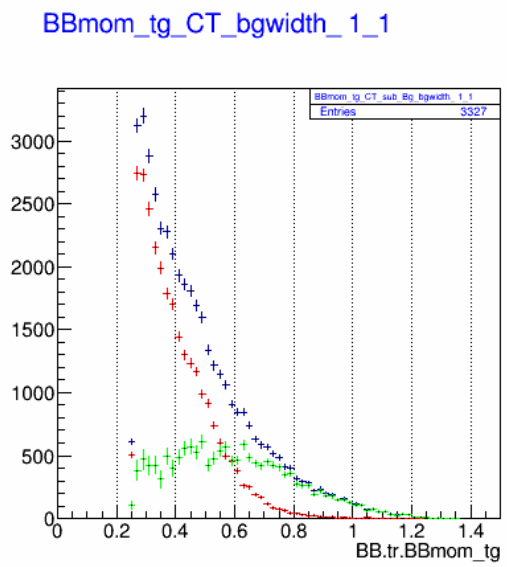
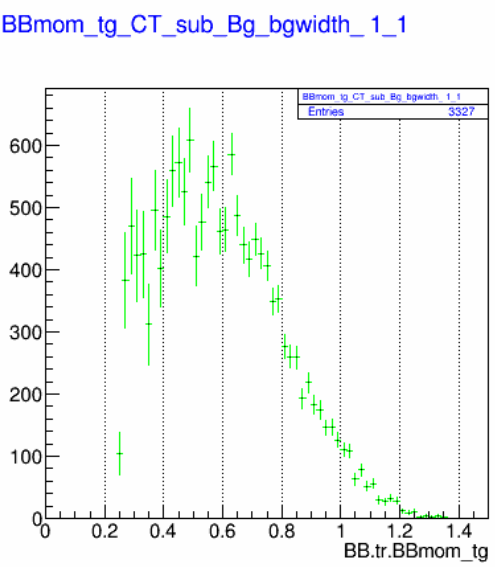
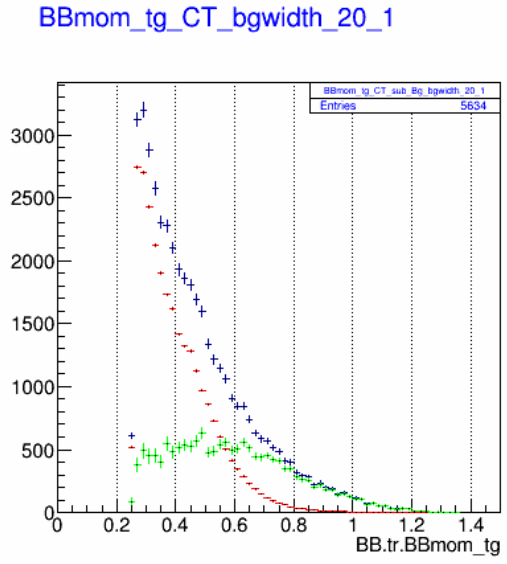
Testing4

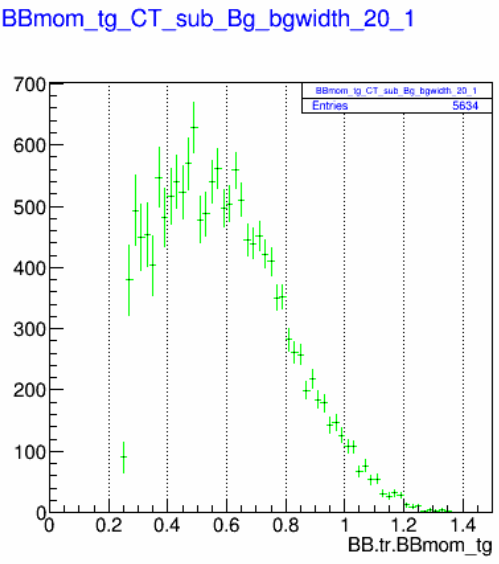
0. Taking the background at 20x the width of the CT peak and average.





