

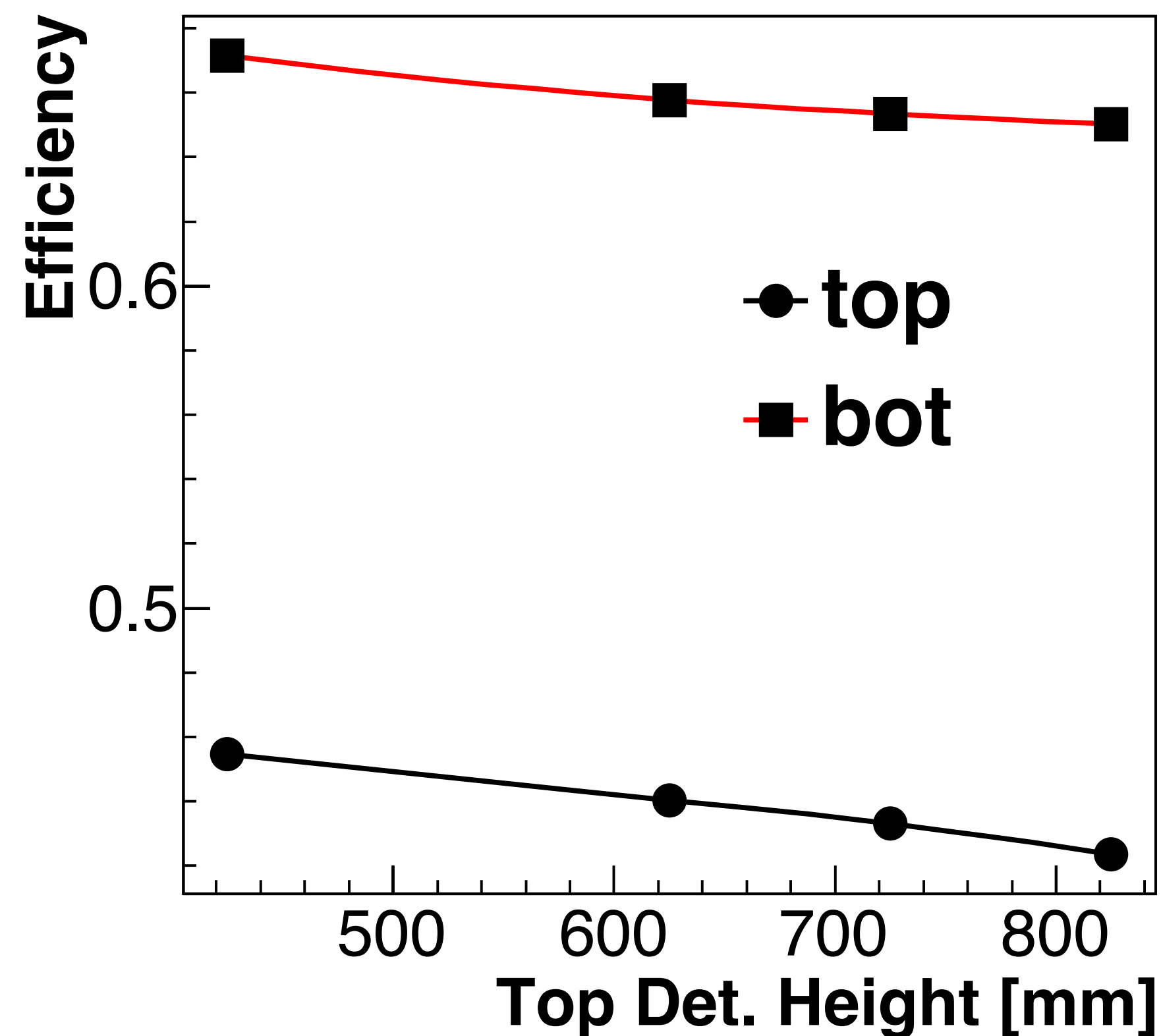
Status report (21 Dec. 2016)

Jongwon Hwang

Single Charged Pion Efficiency

- $(\text{total \# of detected charged pions}) / (\text{total \# of generated charged pions})$
- angular acceptance dependent

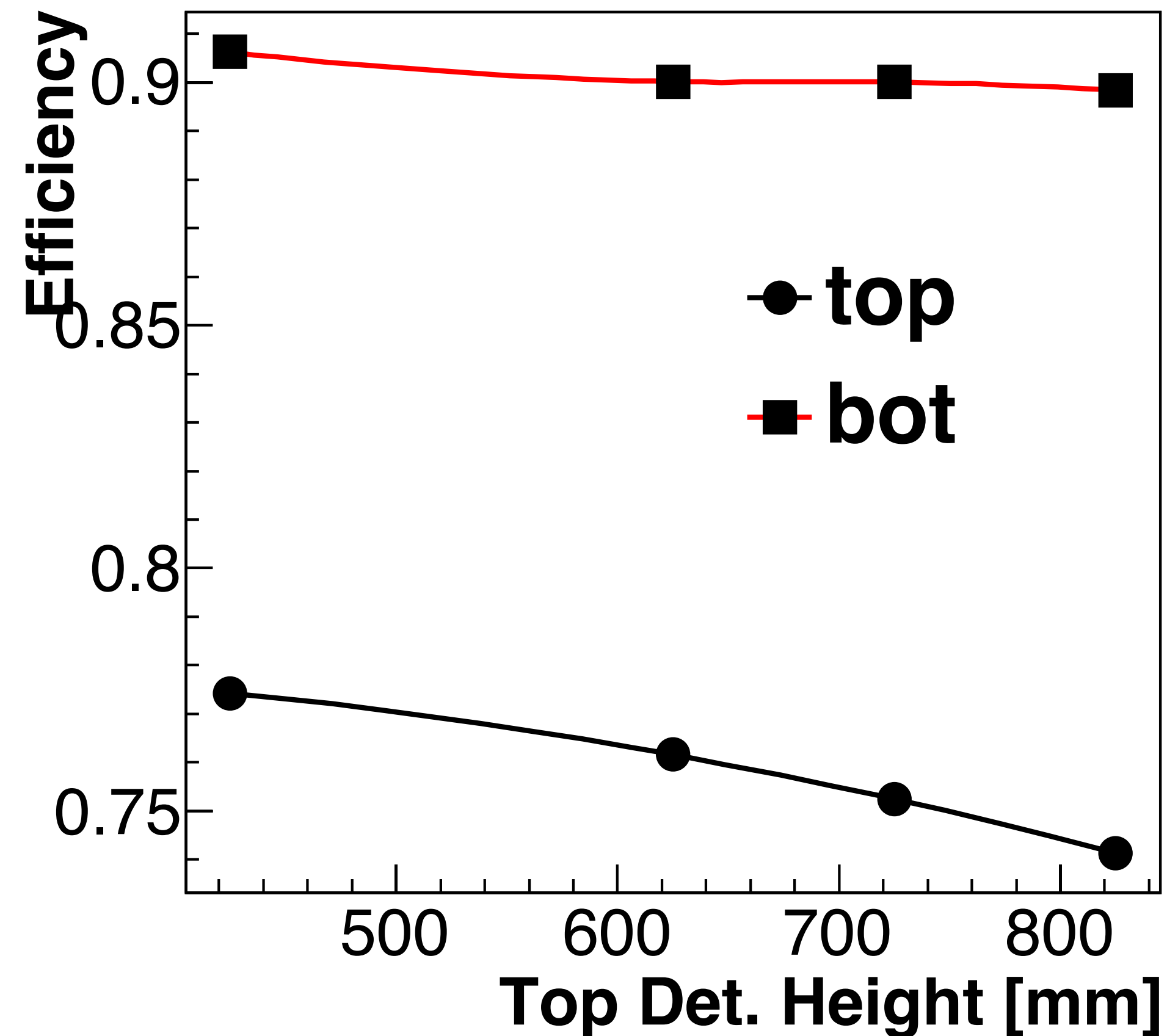
Single Track Eff.



	425 mm	625 mm	725 mm	825 mm
Top	0.455	0.440	0.433	0.424
Bottom	0.671	0.658	0.653	0.650

≥ 1 Charged Pion Efficiency

≥ 1 Pic Eff.

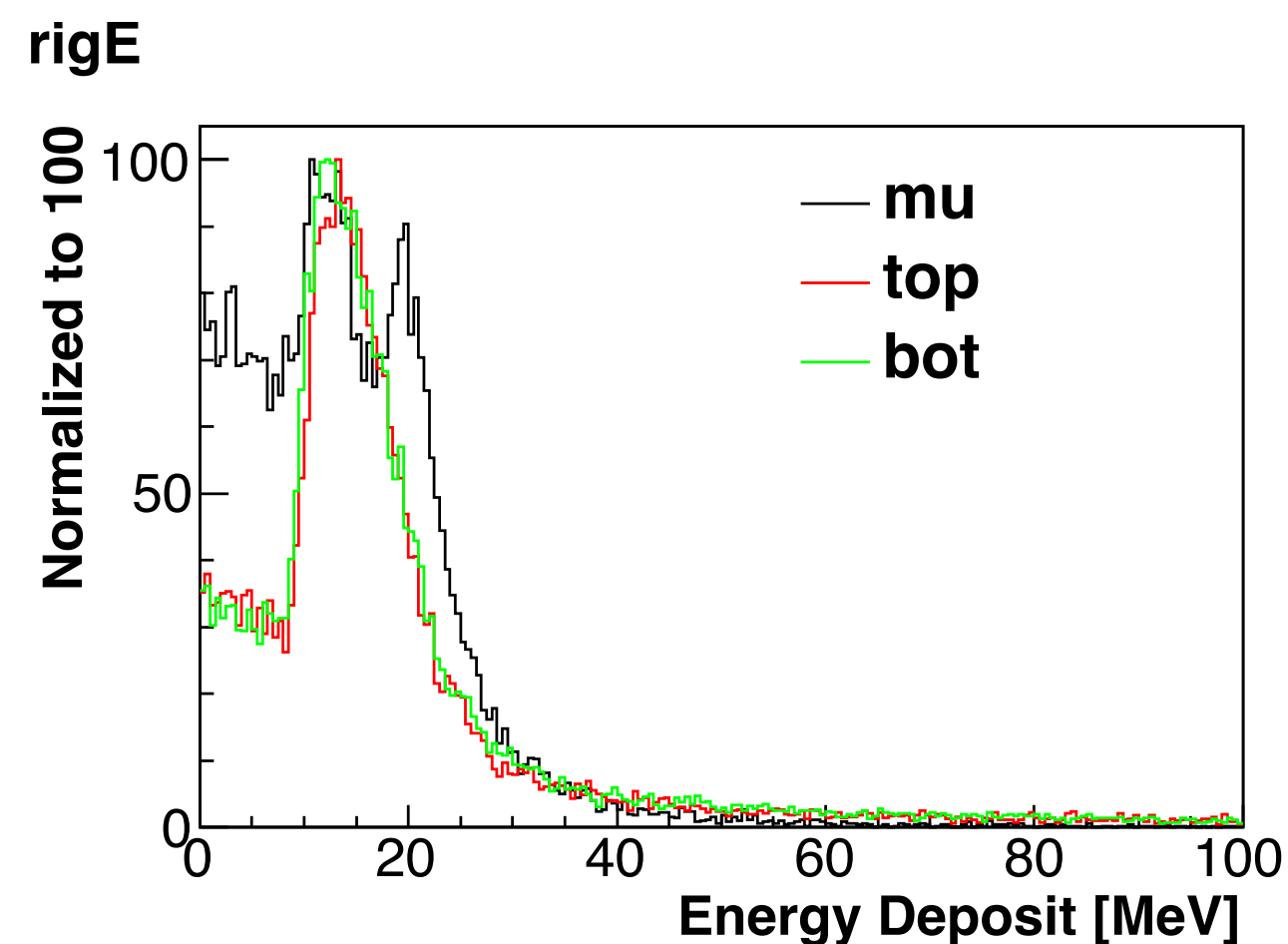
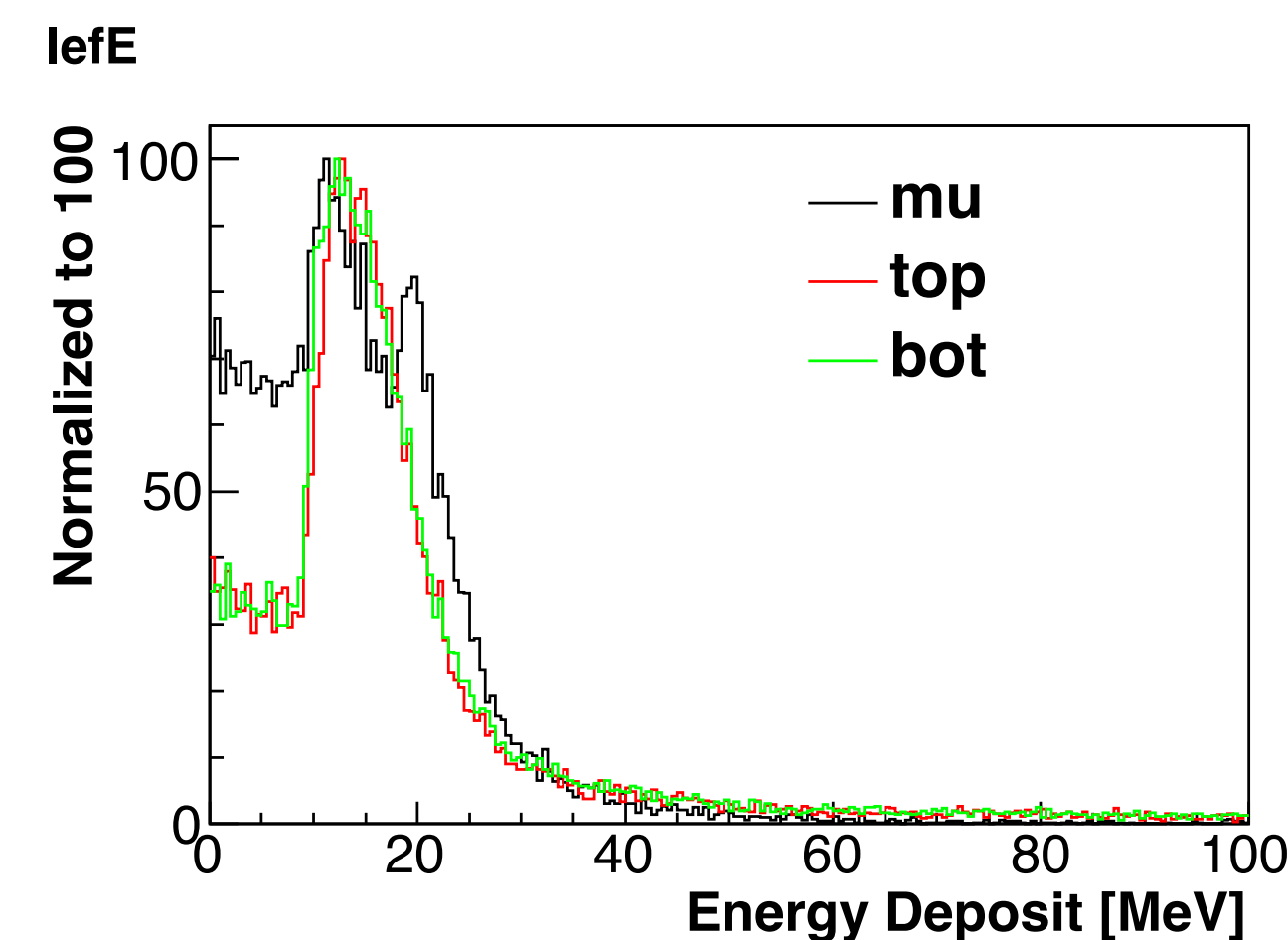
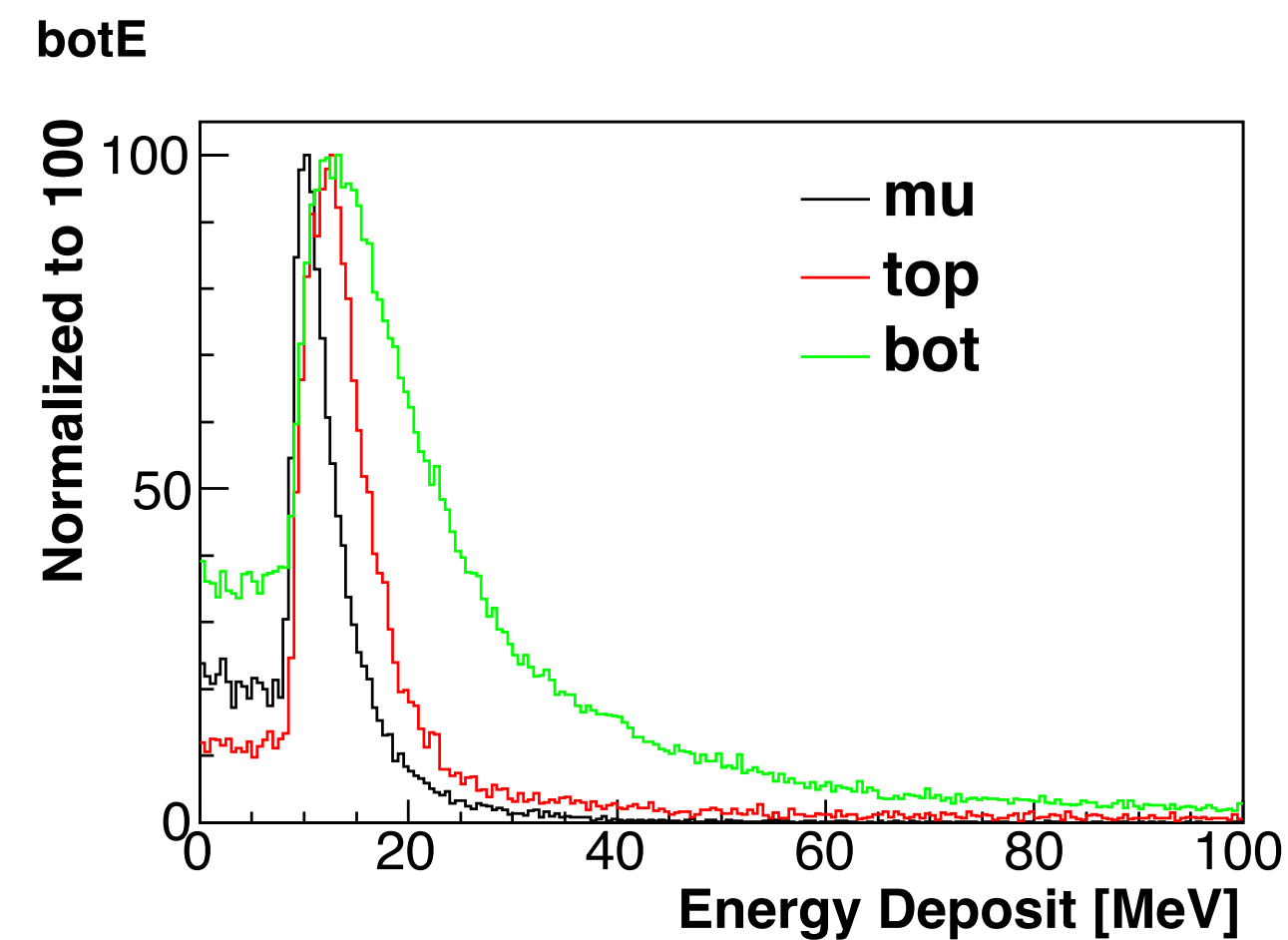
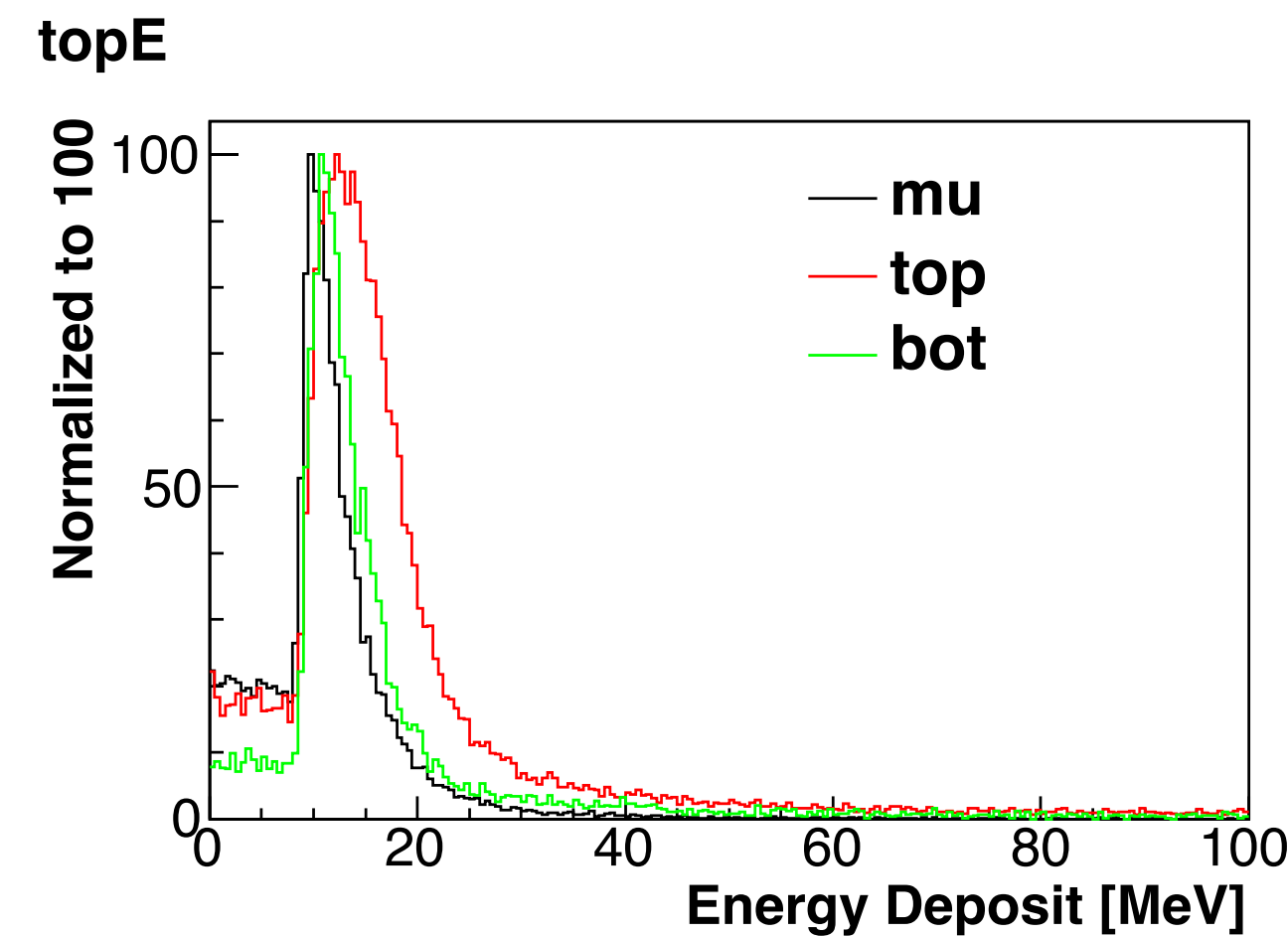


