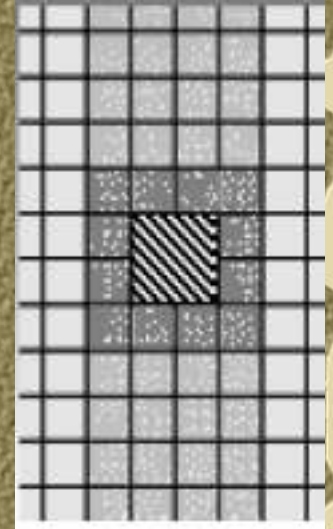


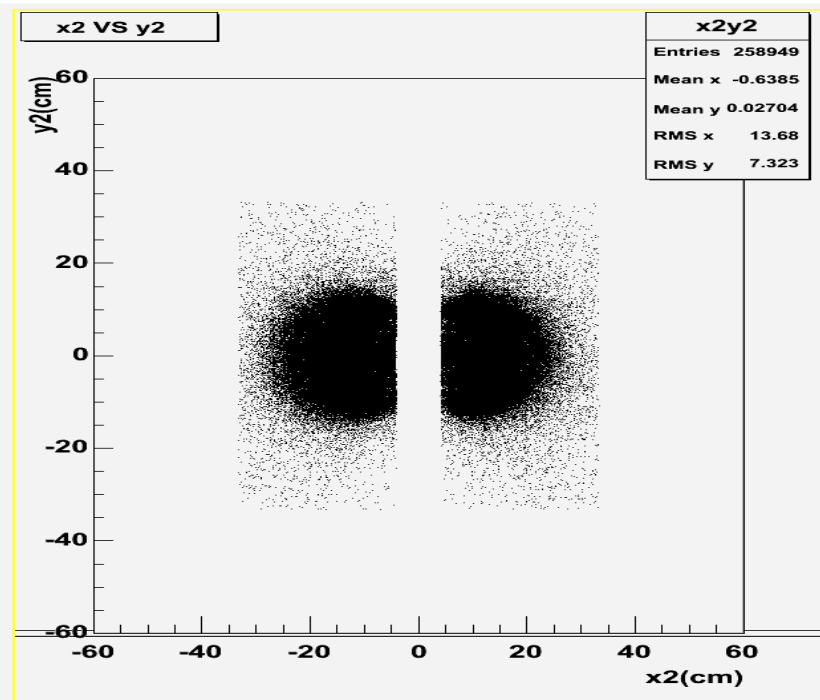
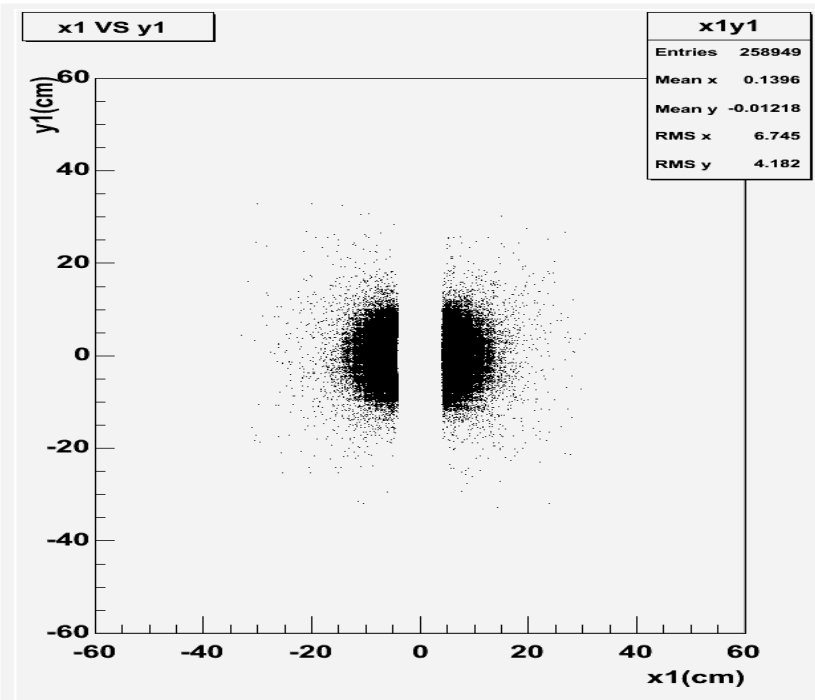
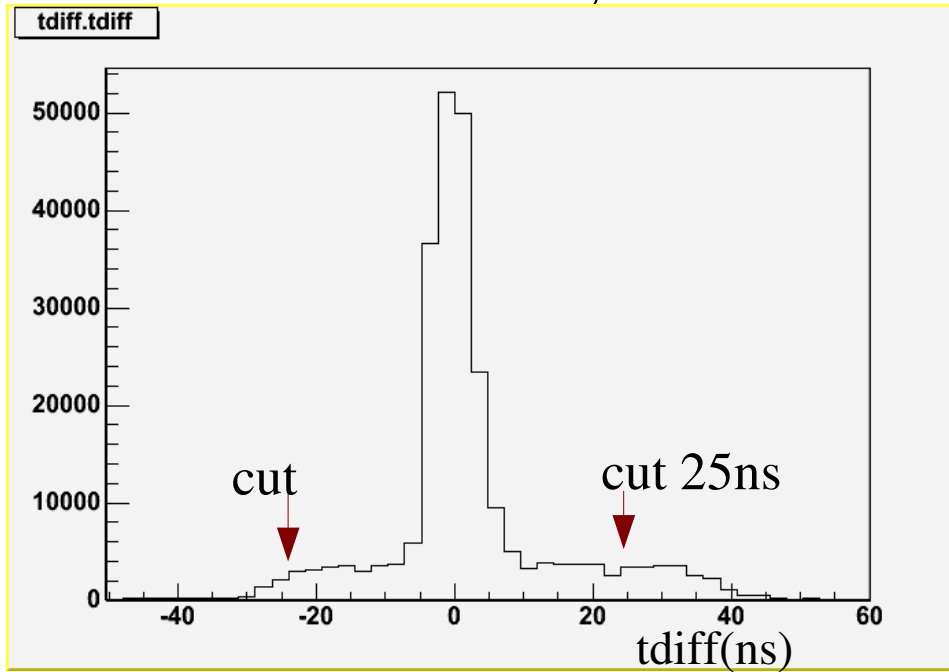
# Compton crosssection

- Selected compton run:4943-4946,4965
- Cuts applied in this analysis:
  - 1. Time:  $|t_{diff}|$  (ie: $|T_{hycal}-T_{tagger}|$ ) $<25$ ns
  - 2.  $E_{cluster}>0.5$ GeV
  - 3. Geometry:Crystal part with 4 central vertical rows excluded
    - $|x1|,|y1|<33.232$ cm,  $|x2|,|y2|<33.232$ cm,  $|x1|,|x2|>4.154$ cm
  - 4.  $|E_{beam}-E1-E2|<1$ GeV
  - 5.  $|P_x1+P_x2|<0.025$
  - 6.  $|P_y1+P_y2|<0.025$
  - 7.  $|P_z-P_z1-P_z2|<1$

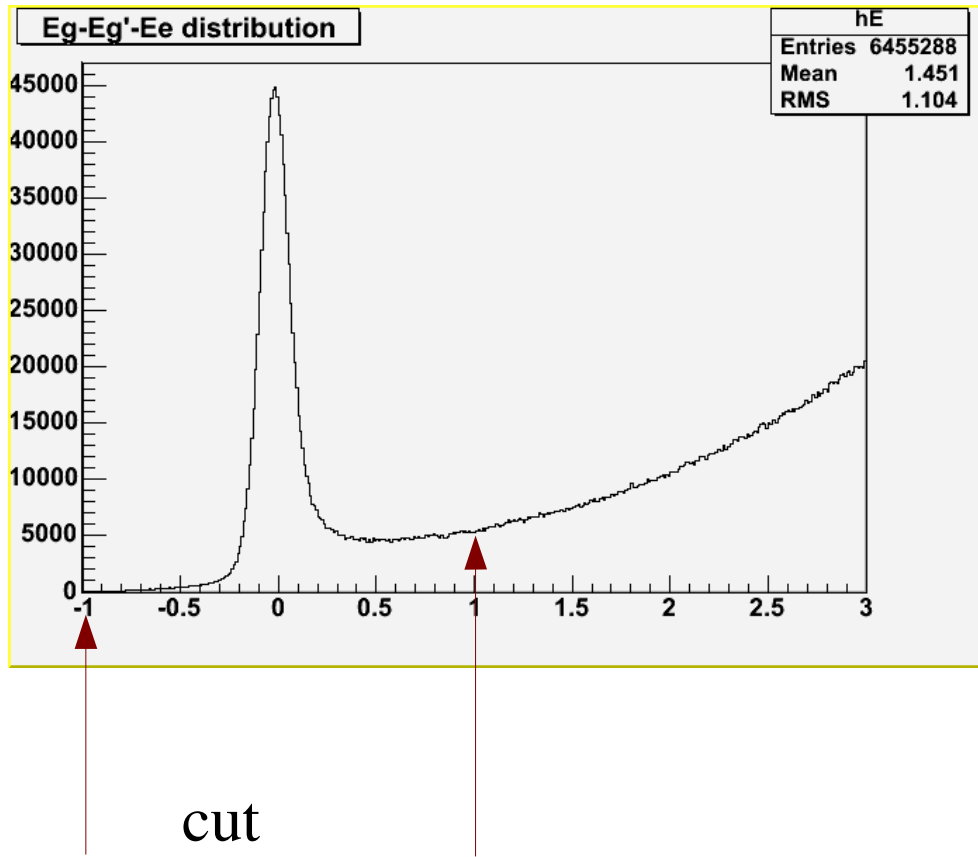


cuts :  $t_{diff} < 25\text{ns}$ ,  $E_{cluster} > 0.5\text{GeV}$ ;

