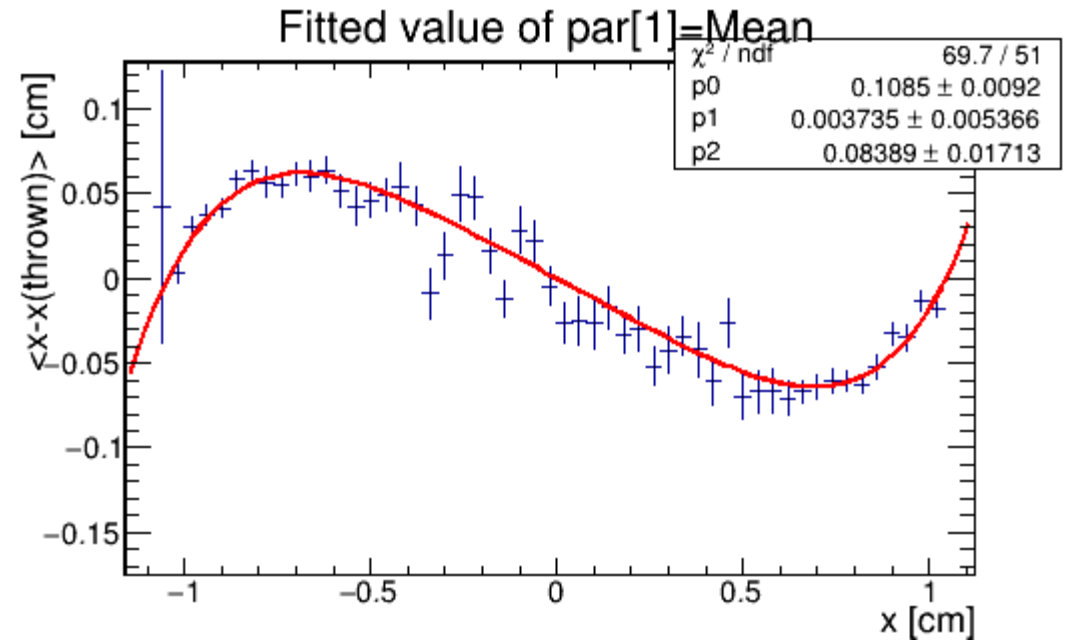


# FCAL-II reconstruction update

Simon Taylor/JLab

- Photon gun simulation,  $\theta = 1.5^\circ$ ,  
 $E_\gamma = \{0.1, 10.1\}$  GeV
- Reconstruction using Island algorithm
  - Shower width parameter  $b = 0.3$  cm  
(previously  $b = 0.35$  cm)

