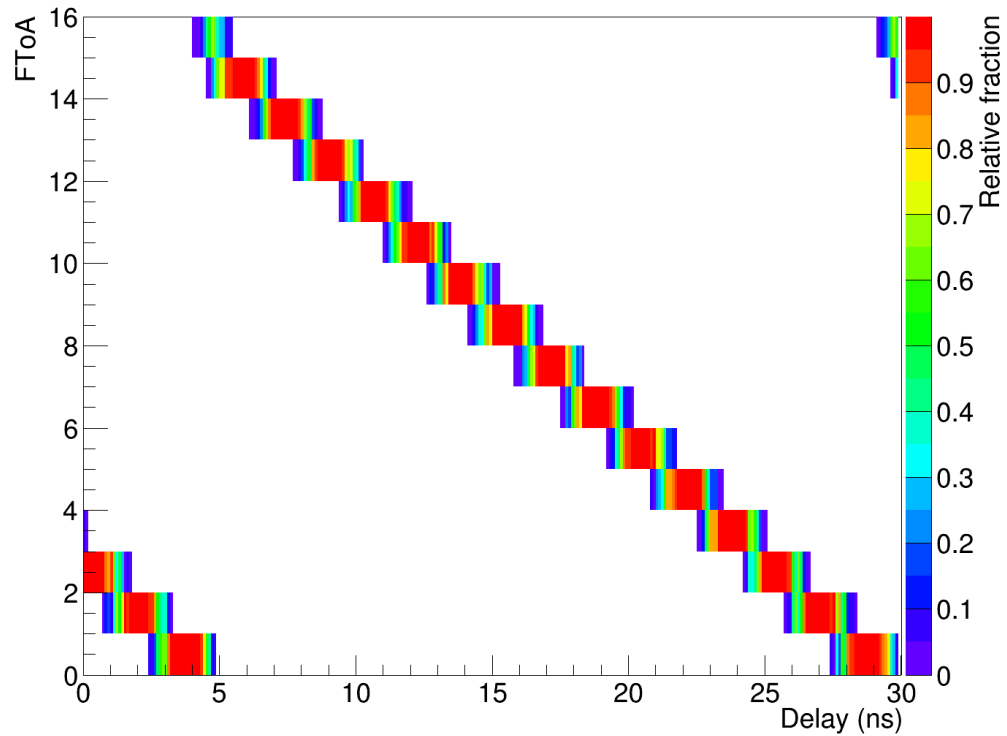
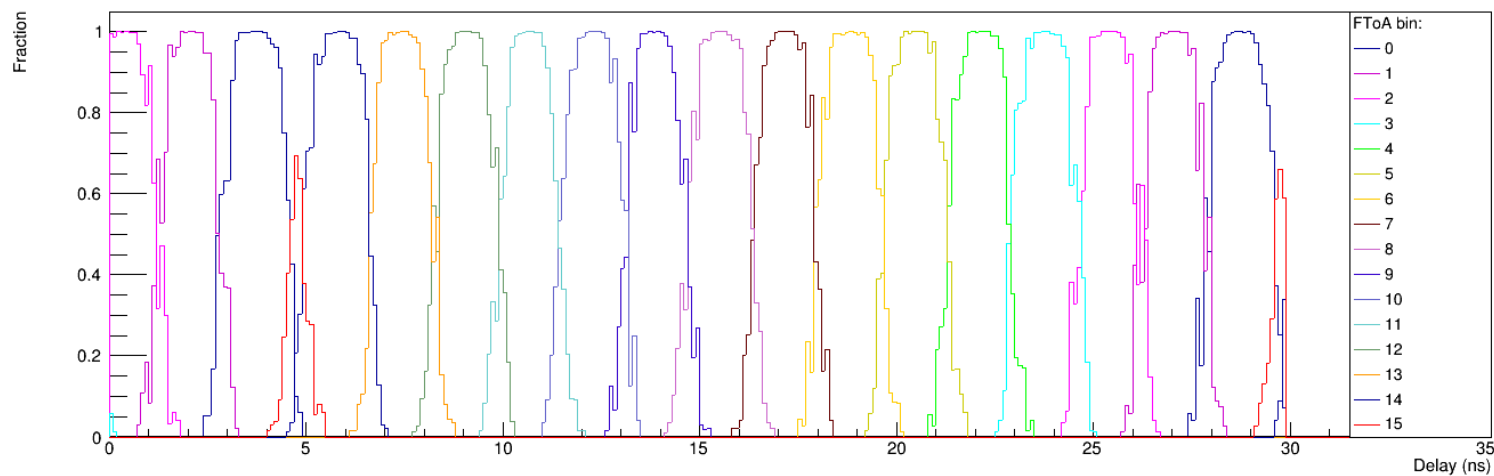