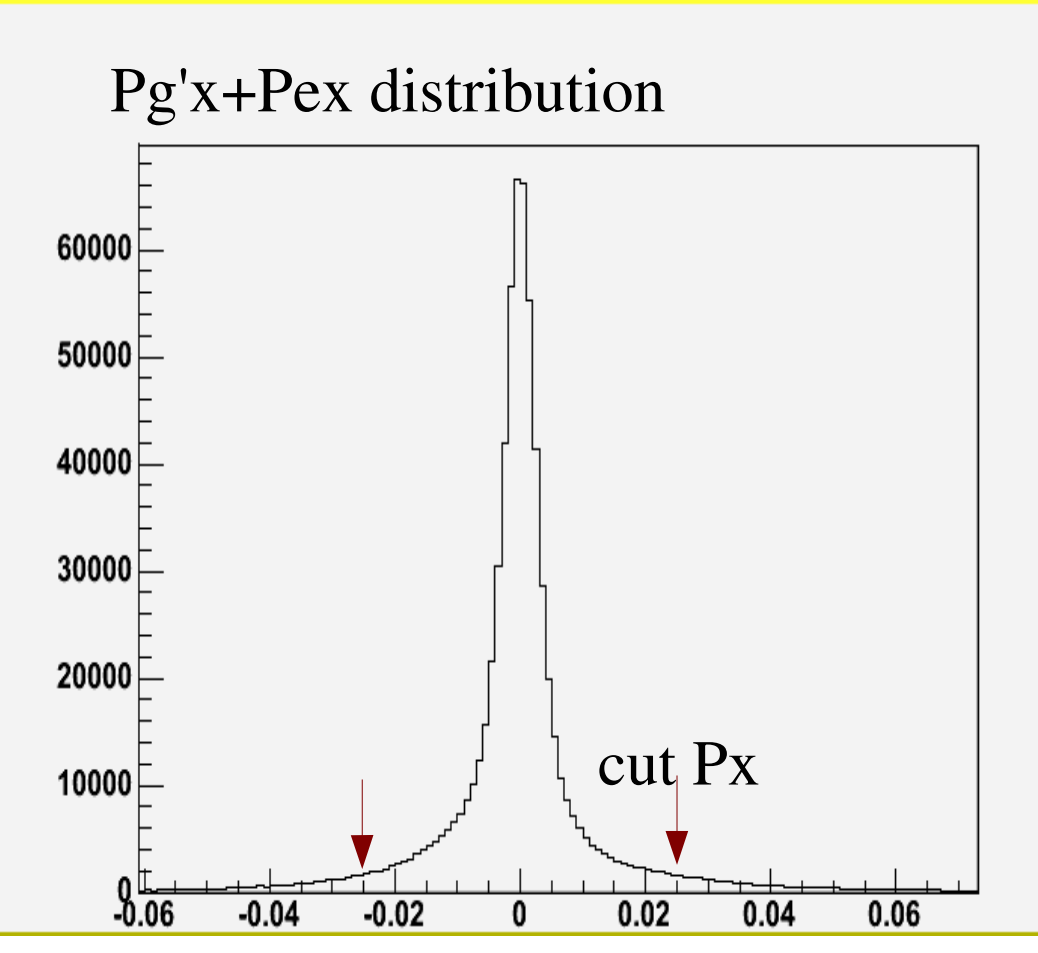
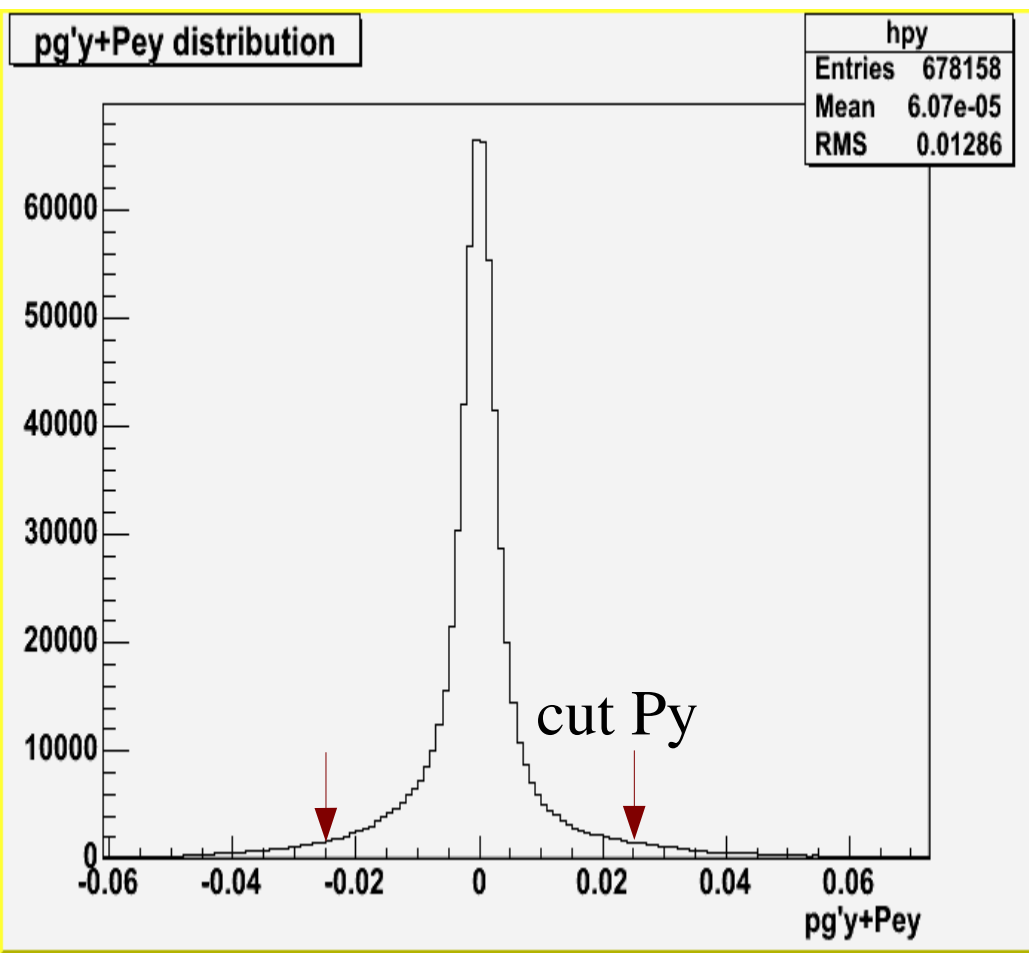
Geometry cuts .



**cuts** :  $t_{diff} < 25\text{ns}$ ,  $E_{cluster} > 0.5\text{GeV}$ , Geometry cut



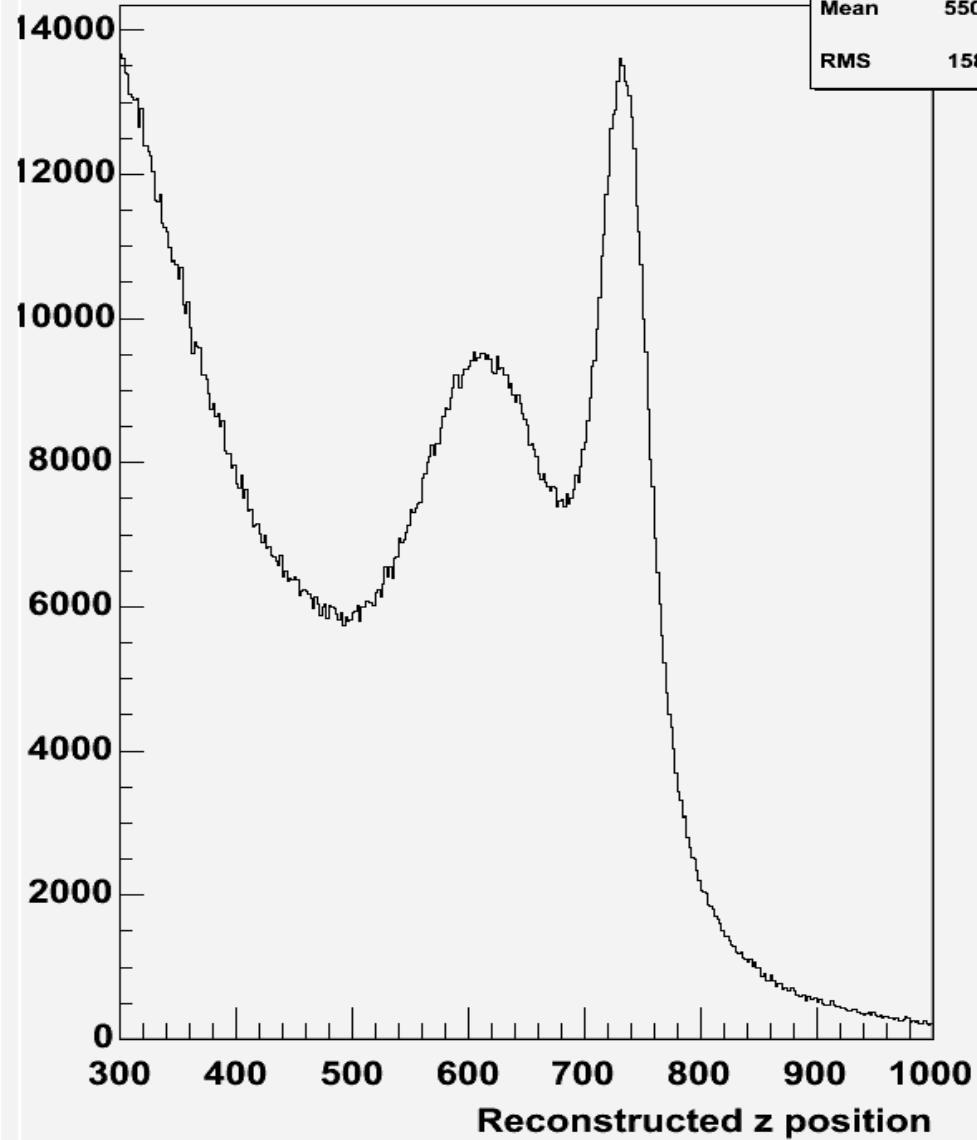
**cuts stage3:**  $t_{diff} < 25\text{ns}$ ,  $E_{cluster} > 0.5\text{GeV}$ , Geometry: crystal part with 4 central rows,  $|E_{beam} - E_g - E_e| < 1\text{GeV}$



