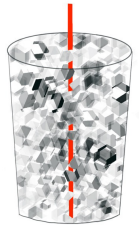
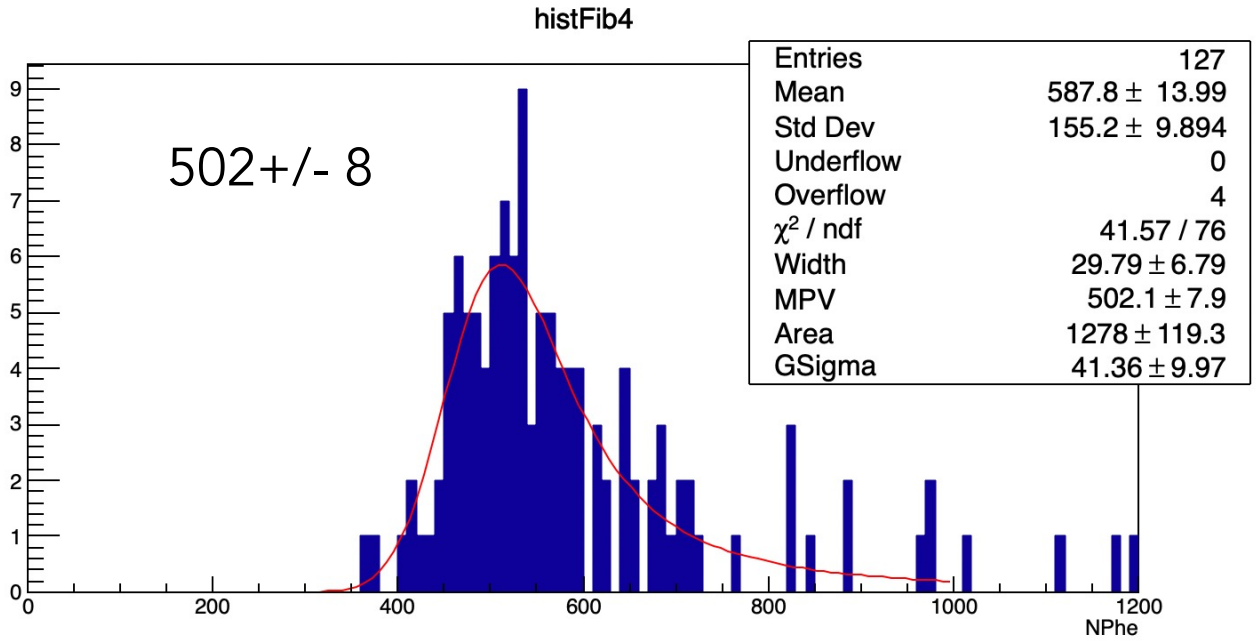


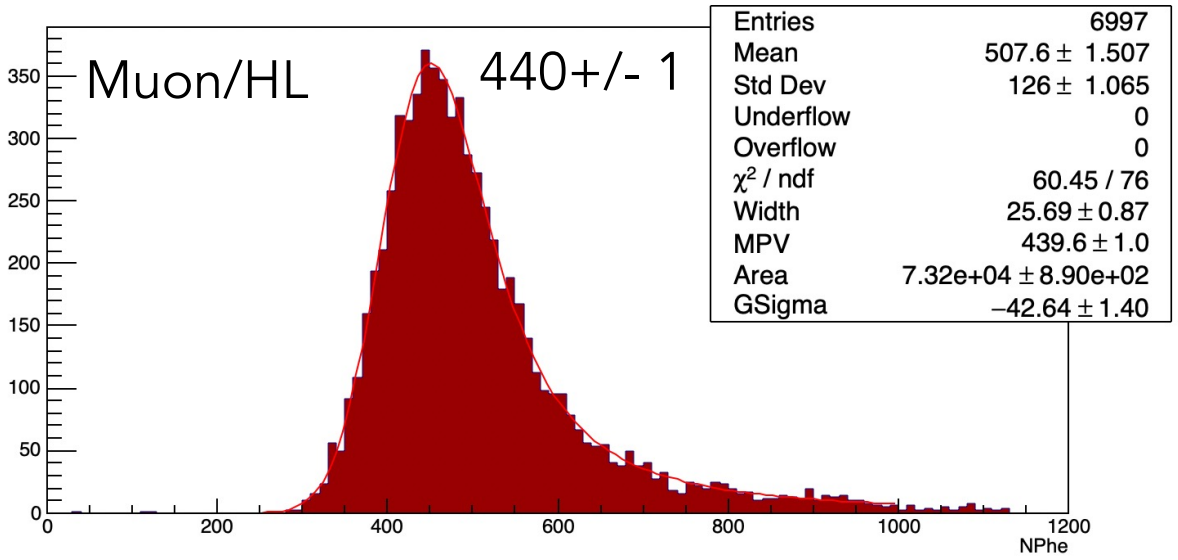
GRAiNITA analysis meeting 04/10/2024

General requirements :
- v3 processing
- general cuts : ("(muonType==20&&eventType==4)&&hitTotCor<1500 &&diffTrack2<1") ;
- muonType==20 (crosses all GRAINITA)

NPHE Water vs HL

Muon/Water

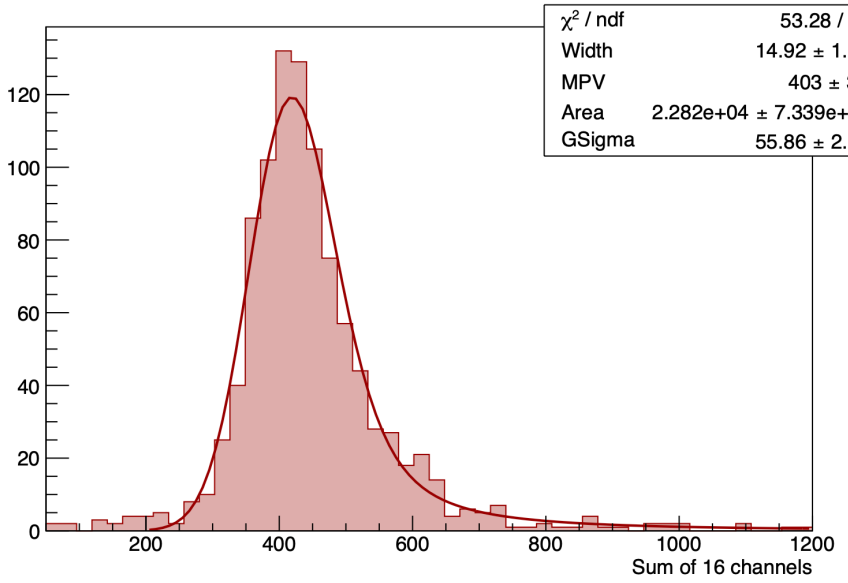




Plot public cosmics with Water

Cosmics/EGL 403+/- 3

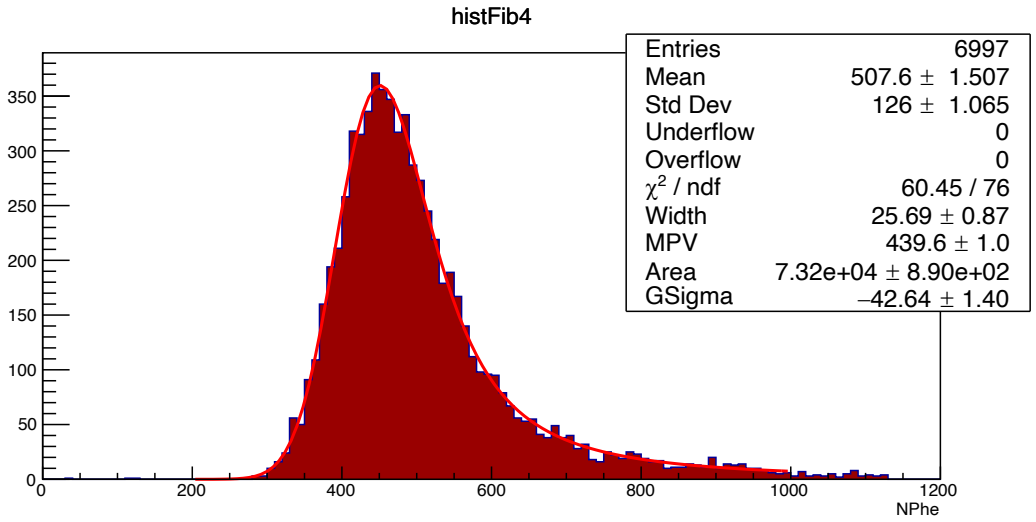
[JINST 19 P04008]

