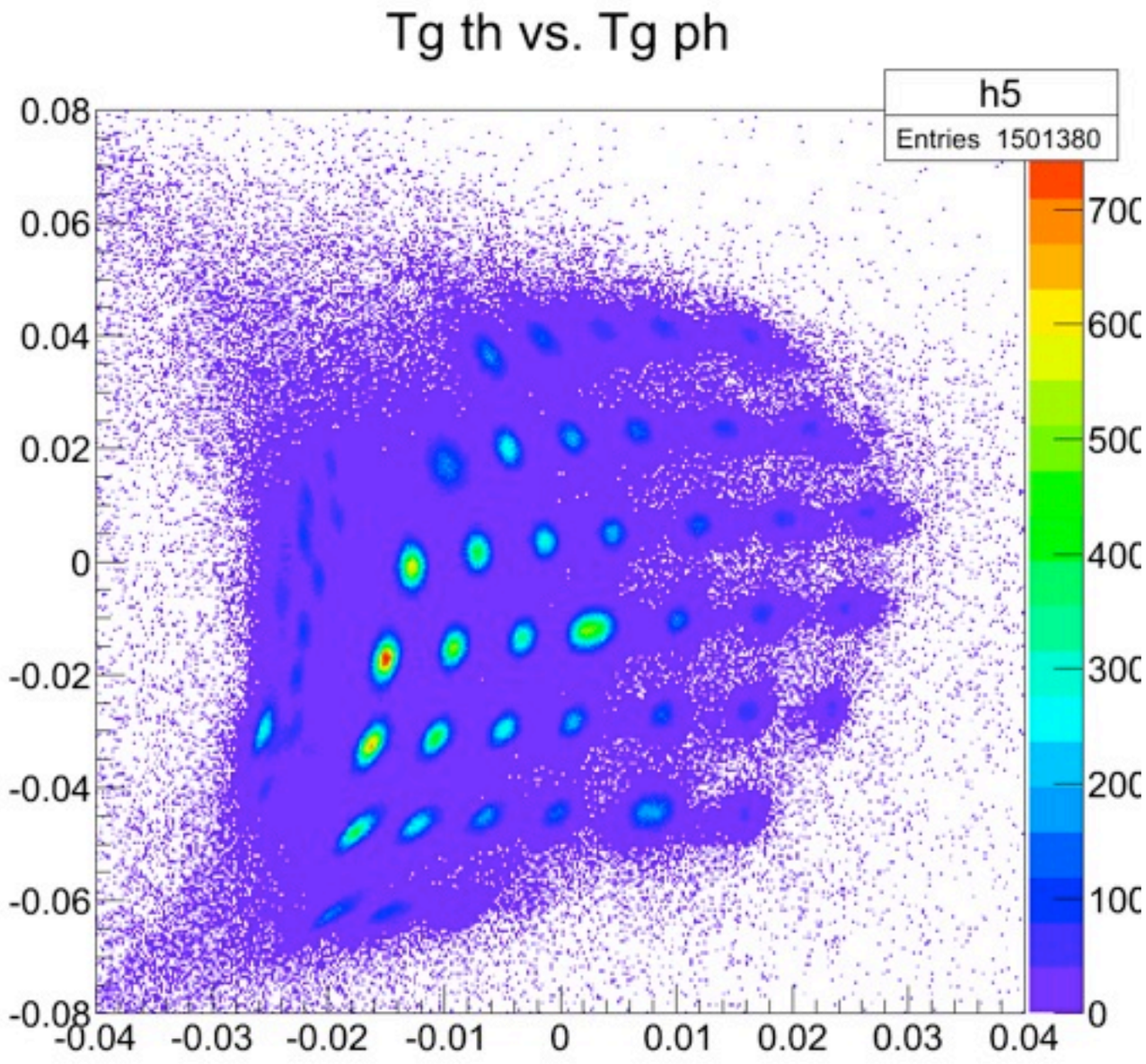
Longitudinal Optics Status Update

Chao Gu

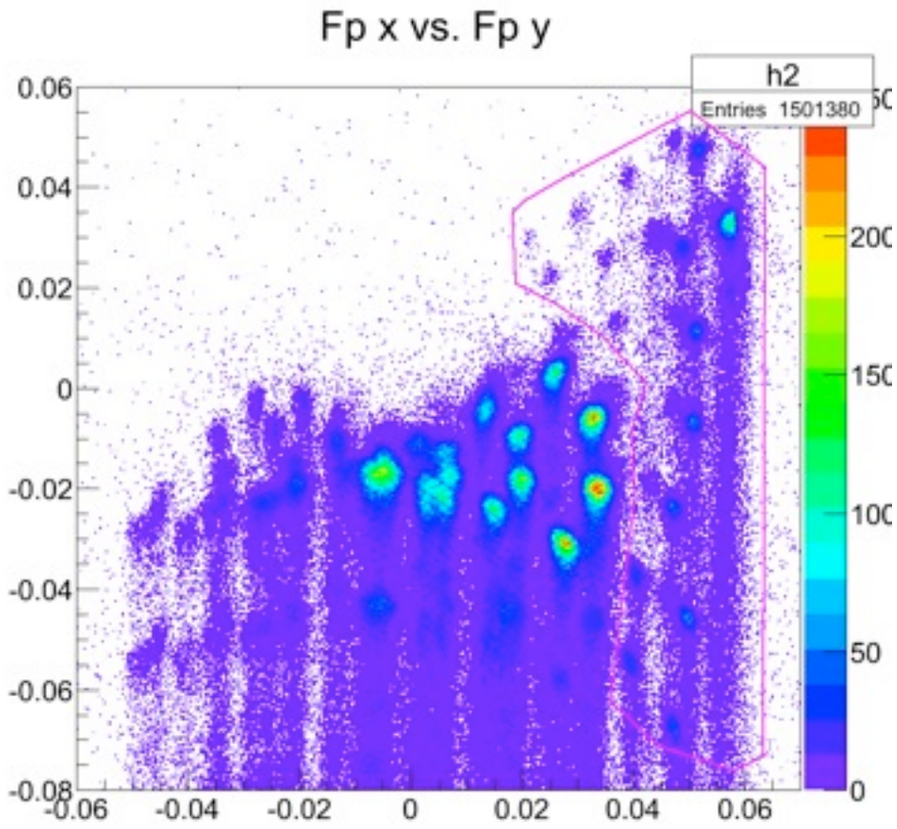
Longitudinal Optics