cuts stage1:  $t_{diff} < 25 \text{ ns}$ ,  $E_{cluster} > 0.5 \text{ GeV}$ ,  
Geomety: crystal part with 4 central rows

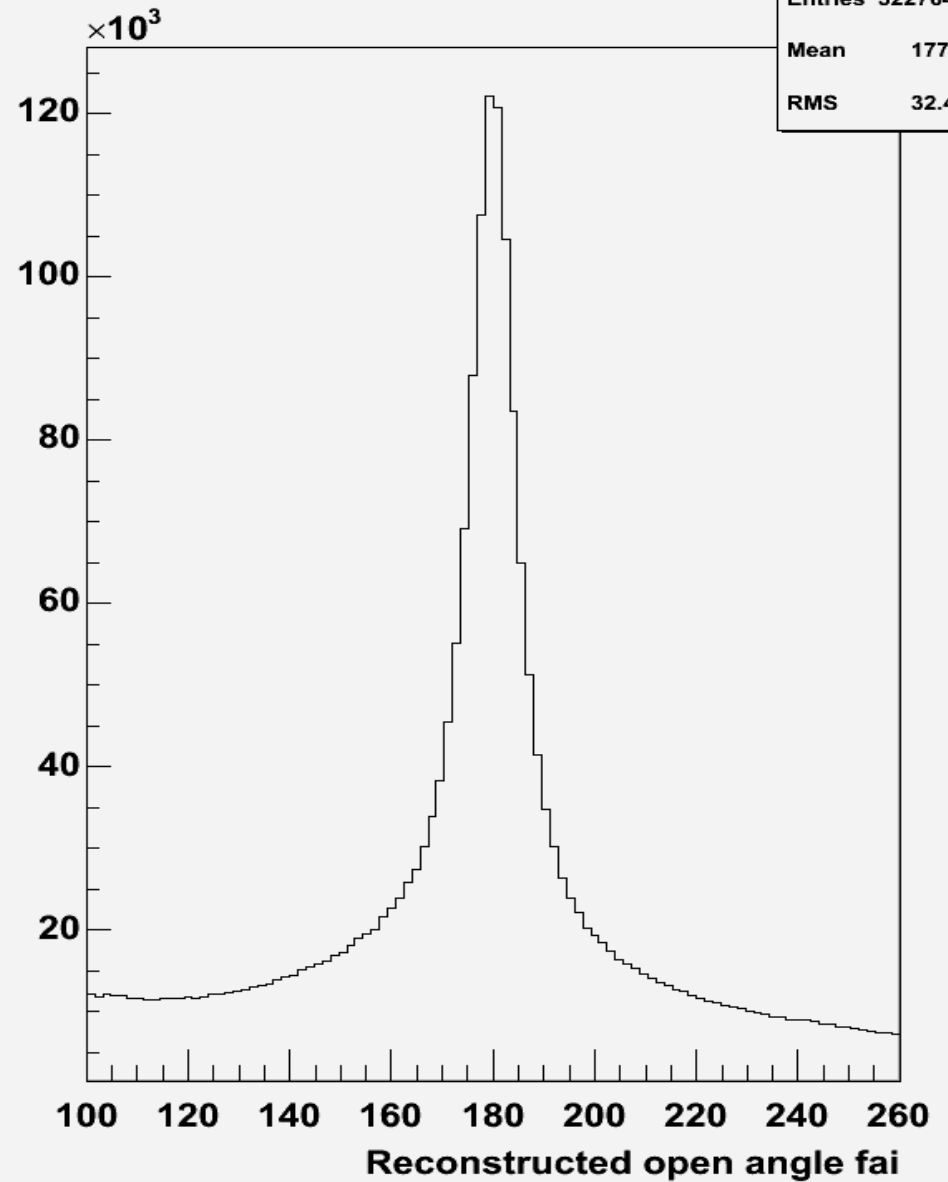
Z recon by energies of secondary particles

hz	
Entries	3227644
Mean	550.2
RMS	158.1



open angle fai calculated by positions of secondary particles

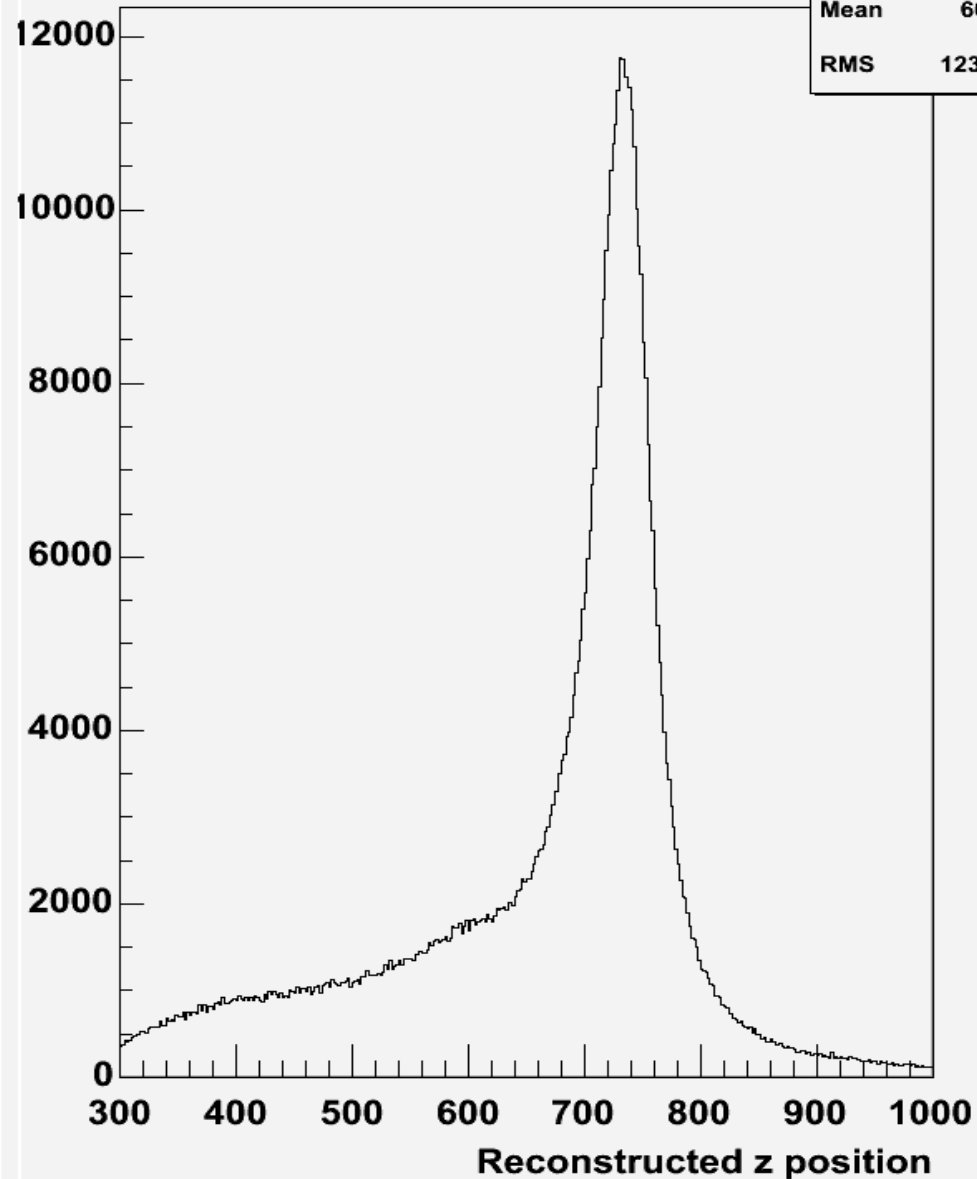
hfai	
Entries	3227644
Mean	177.2
RMS	32.47



**cuts stage2:**  $t_{diff} < 25 \text{ ns}$ ,  $E_{cluster} > 0.5 \text{ GeV}$ , Geometry: crystal part with 4 central rows applied,  $|E_{beam} - E_g - E_e| < 1 \text{ GeV}$  .