Top	425 mm	625 mm	725 mm	825 mm
0 Pic	0.228	0.241	0.251	0.262
1 Pic	0.372	0.375	0.374	0.375
2 Pic	0.277	0.268	0.264	0.255
≥ 3 Pic	0.123	0.115	0.111	0.108
> 1 Pic	0.772	0.759	0.749	0.738

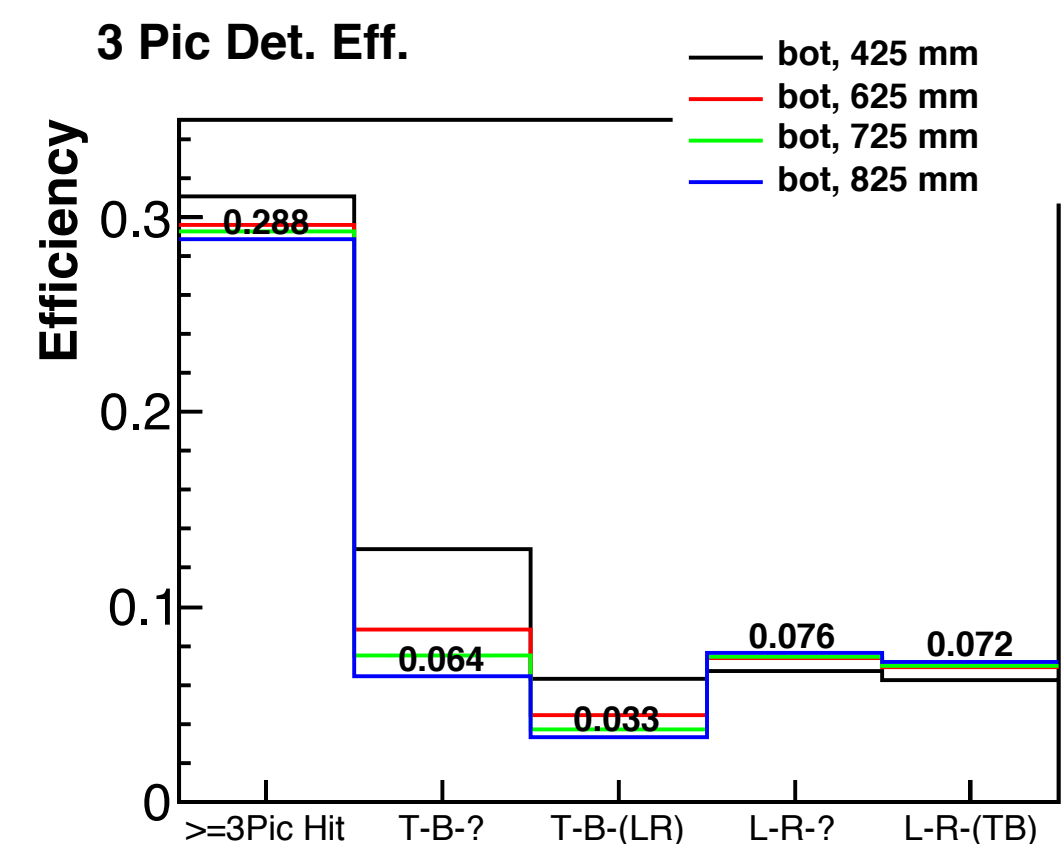
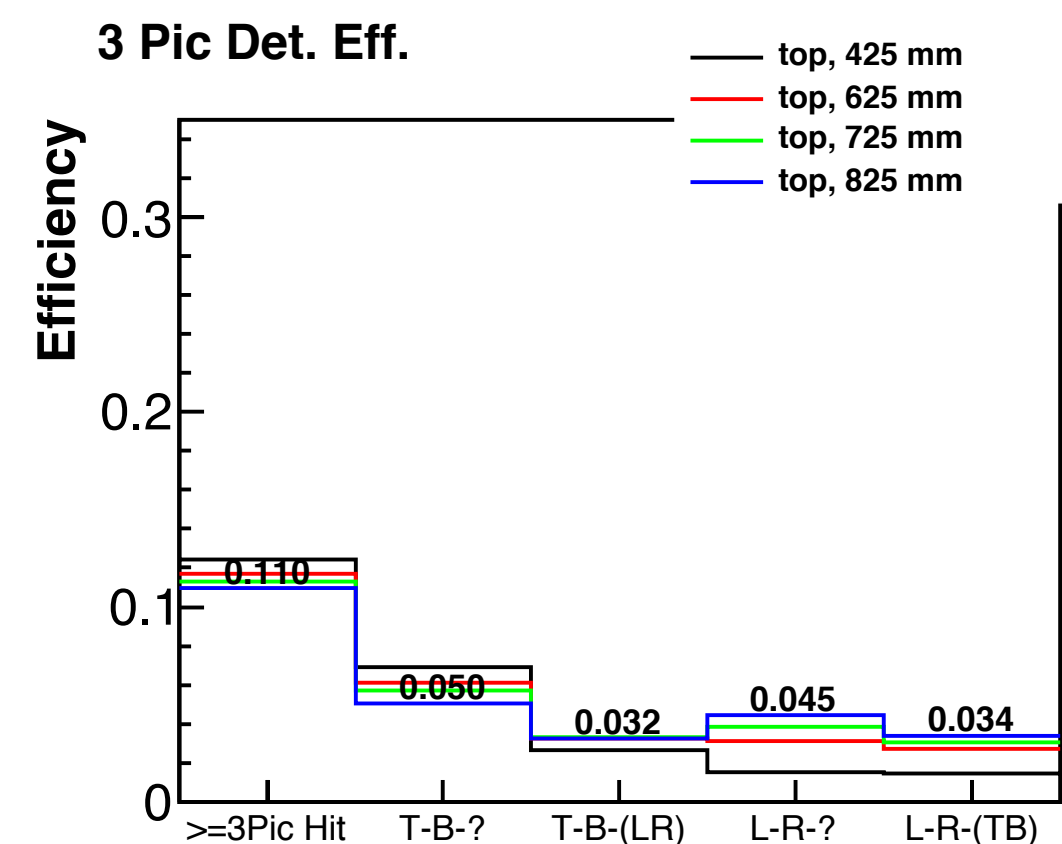
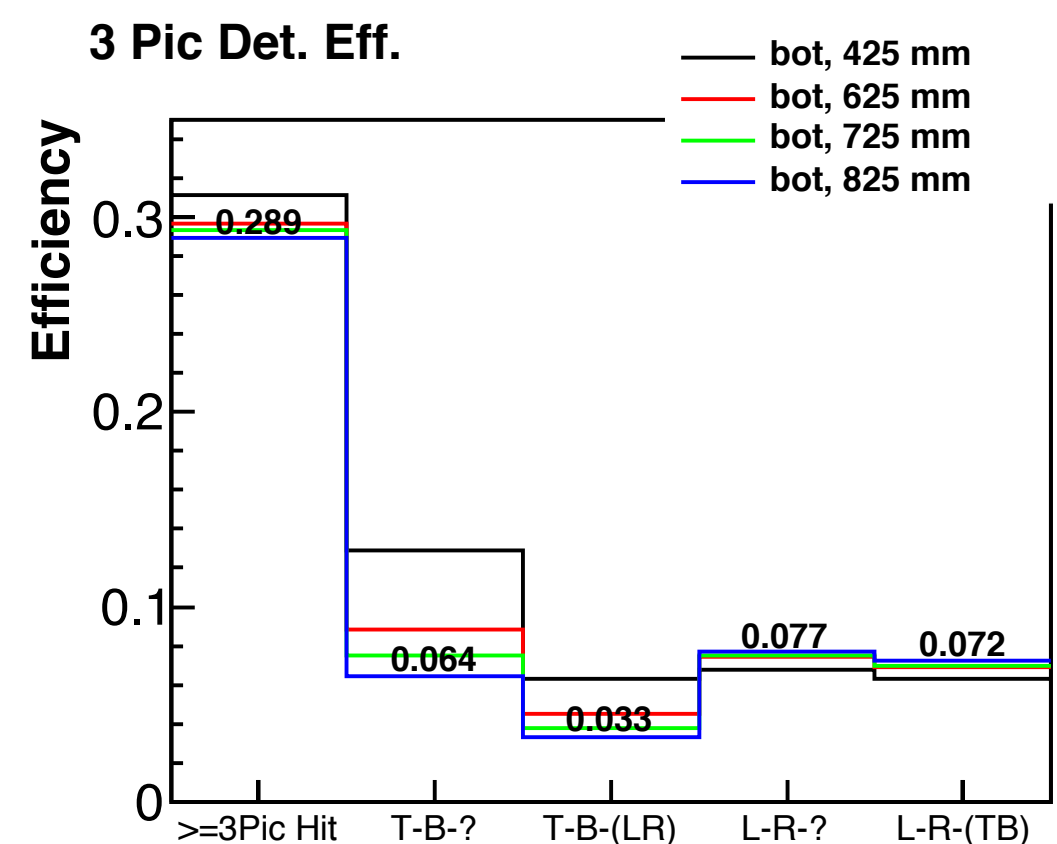
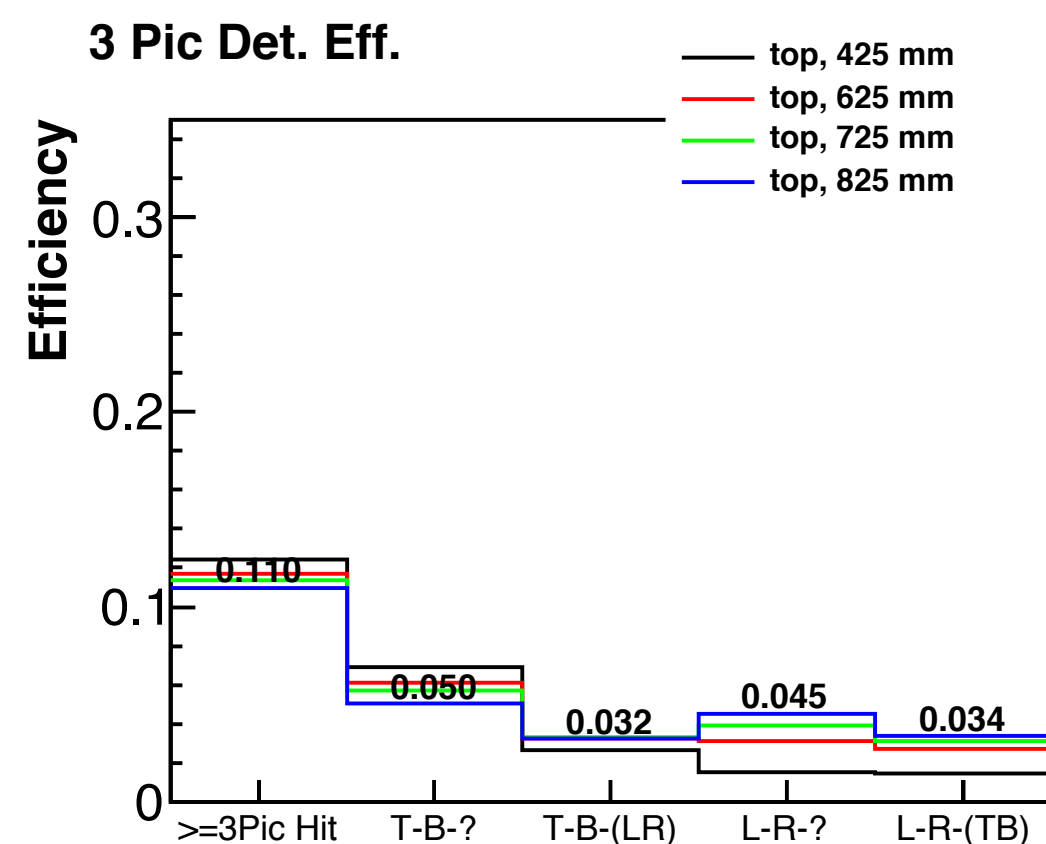
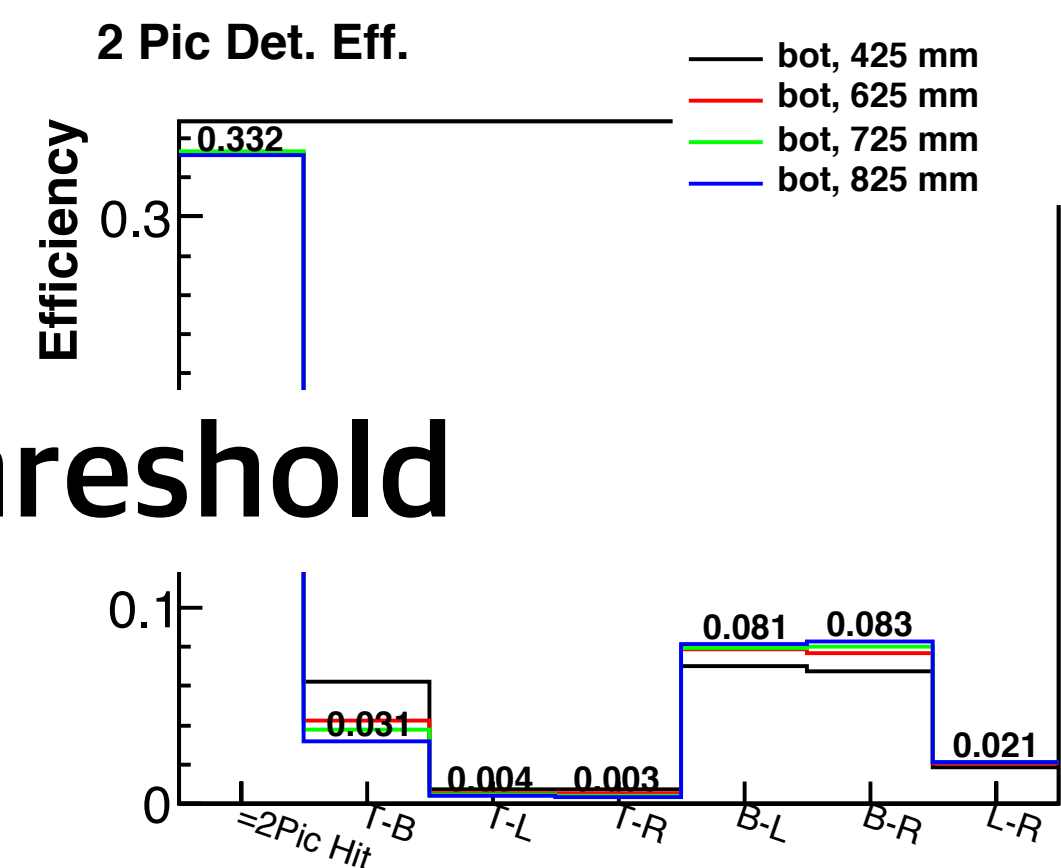
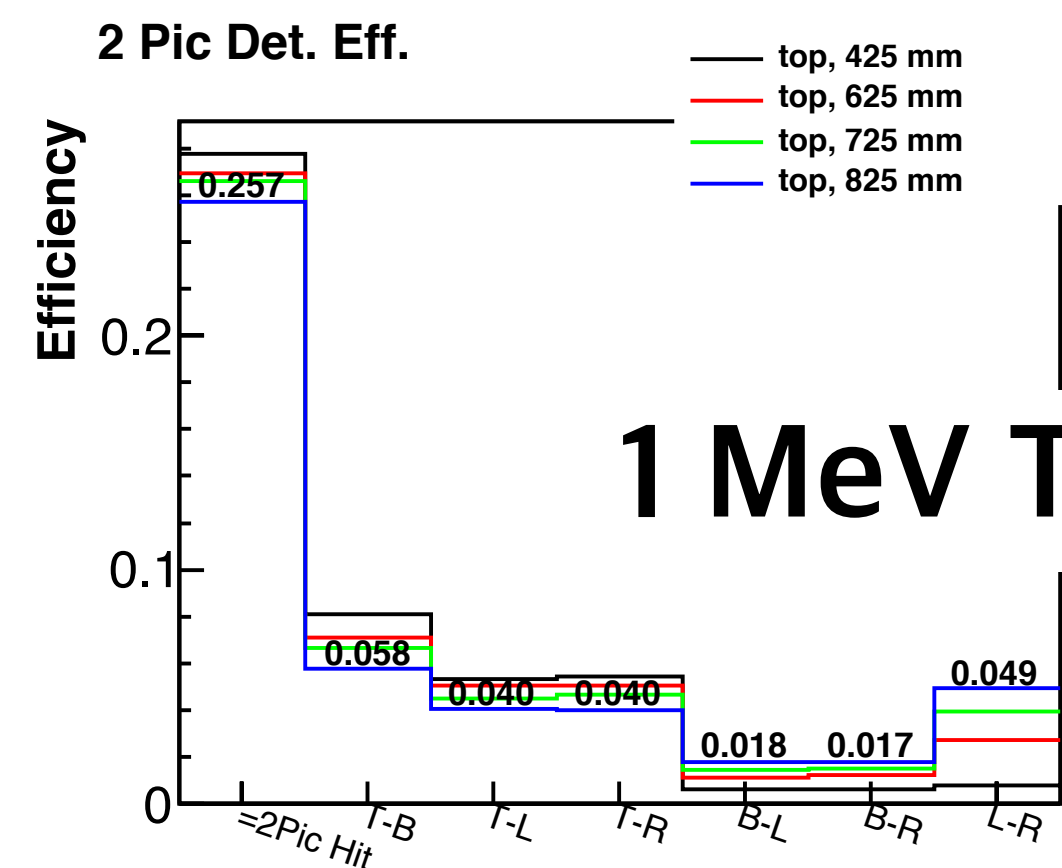
