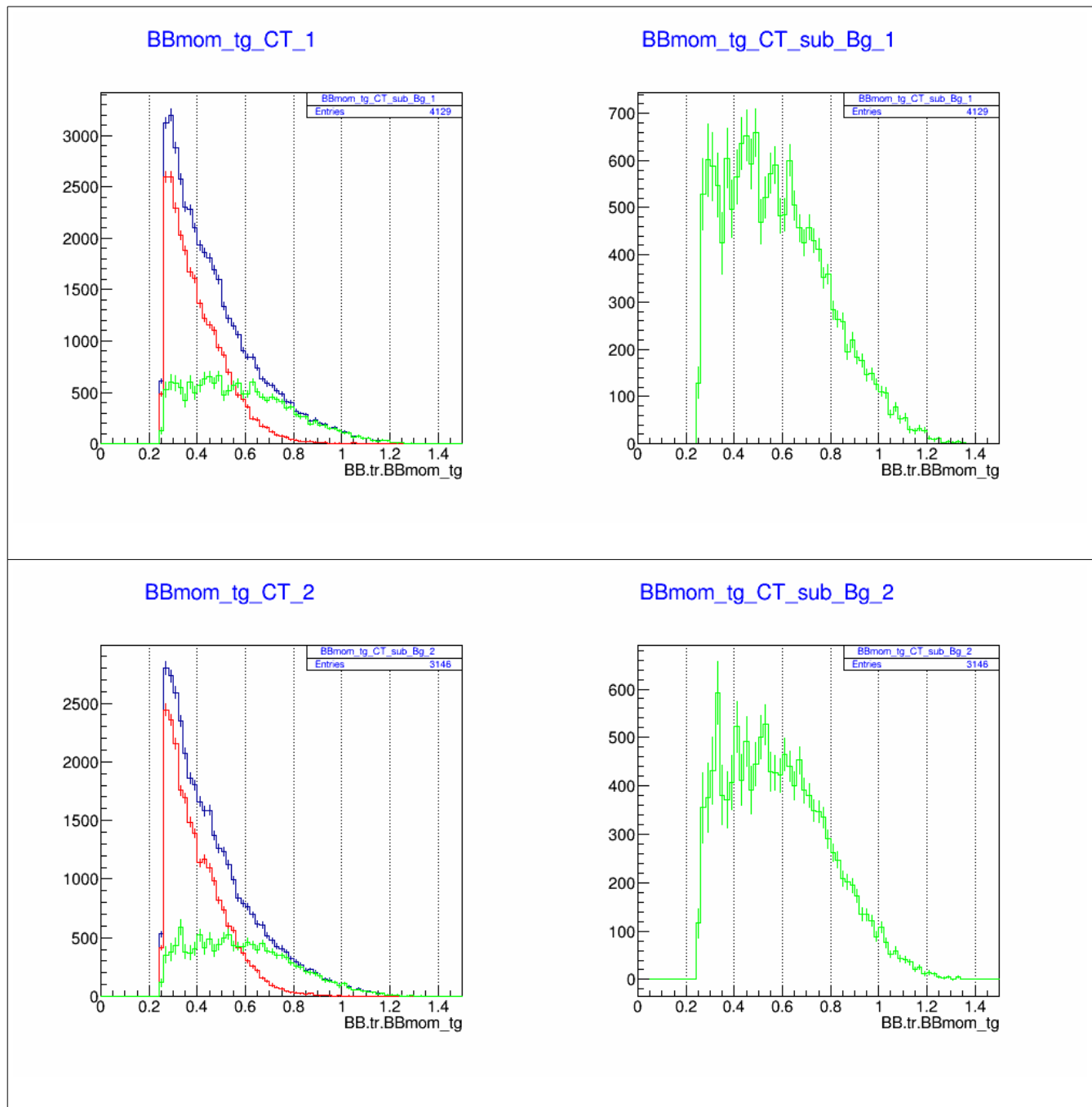


Testing for the dip of the momentum after proton PID and Ctcut



The distribution of proton momentum at the target with “blue” in the CT peak, “red” in the background, and “green” is the CT peak data – background data. The dip seem to change from period to period. The data set is separated into 9 period (additional data at the ends)

Since the distribution (especially the “dip” location) seems to change from period to period, it should have something to do with **the change in the efficiency** from period to period.