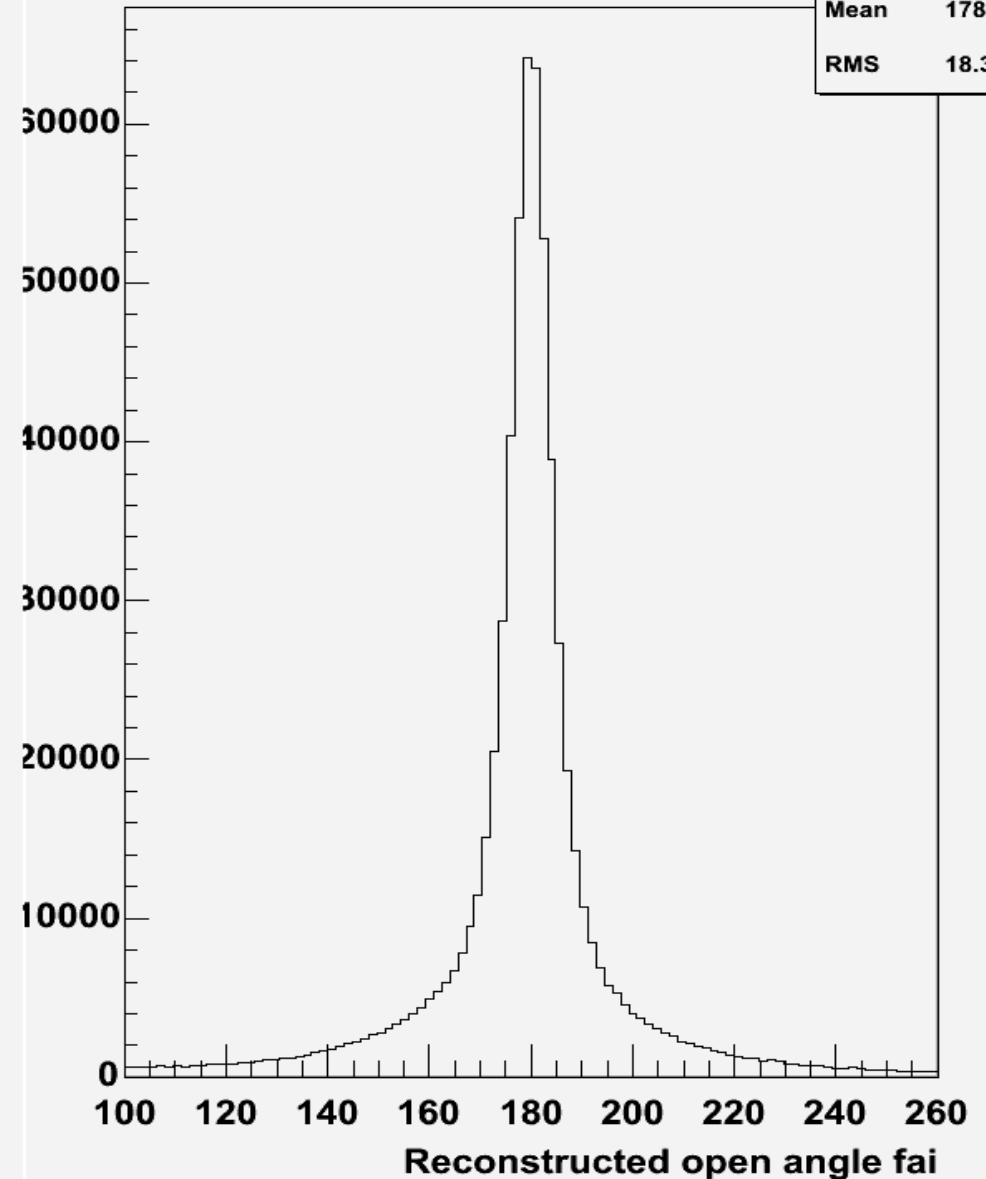
Z recon by energies of secondary particles

hz	
Entries	678158
Mean	669
RMS	123.9

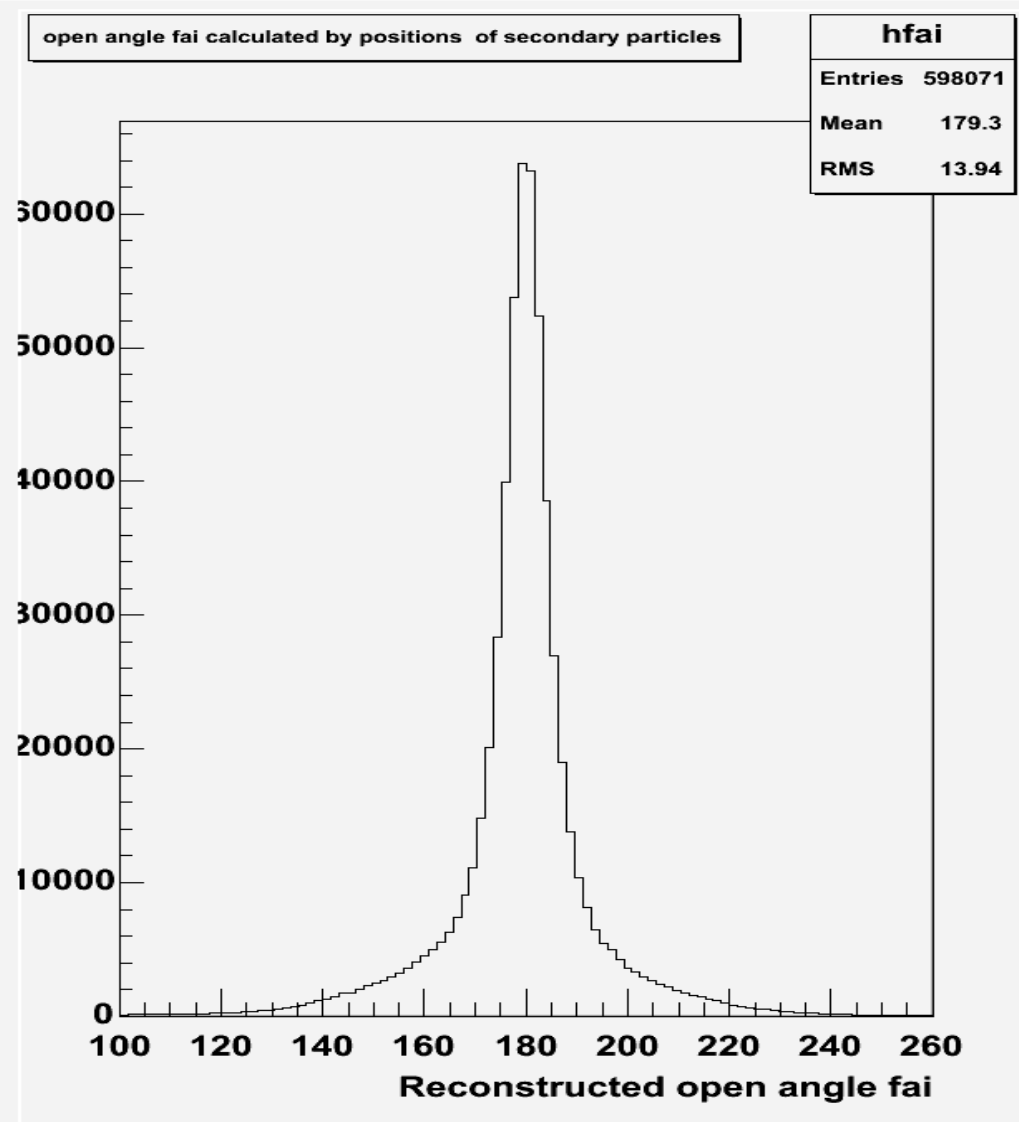
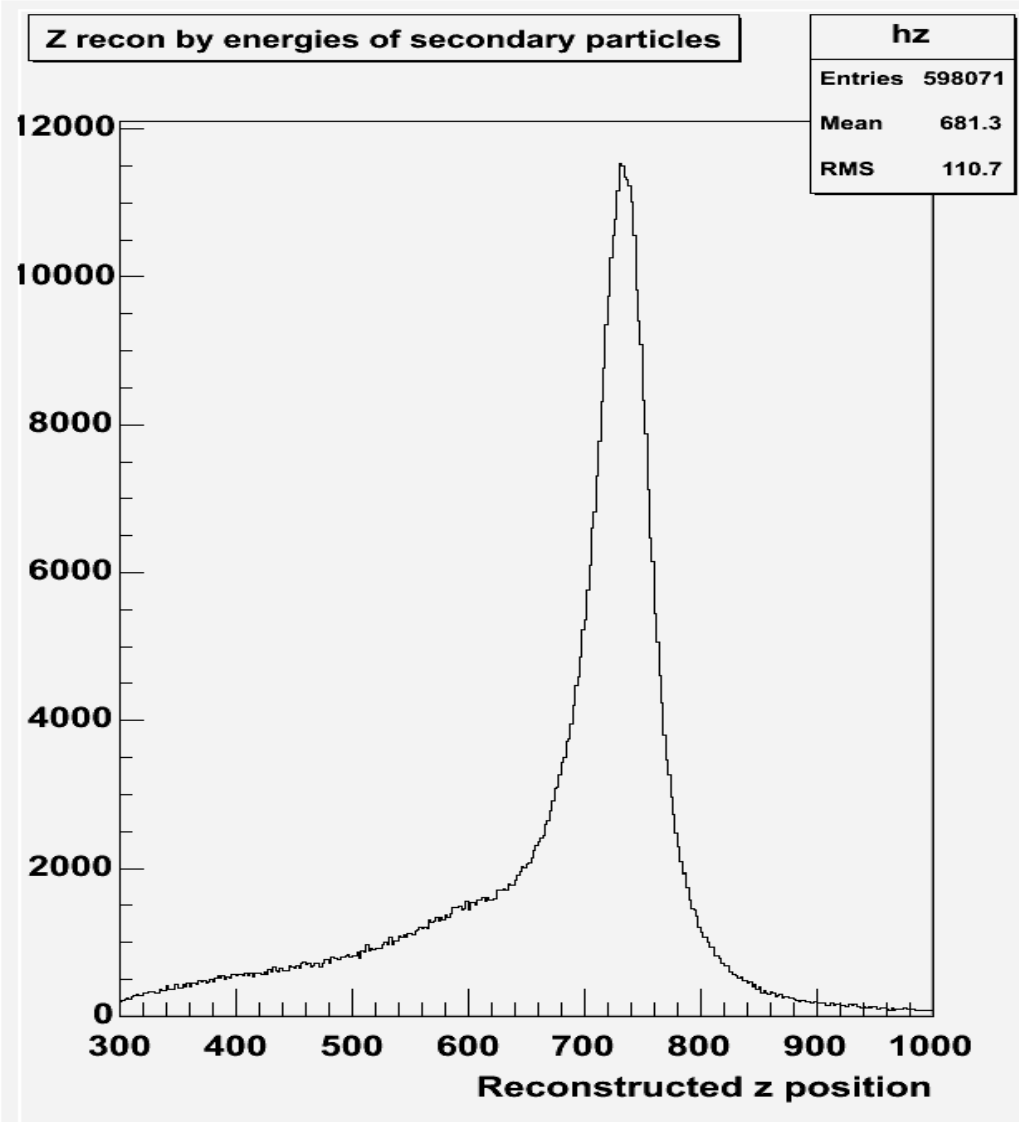


