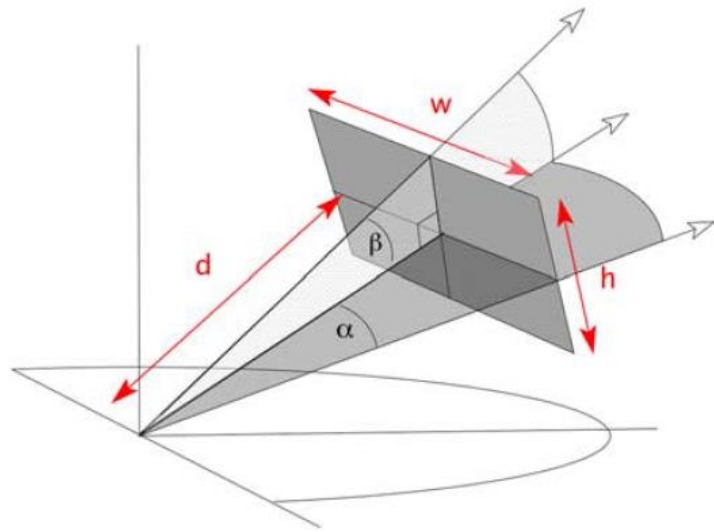


Positronium simulation & TOF issue

SNU

Bongho Kim