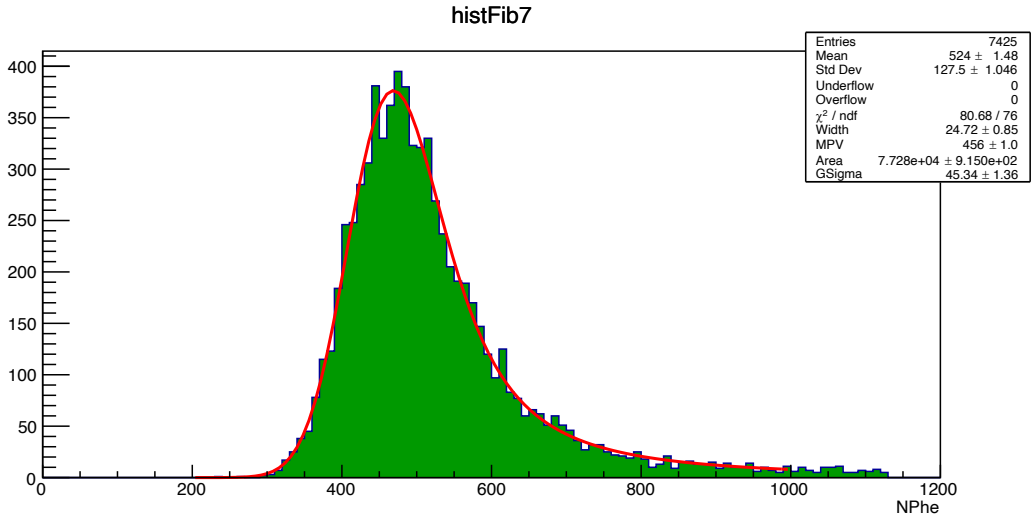


Near Uniformisation parameters to add fibers

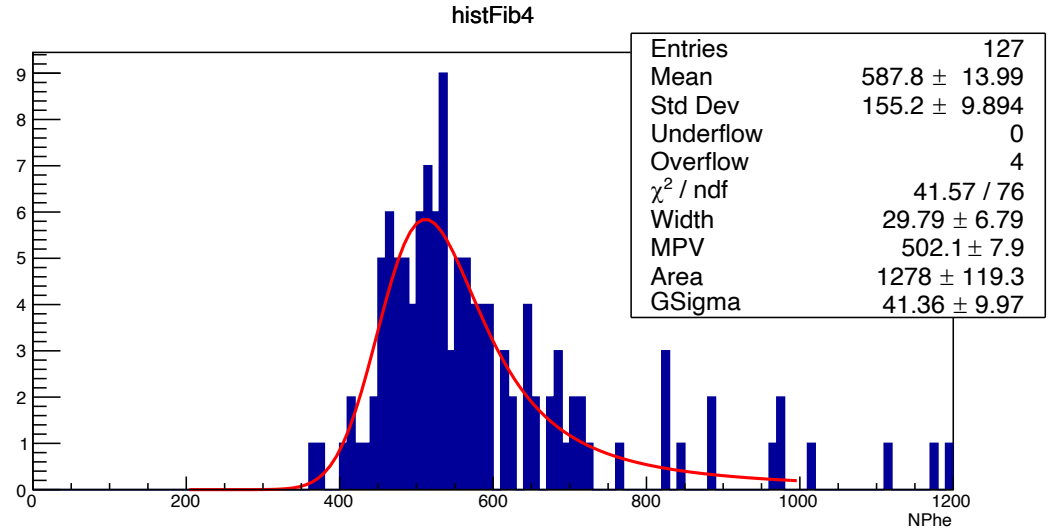
Less NPHE with HL ?

