heights) differences of optics run are improved.

Dp spectrums of optics run agree better.

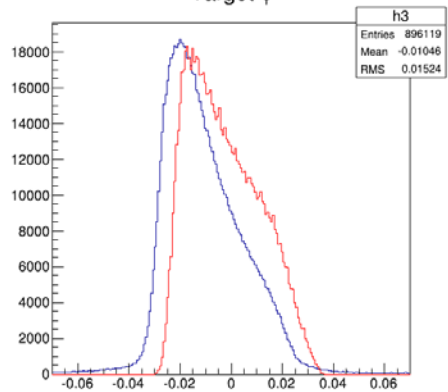
Dp spectrums of dilution run agree well.

Backup

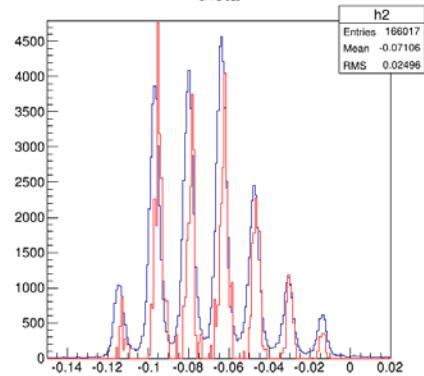
Target θ



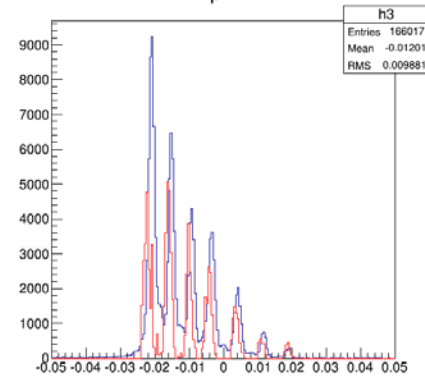
Target ϕ



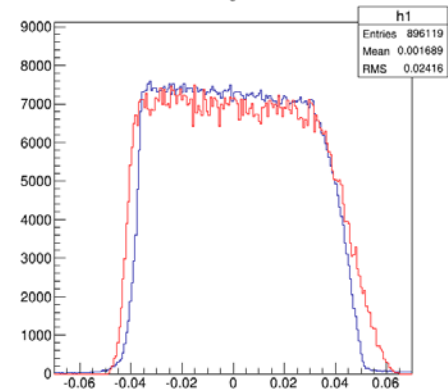
theta



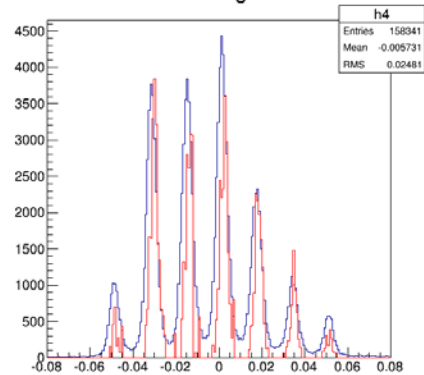
phi



δ



theta no tg field



ϕ before drifting