Solid angle of TOF detector

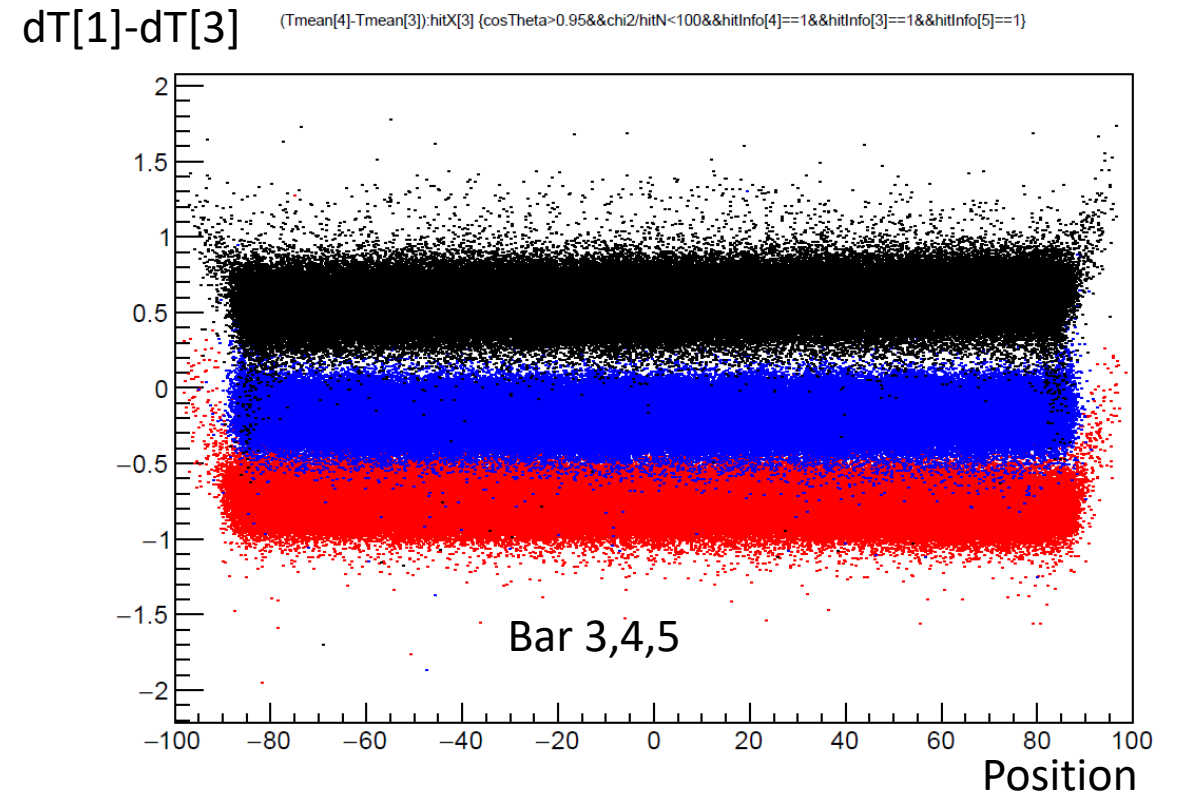
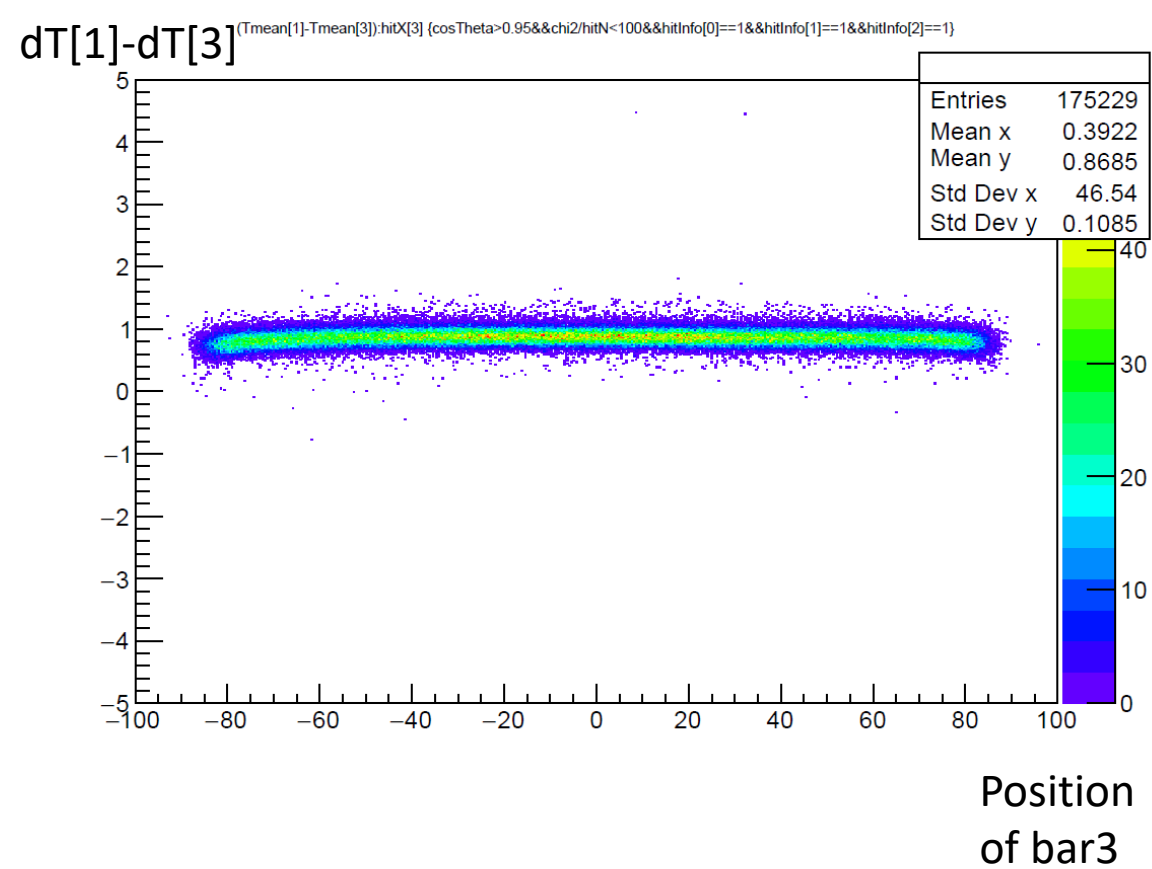