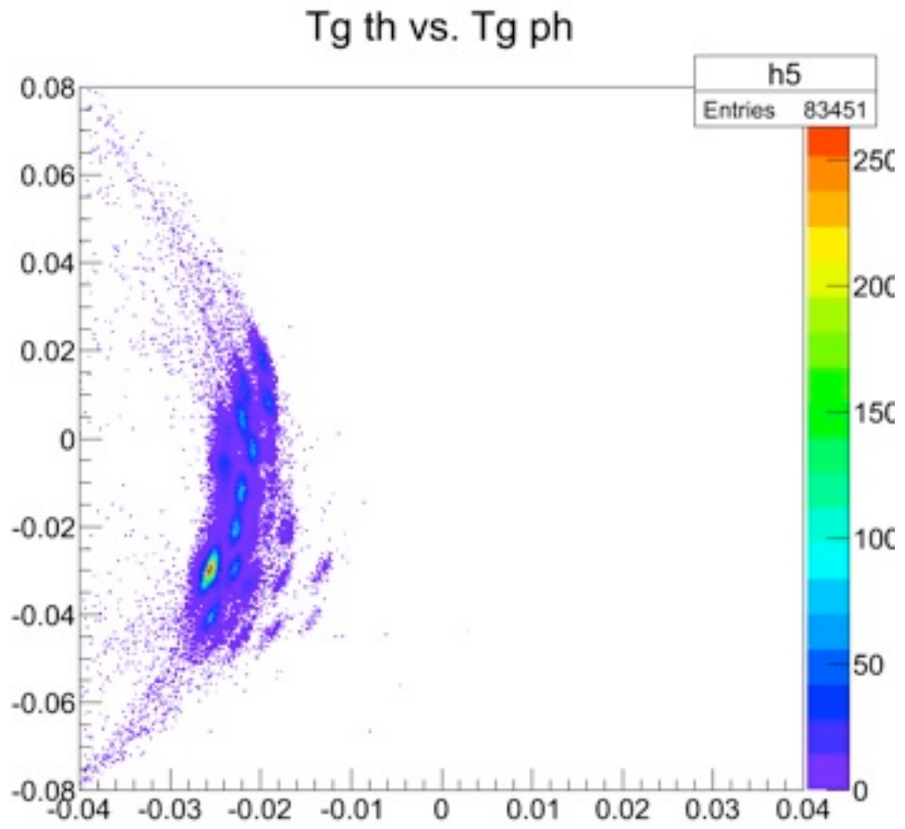
- This time:
  - Use focus plane cuts to clean up data
  - Replace vertex z with target y to make cuts