open angle fai calculated by positions of secondary particles

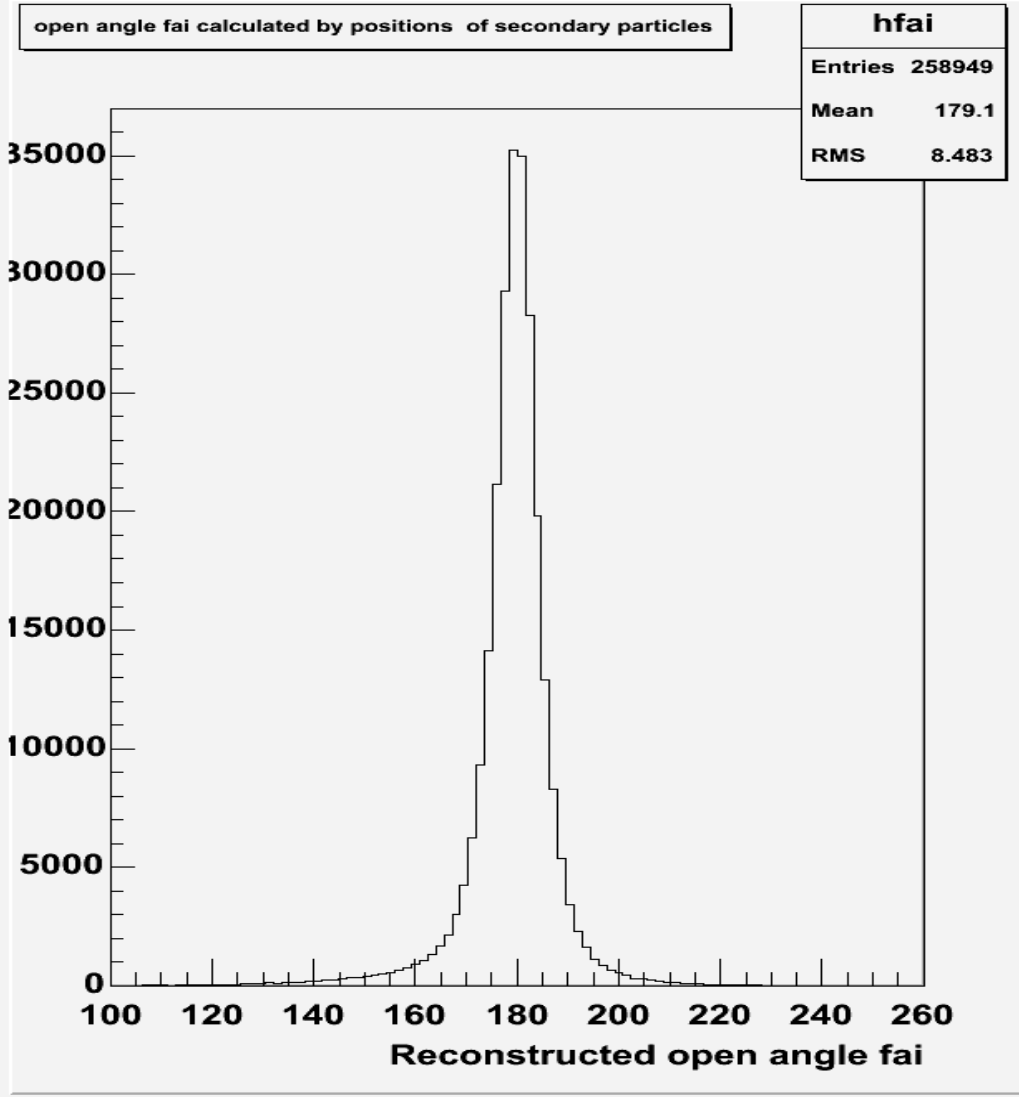
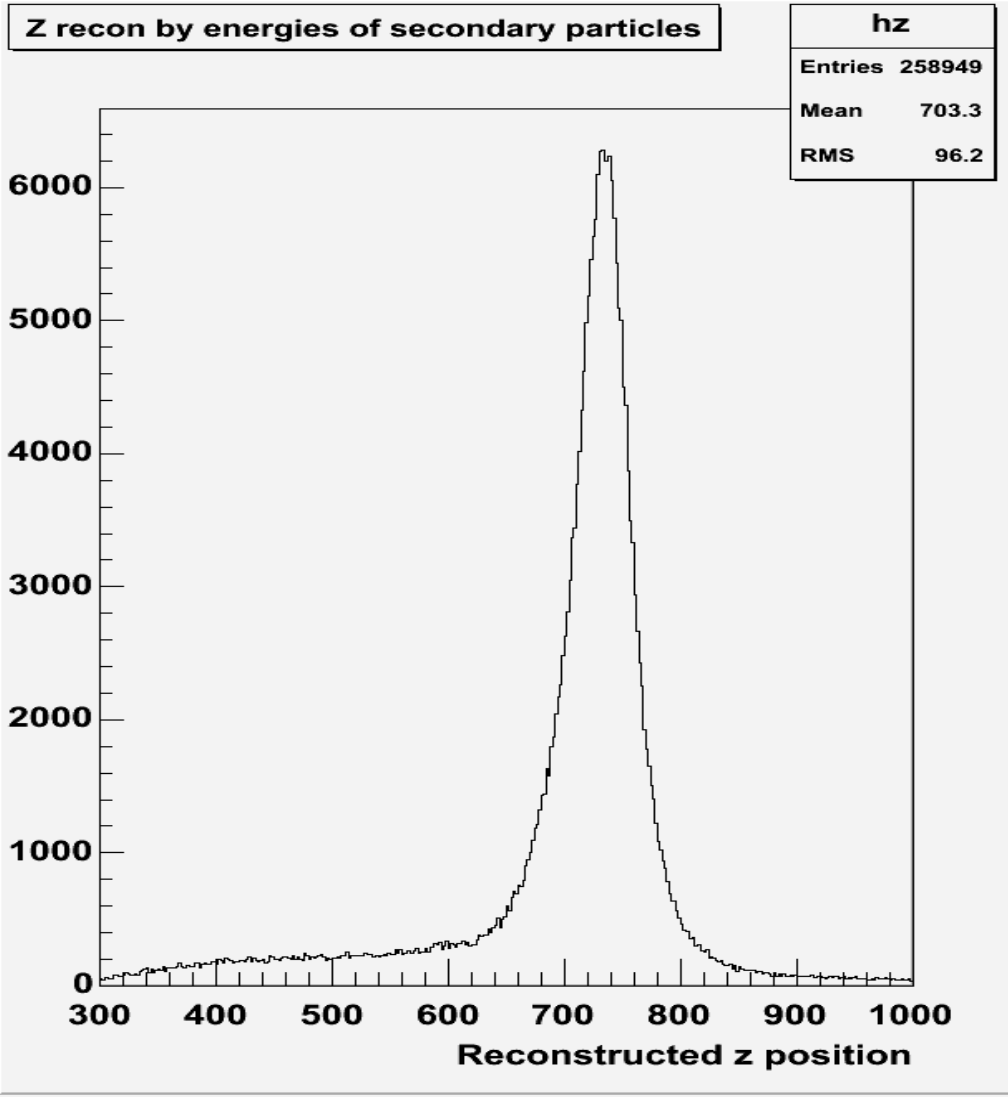
hfai	
Entries	678158
Mean	178.9
RMS	18.36