FToA bin size (again)

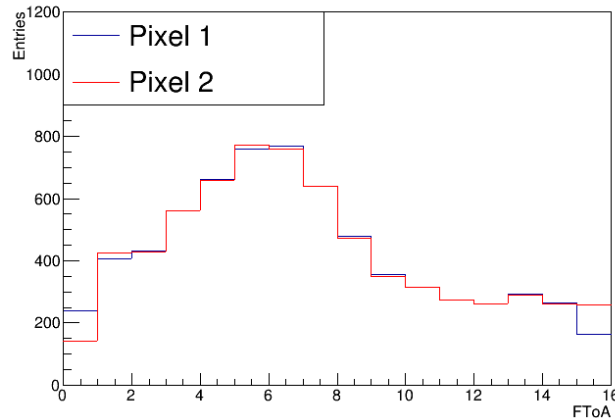


FtoA bin	Length
0	1.71
1	1.58
2	1.51
3	1.74
4	1.58
5	1.63
6	1.66
7	1.58
8	1.67
9	1.55
10	1.64
11	1.52
12	1.63
13	1.59
14	1.71
15	0.37

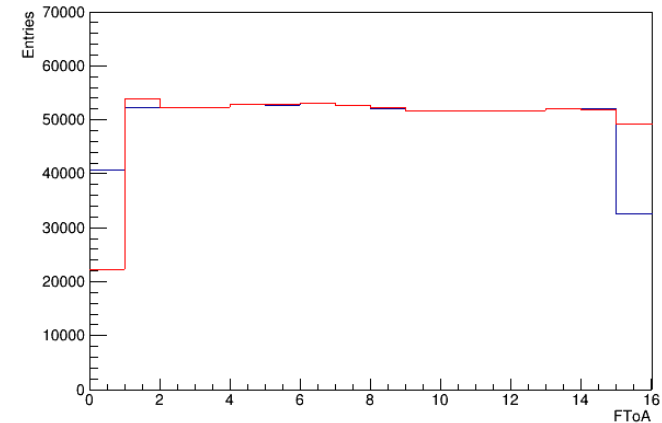


Weird behavior (last week)

Nhits = 2



Nhits > 1

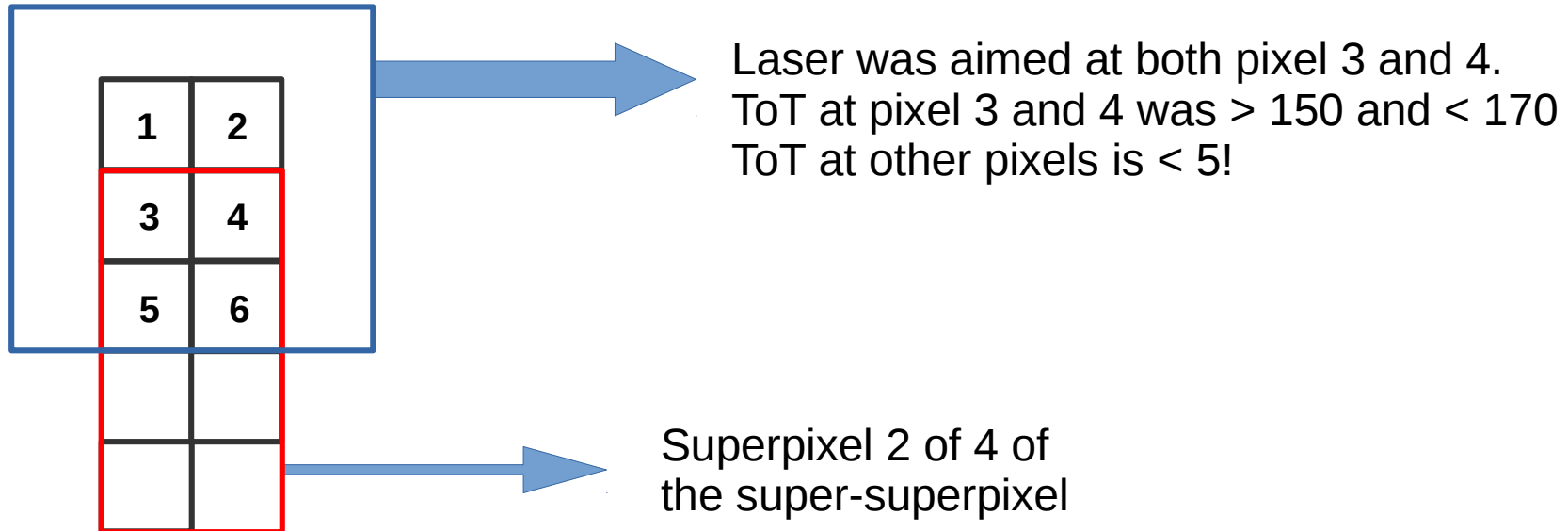


When I went down to 80 ToT per pixel, none of the surrounding pixels was hit. This, as well, gave a flat FToA distribution even when Nhits = 2 was a requirement.