List1: Background with Equal width to the CT peak

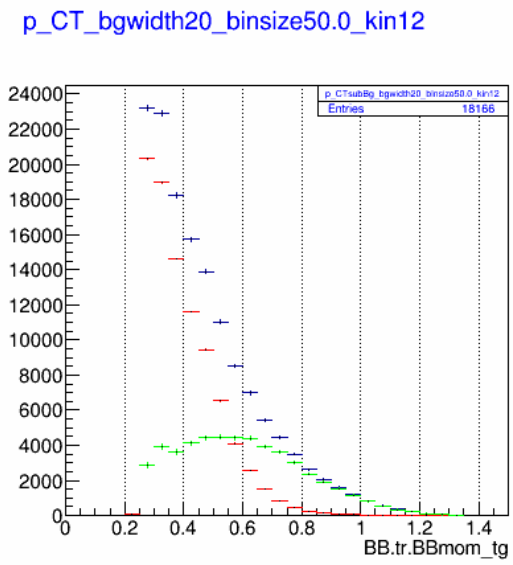


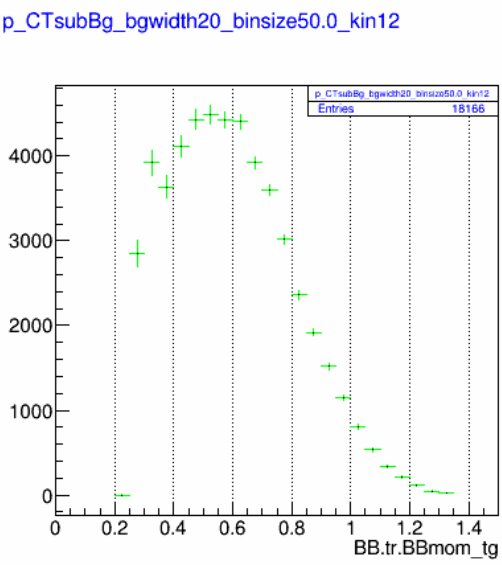


List1: Background average of the 20x the width of the CT peak

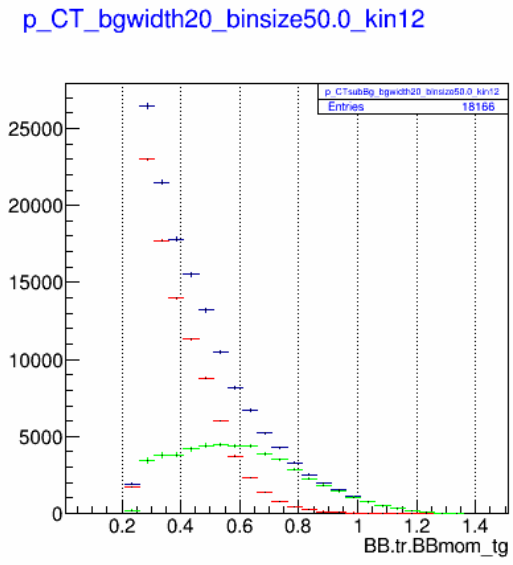
Considering the background (in red). The statistic uncertainty of the background reduced and hence the peak sub background.