**cuts stage3:**  $t_{diff} < 25 \text{ ns}$ ,  $E_{cluster} > 0.5 \text{ GeV}$ , Geometry: crystal part ,  
 $|E_{beam} - E_g - E_e| < 1 \text{ GeV}$ ,  $|P_{x1} + P_{x2}| < 0.025$ ,  $|P_{y1} + P_{y2}| < 0.025$



**cuts stage4:**  $t_{diff} < 25 \text{ ns}$ ,  $E_{cluster} > 0.5 \text{ GeV}$ , Geometry: crystal part ,  
 $|E_{beam} - E_g - E_e| < 1 \text{ GeV}$ .  $|P_{x1} + P_{x2}| < 0.025$ ,  $|P_{y1} + P_{y2}| < 0.025$ ,  $|P_z - (P_{z1} + P_{z2})| < 0.025$ , 4 central vertical rows cutted .

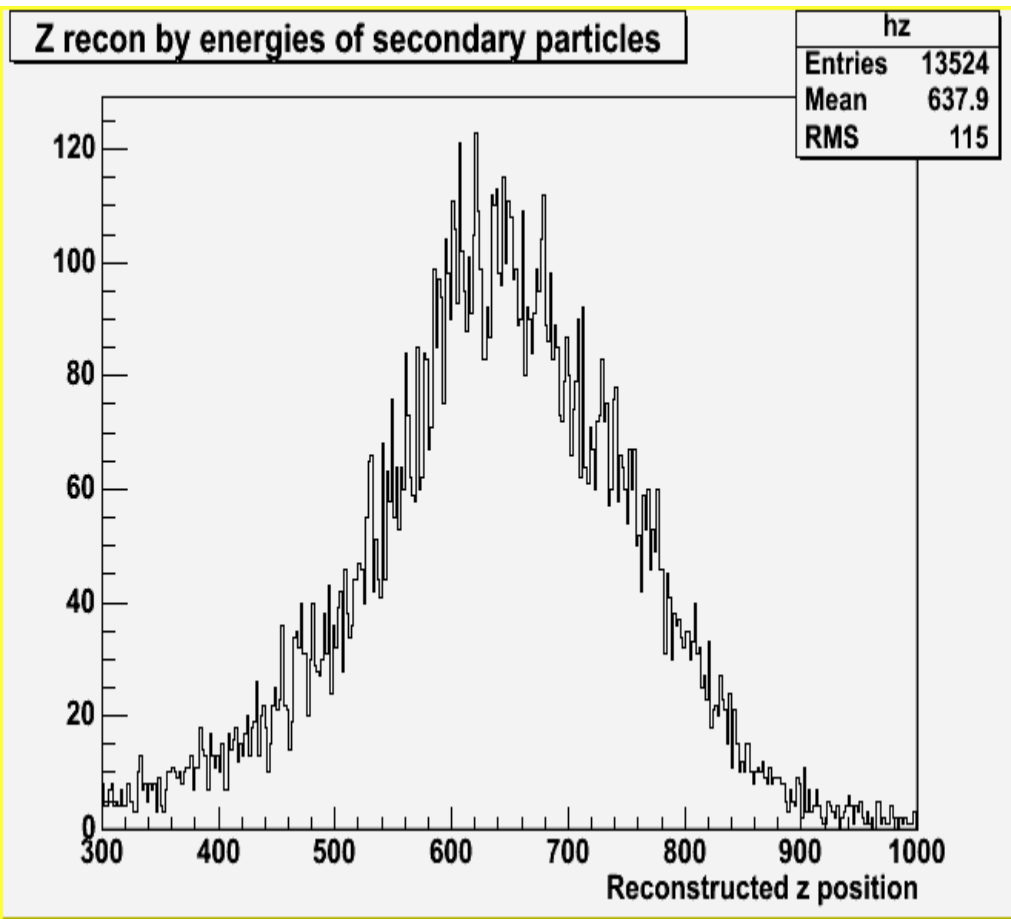