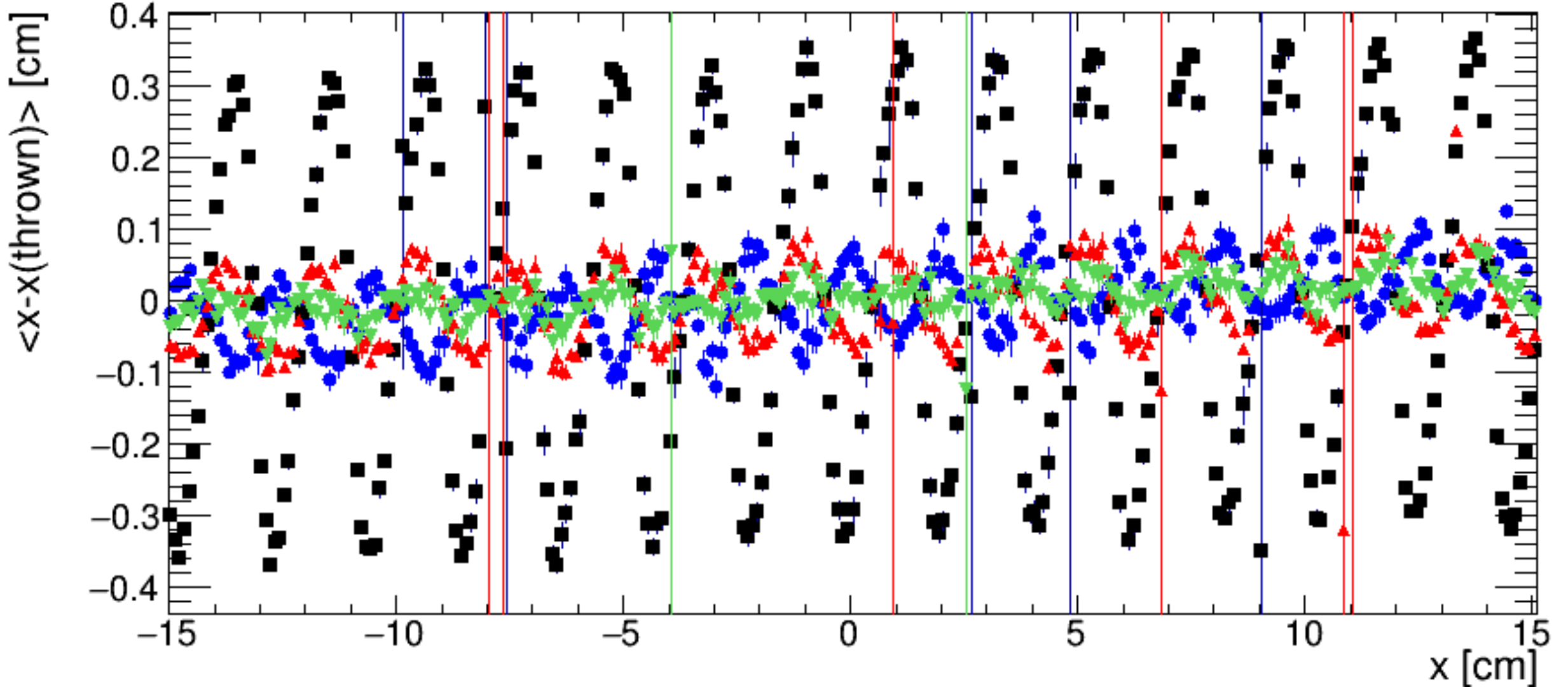
Photons in insert



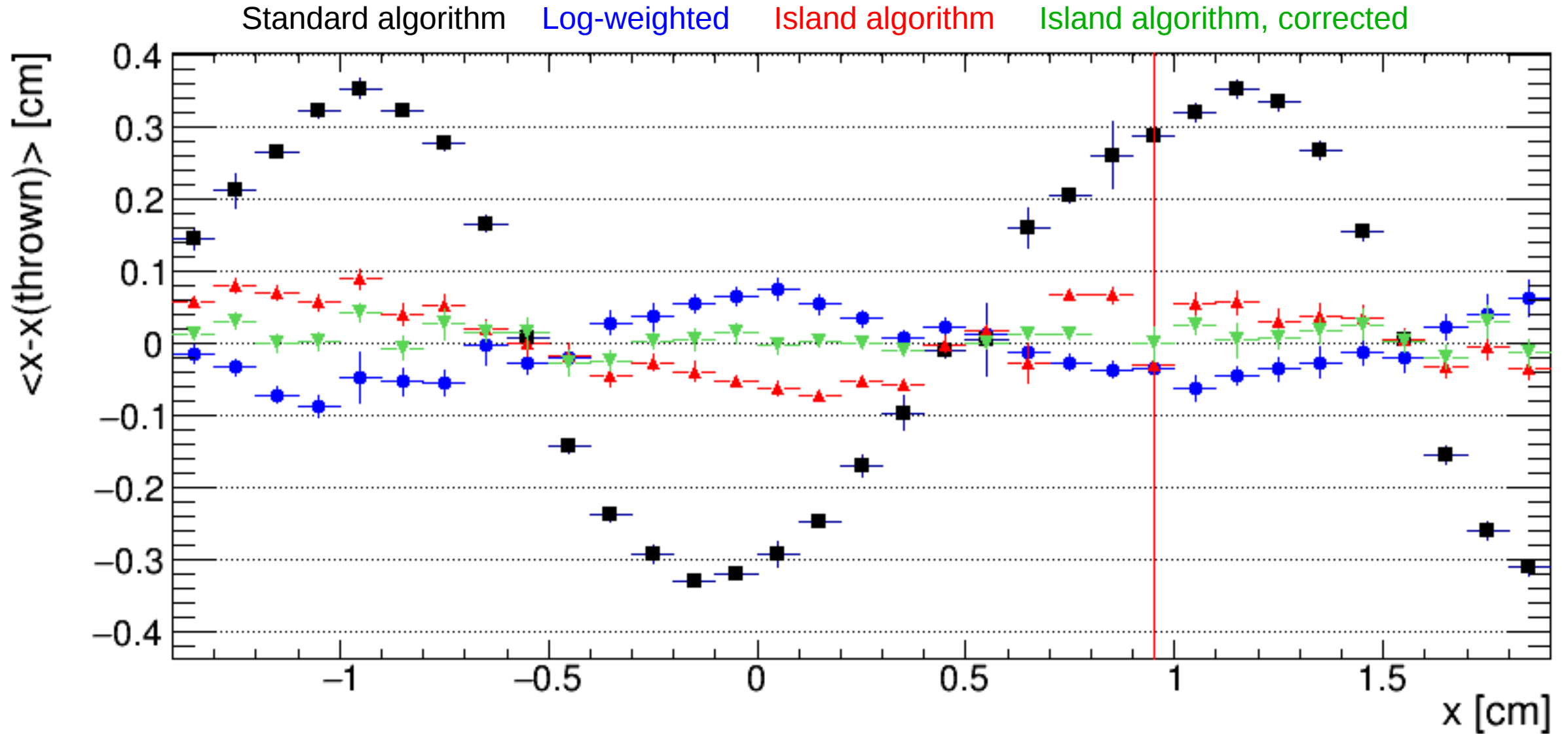
$$f(x) = x \left( x^2 - \frac{2.09^2}{4} \right) (p_0 + p_1 x + p_2 x^2)$$