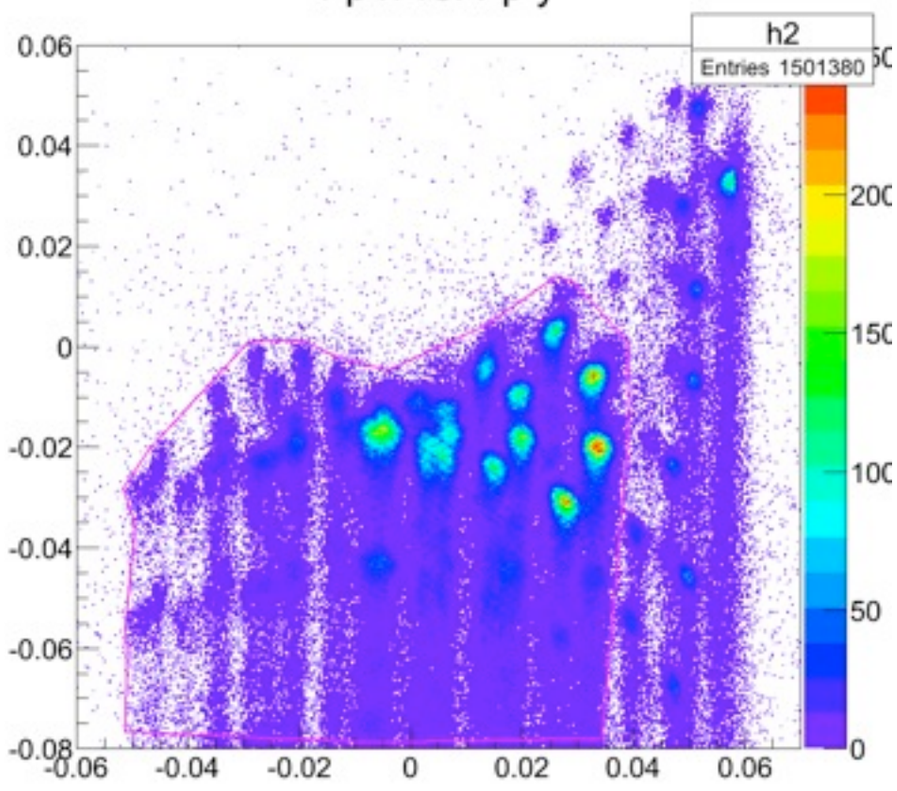
Select Cuts

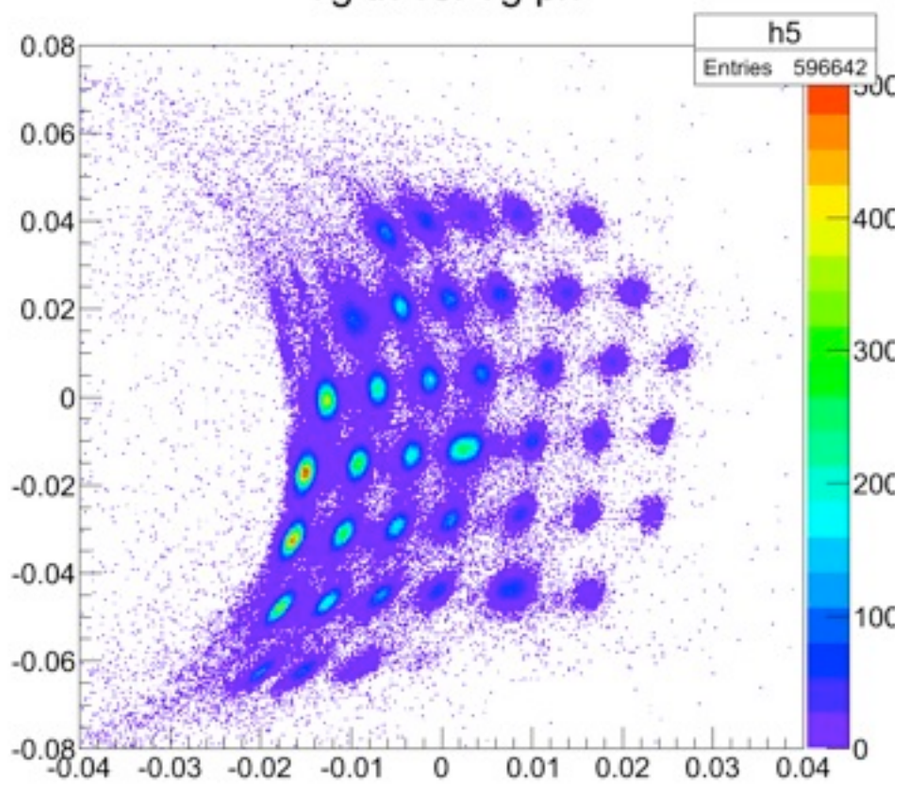


No cuts

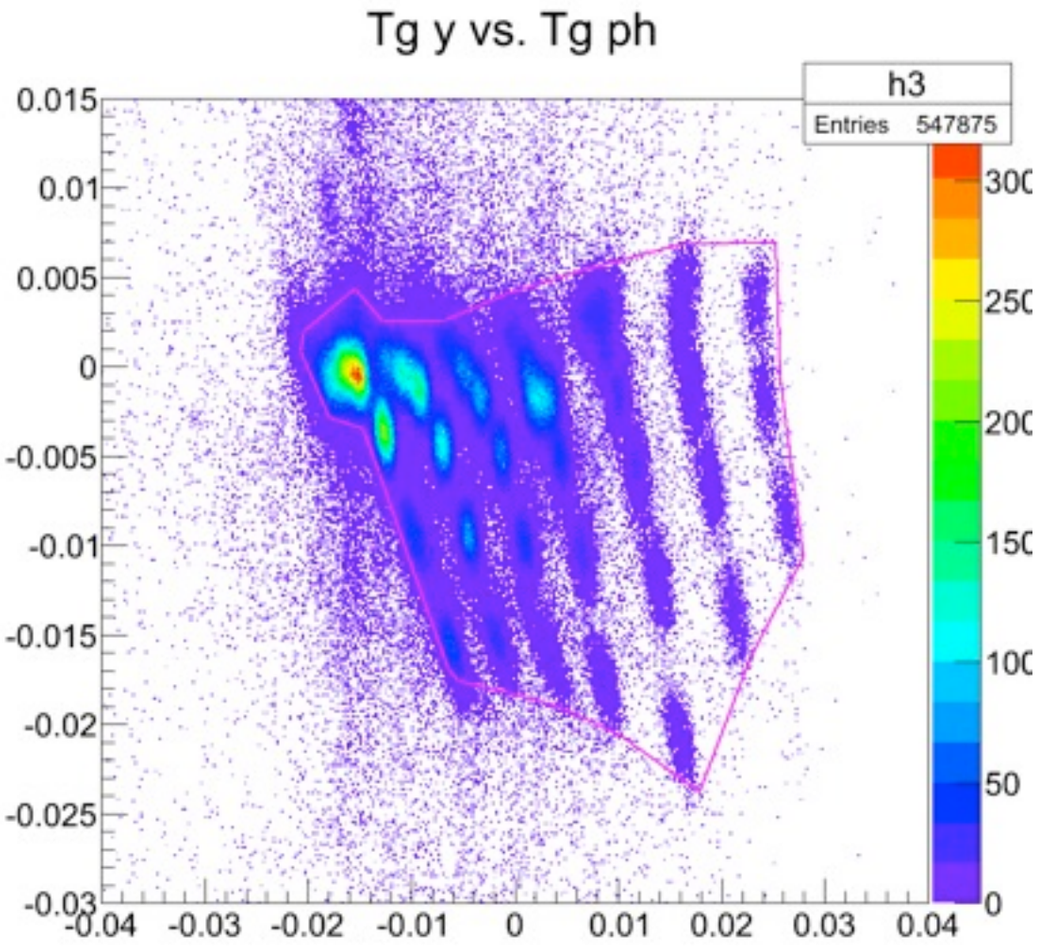

Fp x vs. Fp y
h2
Entries 1501380
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.06 -0.04 -0.02 0 0.02 0.04 0.06