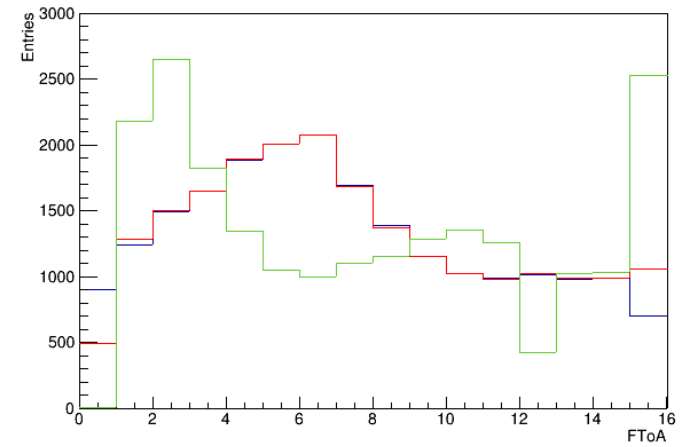
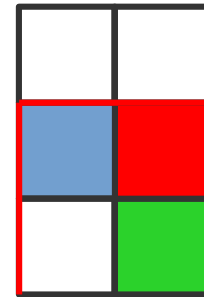
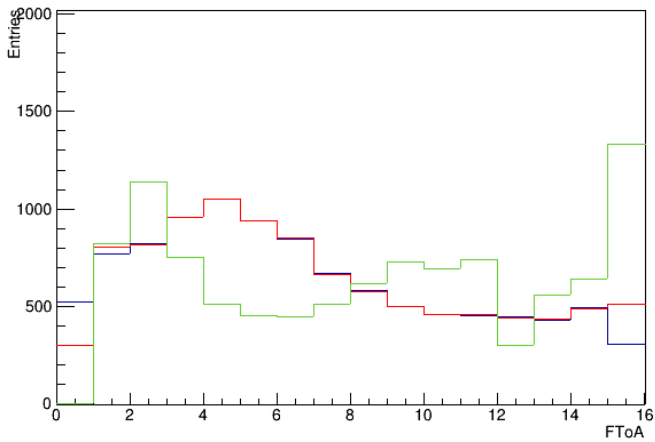
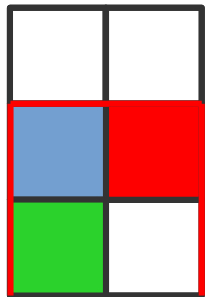
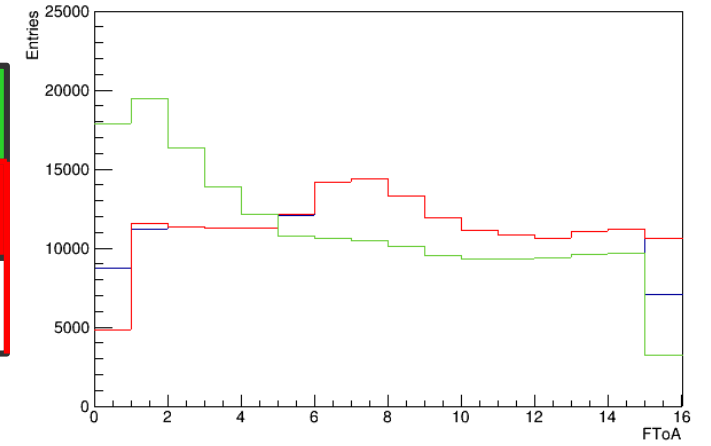
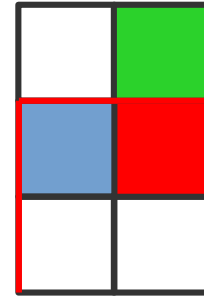
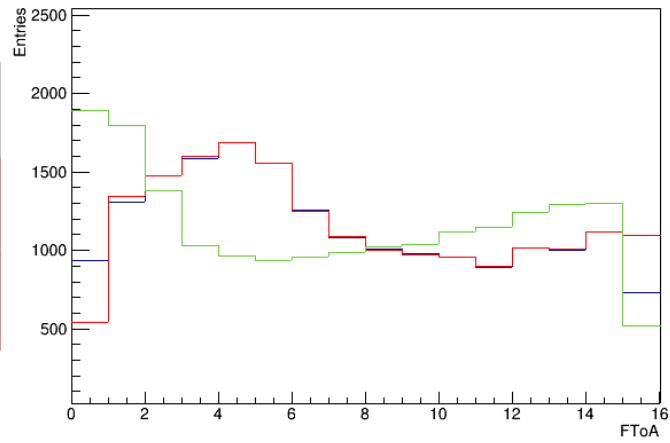
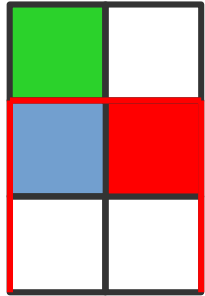
Therefore it seems that the extra pixels that are fired as well influence the the main pixels