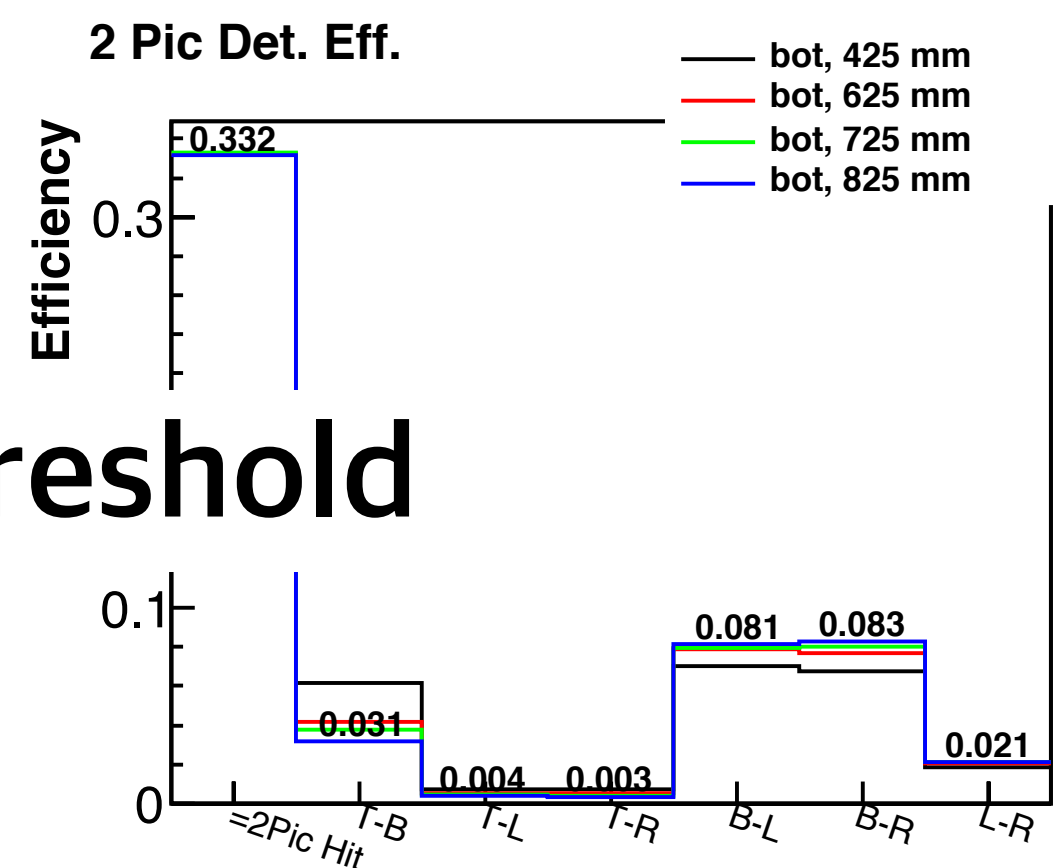
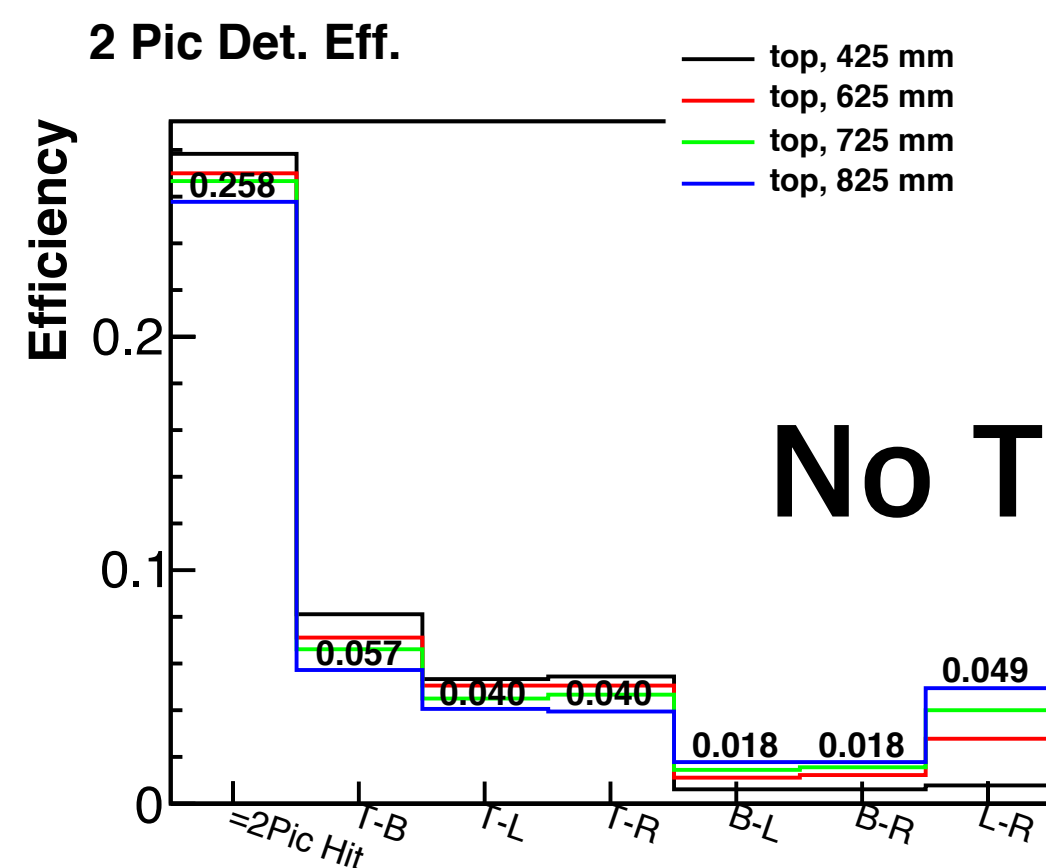
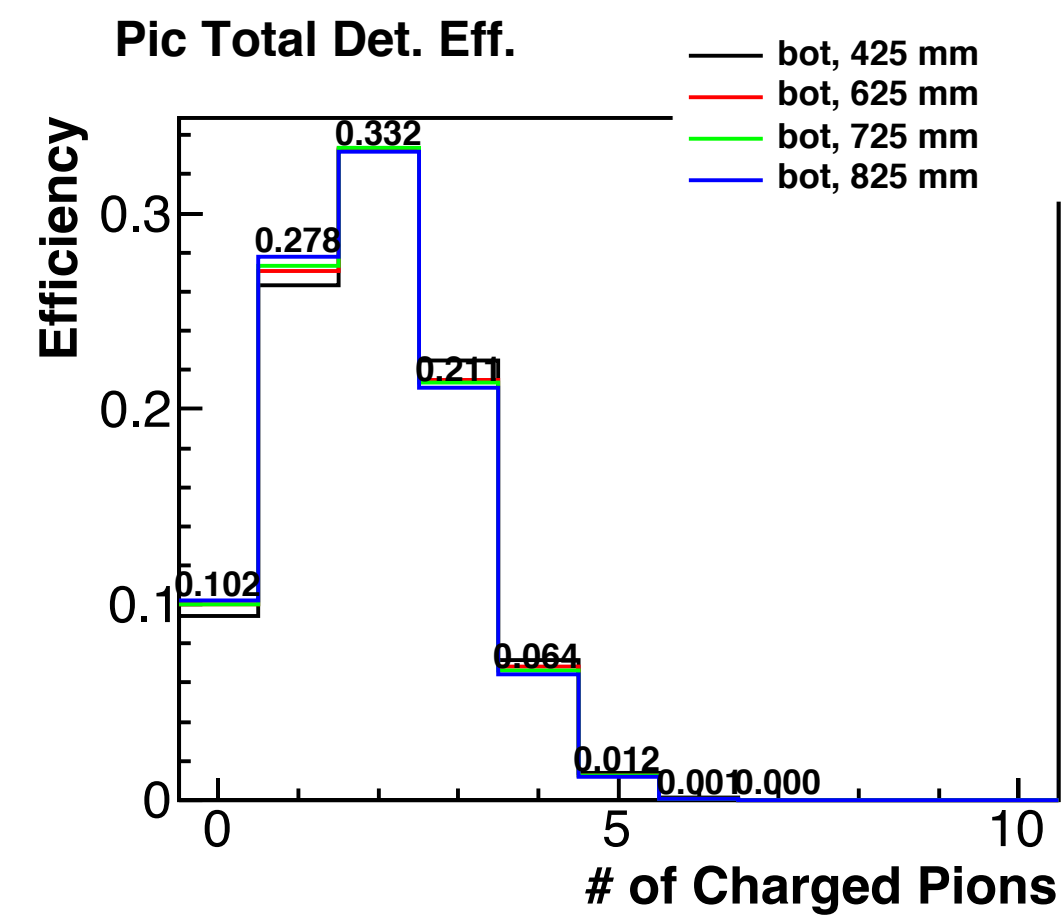
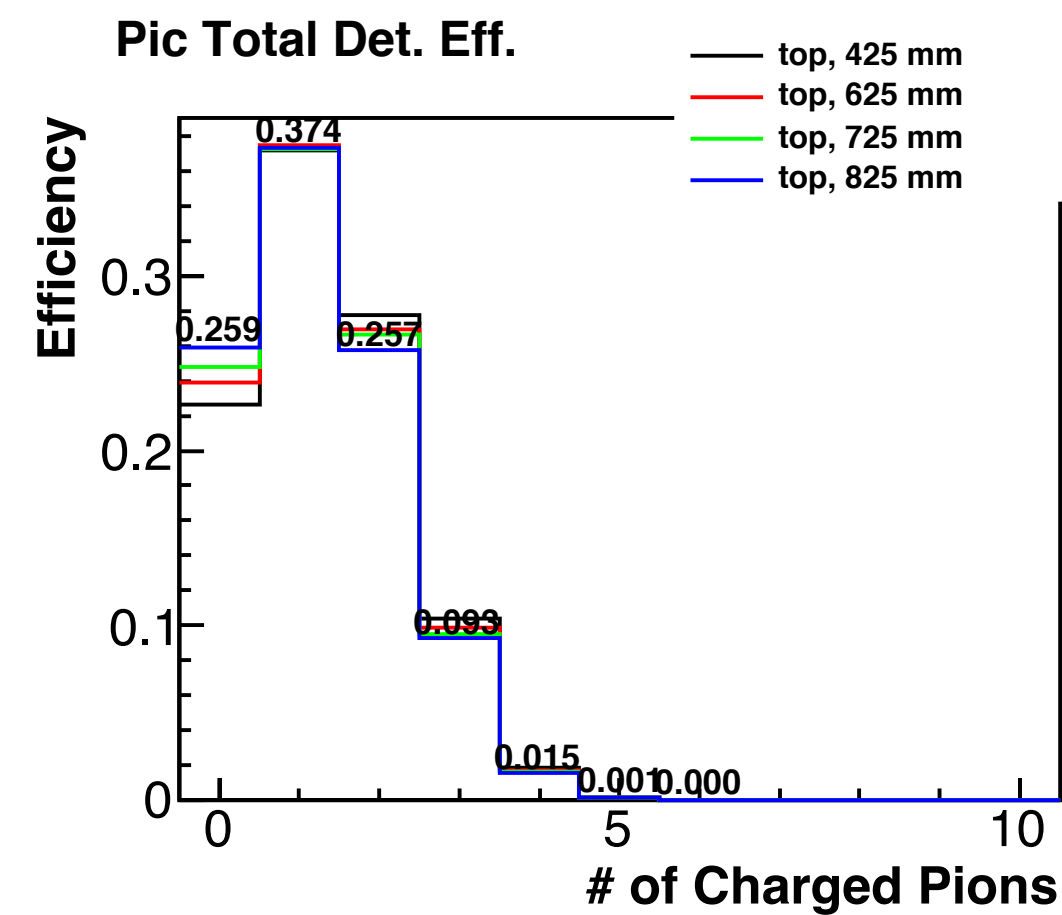
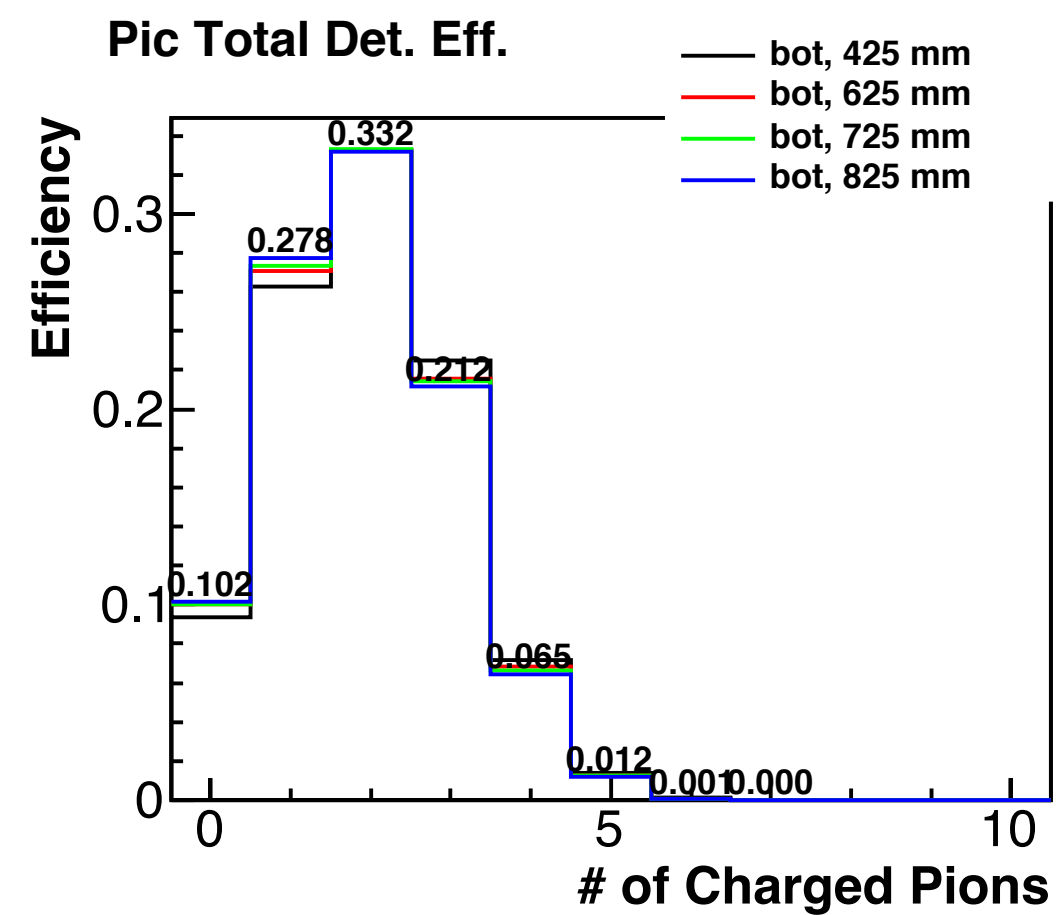
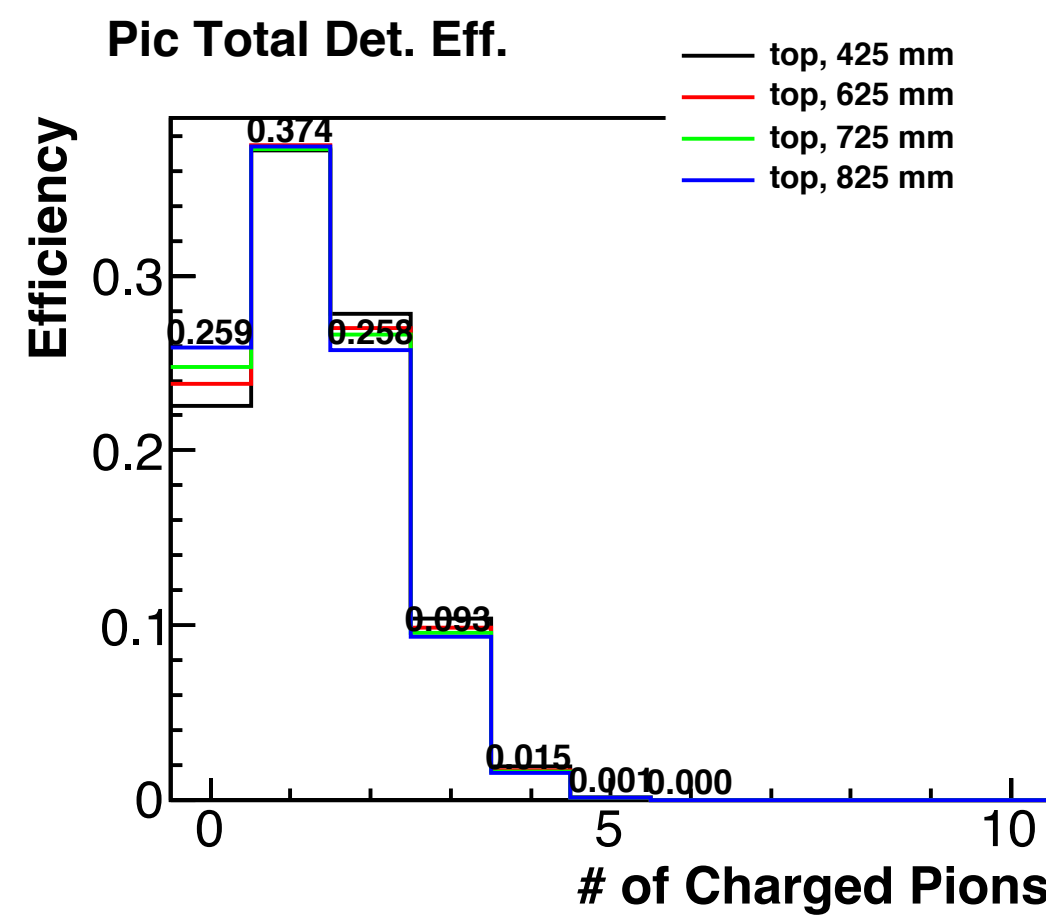
Bottom	425 mm	625 mm	725 mm	825 mm
0 Pic	0.095	0.102	0.102	0.103
1 Pic	0.266	0.273	0.276	0.280
2 Pic	0.332	0.333	0.333	0.331
≥ 3 Pic	0.307	0.293	0.290	0.285
> 1 Pic	0.905	0.898	0.898	0.897