$$\Omega = 4 \cdot \arcsin(\sin \alpha \cdot \sin \beta)$$

$$\beta = \arctan\left(\frac{h}{2d}\right)$$

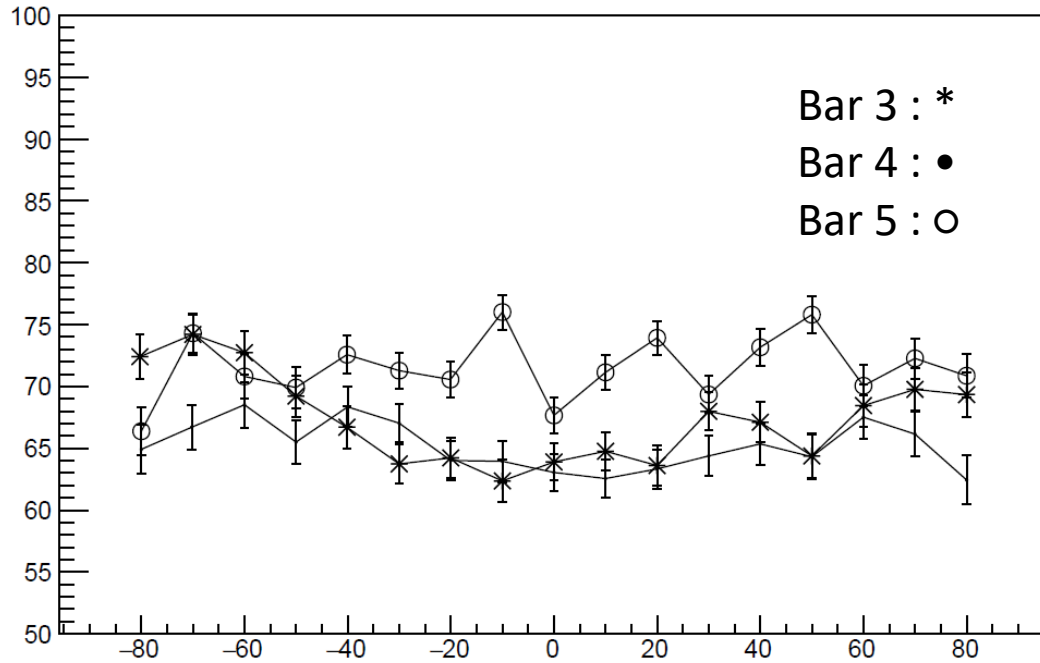
- With current design (height 825)
- Calculated geometrical efficiency is 0.64