So there are two components that I should check over time:

1. Efficiency of the MWDC

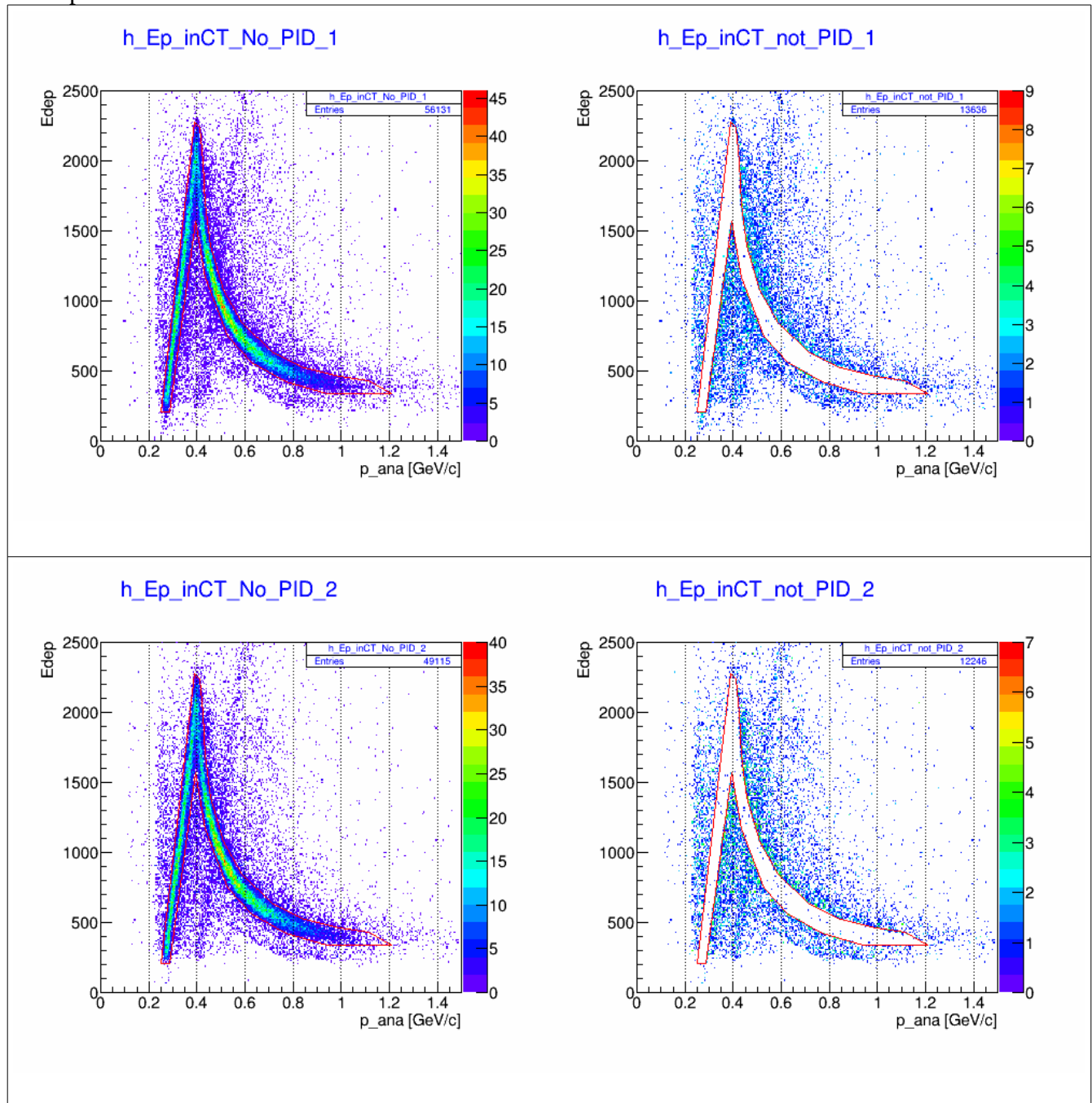
2. Efficiency of the Trigger Plane (especially E plane)