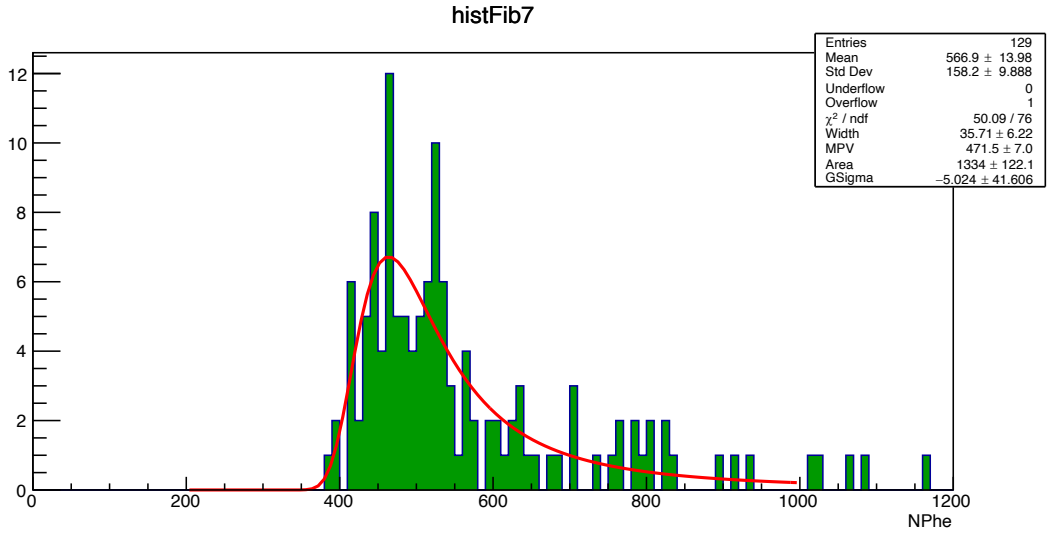
Muon Troll1 , HL, SiBB corrected





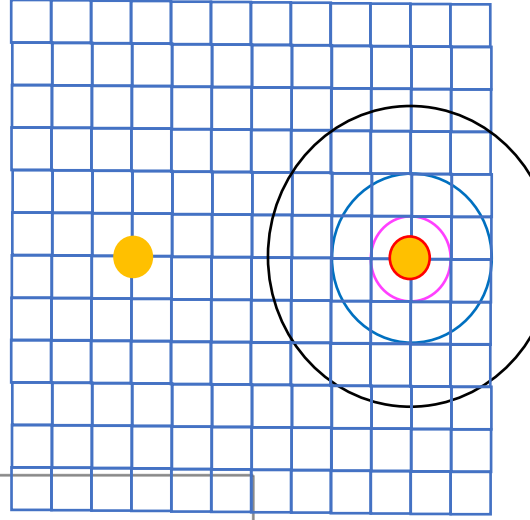
Muon Troll1 , water, SiBB corrected

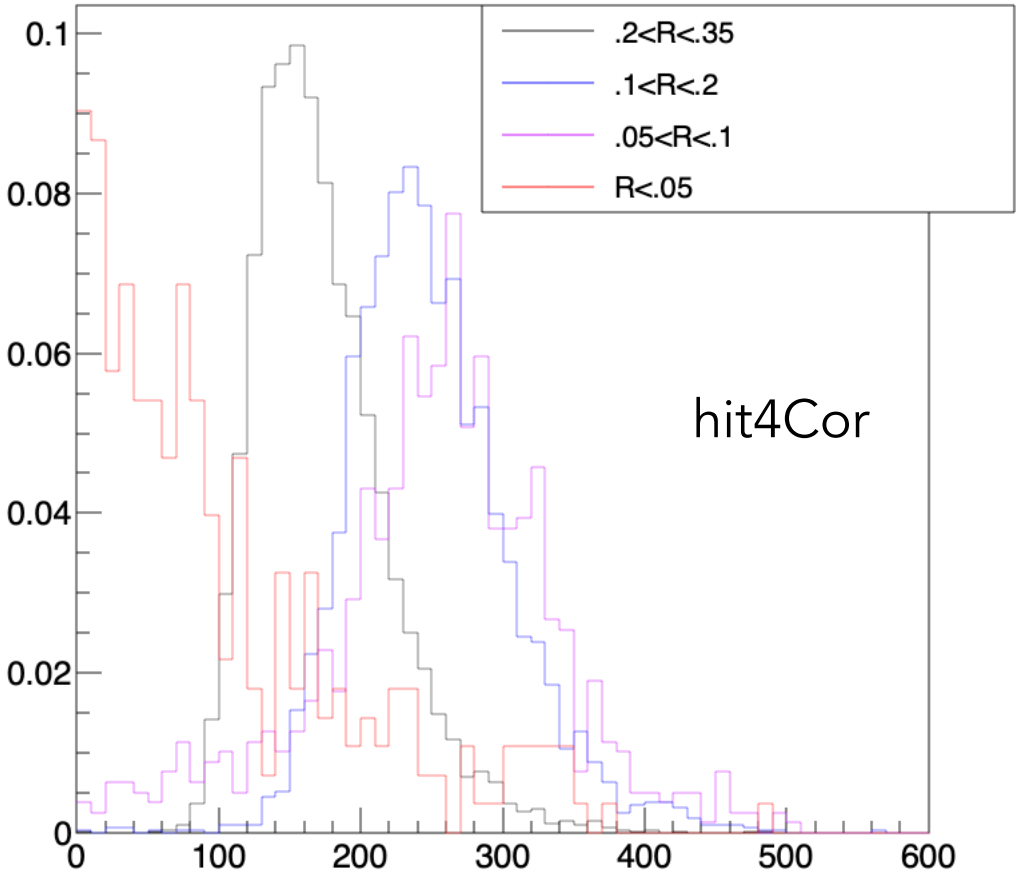


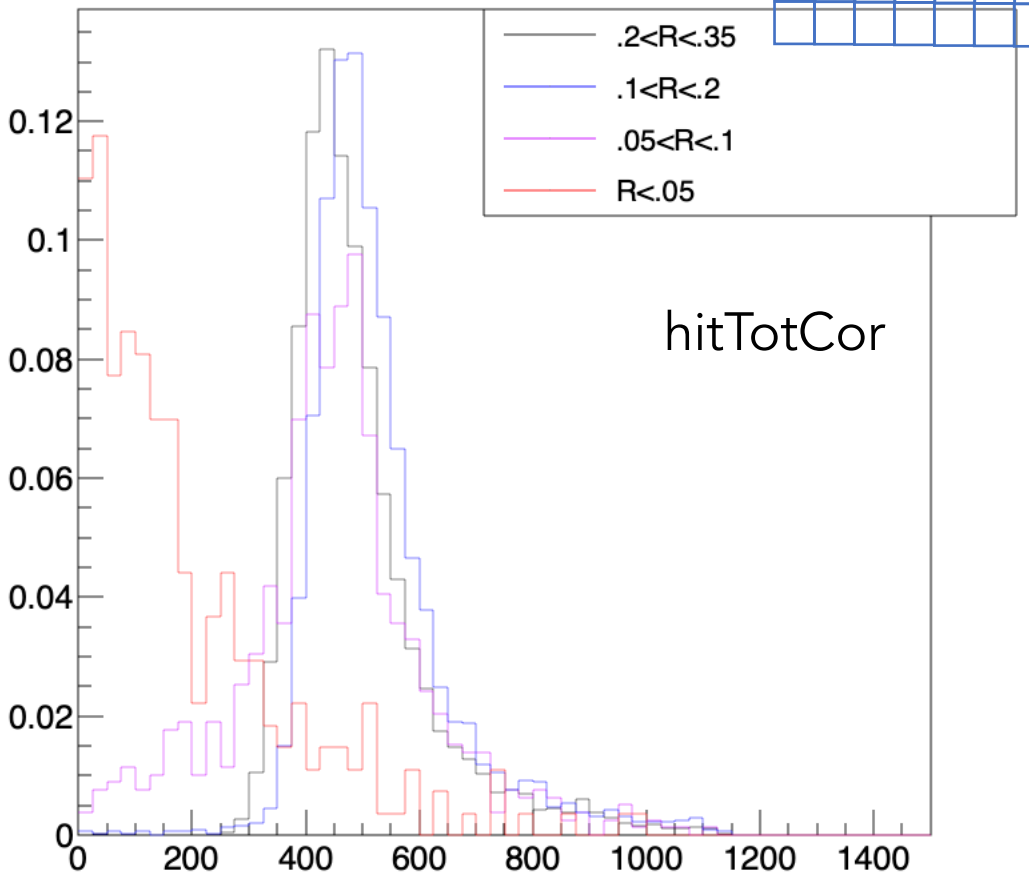


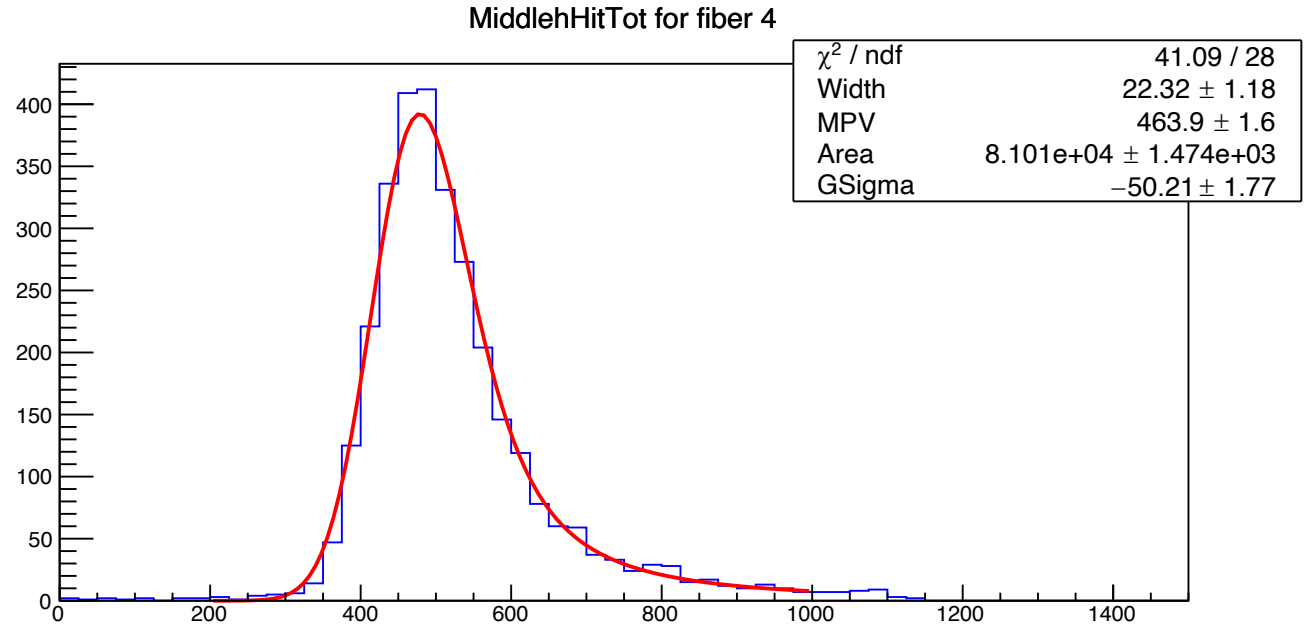
On fiber positions

Muon, 59 – 60 corrected for bad SiBB Fiber 4. Center = (.33,.31)