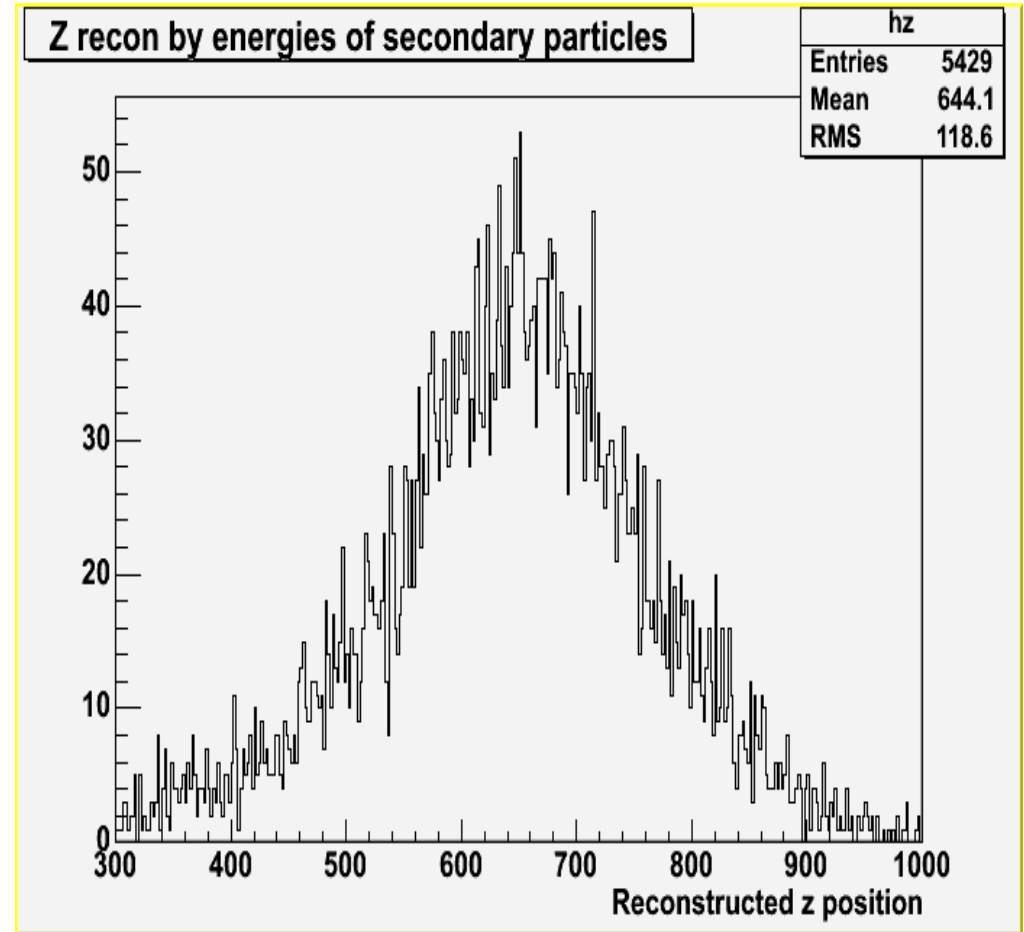
# Empty target run5158&run4869

All the cuts applied except for 4 vertical central rows

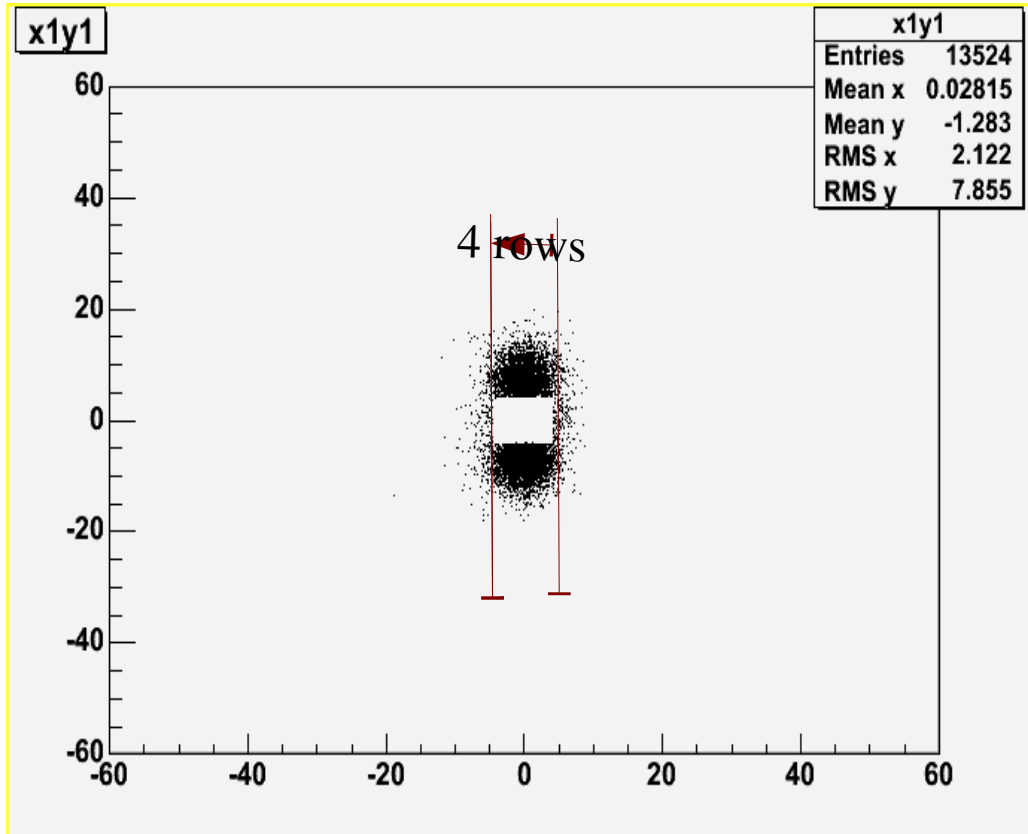
run 5158



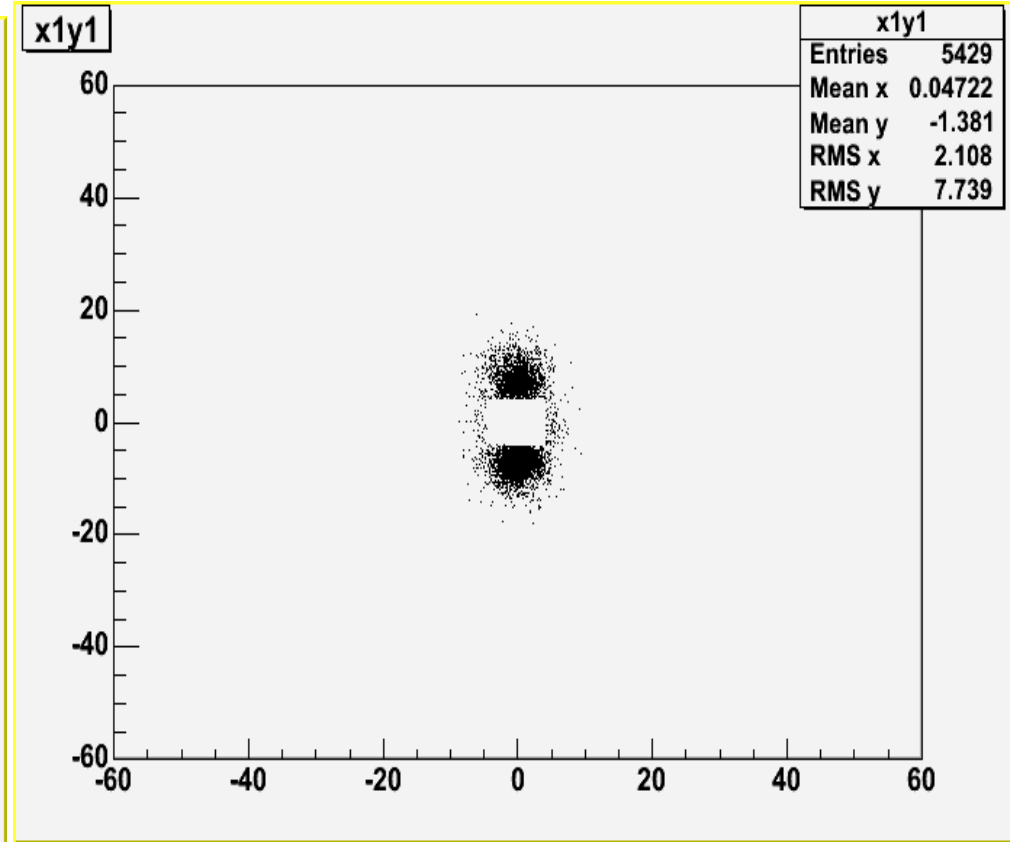
run 4869



Empty target run5158



Empty target run4869



Run5158 particle 1 with higher energy

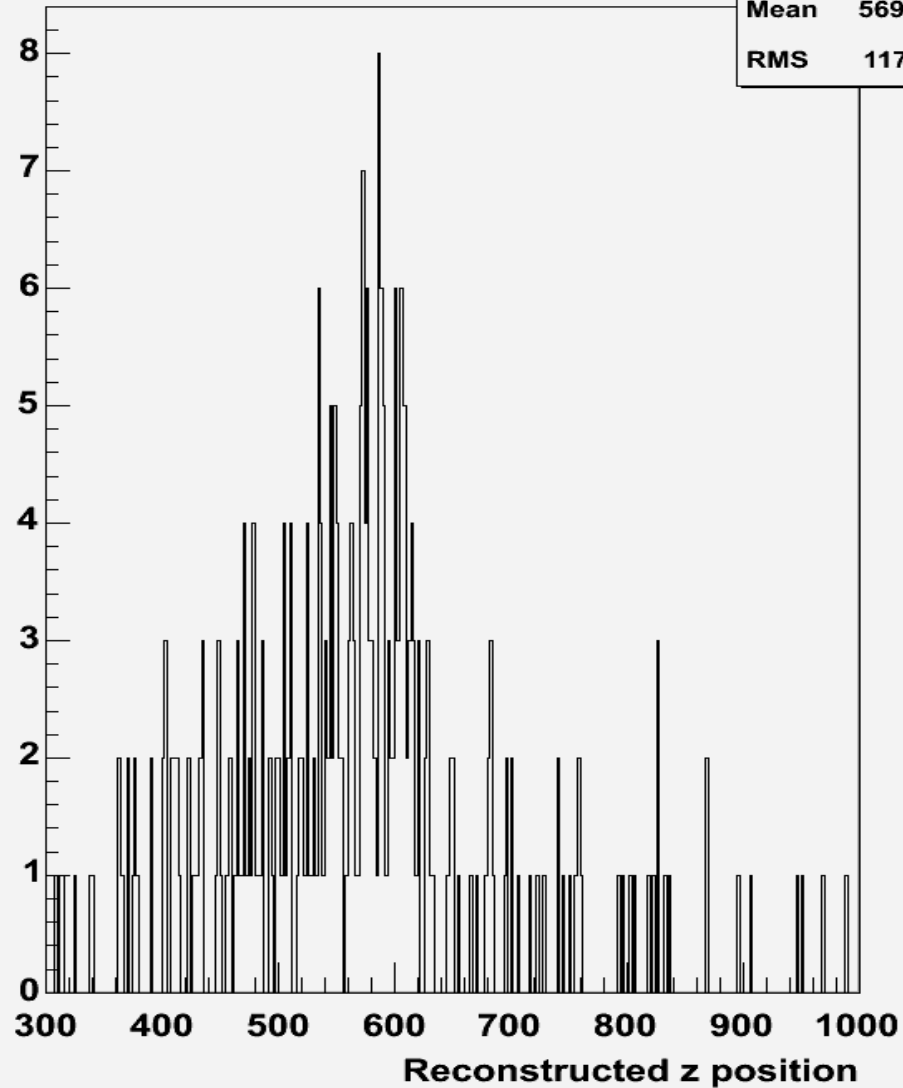
Run4869 particle 1 with higher energy

All the cuts applied except for 4 vertical central rows

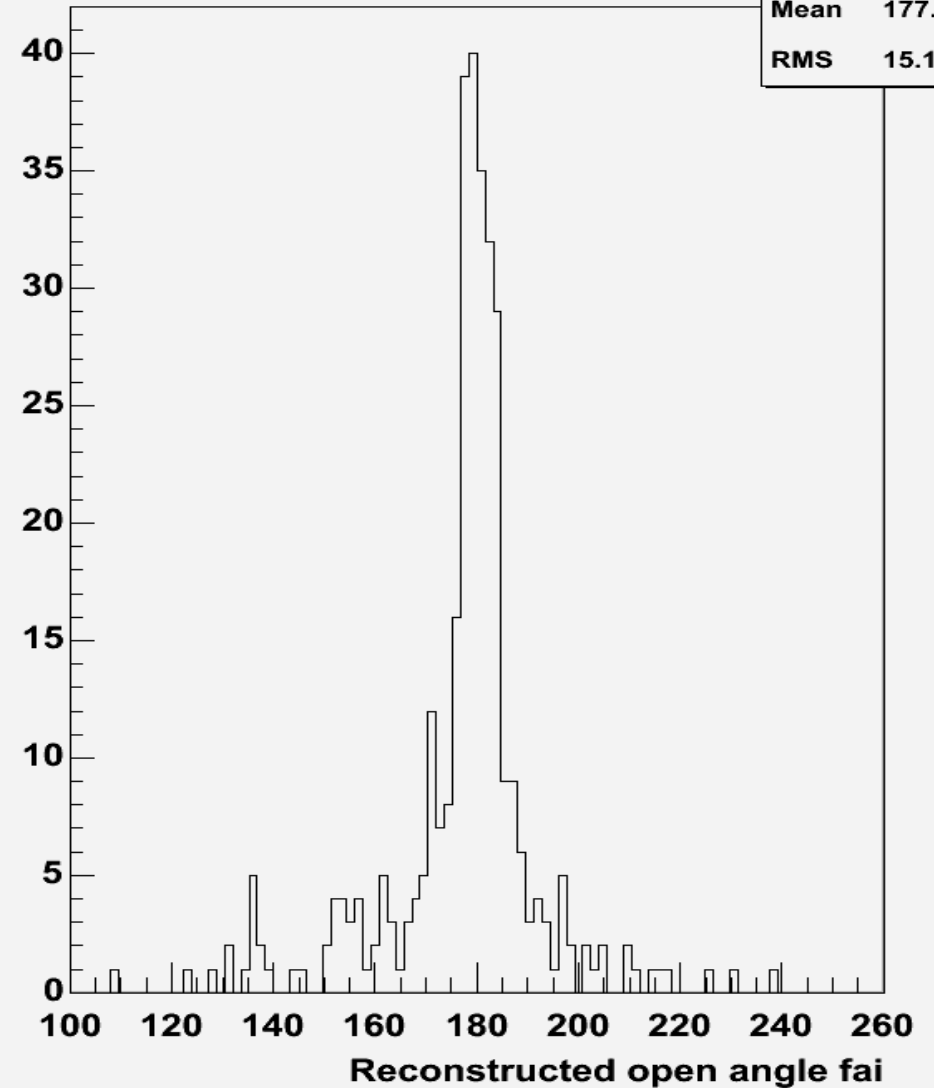
# Empty target run5158&run4869 subtraction