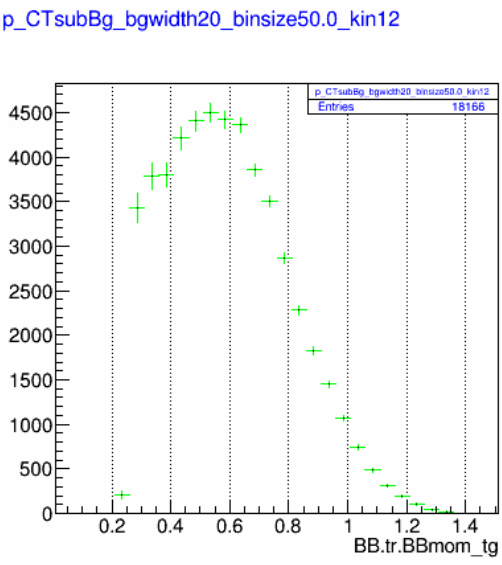
1. 50 MeV/bin shift the location



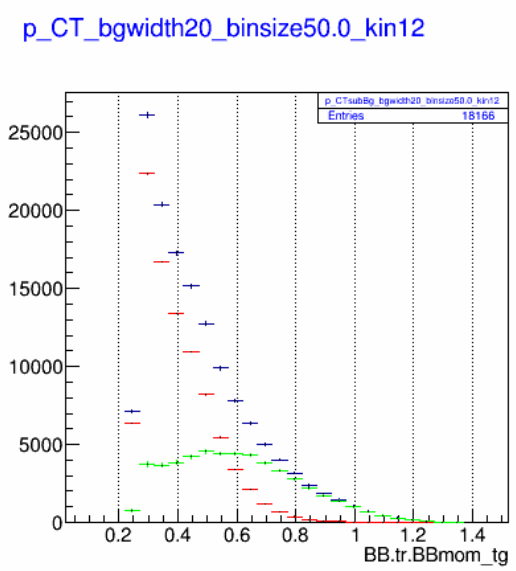


Kin 12 from 0-1.5 GeV

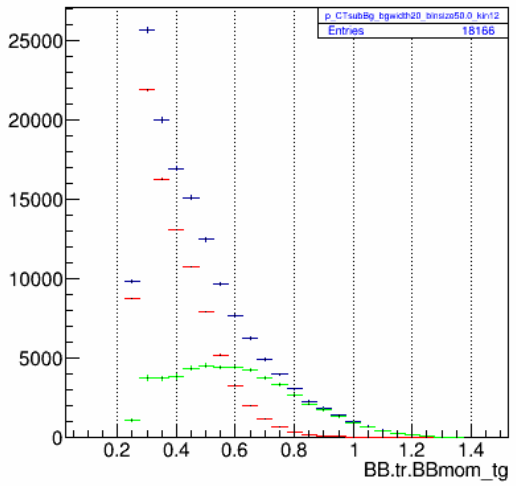




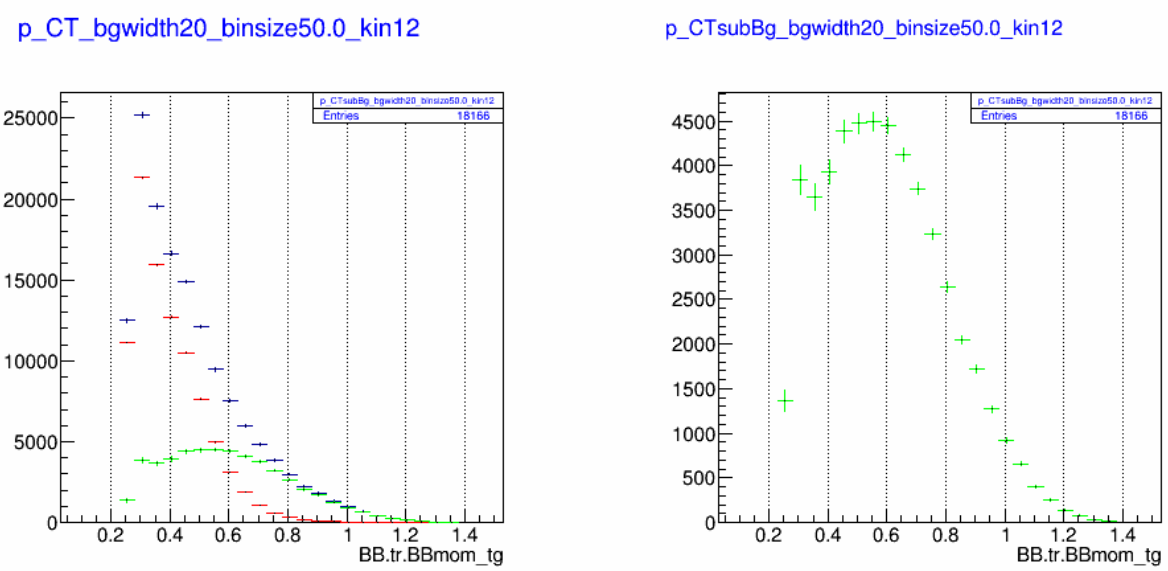
Kin 12 from 0.01 to 1.51 GeV



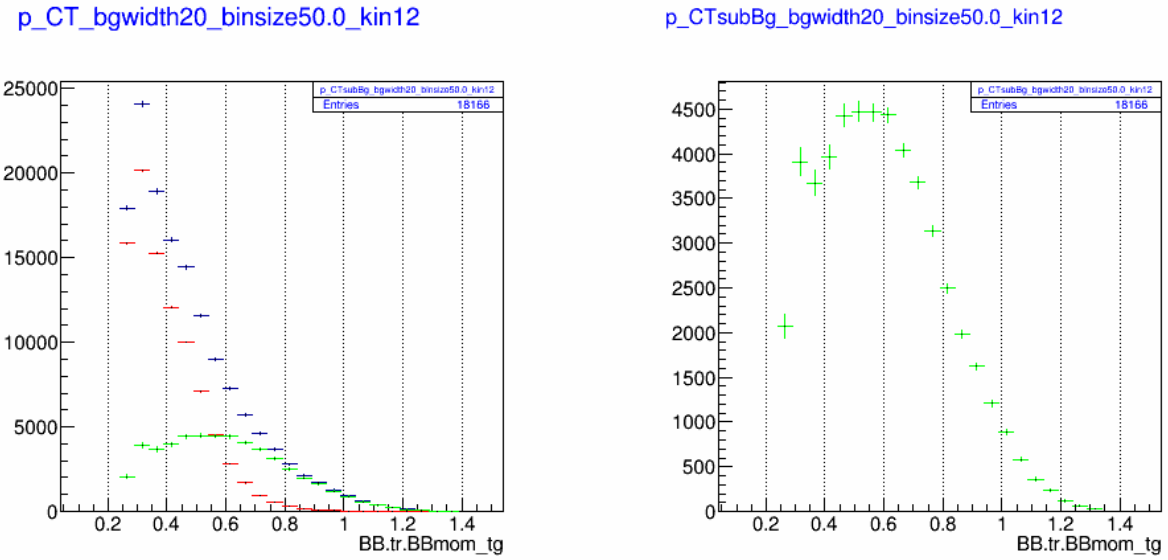
Kin 12 from 0.02 to 1.52 GeV