Investigation of weird behaviour

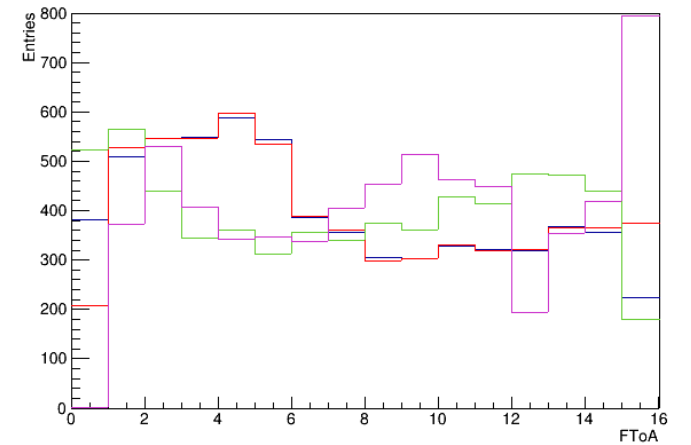
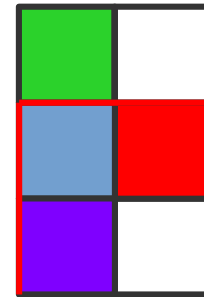
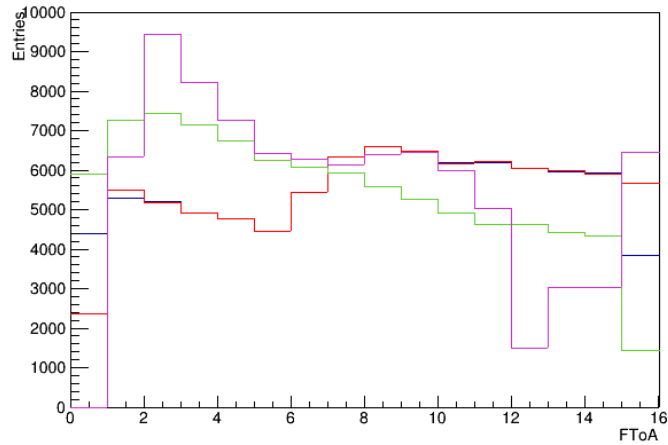
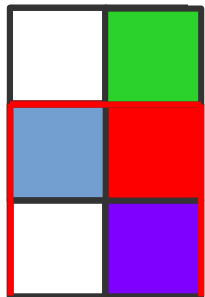
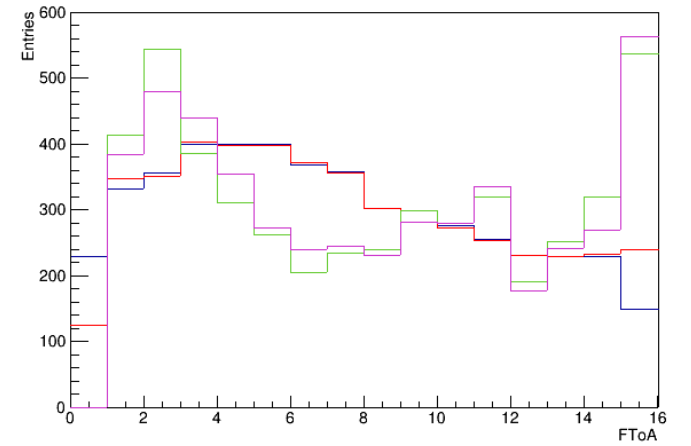
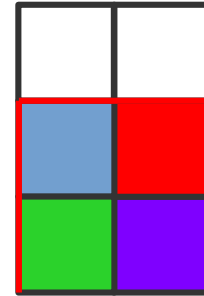
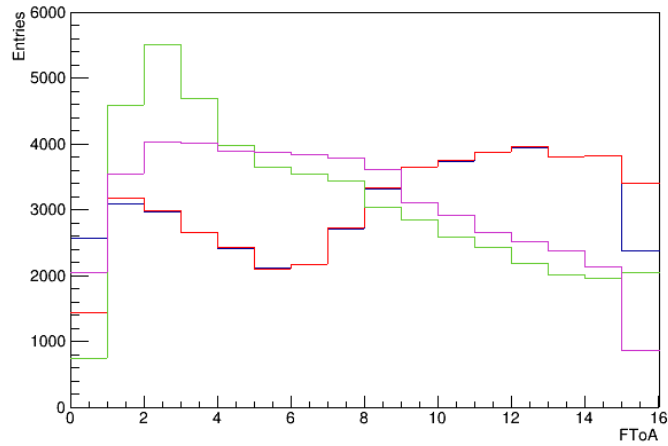
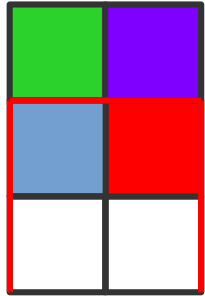
Because the “bump” is not present if only the two pixels are hit every time. For the “bump” measurement 2 to 6 pixels are hit. This implies that the charge cloud spreads out of multiple pixels. Therefore I investigated the FToA distribution per combination of pixels