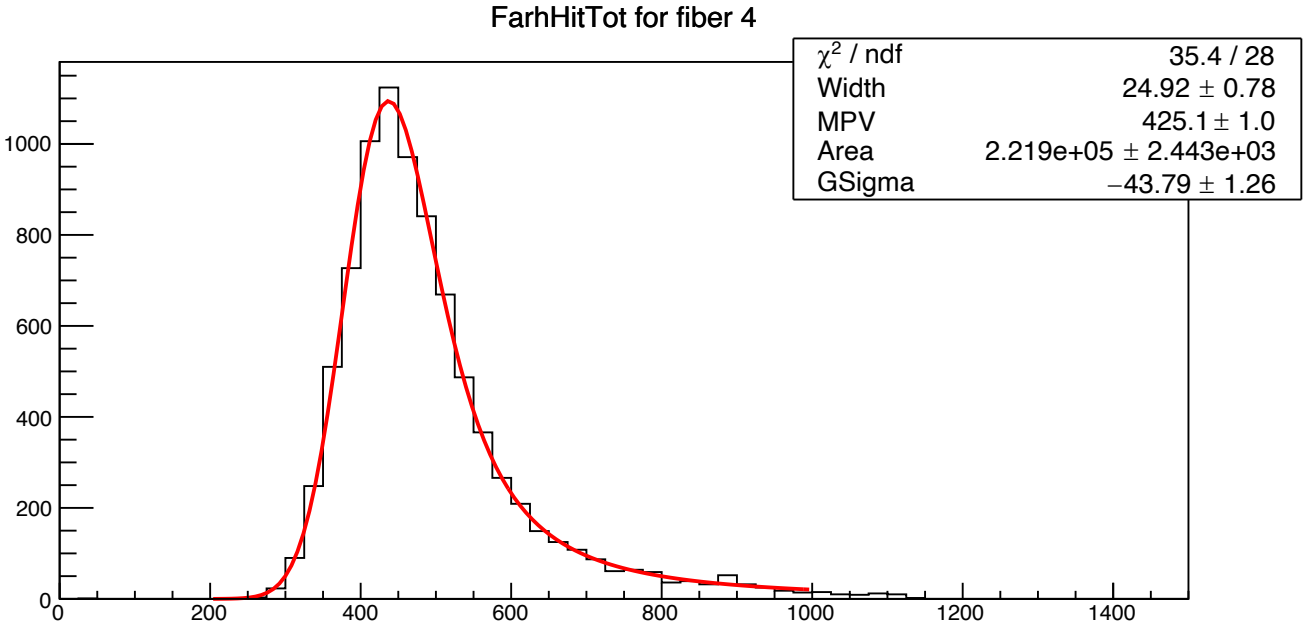






.1<R<.2

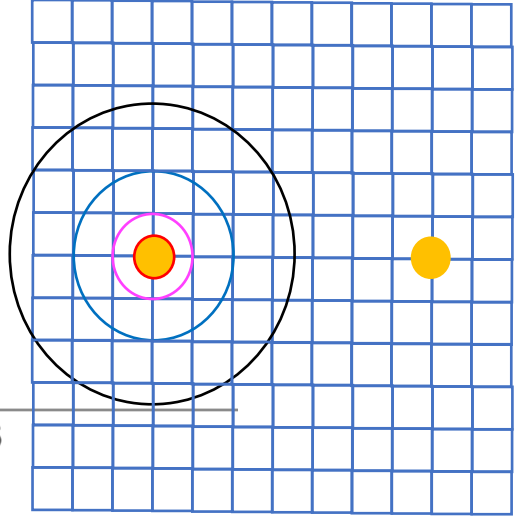
MPV = 464 +/- 2

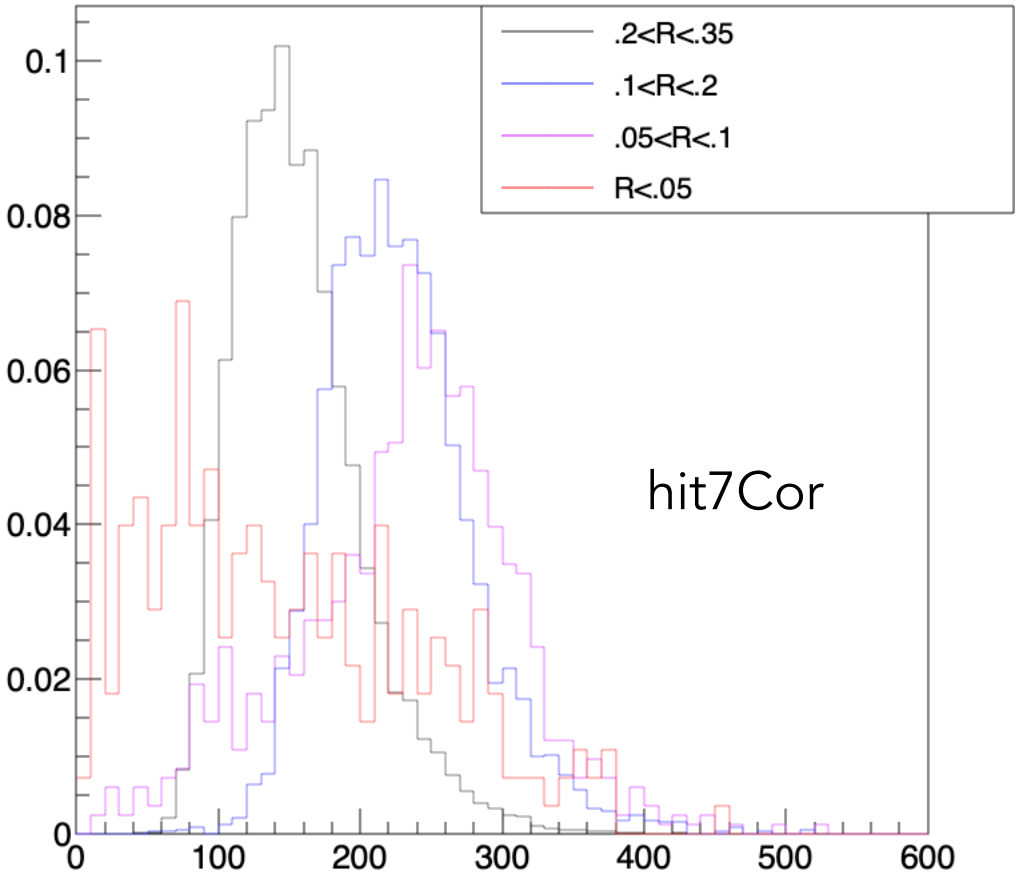


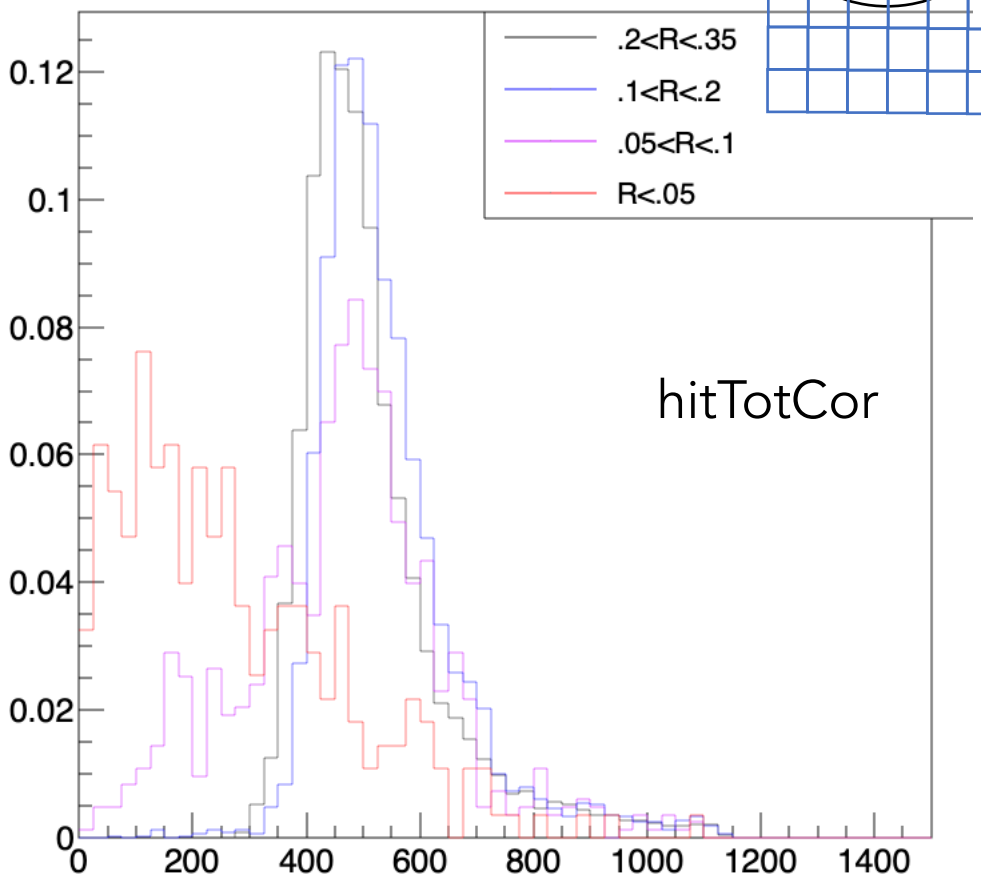
.2<R<.35

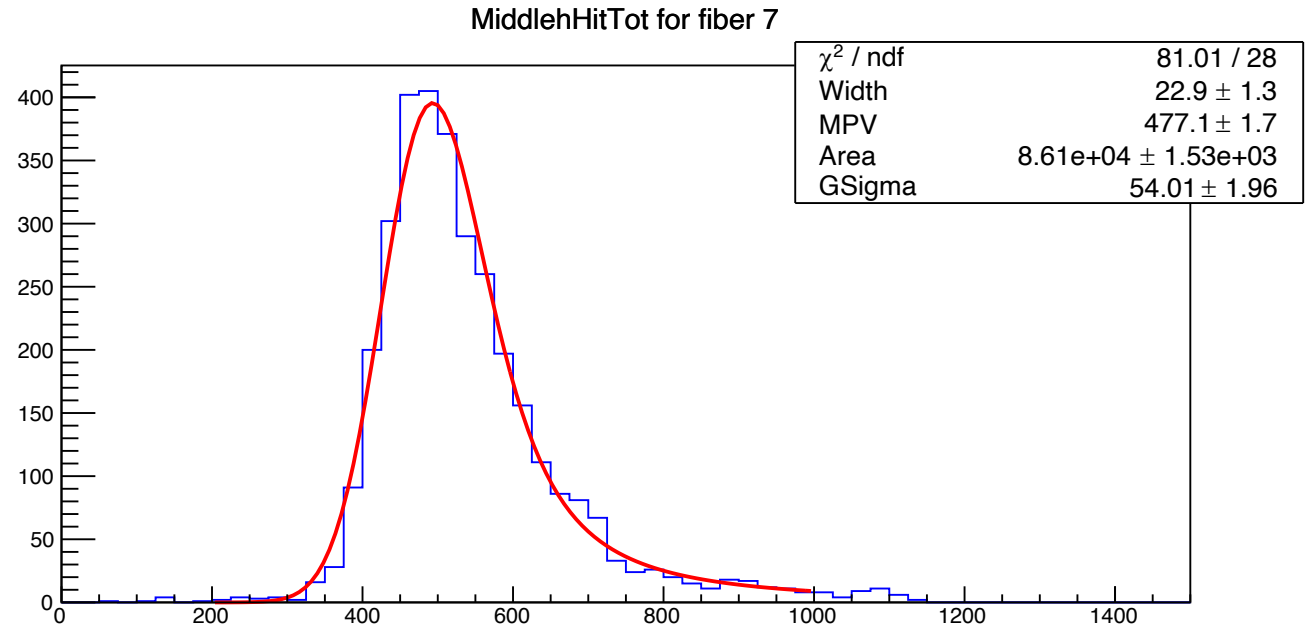
MPV = 425 +/- 1

Muon, 59 – 60 corrected for bad SiBB Fiber 7 Center = (-.34,.34)