Kin 12 from 0.025 to 1.525 GeV

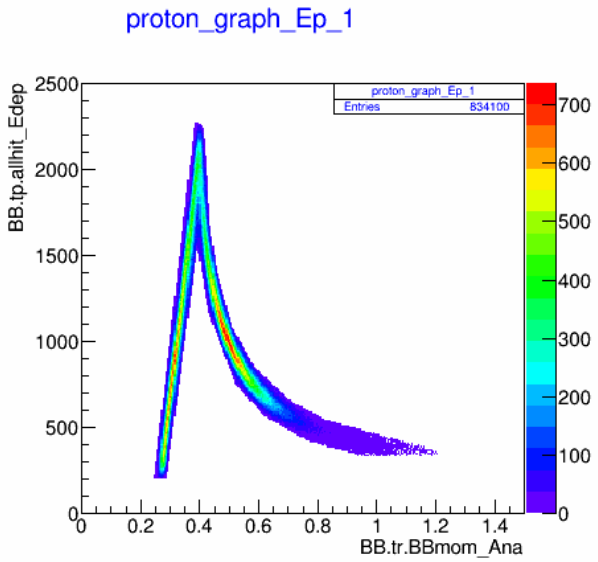


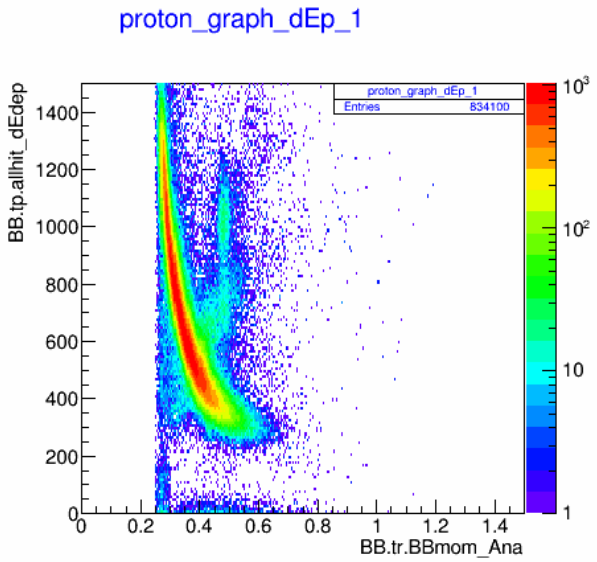
Kin 12 from 0.03 to 1.53 GeV



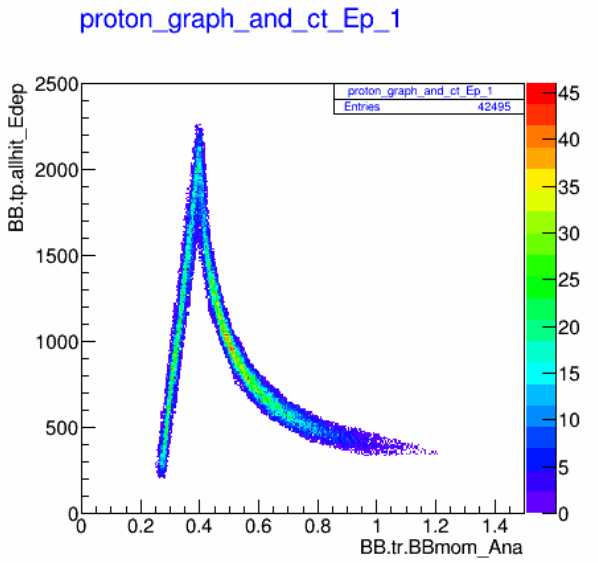
Kin 12 from 0.04 to 1.54 GeV

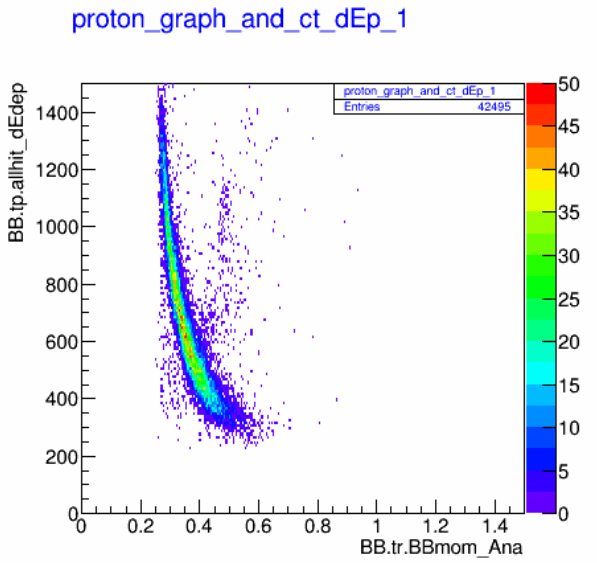
2. Checking whether the deuteron are totally out