The most likely change over time is the Trigger Plane Efficiency as the “power trip” of the PMT for the Trigger plane can happen more than the power supply for the A/D card of the MWDC.

The momentum does depend on x but because of open geometry it is not 1-1.

also the background fluctuation should also be in consideration.

Checking whether it is the result from my proton PID graphical cut. Whether or not my PID leaves out some proton data that should NOT be excluded.



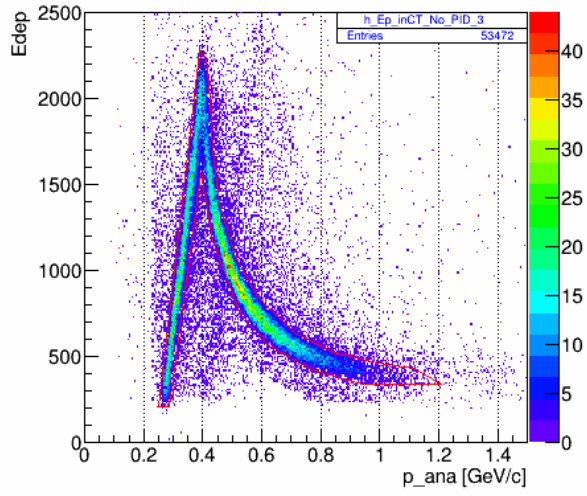
The distribution of E_{dep} vs p_{ana} which I used as PID (graphic in red color).

Left: data in CT peak with no PID

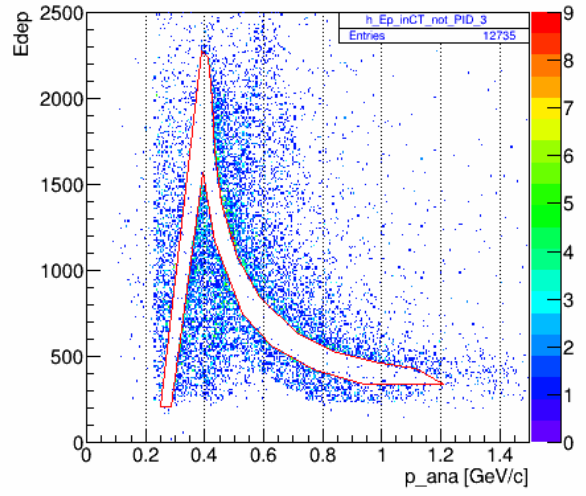
Right: data in CT peak with NOT proton PID

Considering data on the right, If the graphic cut eliminate the real proton, I should be able to see it outside the graphic area.