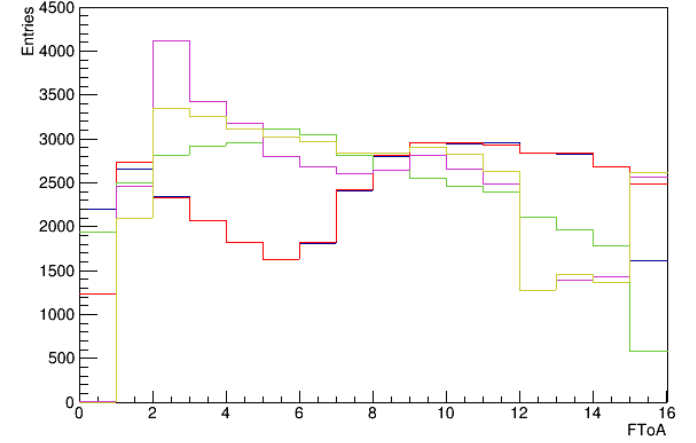
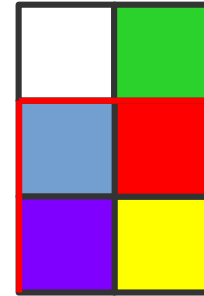
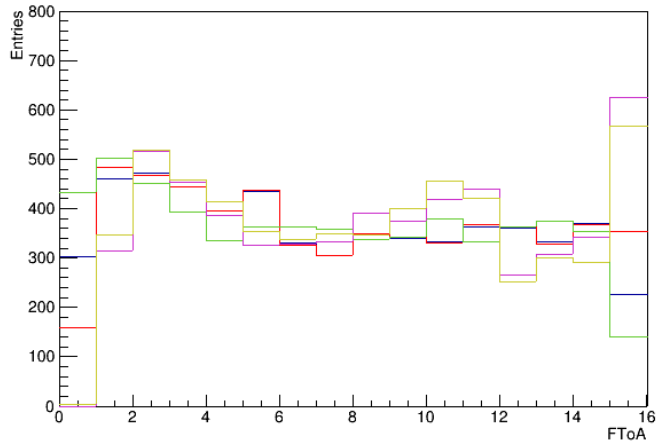
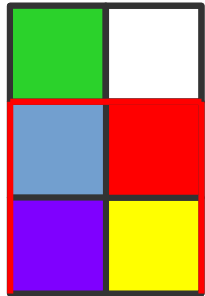
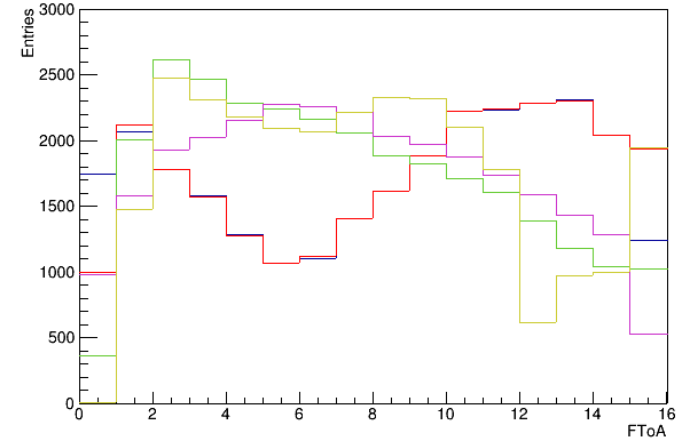
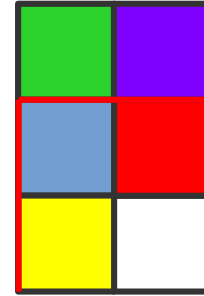
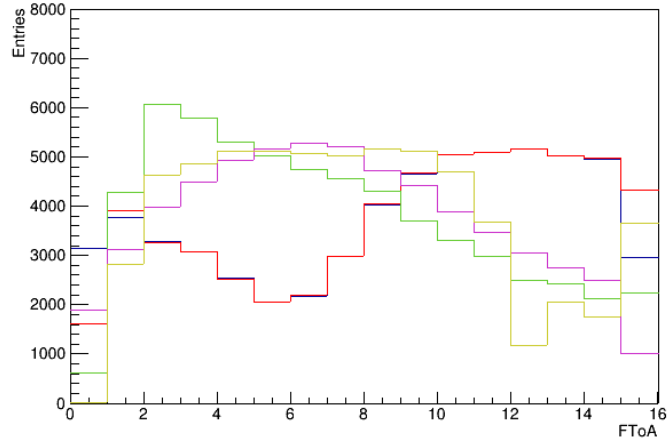
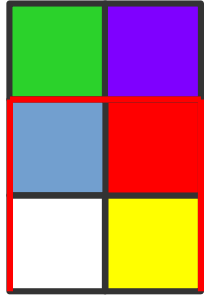
Nhits = 3