1. with only proton PID graphical cut
The deuteron is still within the graphic cut which we can see from the around 0.5 GeV/c in dE vs p

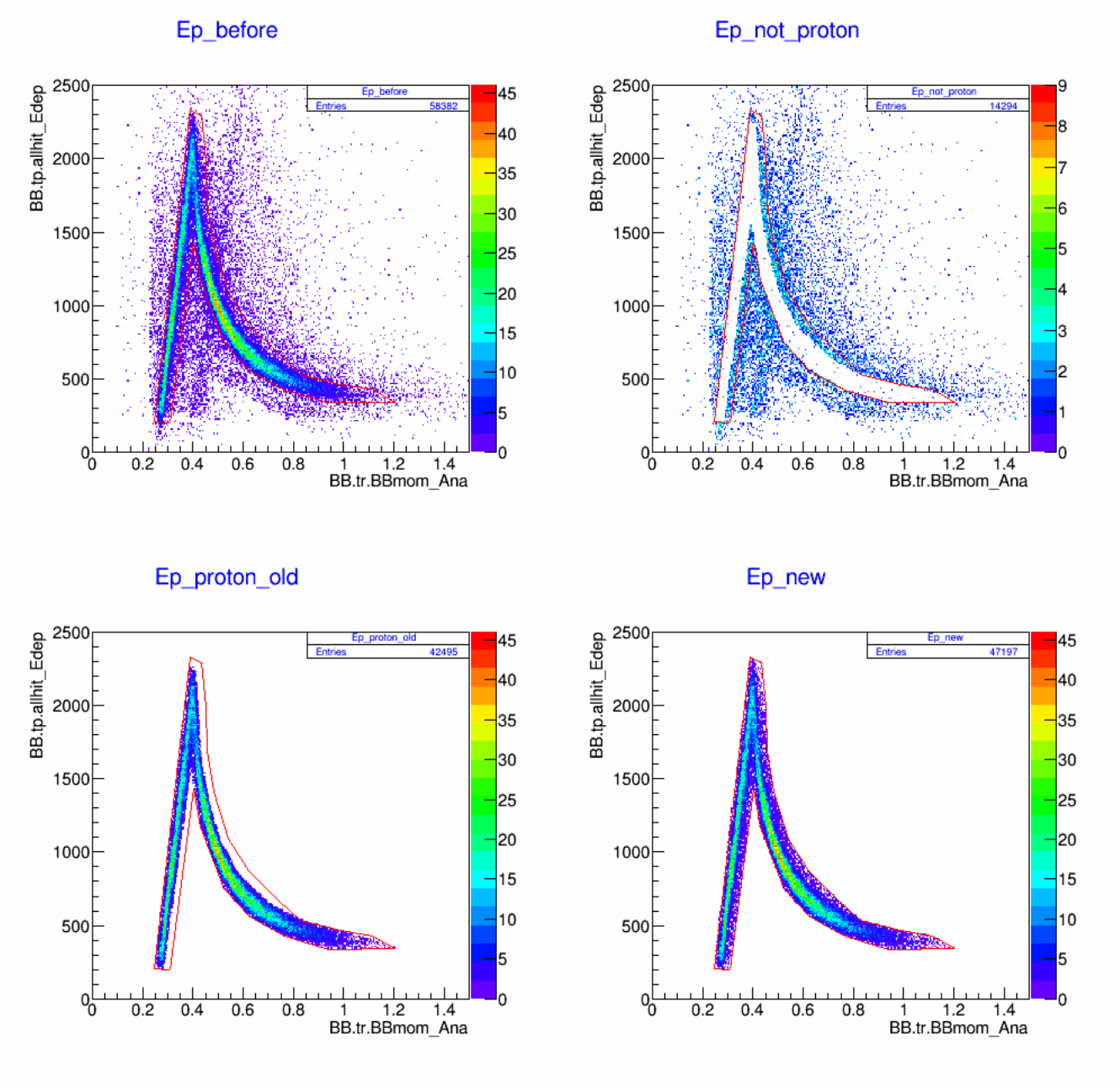




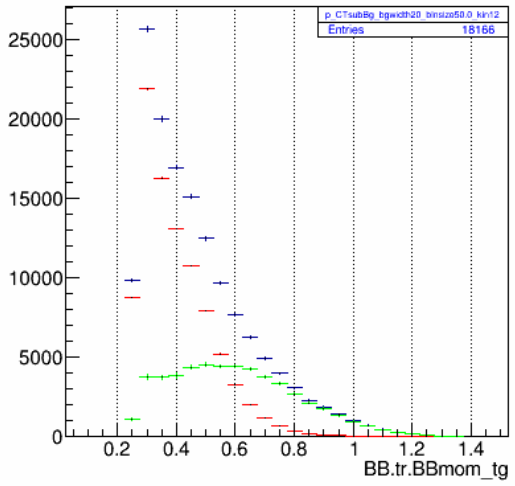
2. with protn PID graphical cut and the CT time
The deuteron is almost not there

So the conbine of the graphic E-p and the CT peak cut out most of the deuteron already.