200
150
100
50
0

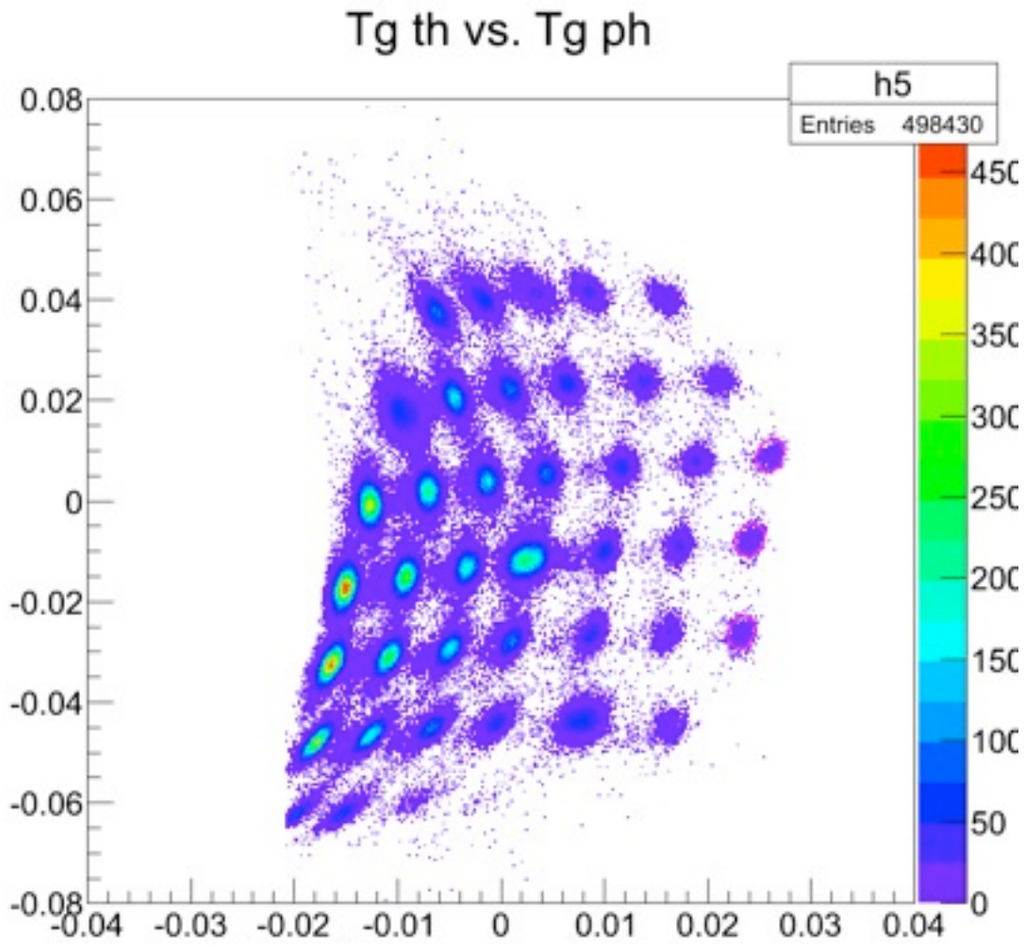

Tg th vs. Tg ph
h5
Entries 83451
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.04 -0.03 -0.02 -0.01 0 0.01 0.02 0.03 0.04
250
200
150
100
50
0