Nhits = 4

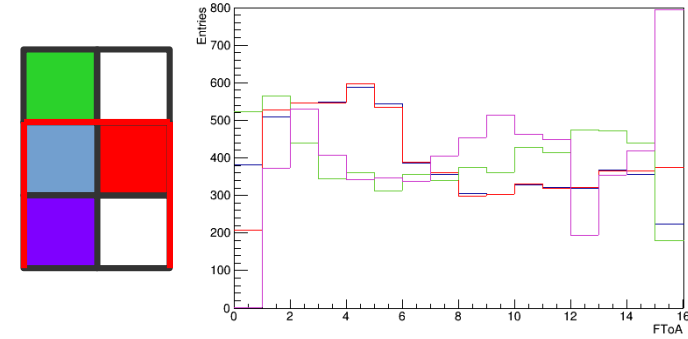
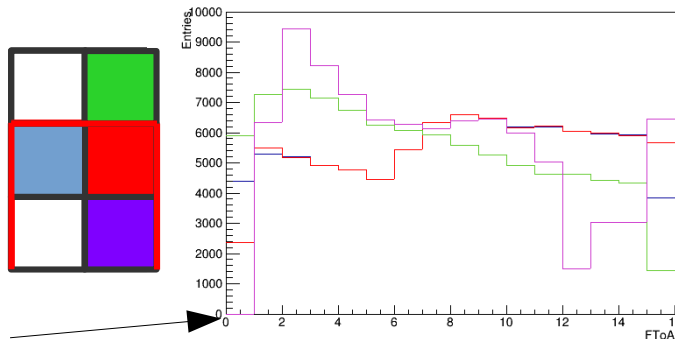
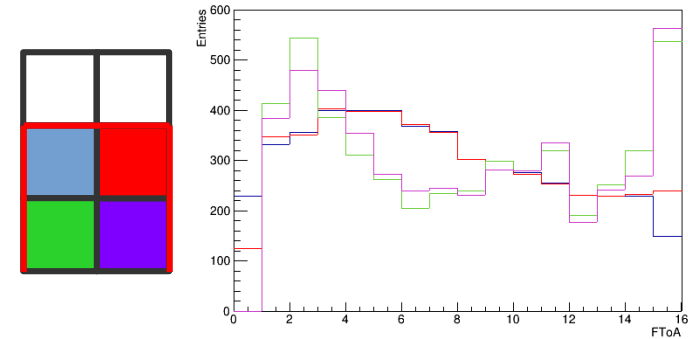
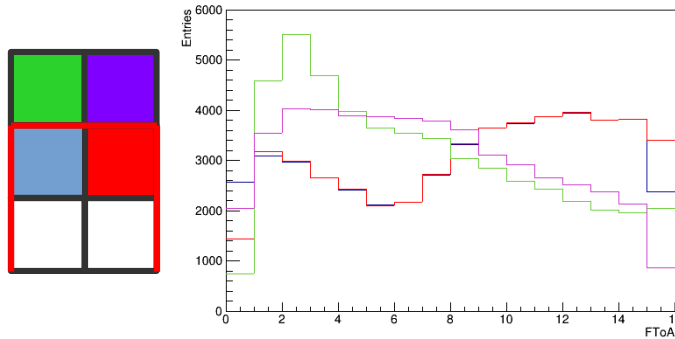
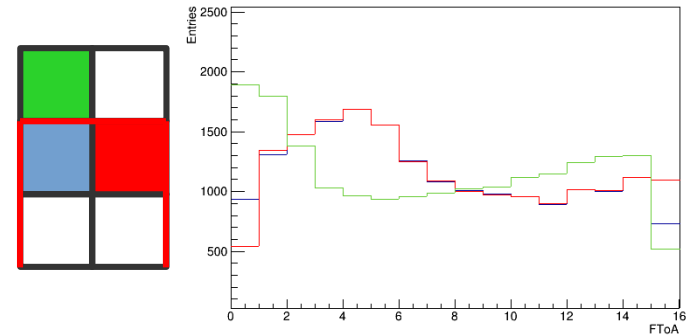
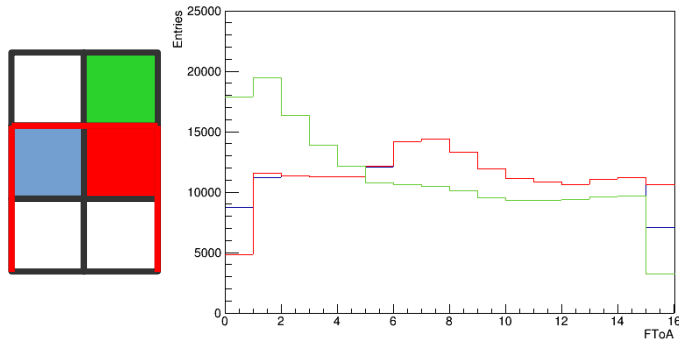