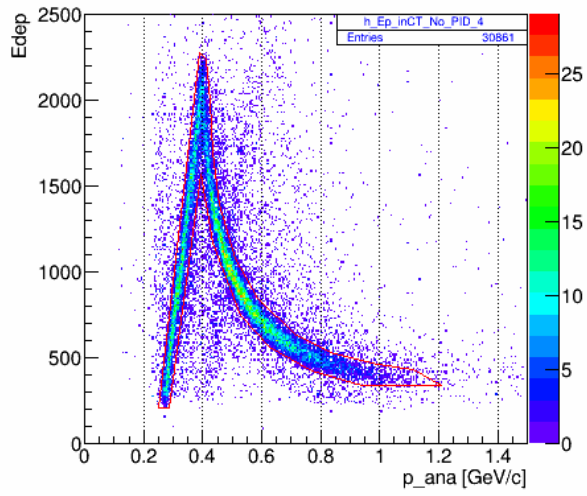
h_Ep_inCT_No_PID_3



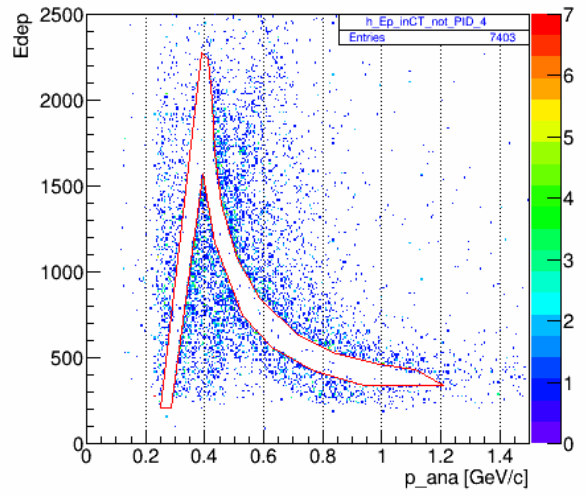
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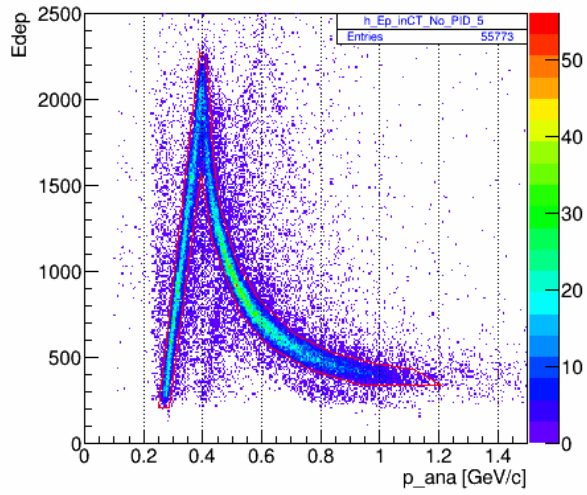
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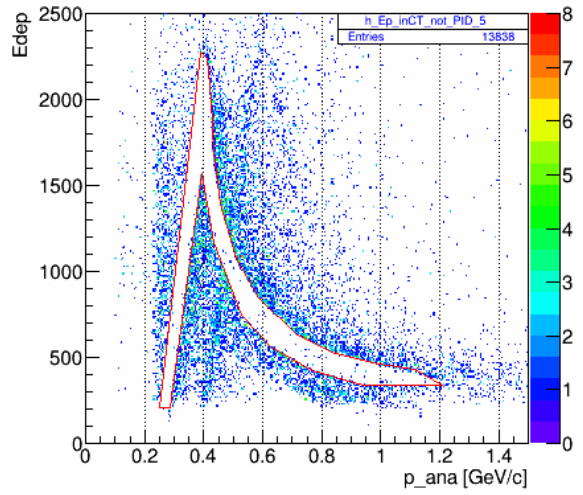
h_Ep_inCT_not_PID_4