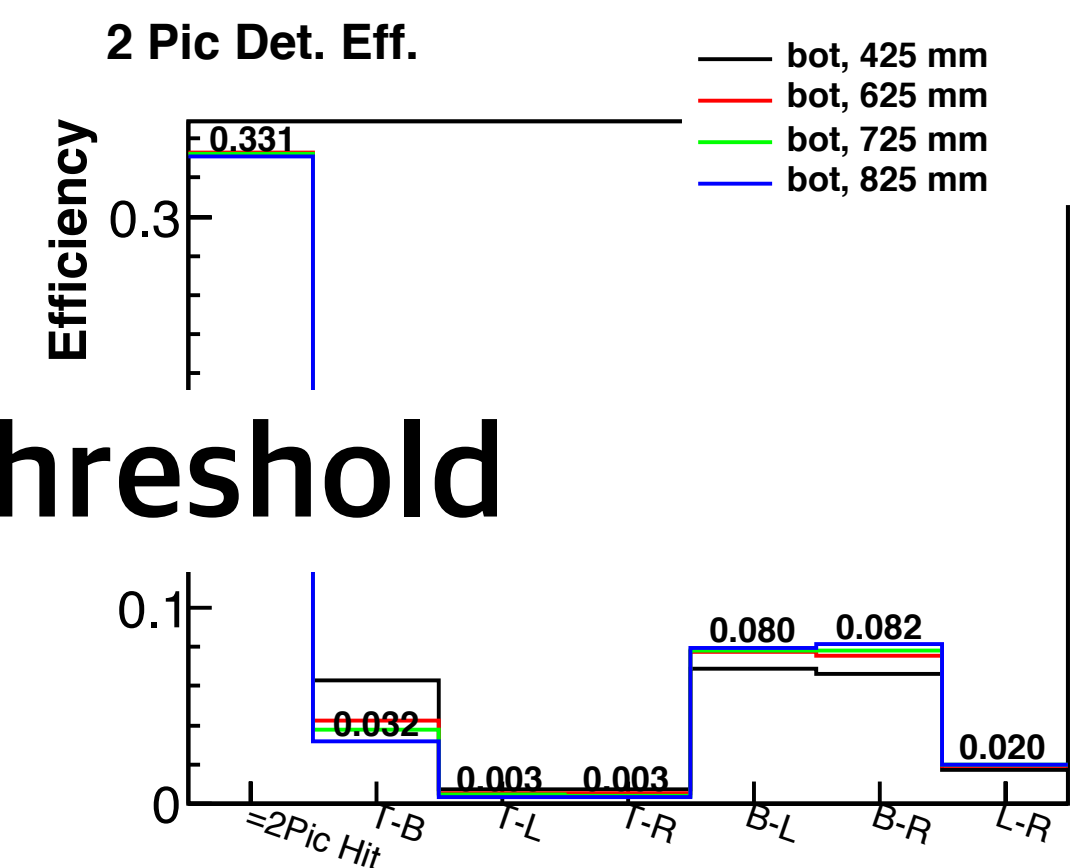
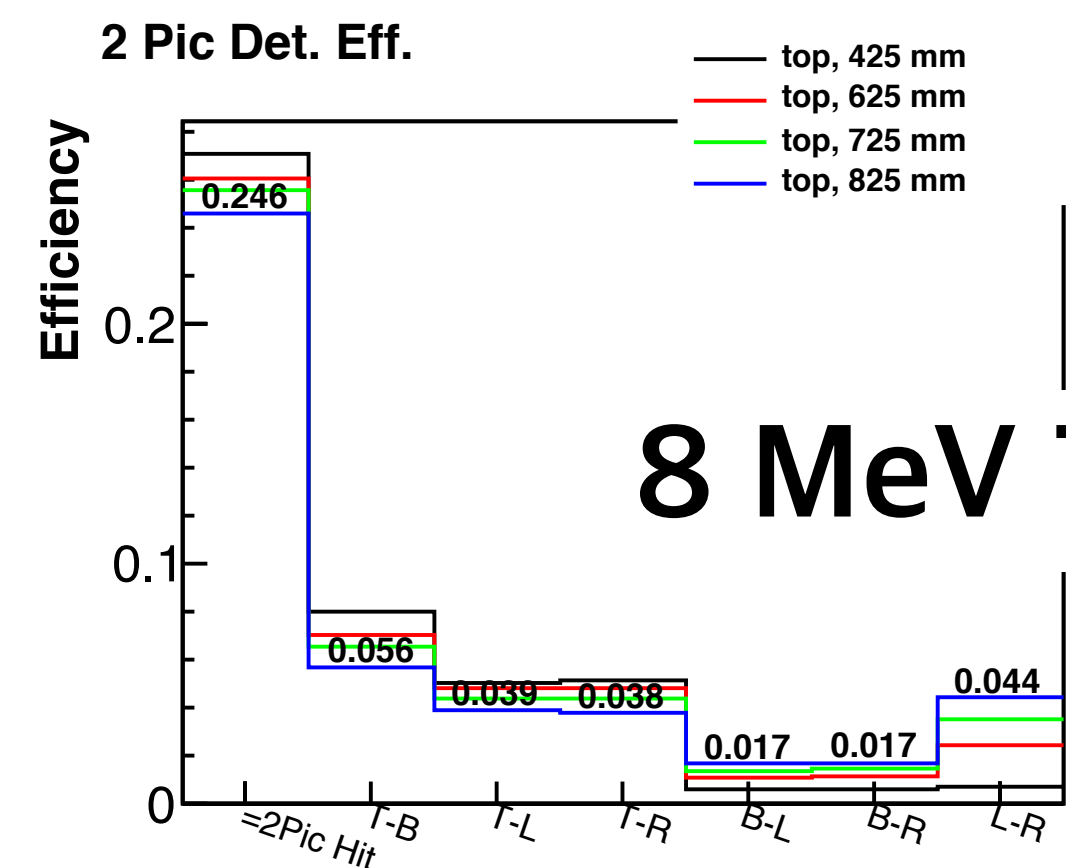
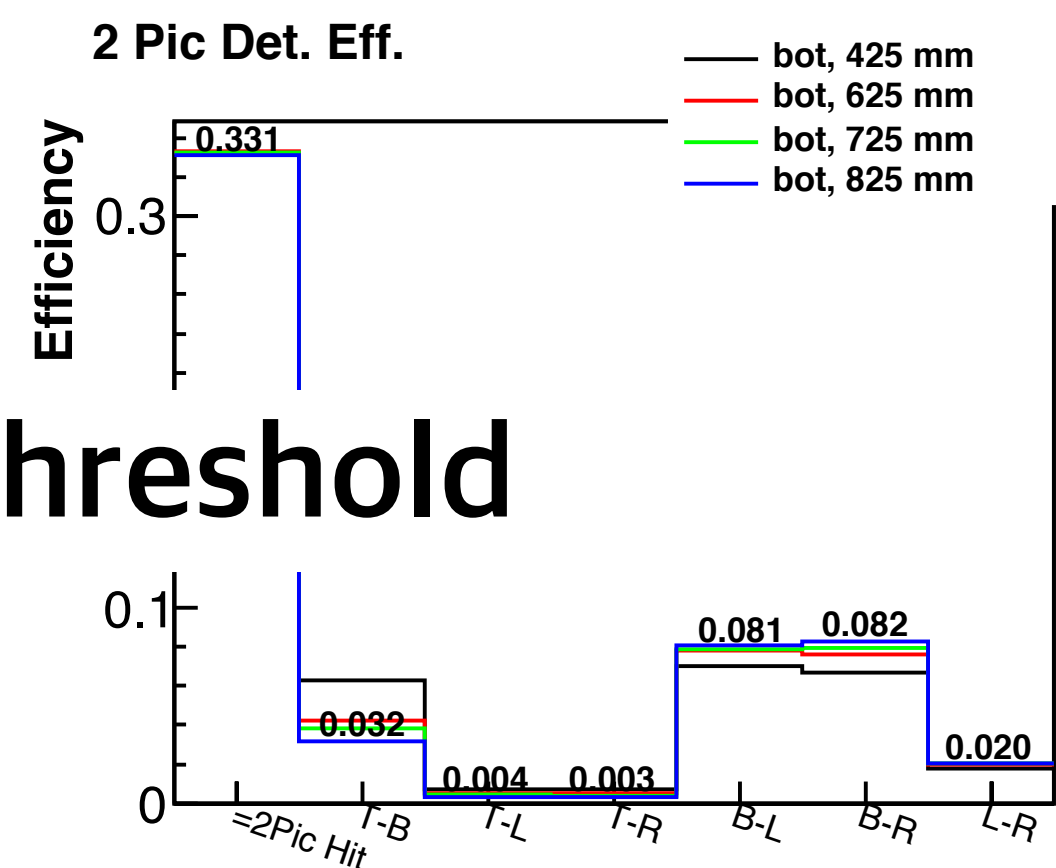
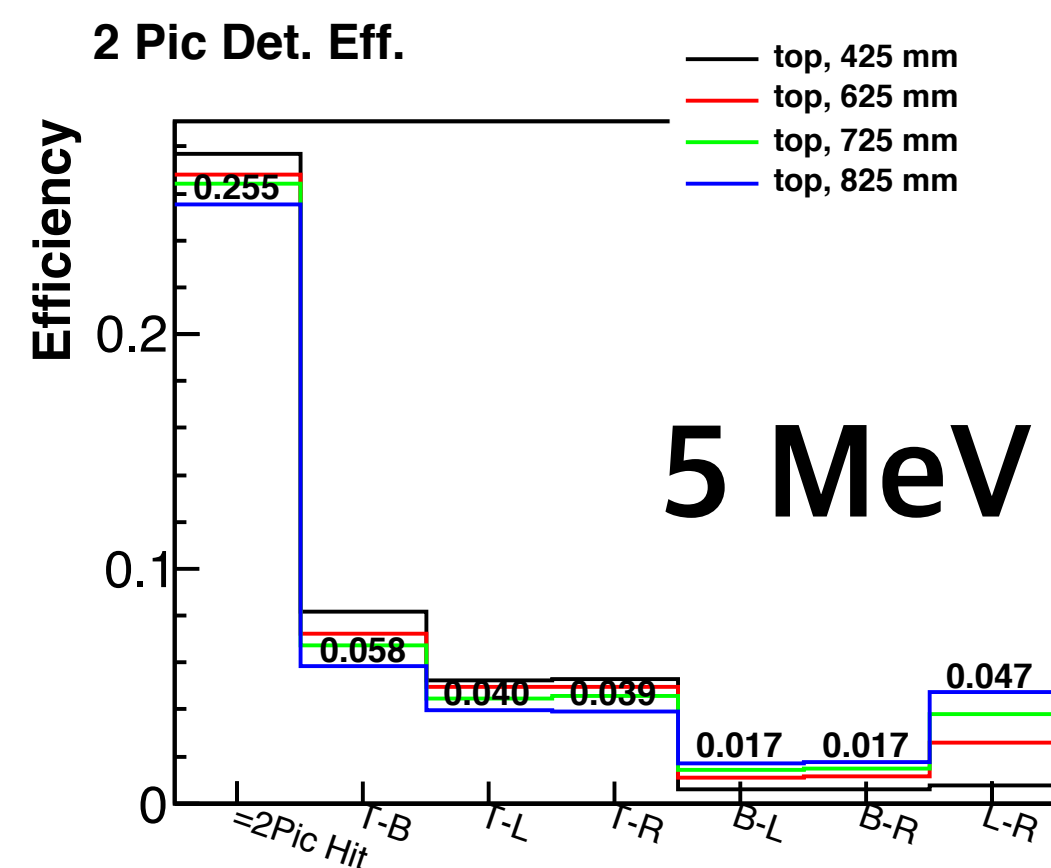