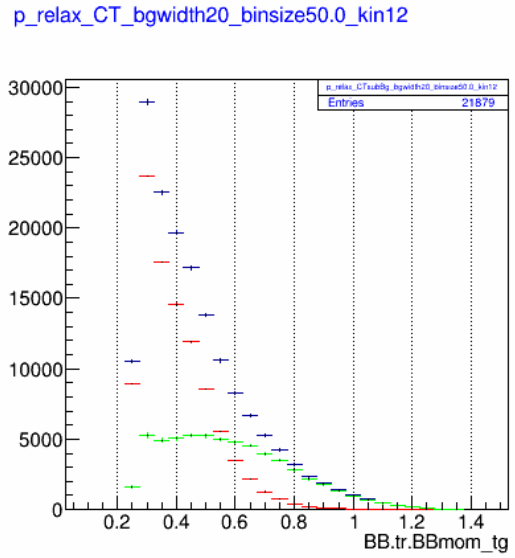
3. relax the graphic cut



Relax graphic cut PID (red graph)
Left: old selection in the new graphic cut
Right: new selection in the new graphic cut



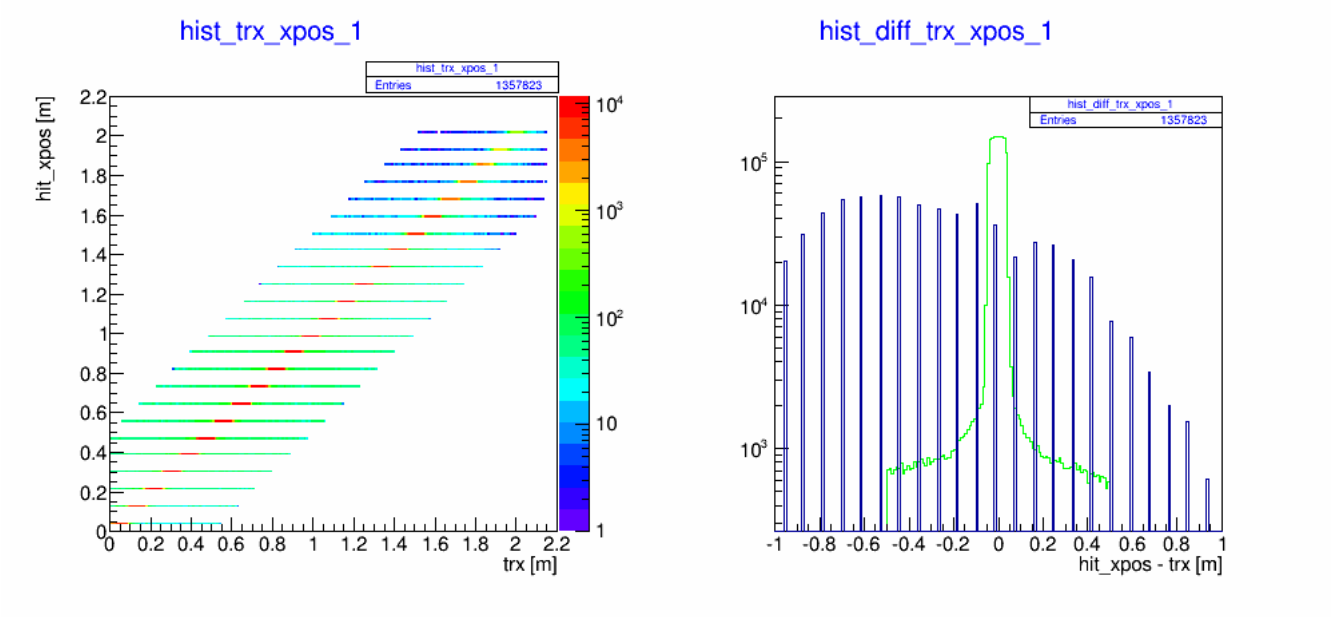
BEFORE:
Kin 12: from 0.025-1.525 GeV



AFTER:
Kin 12: from 0.025-1.525 GeV

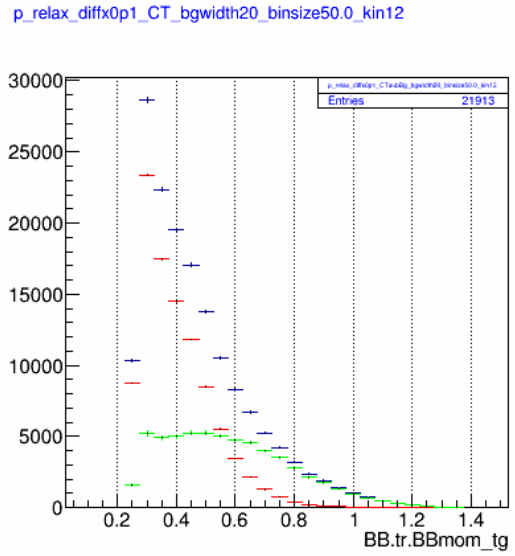
There is the change in the shape of the peak sub background, mainly in the low momentum<0.4 GeV/c.