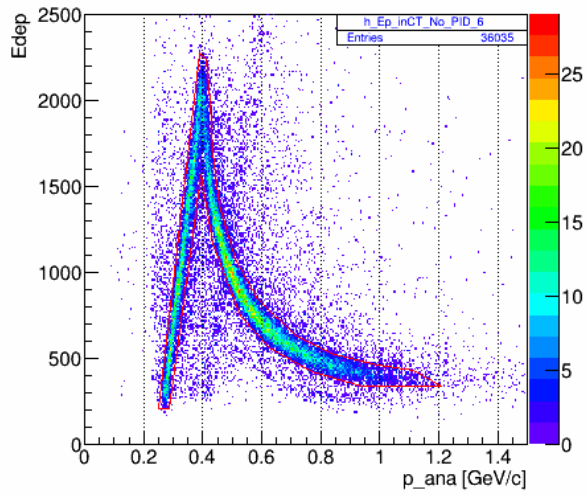
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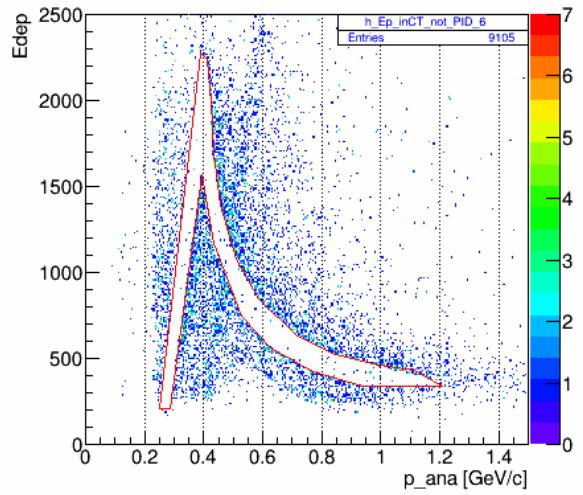
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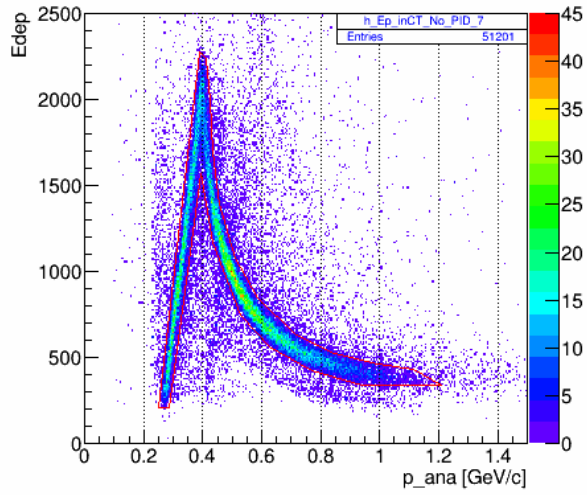
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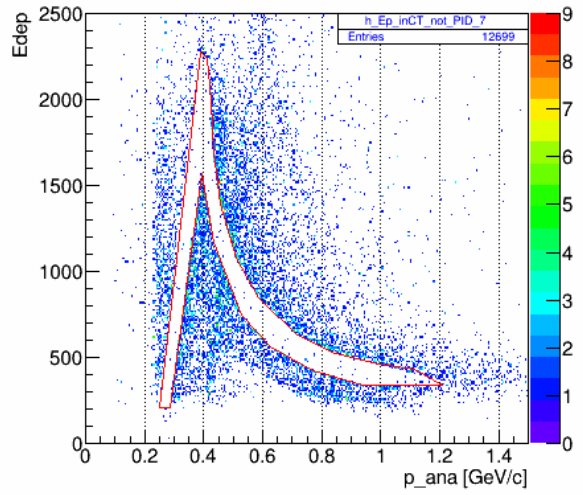
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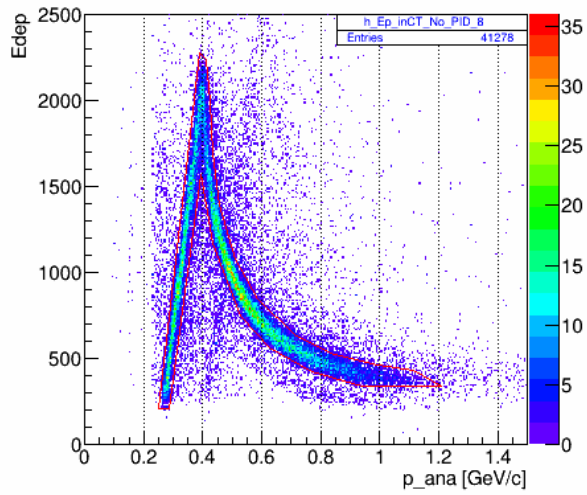
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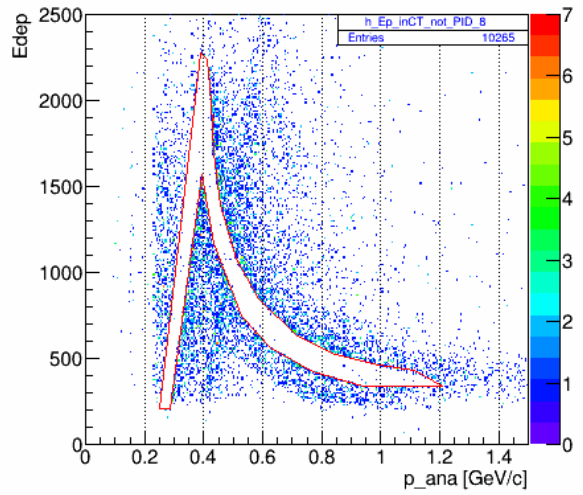
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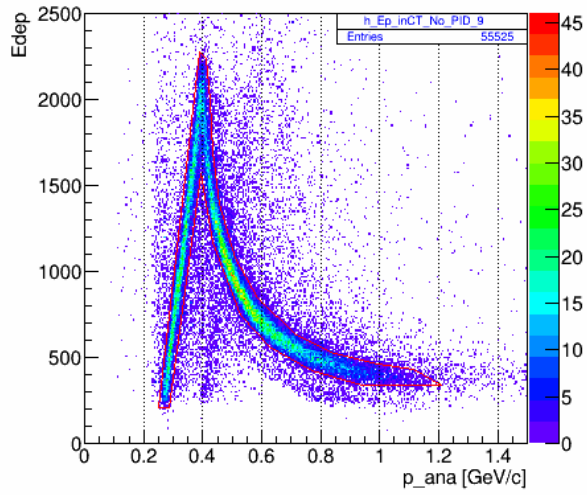
h_Ep_inCT_No_PID_8