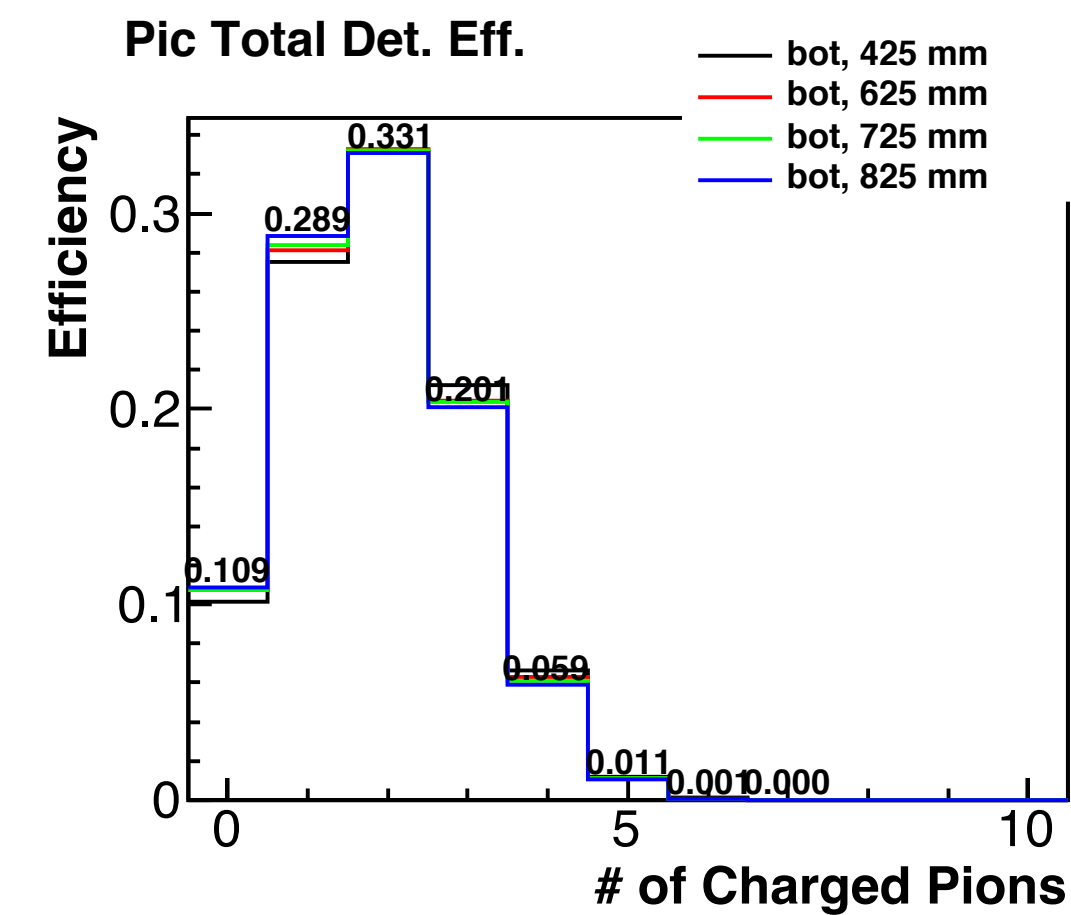
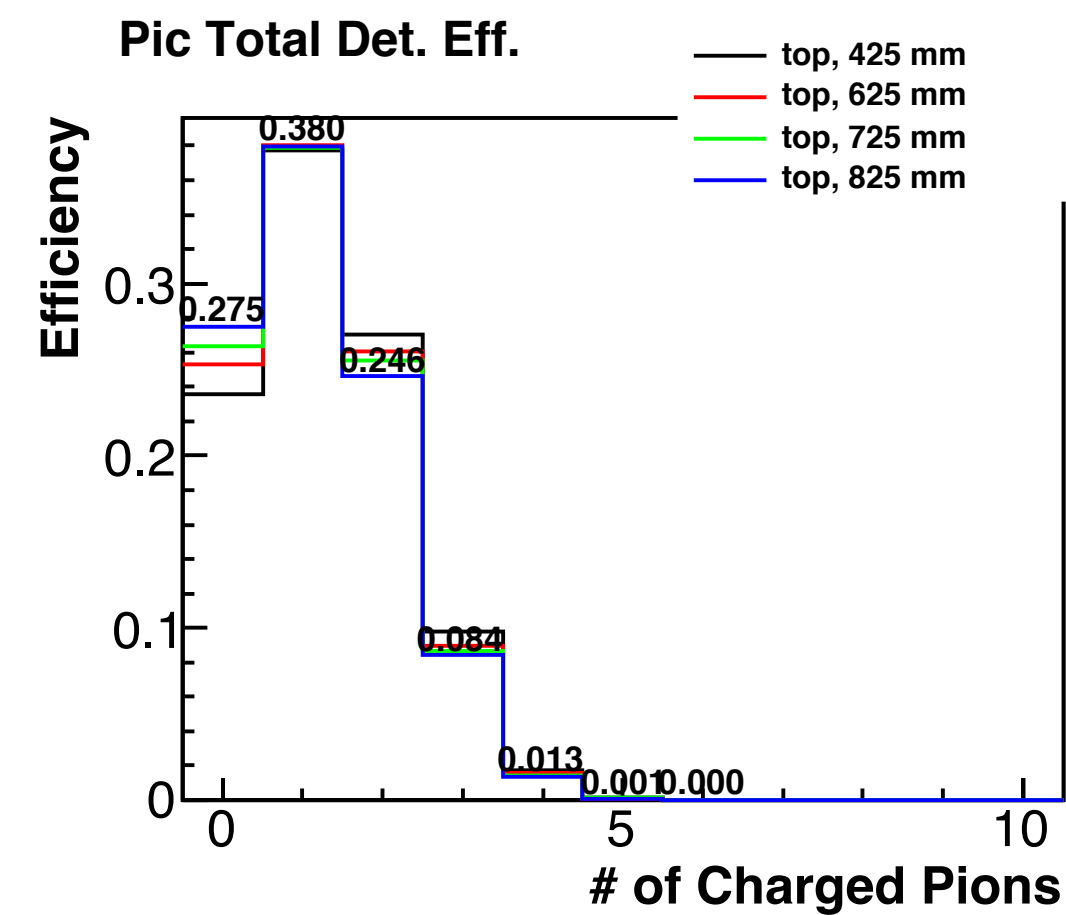
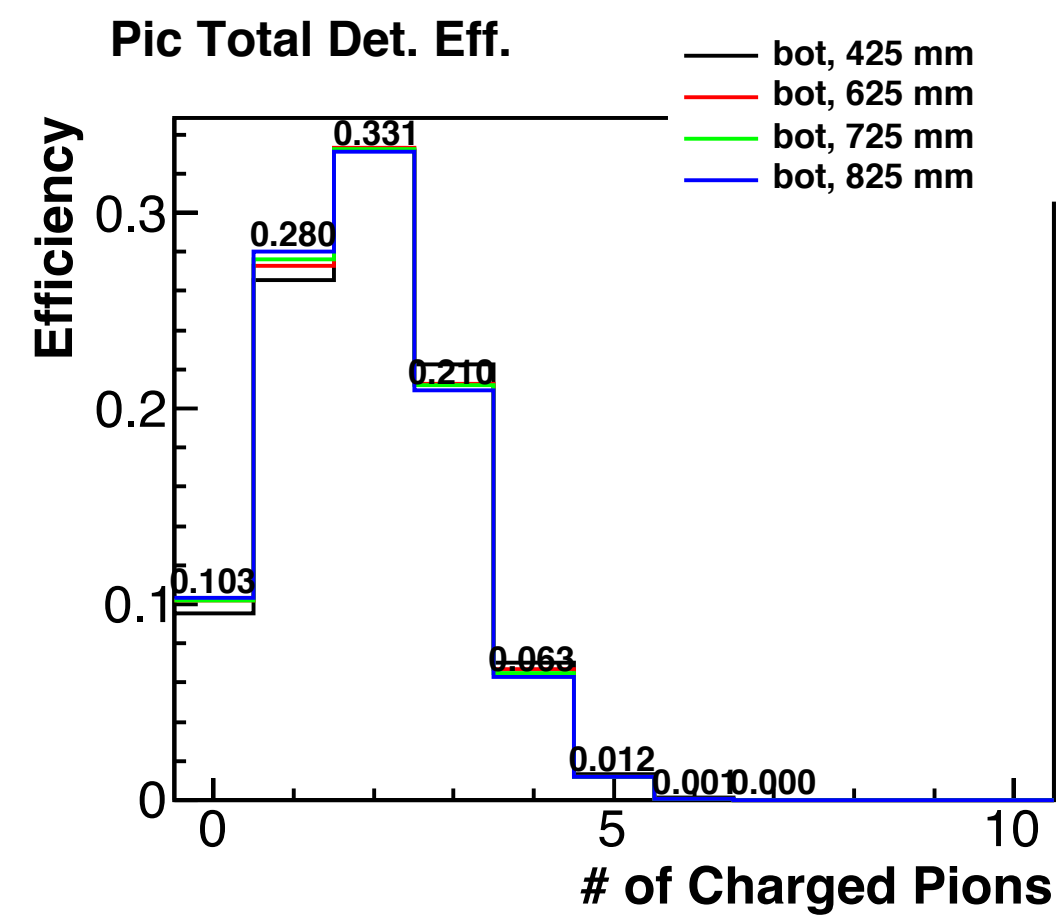
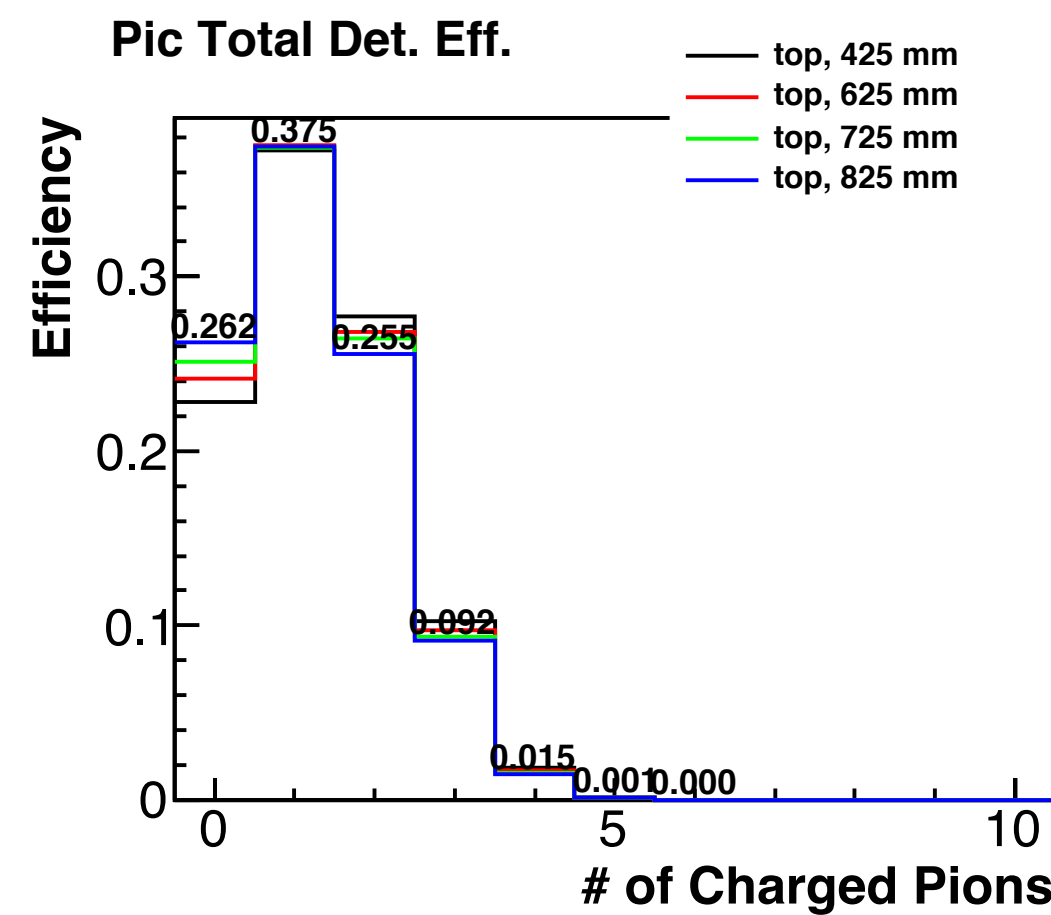
Checking threshold effect