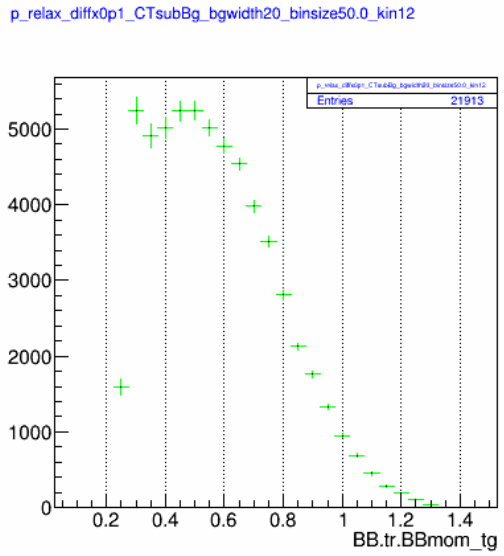
4. Checking the track Matching criteria
→ The projection from MWDC track x location vs the bar location



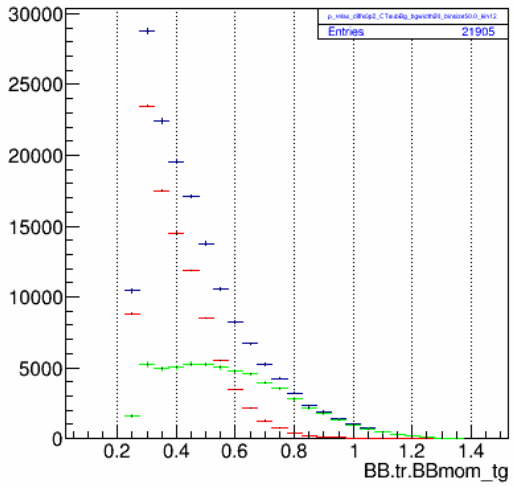
the range of acceptance in x is already large: covering about 12 bar. So it end up that I do not need to relax the range but may be I should make it smaller.
LEFT: bar position vs track x
Right: bar position - track x. over lay with the bar position (blue) to show the range of the cut

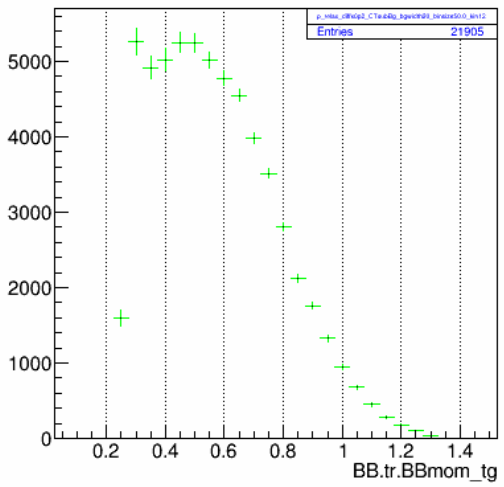
** cut down to +/- 0.1 or 0.2 of the difference