Fp x vs. Fp y
h2
Entries 1501380
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.06 -0.04 -0.02 0 0.02 0.04 0.06
200
150
100
50
0


Tg th vs. Tg ph
h5
Entries 596642
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.04 -0.03 -0.02 -0.01 0 0.01 0.02 0.03 0.04
400
300
200
100
0

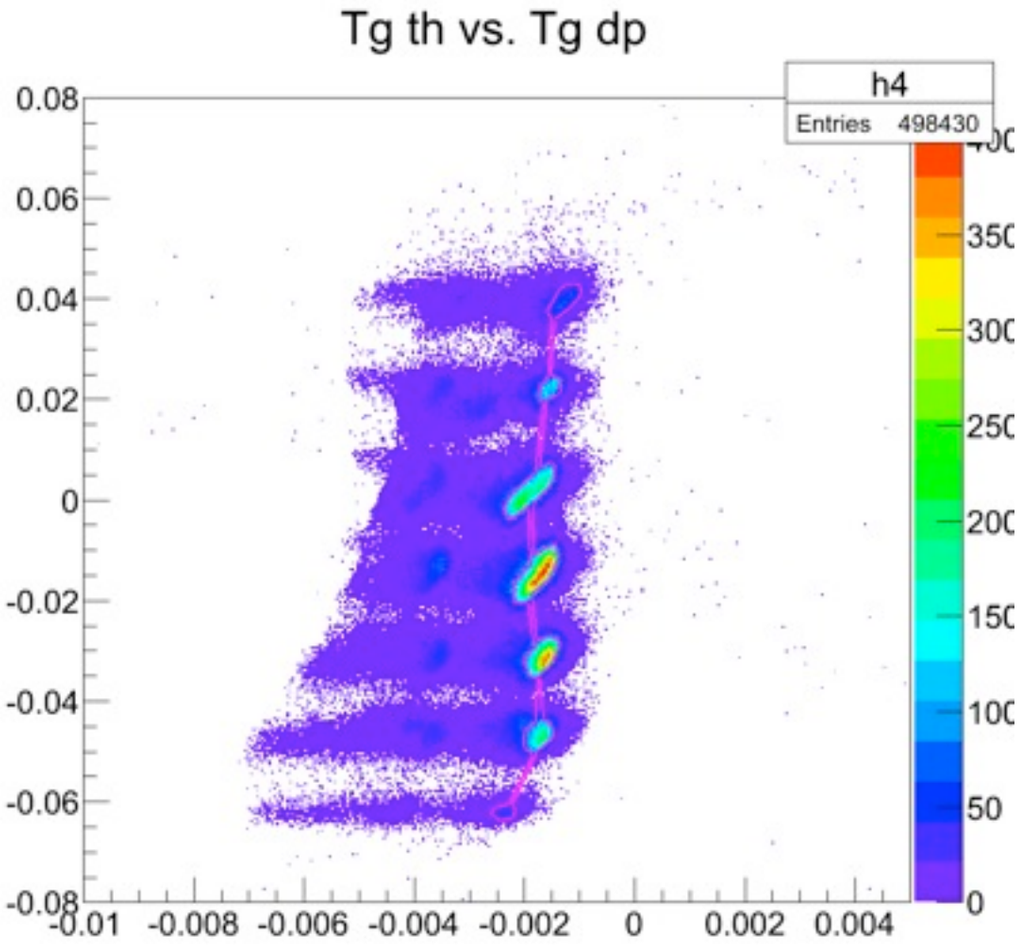
Select Cuts

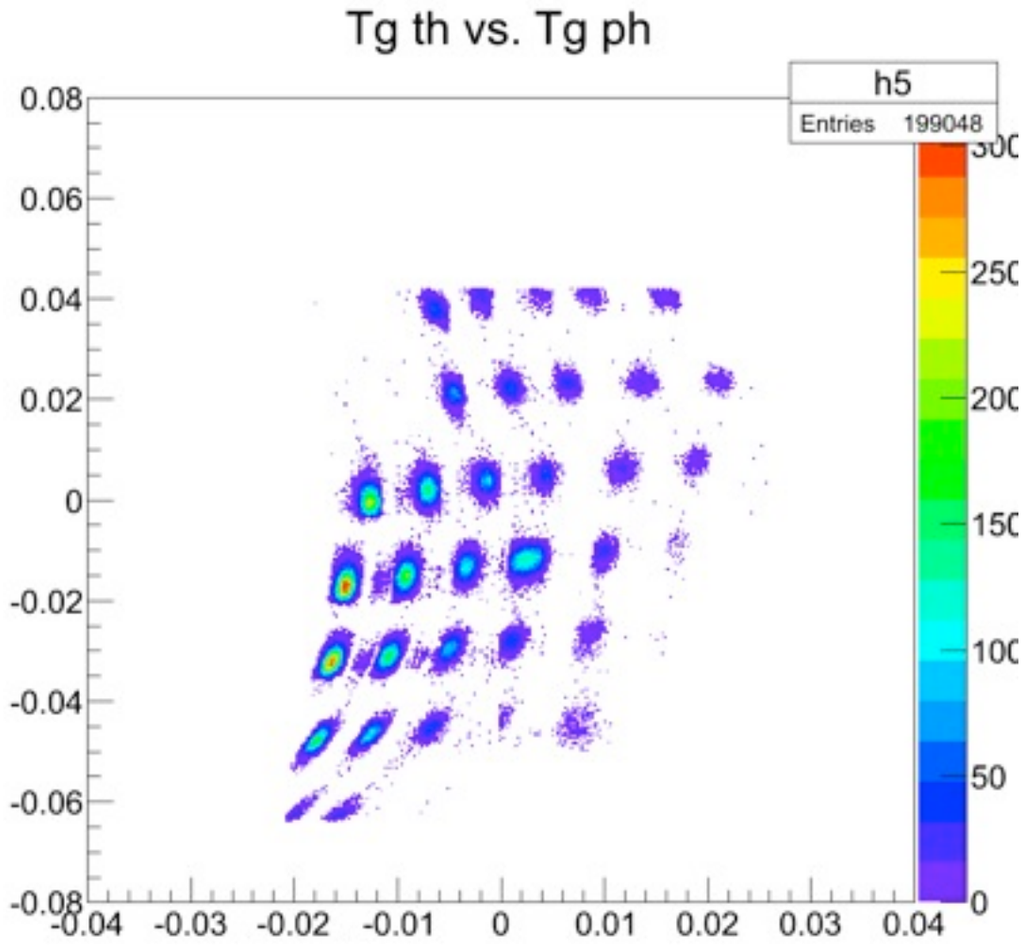