run 5158 ,cuts applied are same as compton runs

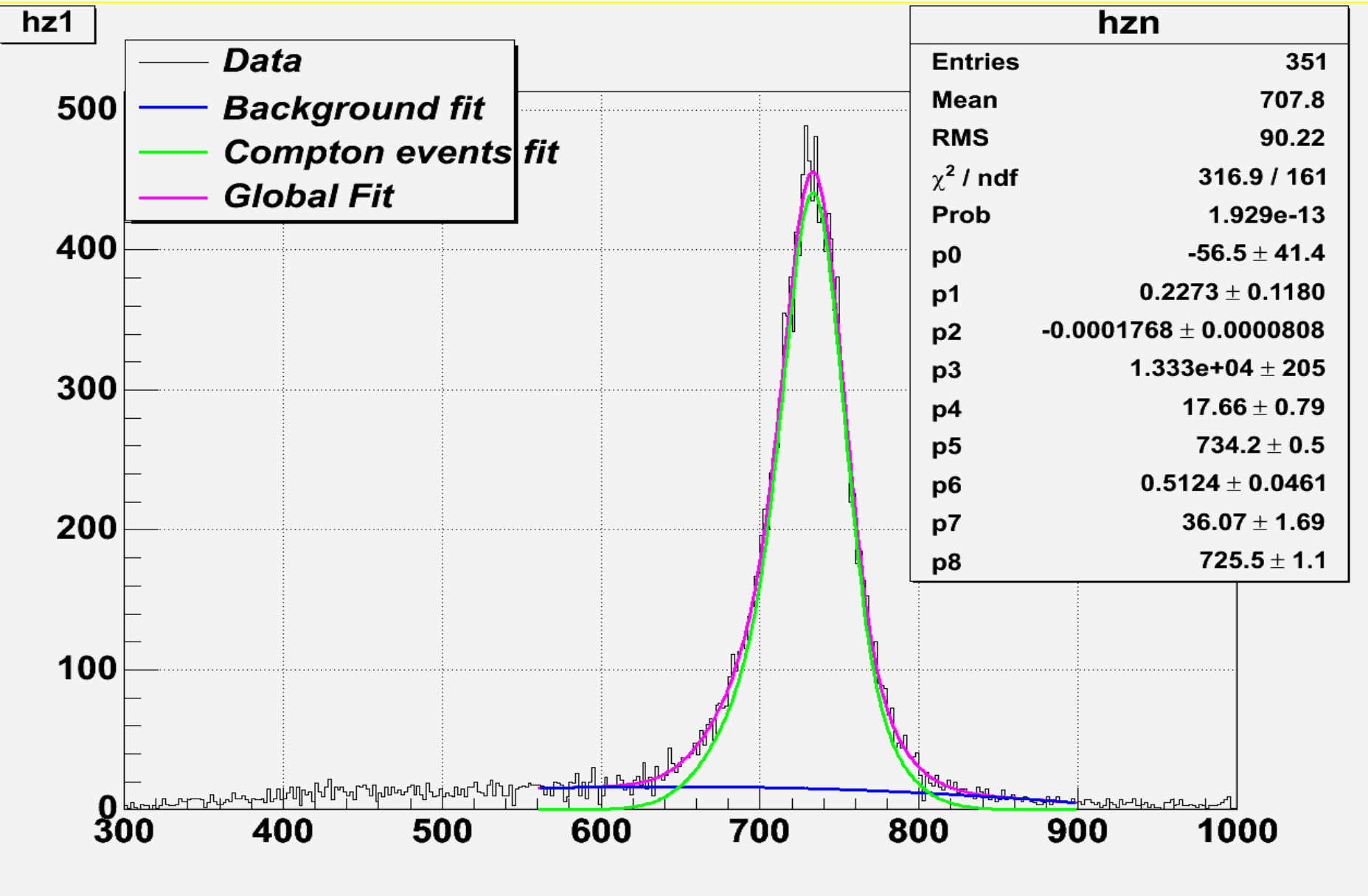
Z recon by energies of secondary particles



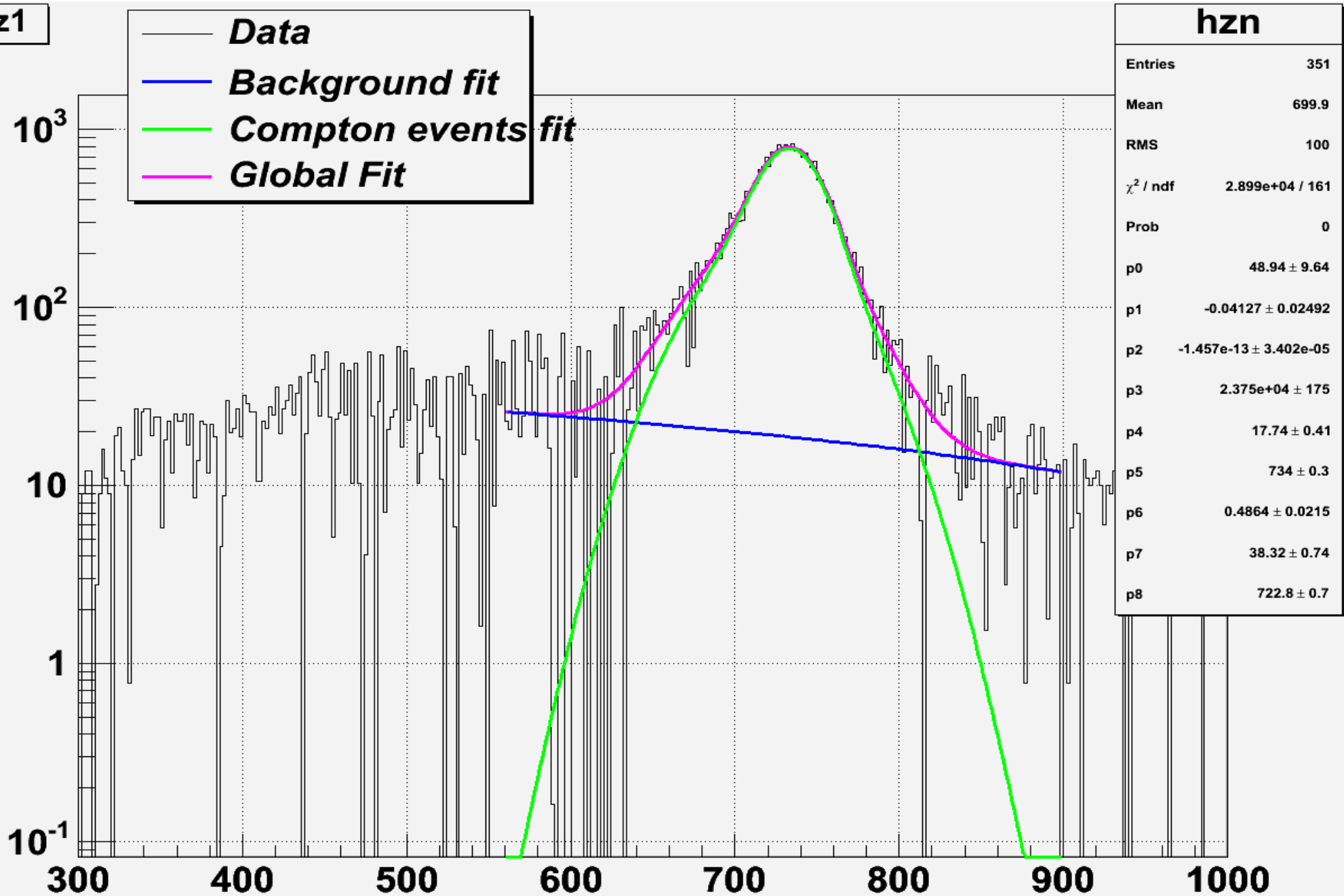
open angle fai calculated by positions of secondary particles



# Z fitting for Tcounter 1, empty target substracted



# Z fitting for Tcounter 1, empty target subtracted



crosssection: empty target substracted

Compton Crossections showing only statistic uncertainty