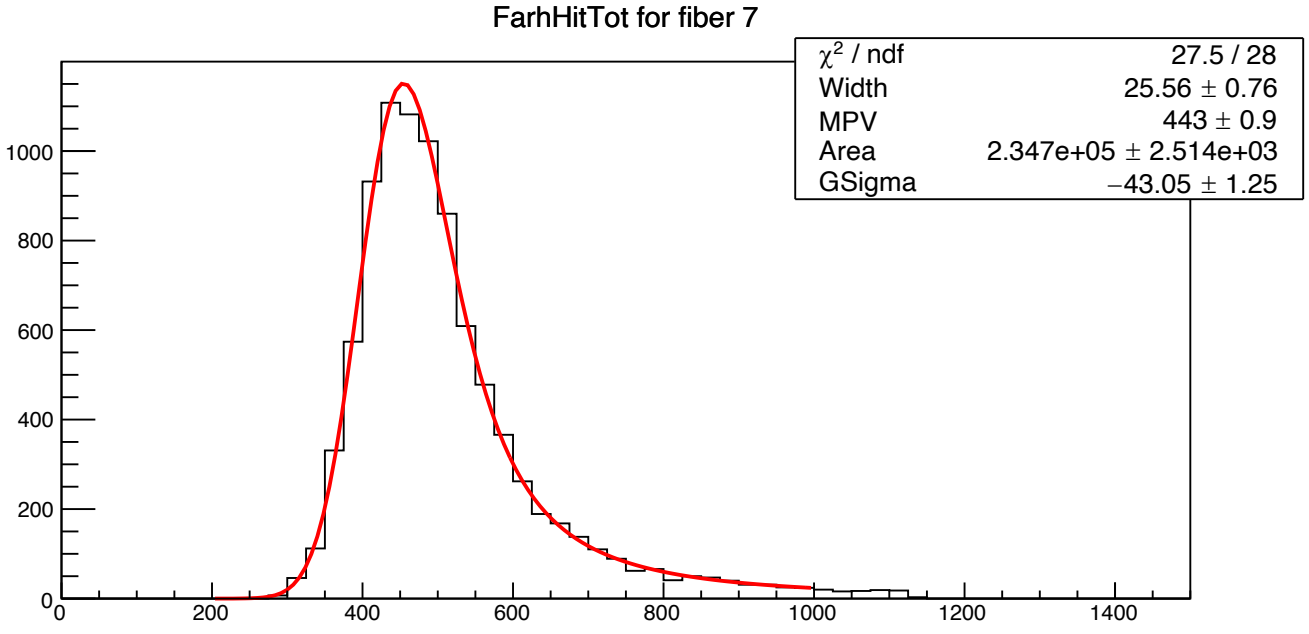






.1<R<.2

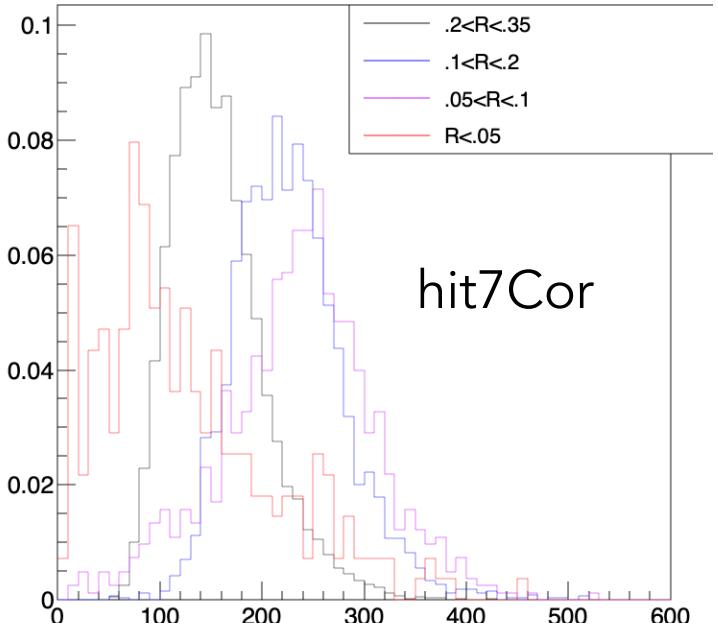
MPV = 477+/-2



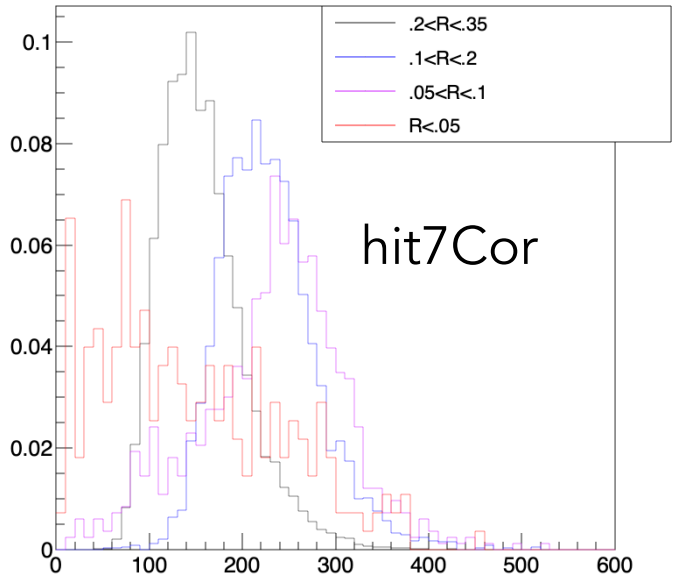
.2<R<.35

MPV = 443+/-1

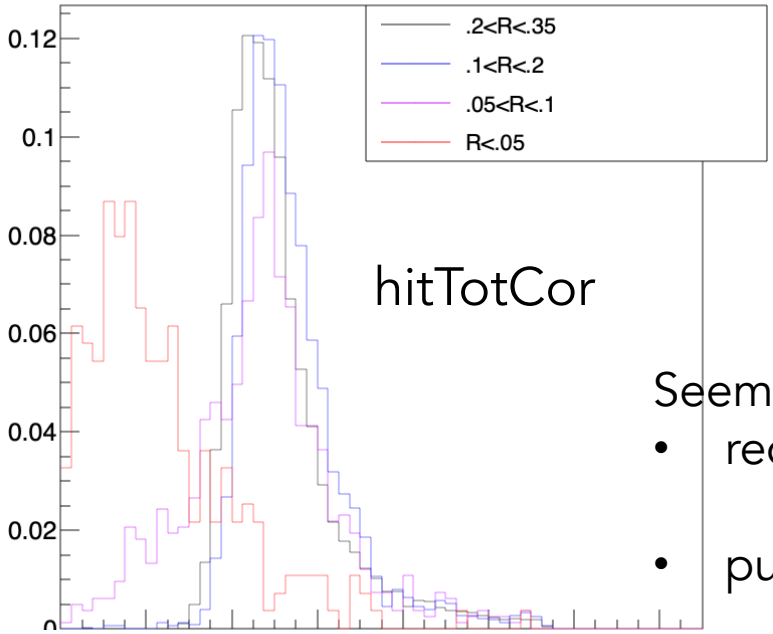
Would it help to better define the centering of the fiber ? Try Fiber 7 Center = (-.36,.34)

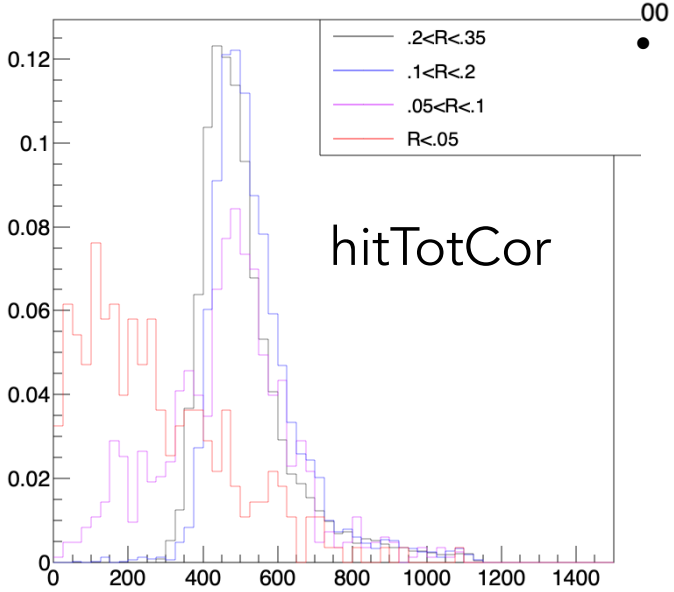