Nhits = 5



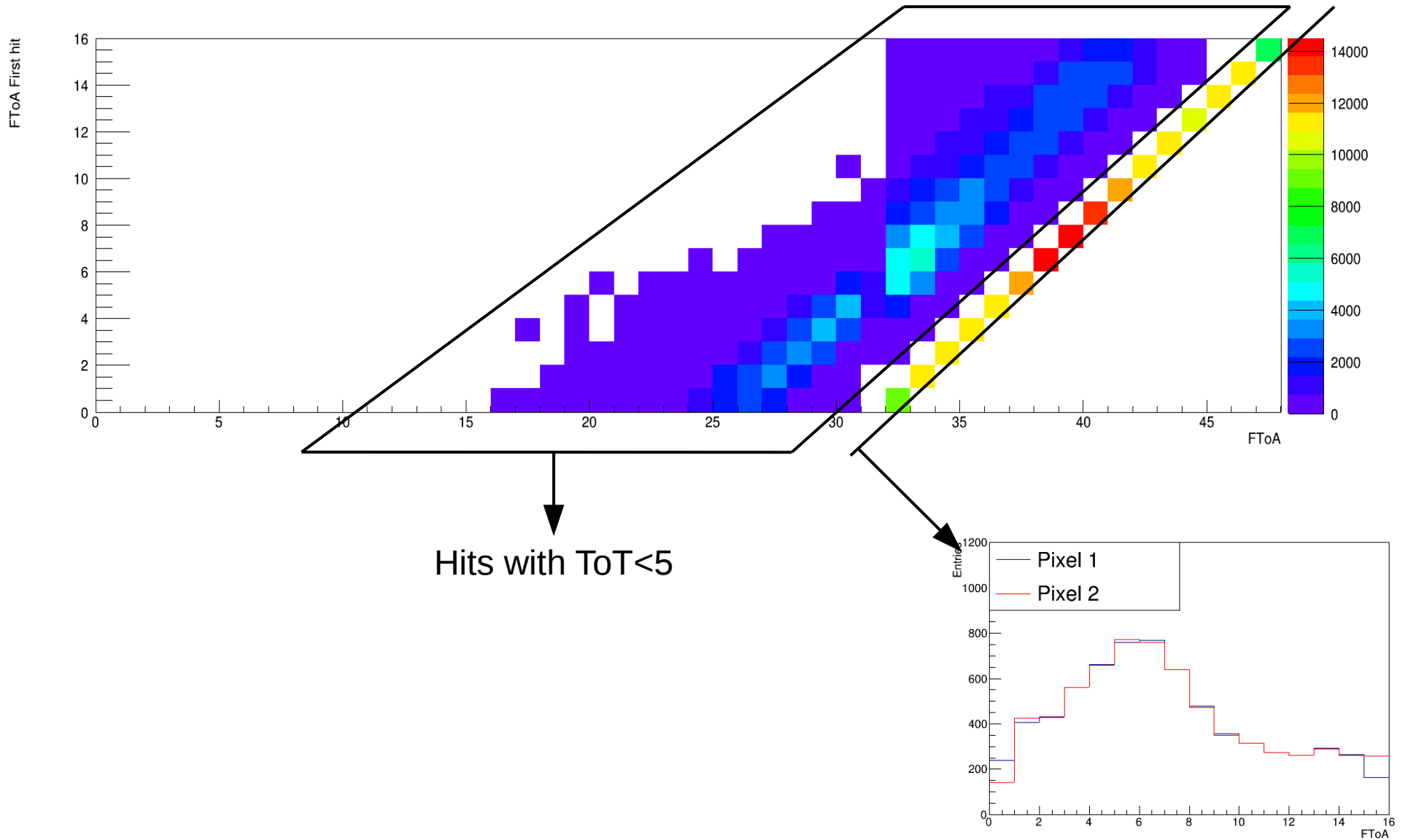
Observation (1)