Mean time difference distribution

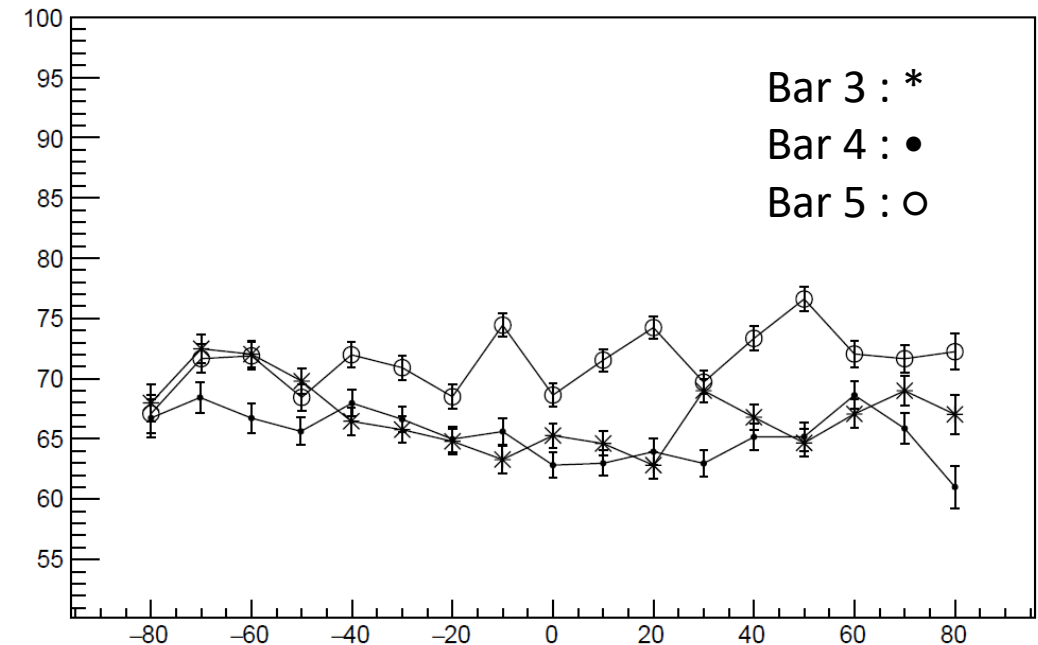


Time resolution of Bar 3,4,5

Cos > 0.99 & hitN==12

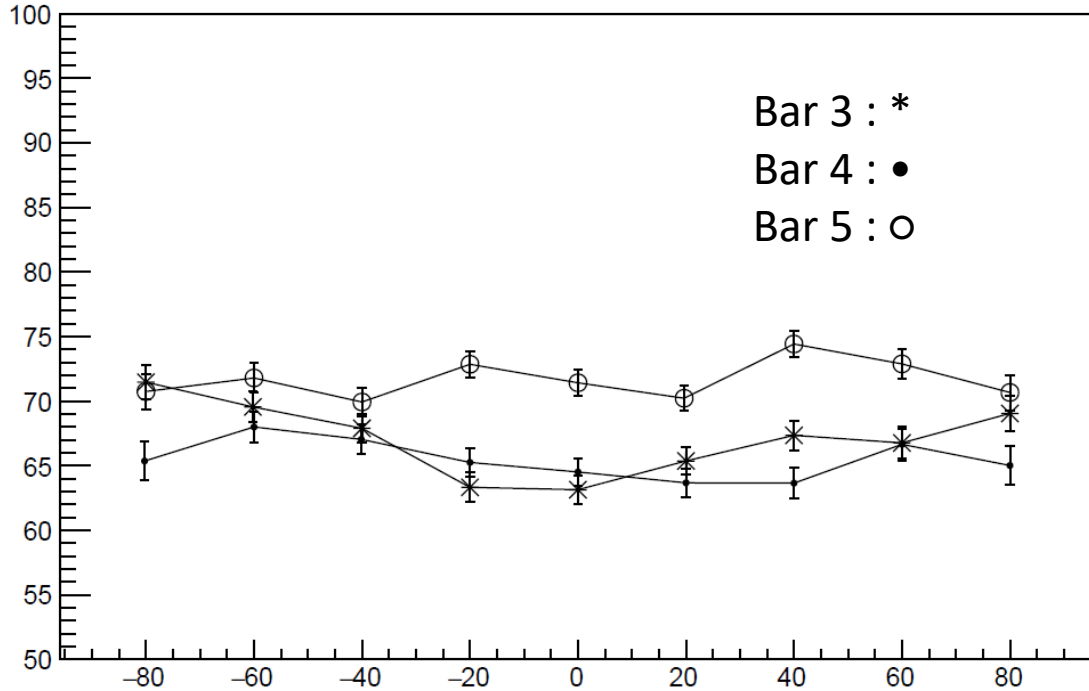


Cos > 0.95 & hitN==12

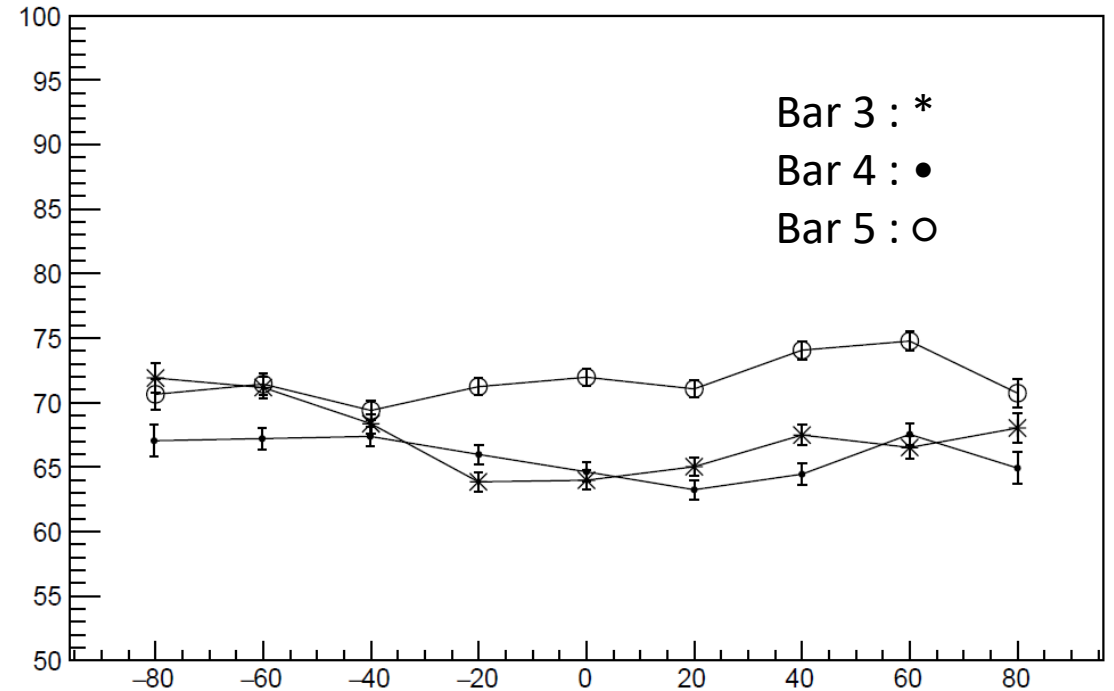


- More stable when all bars have events (12hits per event)