(-.36,.34)



(-.34,.34)

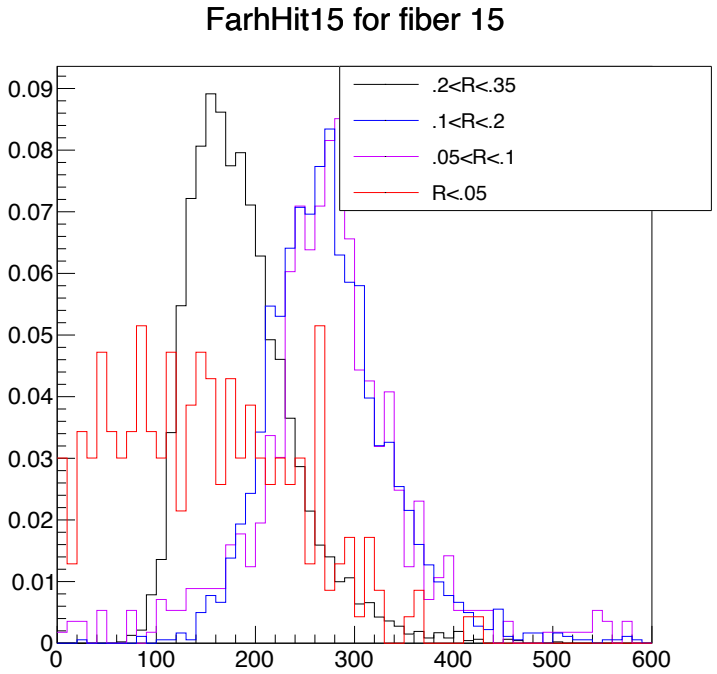




Seems better:

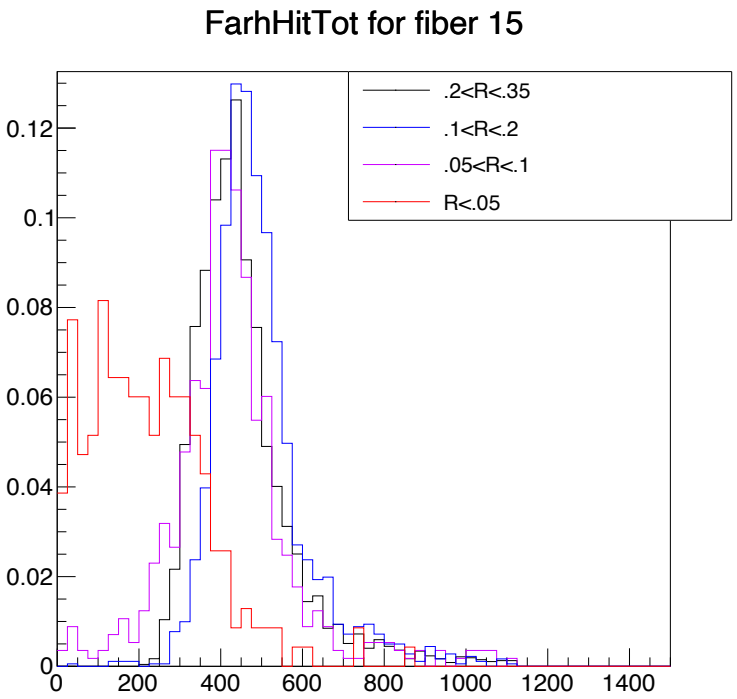
- red more peaking at ~ 0
- purple peak less tails at ~0
- When one is far away with the large definition I am using, it is less sensitive

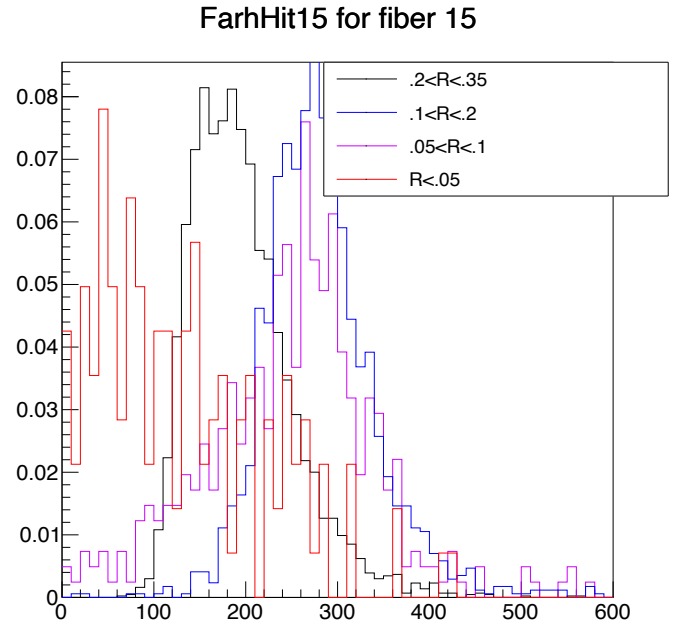
What about Fiber 15 ?