This is used to select sieve hole and calibrate theta and phi angle

Select Cuts

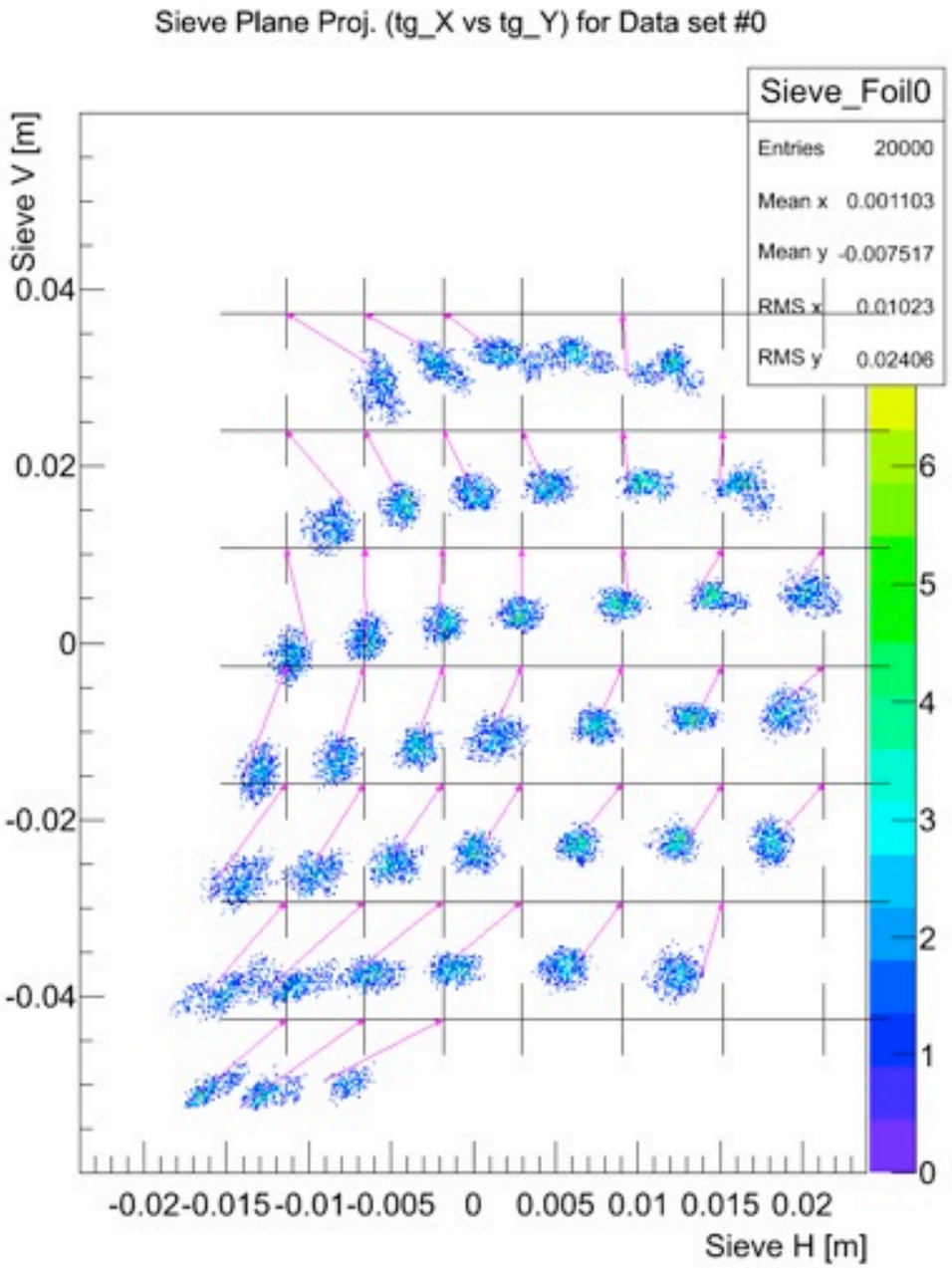




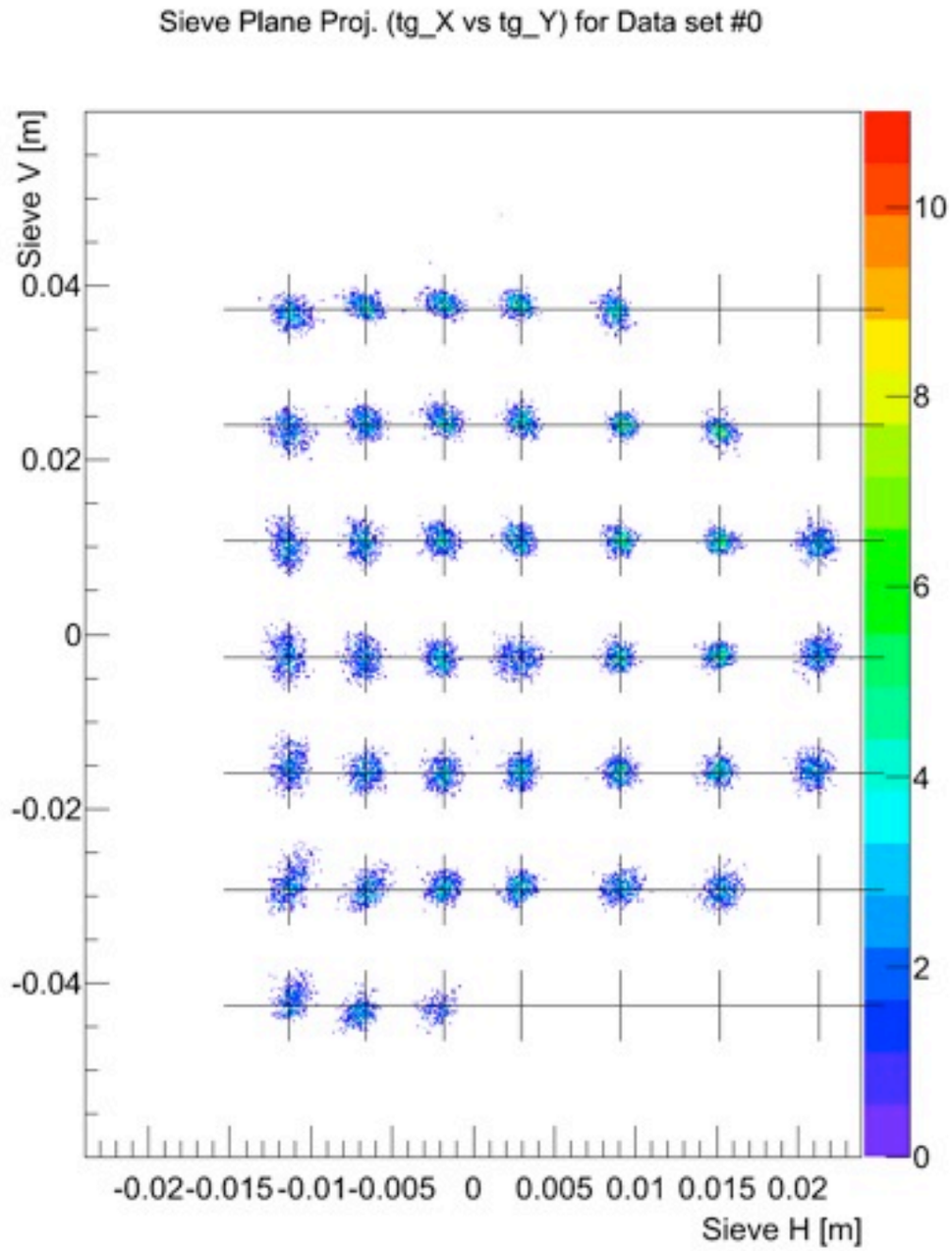
This is used to select sieve hole and calibrate dp