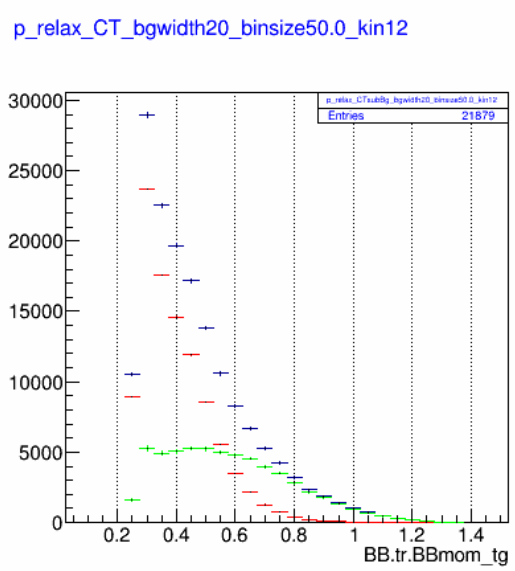


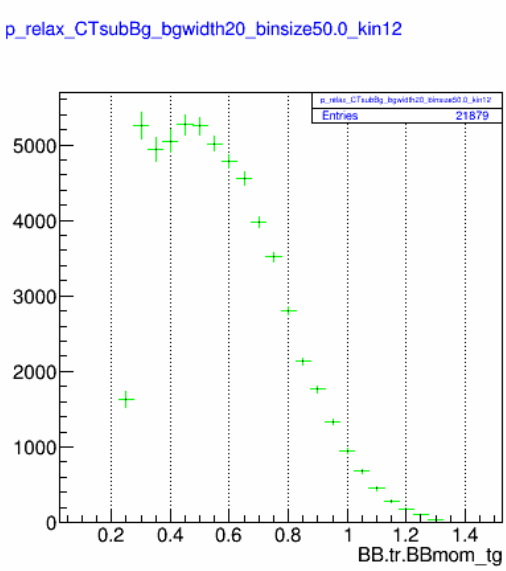
With |trx-bar_x|<=0.1





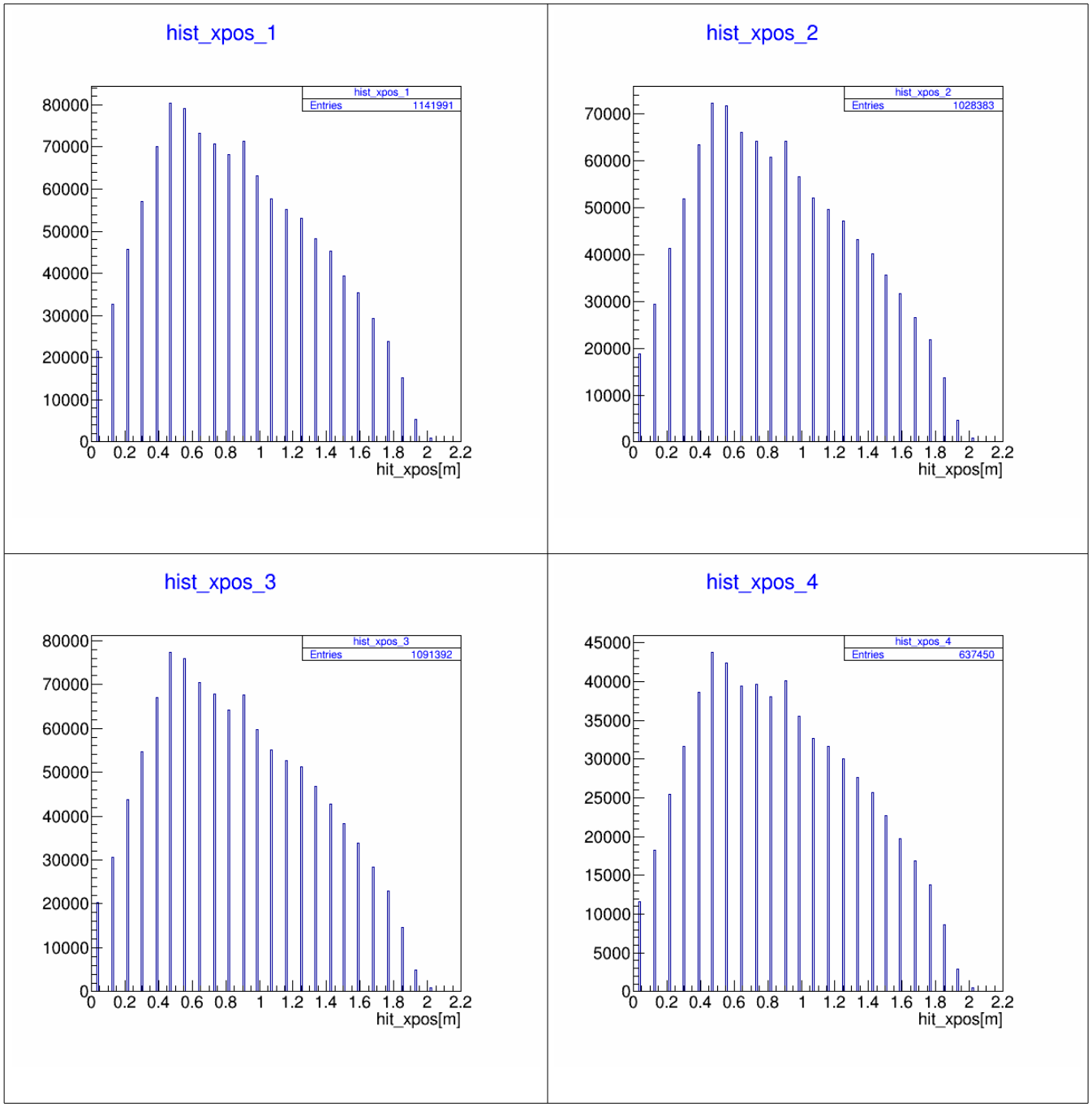
With |trx-bar_x|<=0.2





With |trx-bar_x|<=original (0.5)

bar efficiency?
Data with no parthit and fullhit No PID and No CT



The bar at 0.9 m seem to have higher number then the nearby bars. This need to be checked.