Cos >0.99 & hitN==12



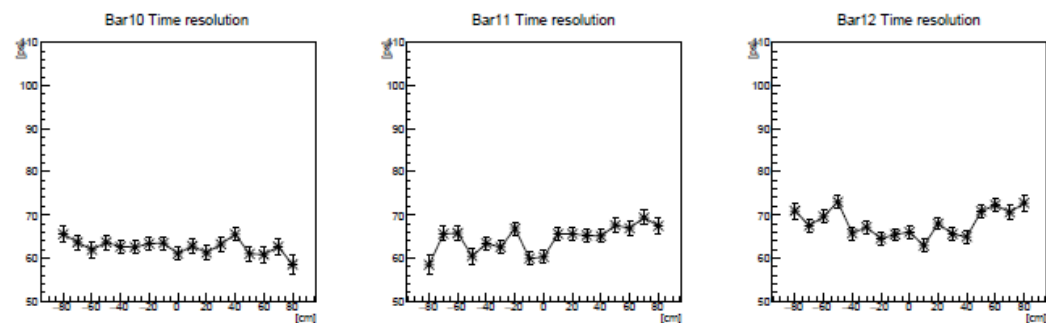
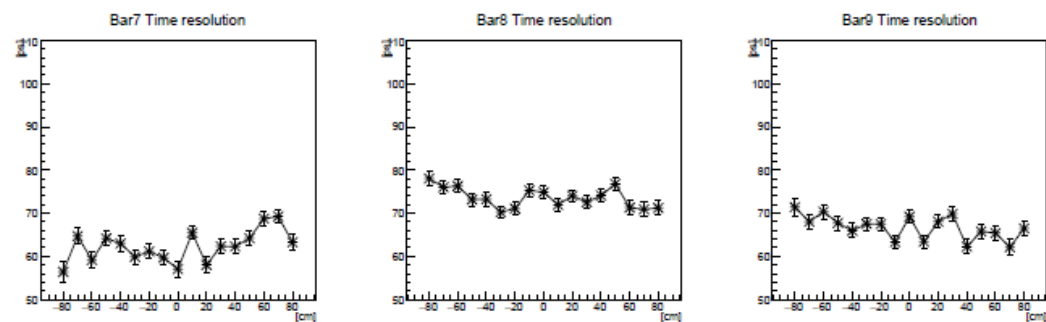
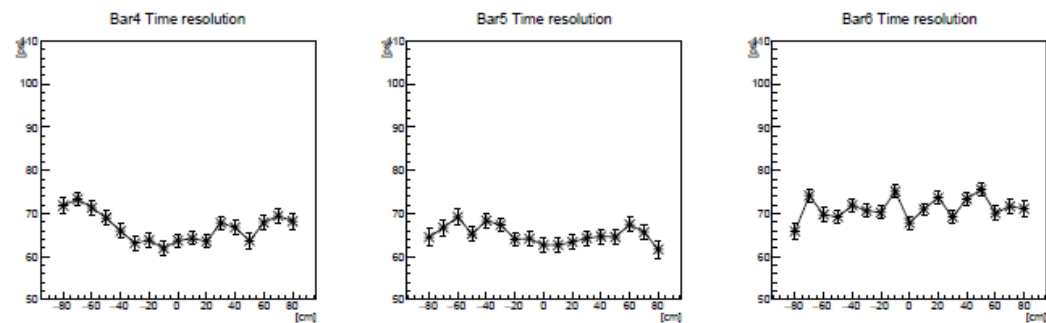
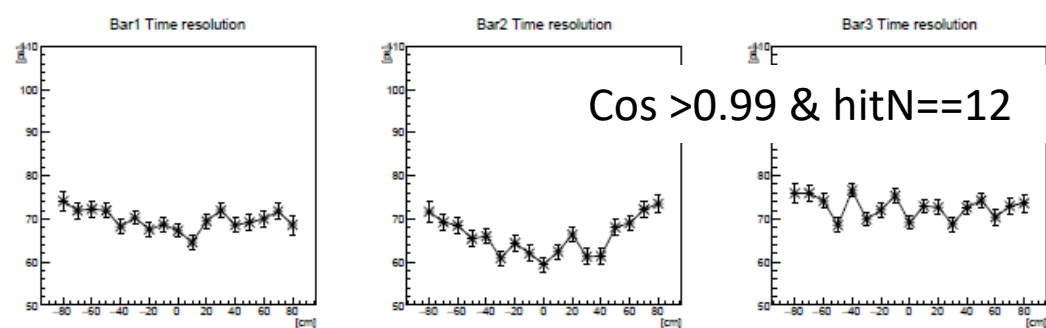
Cos >0.95 & hitN==12



- Compared with +-5cm bin, +-10cm bin distribution shows more stable condition
- Cos >0.95 is good enough and stable by better statistics(?)

backup

Cos >0.99 & hitN==12



Cos >0.95 & hitN==12