- Set the deposit energy threshold for each hit: 1 MeV, 5 MeV, 8 MeV



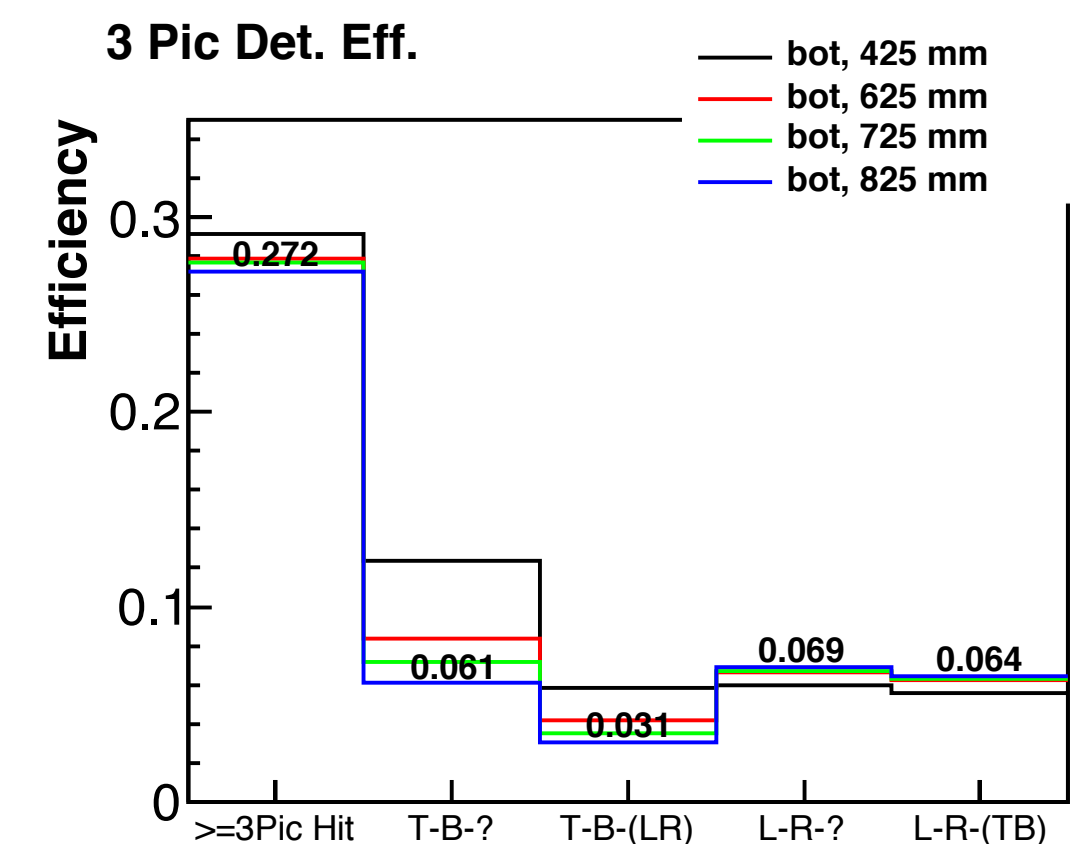
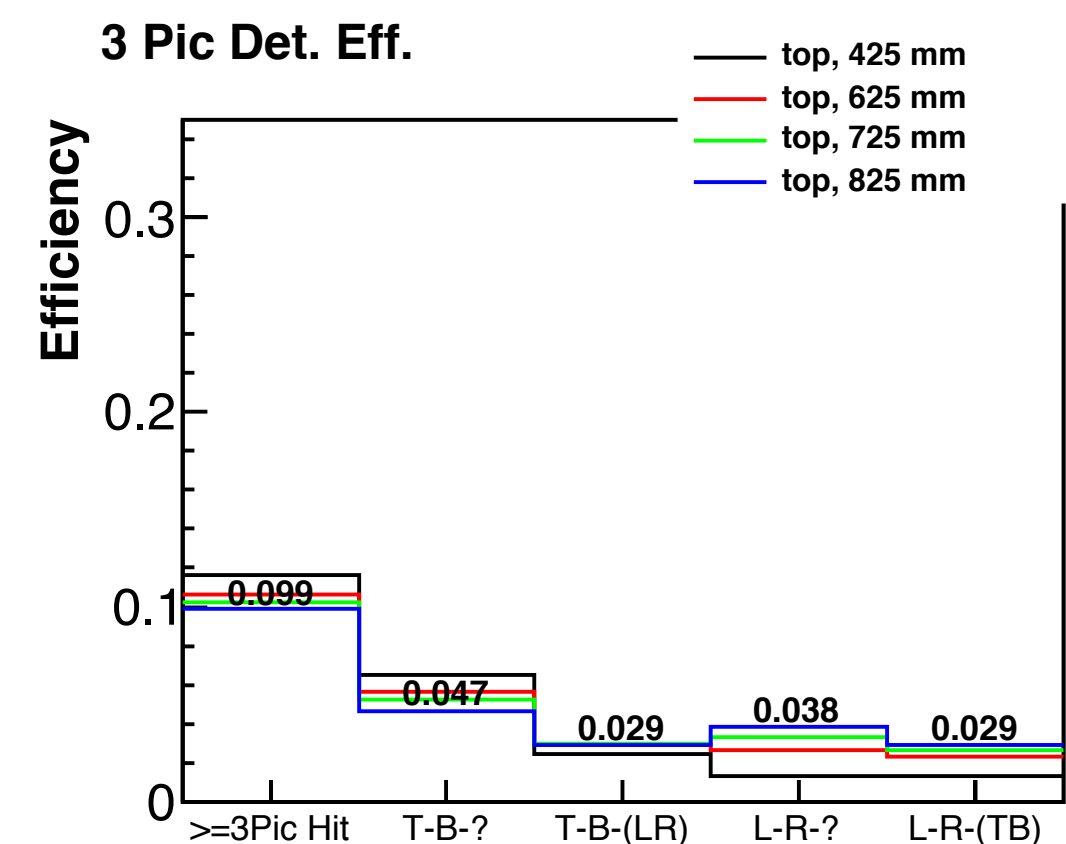
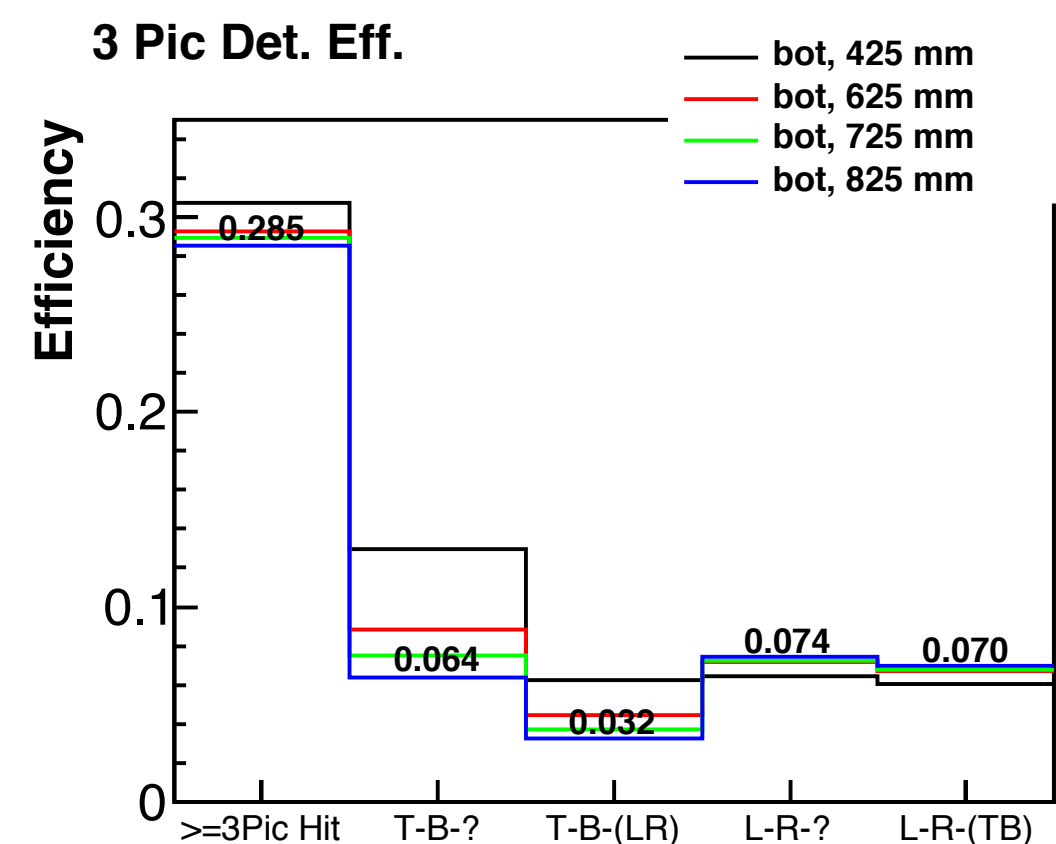
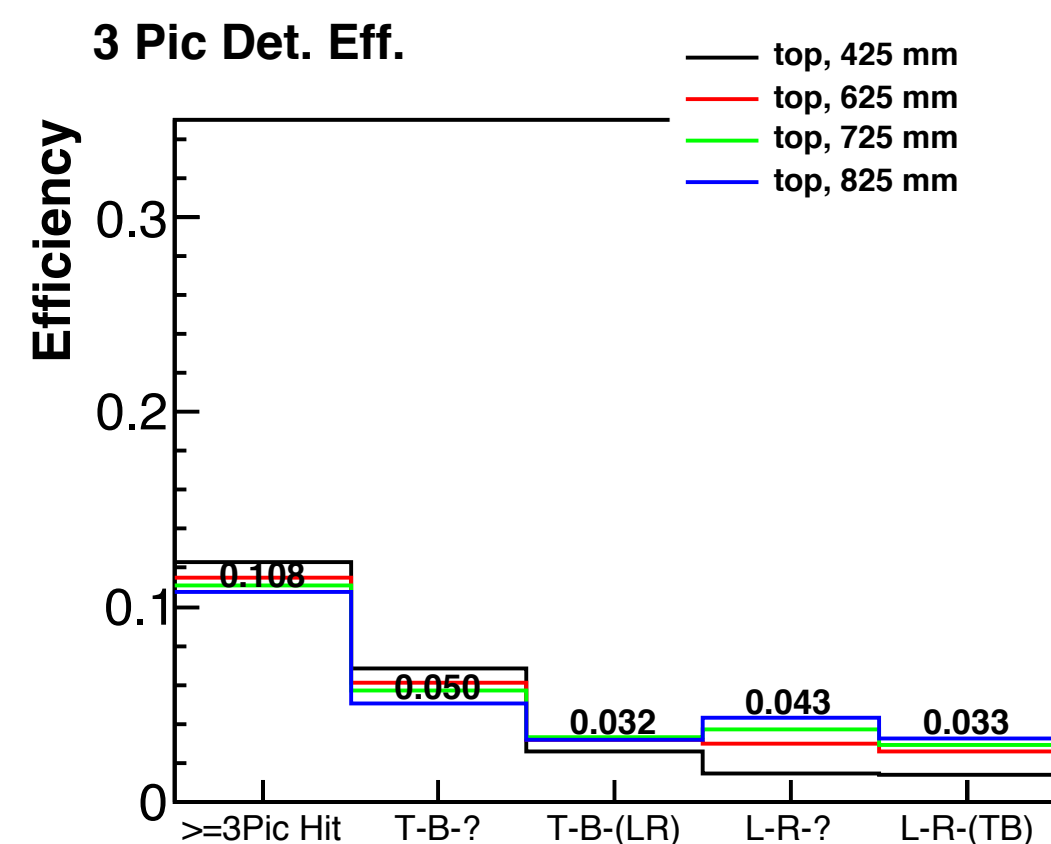
**Energy deposit
for each detector
(Top, Bottom
Left, Right)**