Matrix Calibration

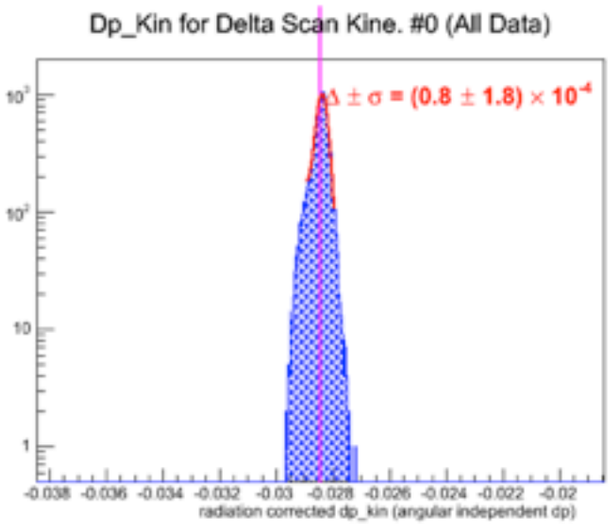
Before Optimize

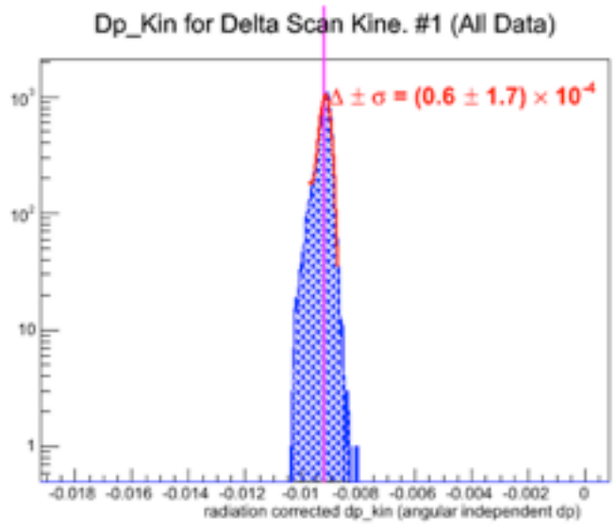


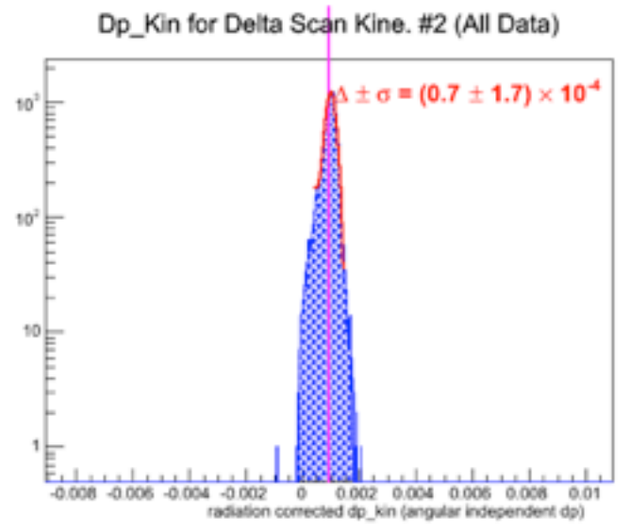
After 1 iteration

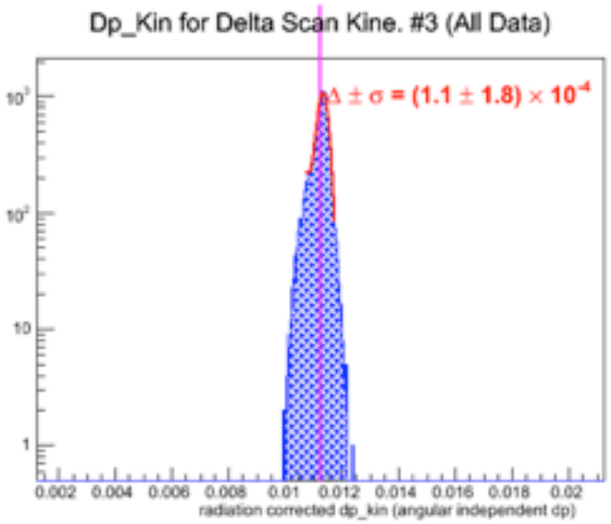


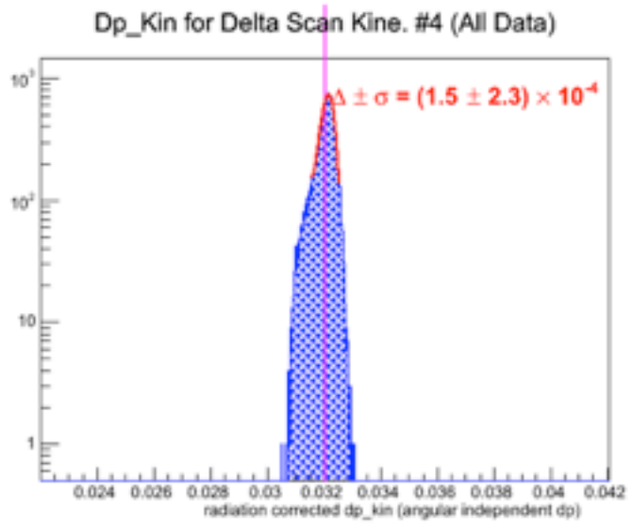
Matrix Calibration











TODO

- Modify the optimization package to directly use target y to do y direction calibration
- Start from the lowest order and try to decide the matrix order used in optimzation
- Any suggestion from this meeting