# Mean position comparisons

Standard algorithm    Log-weighted    Island algorithm    Island algorithm, corrected

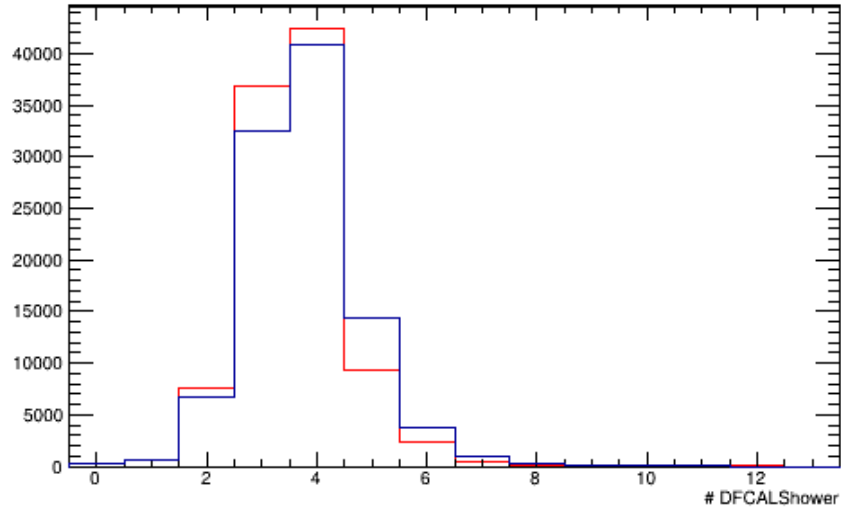


# Mean position comparisons

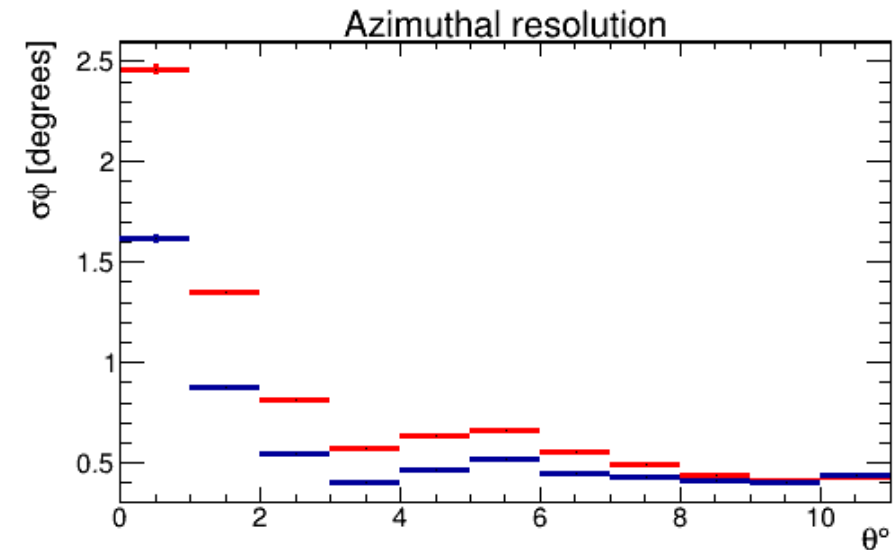