“Bump” is not present when pixel 2 is hit
(seems to become a dip)



If a third pixel
in the
superpixel is
hit, the hit with
 $ToT < 5$ is never
in bin 0 and
seems to
overflow to bin
15

Observation (2)



Observation (3)

Does this behaviour imply that even if a certain pixel does not go over threshold, this does still influence the FToA distribution?

Does pixel 2 really influence the timing of the superpixel below it?

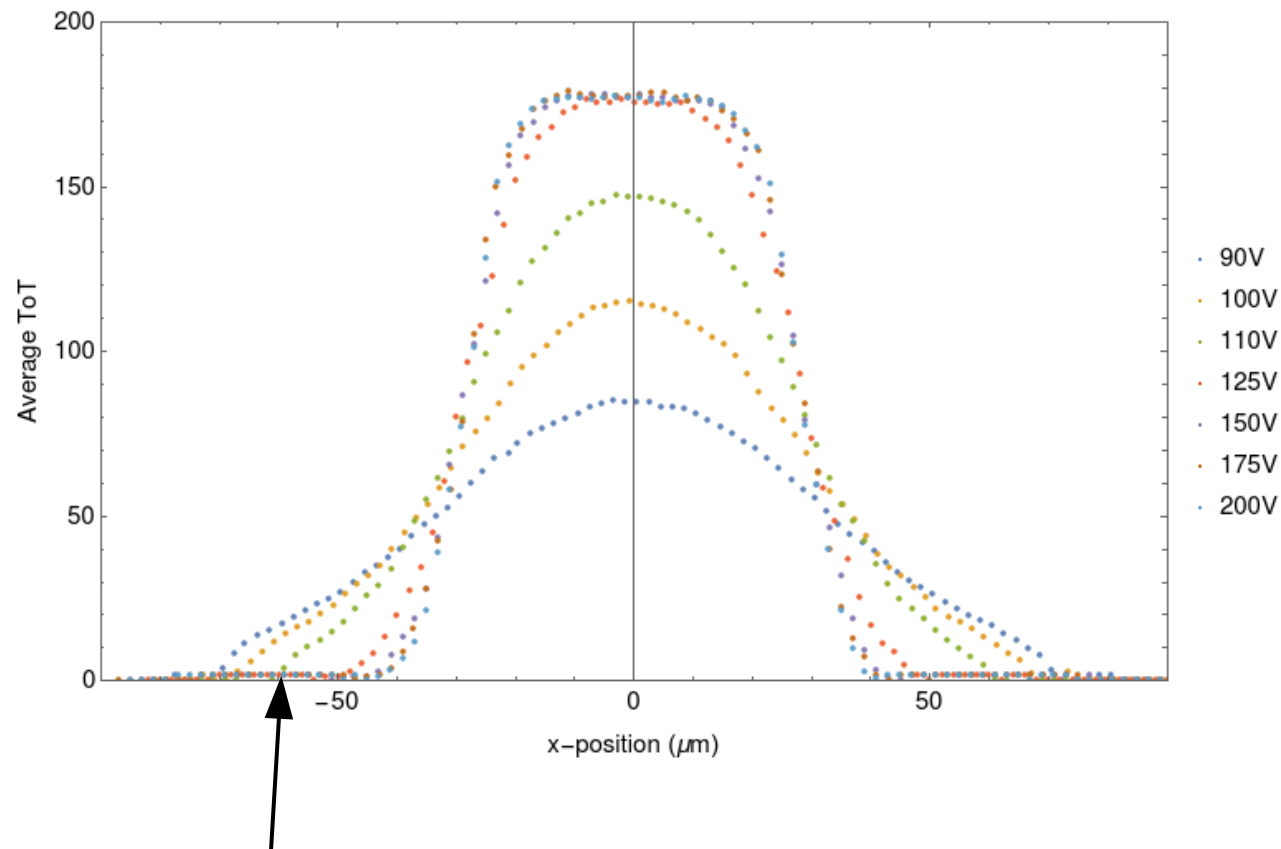
Any other ideas?

Planned next steps:

- Increase trimdacs / mask pixels 1, 2, 5, and 6

1	2
3	4
5	6

ToT scan of 1 pixel (again)



Even when the spot is not near the pixel, it does sometimes have hits with ToT 1 or 2

With increasing bias the position at which this happens does not change → Due to induced current by high amount of charge in the neighboring pixel?