(-.38,-1.17)

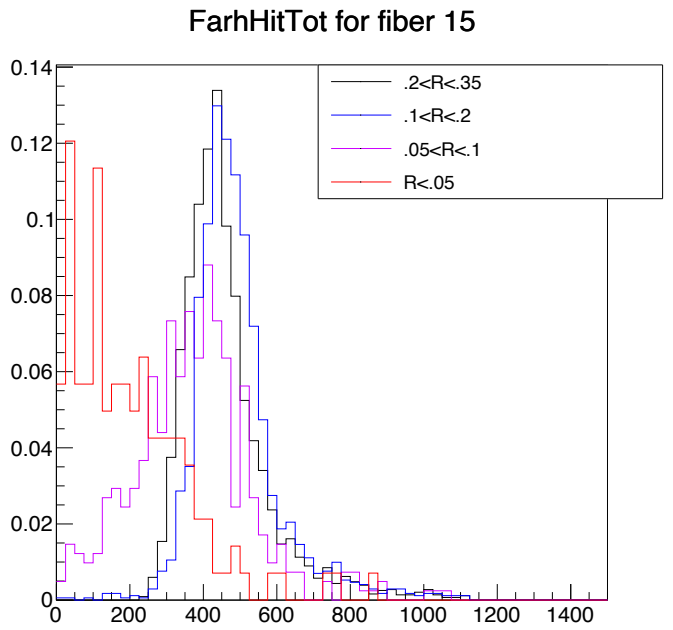
not very nice





(-.35,-1.2)

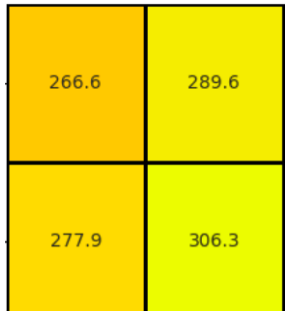
better ?
but locates in y the fiber even further away from 'nominal'
???



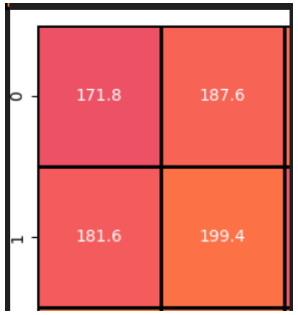
Towards uniformity

Homogenisation: a minor question

quadrant en haut a gauche



Avant



apres

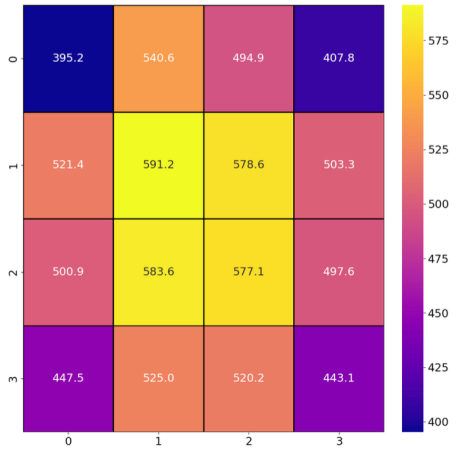
Corr = (199.4/306.3) ?

173.6 188.5

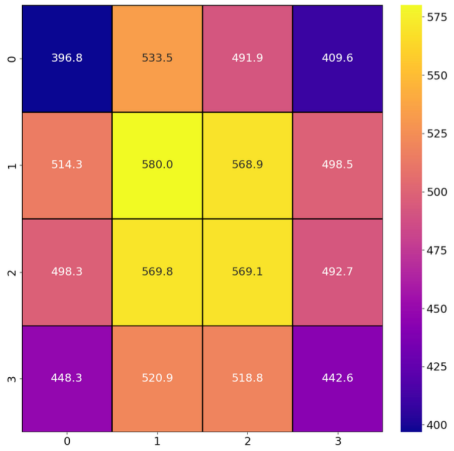
180.9

Similar numbers but not exactly what I would expect… why ?

About border effets



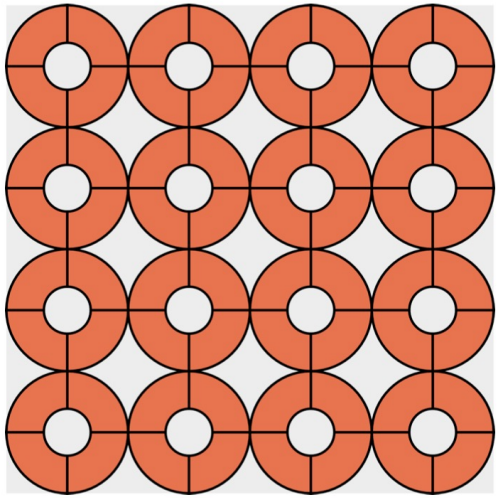
Geometry 2



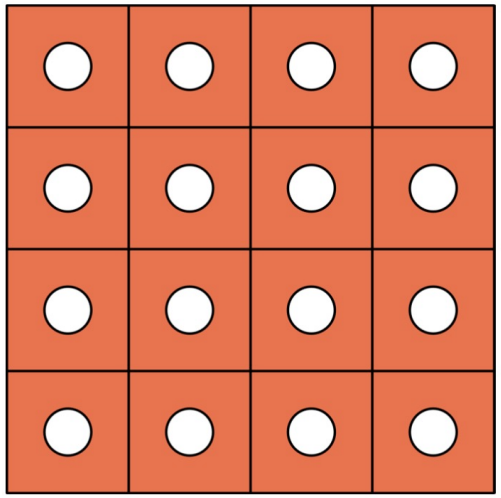
Geometry 3

Do we really see a difference ???

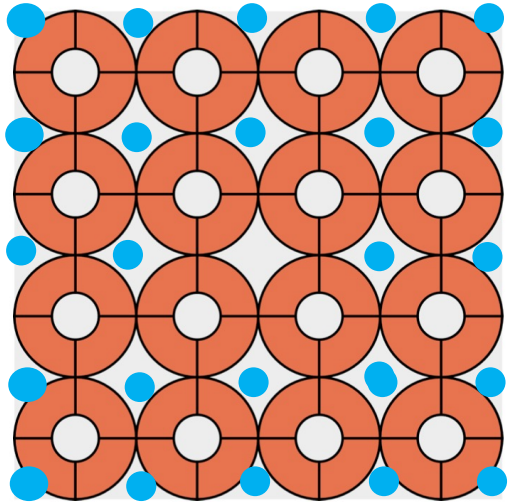
Geometry 3 is also more sensitive to the clear fiber
How are the results of slide 15 for Geometry 2 ?



Geometry 2: Round shapes



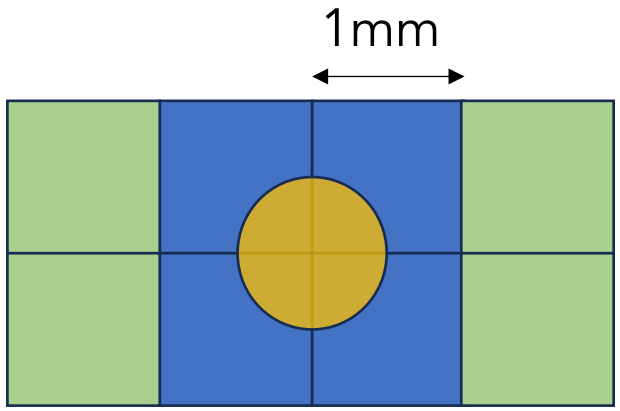
Geometry 3: Square shapes



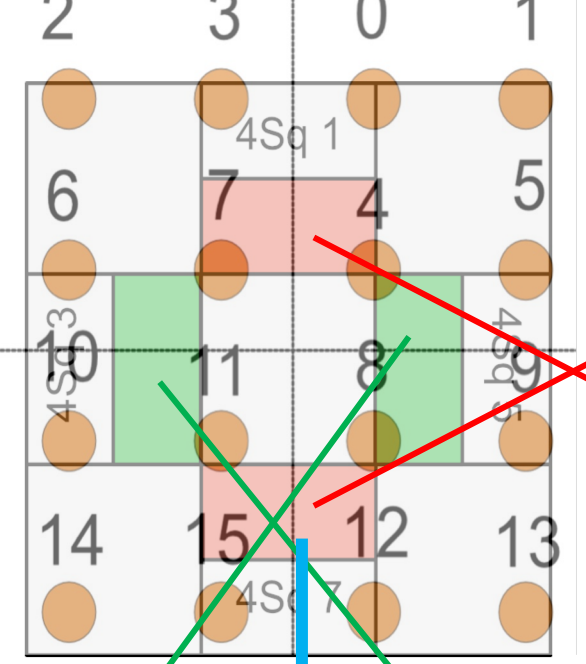
Plots of what we measure in the grey zones (blue dots , not in the fibers of course)