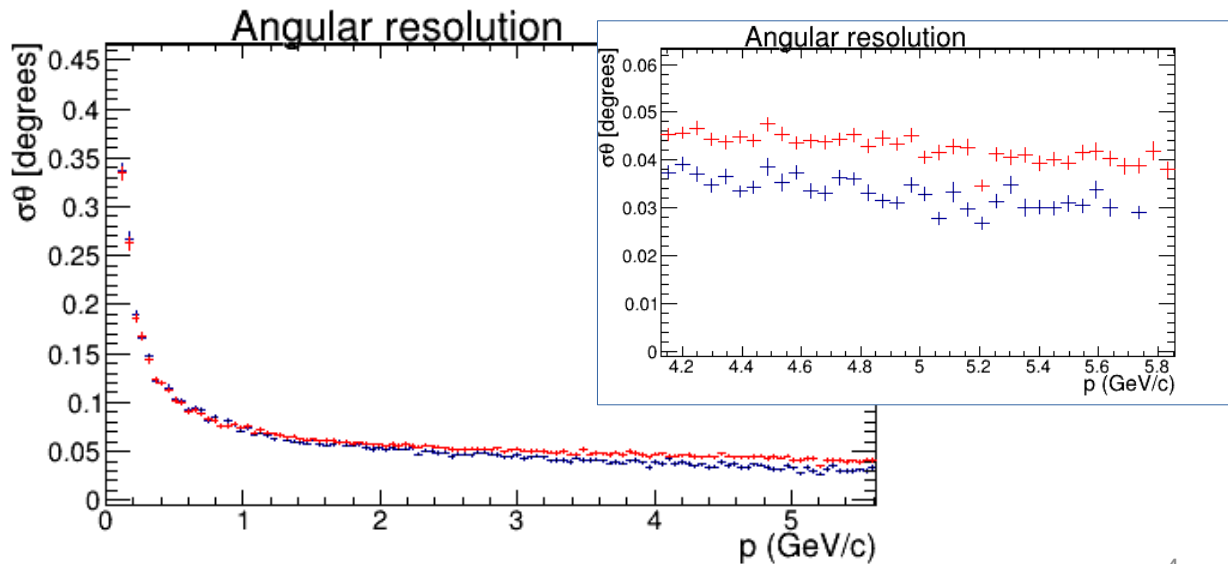
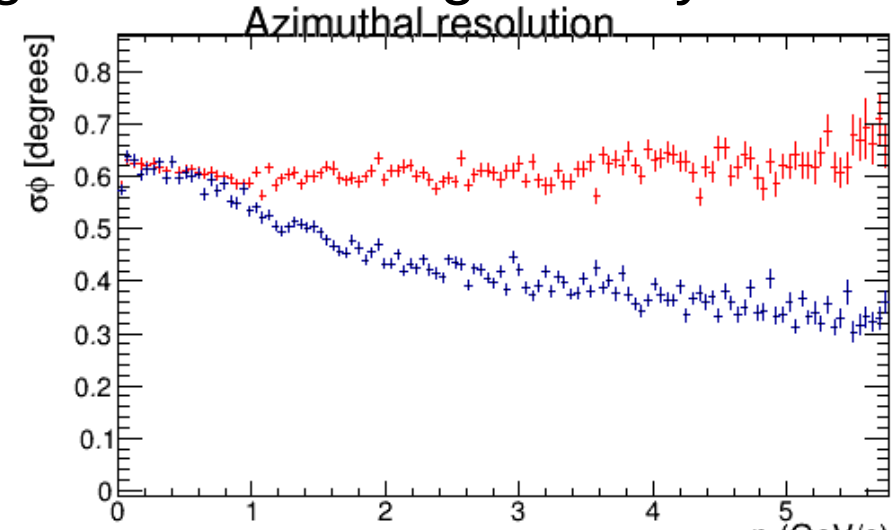


# Simulation of $\eta \rightarrow \pi^0 \gamma \gamma$

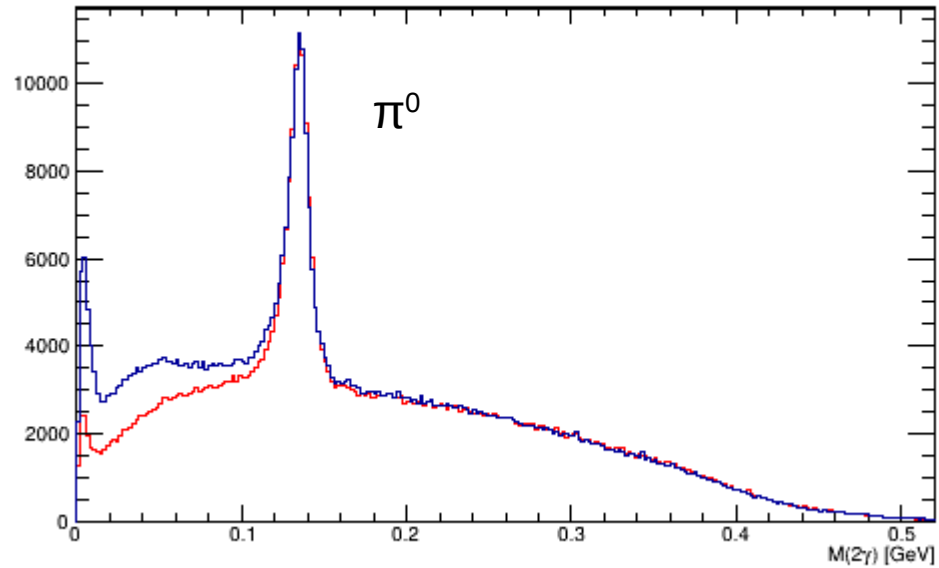
- Generated 100000 events using genEtaRegge and FCAL-II geometry