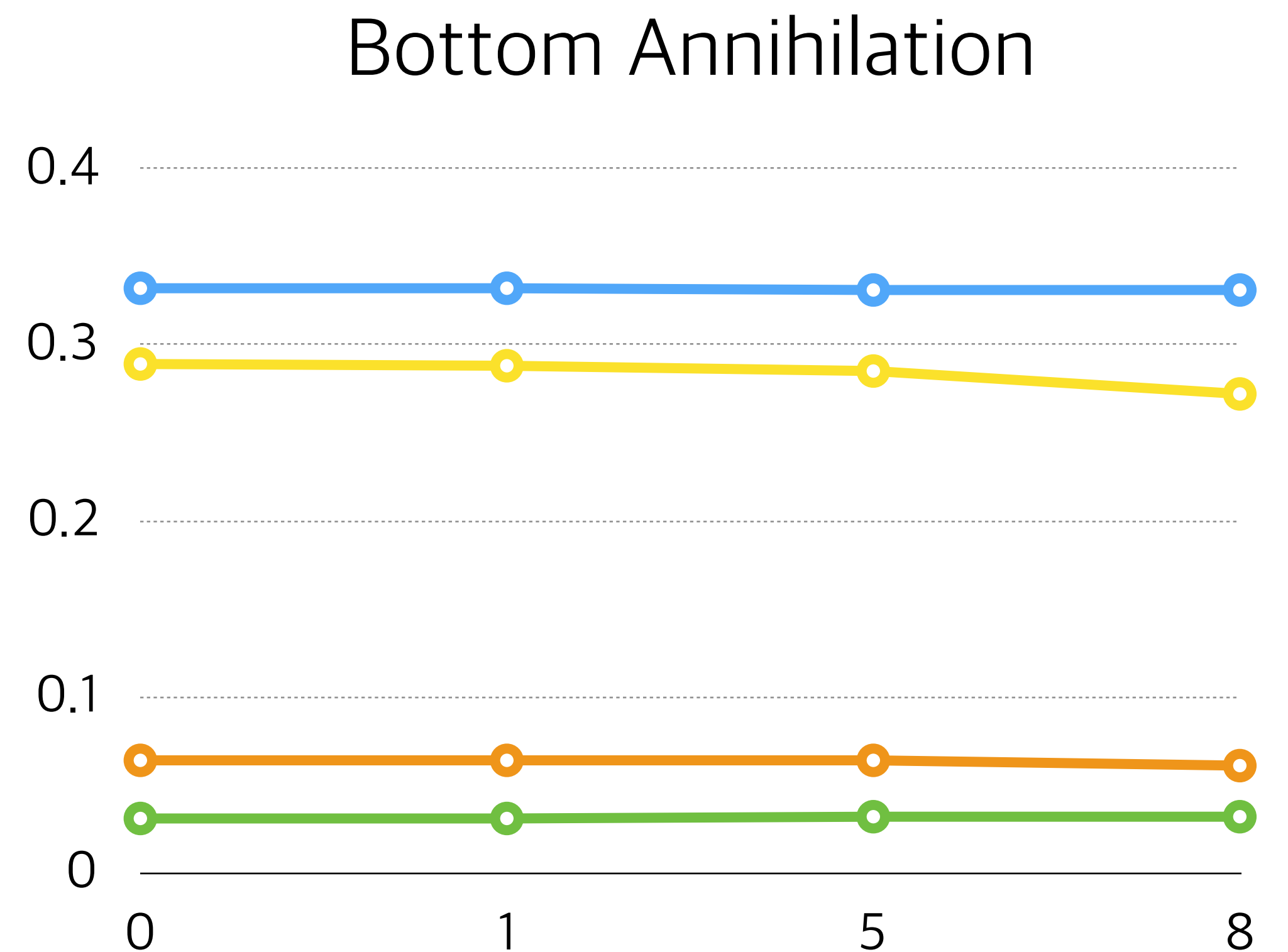
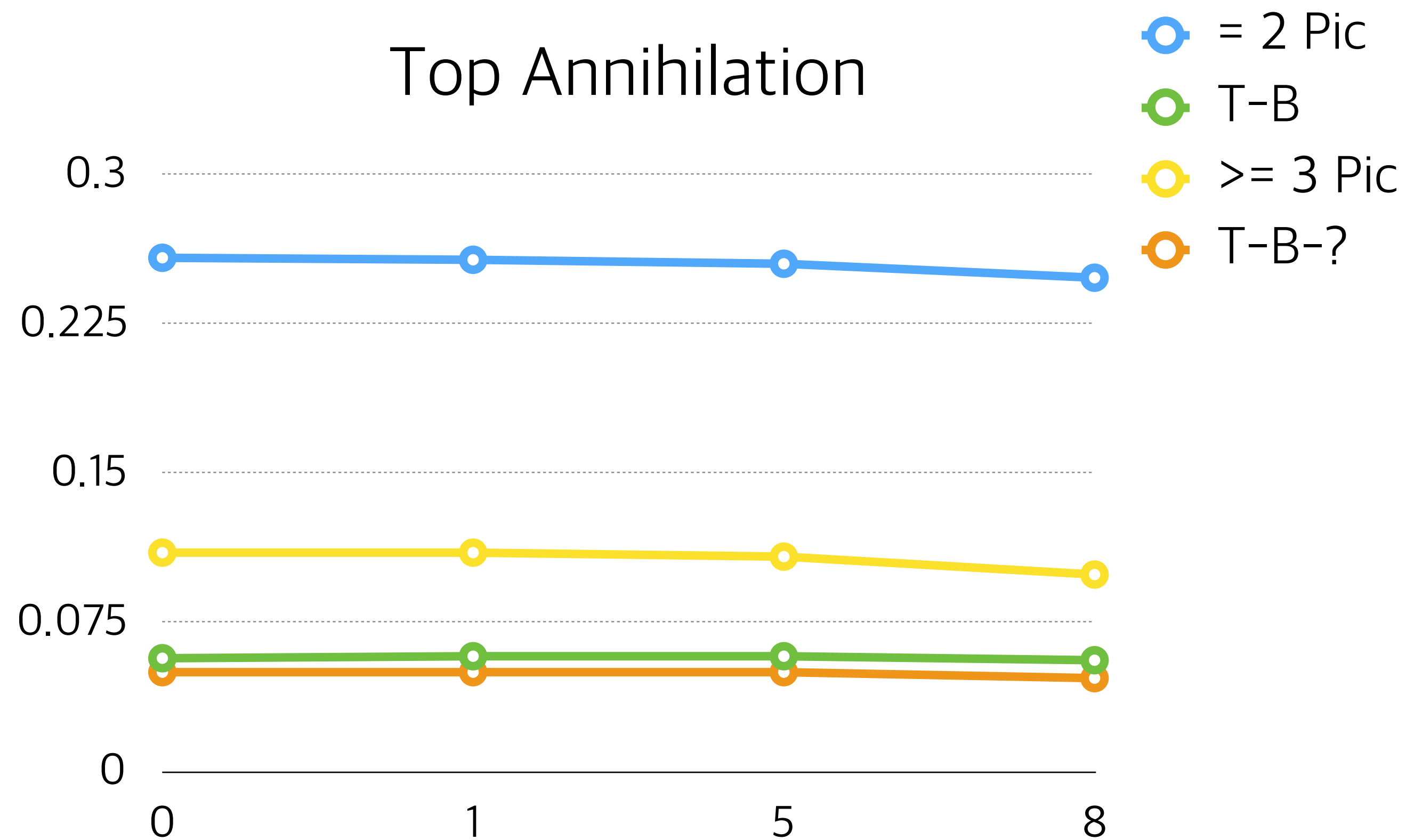
5 MeV Threshold

8 MeV Threshold



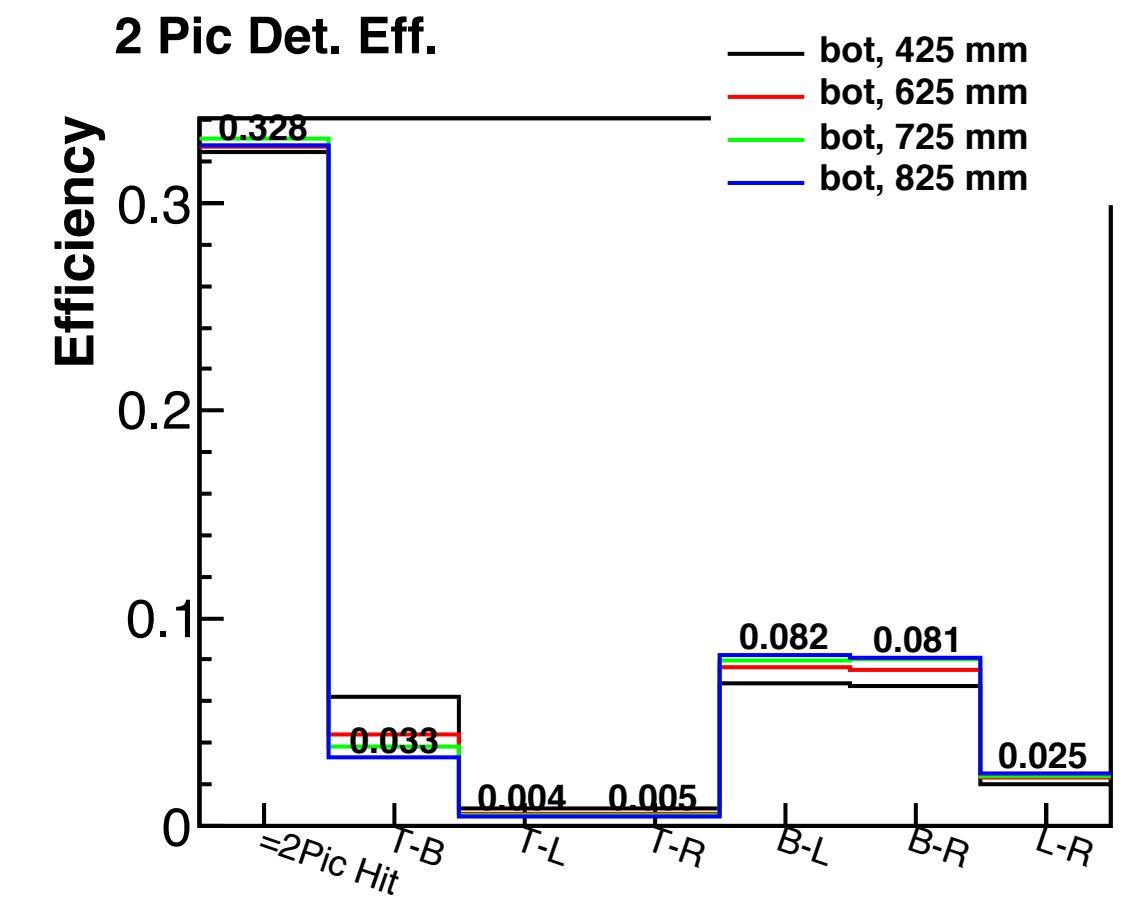
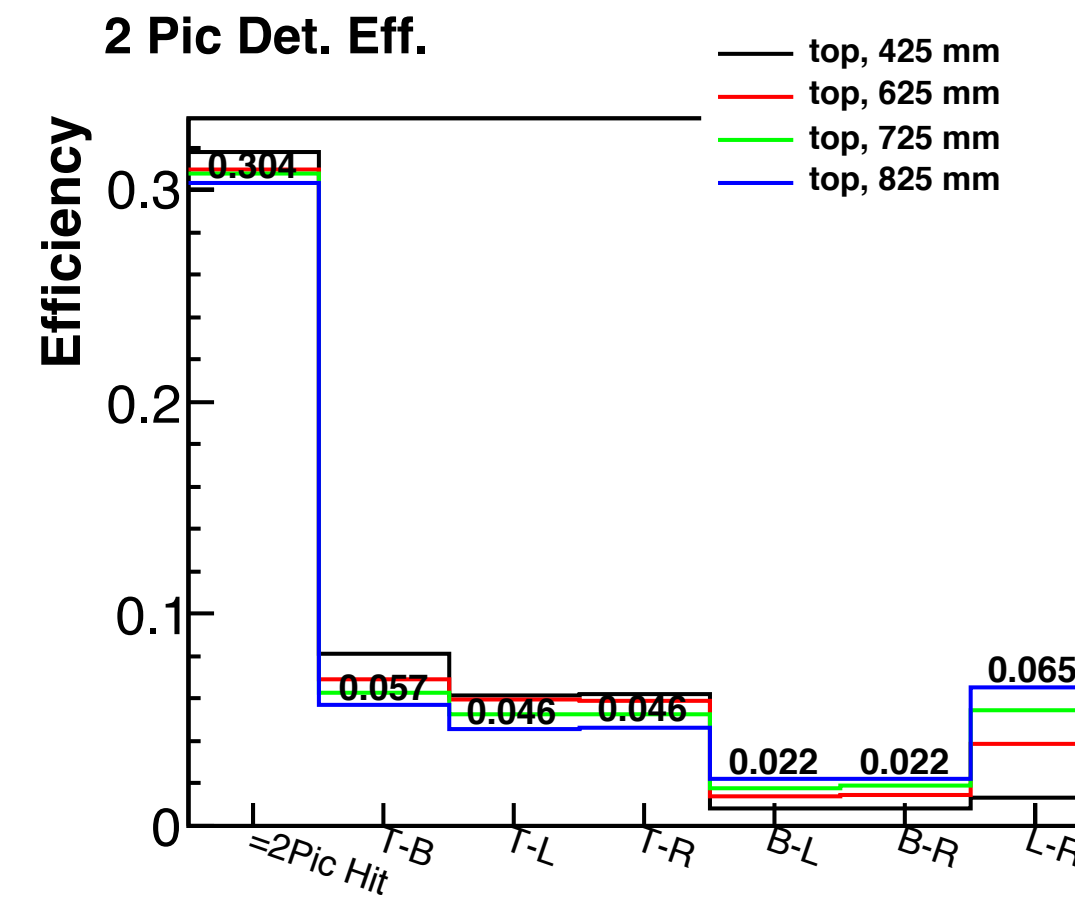
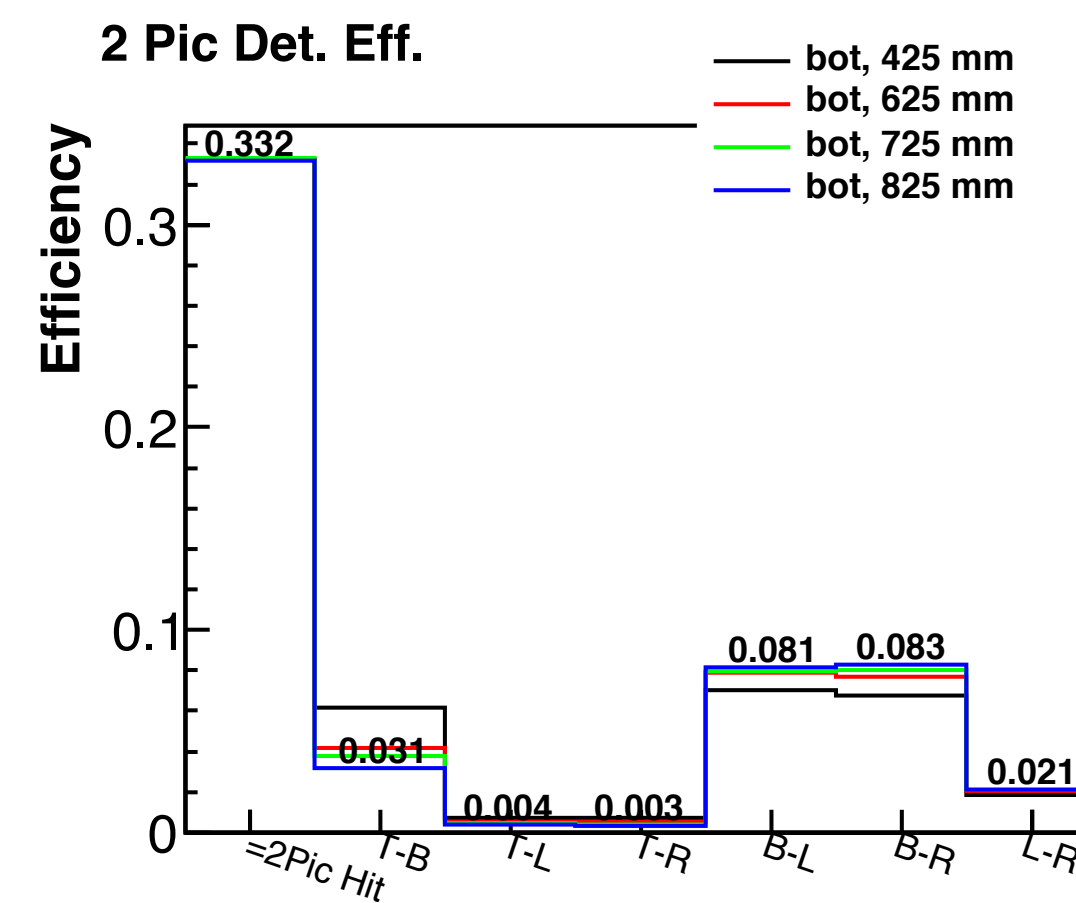
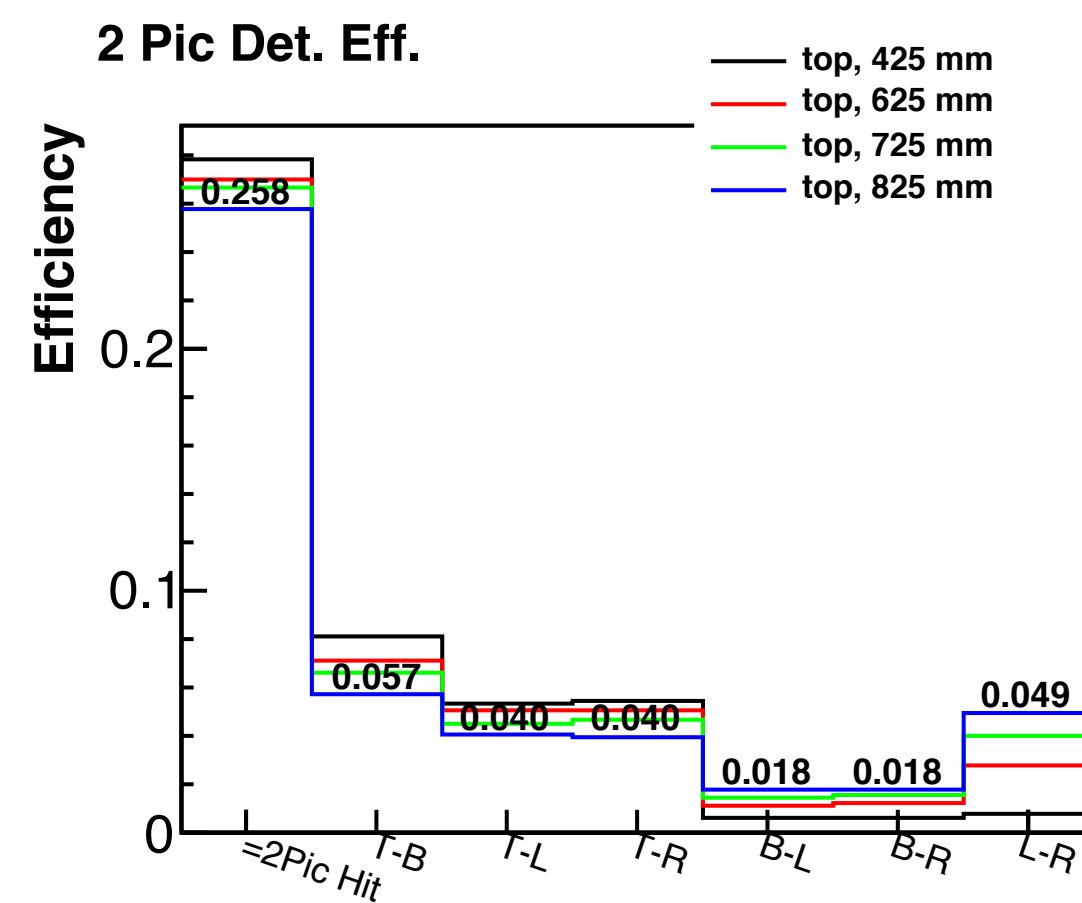
Checking threshold effect