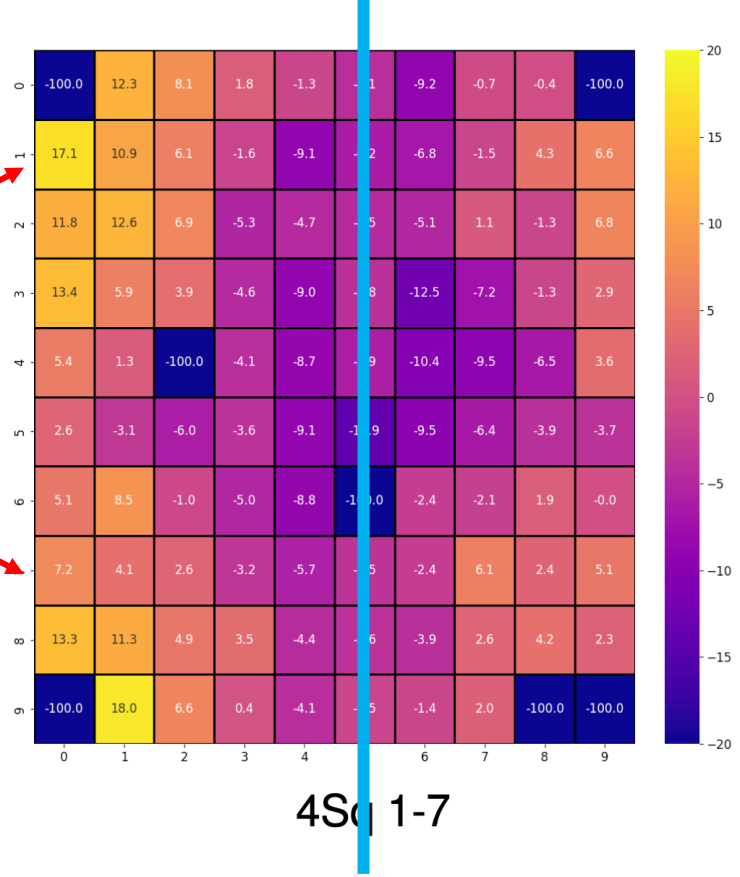
About the uniformity

- We are sensitive to the determination of the fiber positioning. We should not pave by less than 1 mm2 the plane.
- In the presentation of last week what is the reason for having so many squares ? (less than 1 mm2).
- When we are closer than 1 mm from the center of the fiber we are in a dubious region

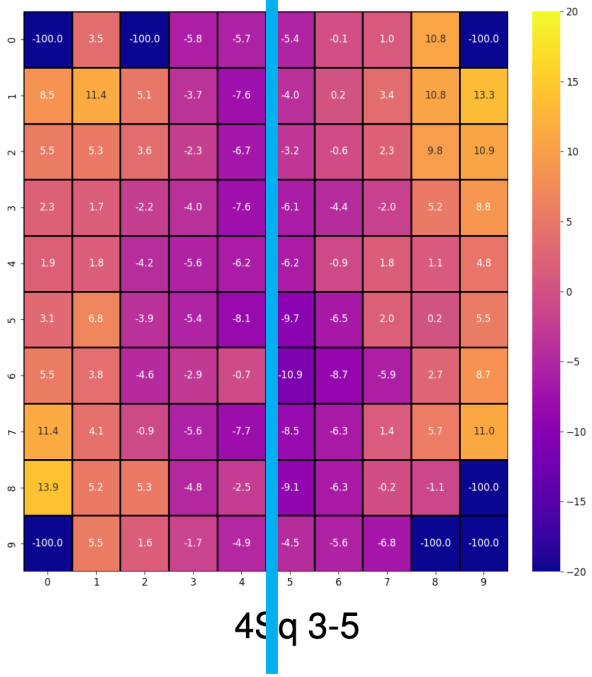


Zone blue to be excluded ?





4Sq 1-7

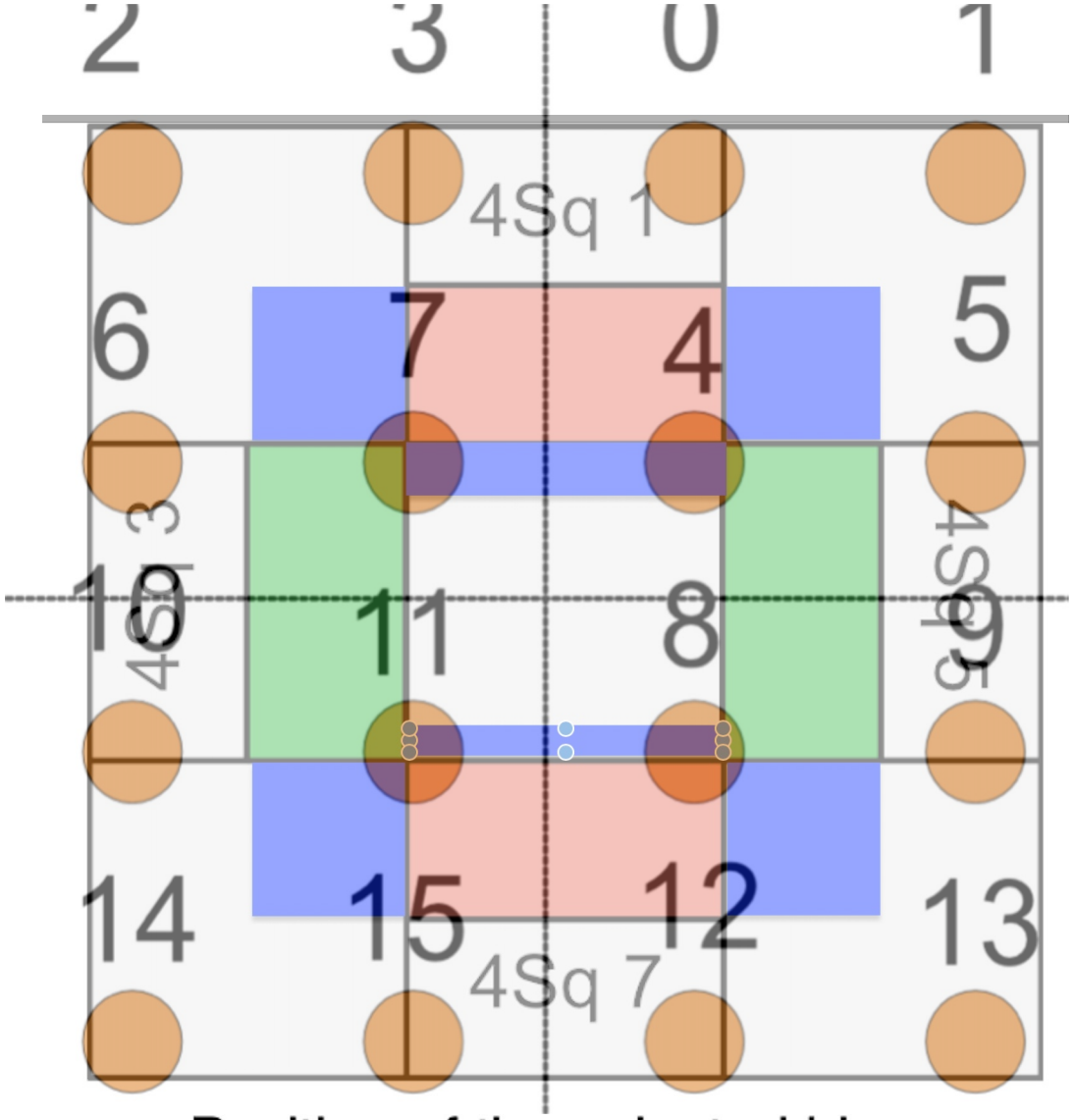


4Sq 3-5

Symmetry around the blue line
Why don't we have an equivalent horizontal line ?

More yellow for the parts which are located on the left-hand side of the Troll .

We should use most of the non-problematic data
In particular it is nice to have data around fiber position



Position of the selected blocs