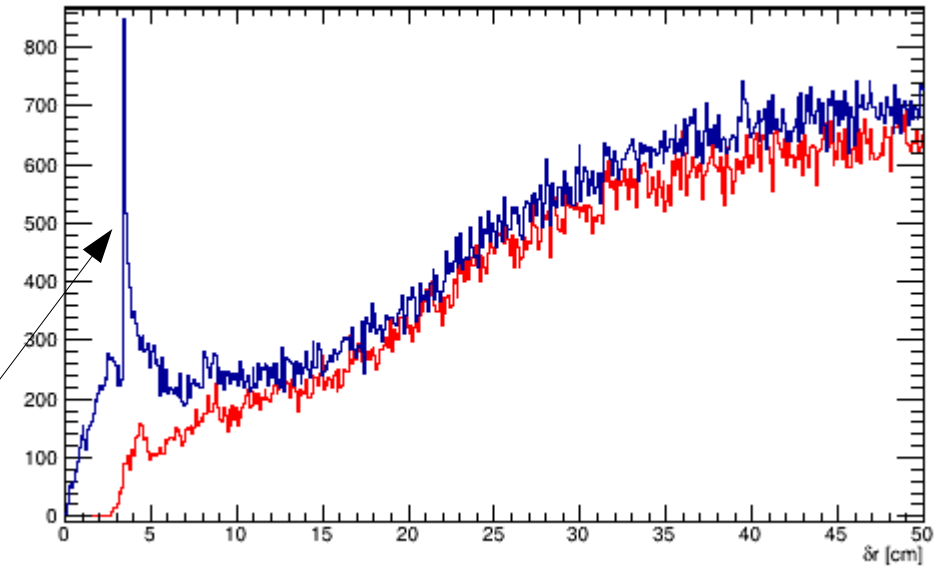
Island  
Default



# Simulation of $\eta \rightarrow \pi^0 \gamma \gamma$



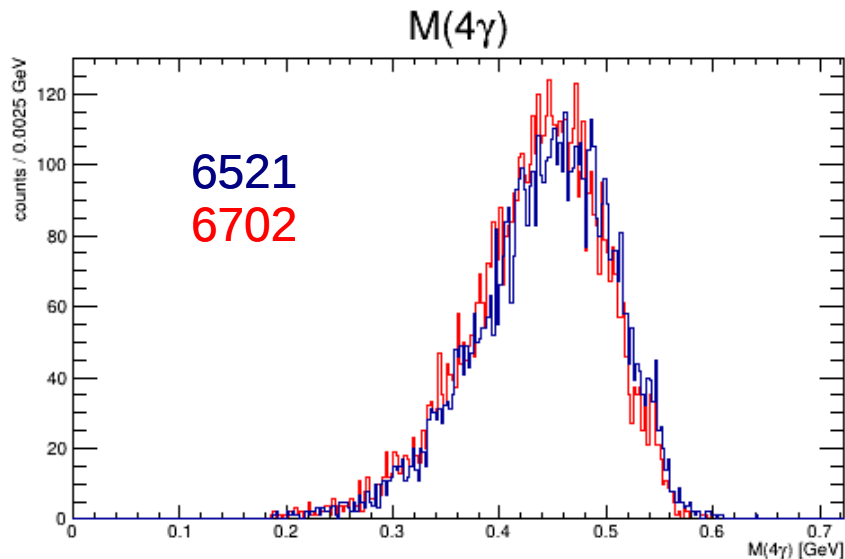
Island  
Default



Spike due to insert/lead glass interface (I think)

# Simulation of $\eta \rightarrow 3\pi^0$

- Generated 1000000 events using genEtaRegge and FCAL-II geometry



Island  
Default

Kinematic fit  
CL>0.01