- Set the deposit energy threshold for each hit: 1 MeV, 5 MeV, 8 MeV
- 825-cm Top Detector case

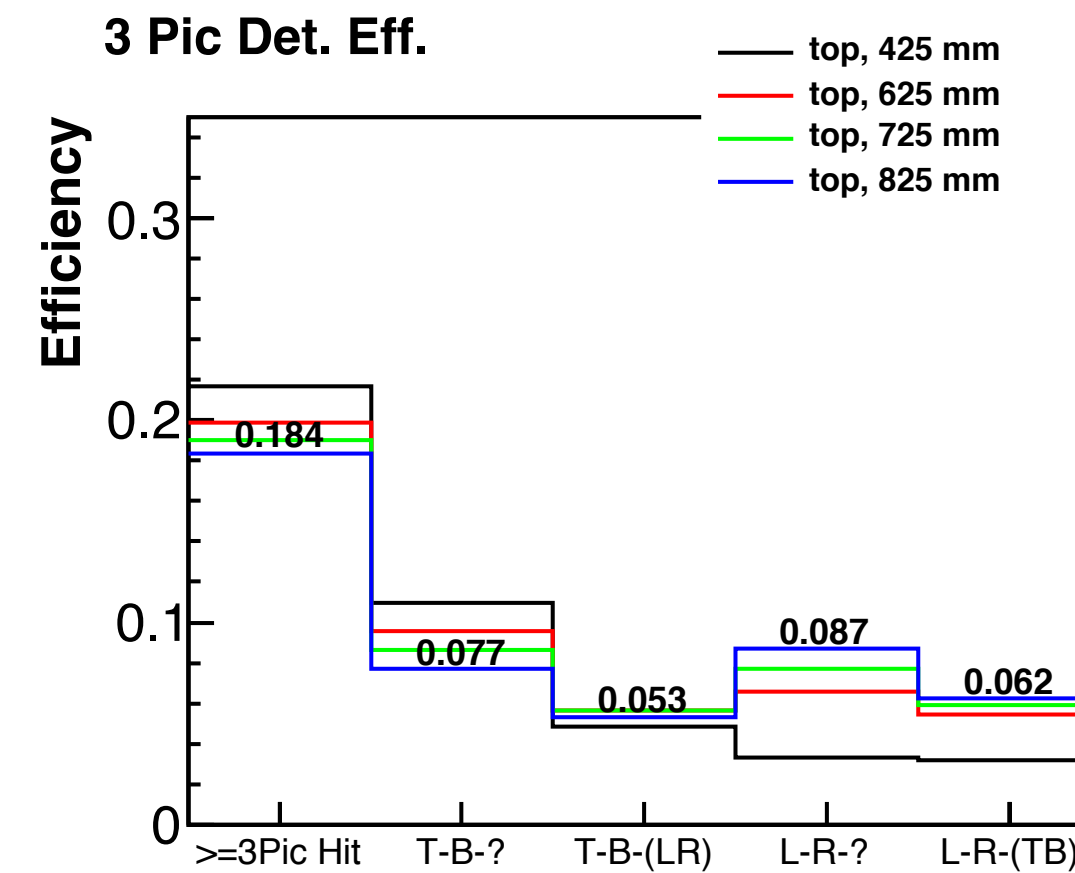
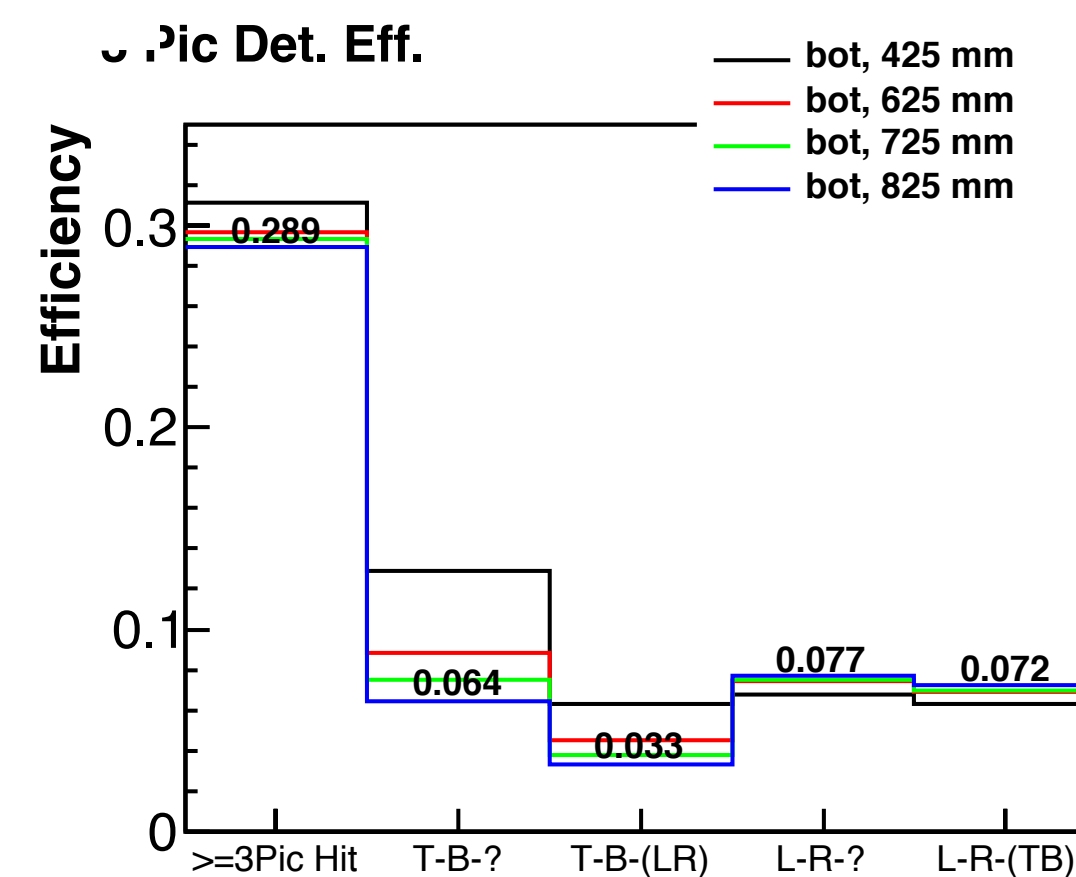
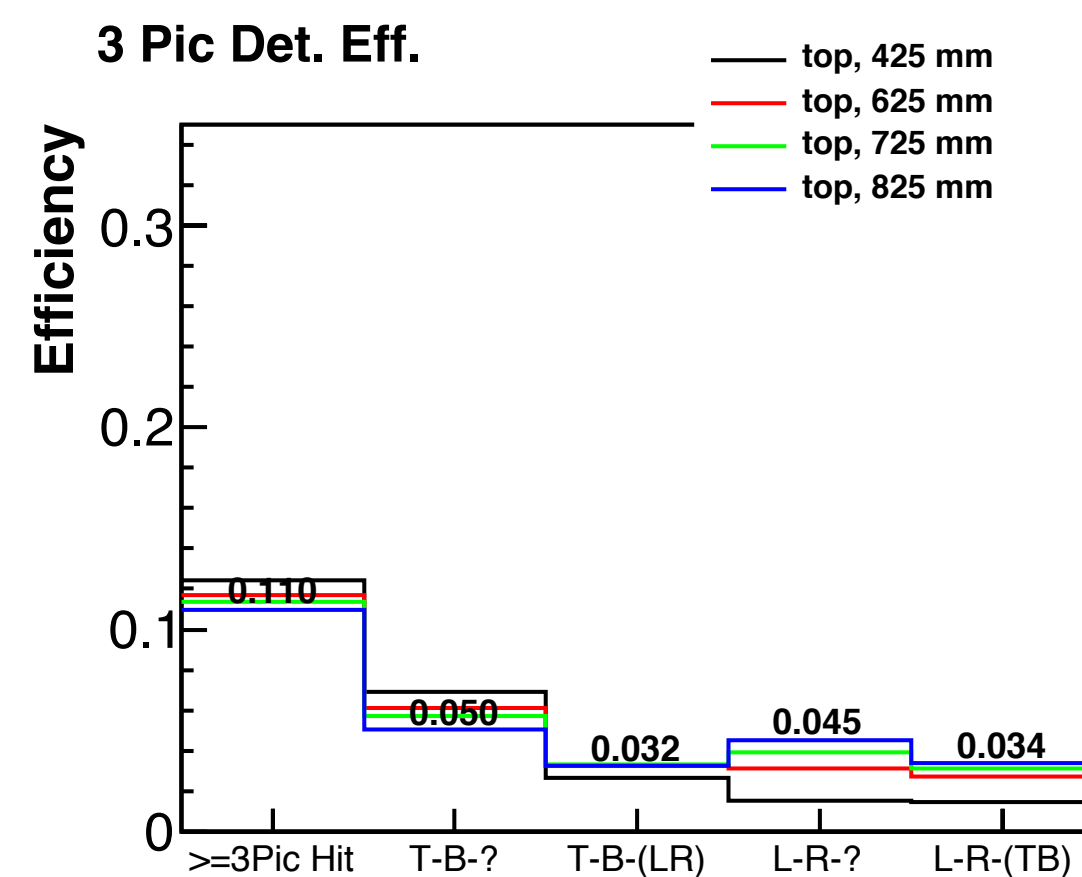


Free-fall Chamber Material Dependence

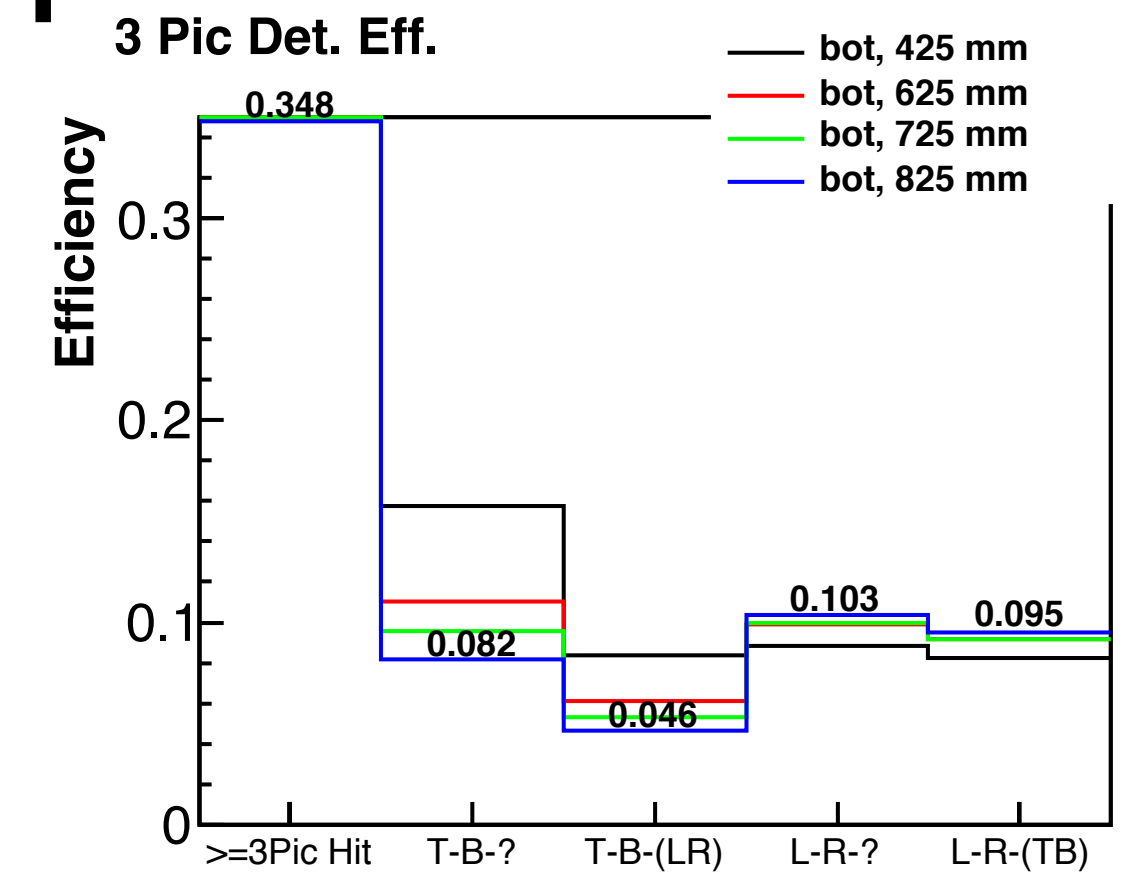
- SUS (Original) vs Ti



SUS



Ti



Free-fall Chamber Material Dependence

- SUS (Original) vs Ti with 825-mm Top Detector case

Top Ann.	SUS	Ti
= 2 Pic	0.258	0.304
T-B	0.057	0.057
>= 3 Pic	0.110	0.184
T-B-?	0.050	0.077

Bottom Ann.	SUS	Ti
= 2 Pic	0.332	0.328
T-B	0.031	0.033
>= 3 Pic	0.289	0.348
T-B-?	0.064	0.082

To-Do List

- Recover the efficiency by considering Side-Bottom or Top-Side cases.