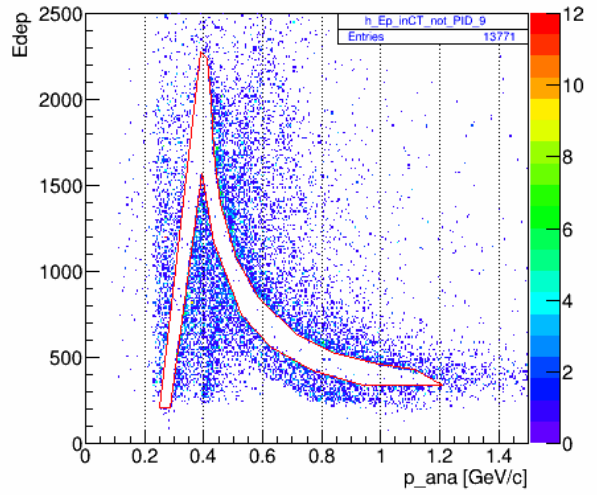
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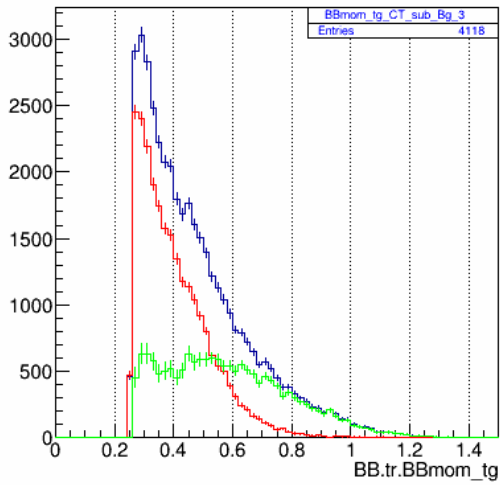
h_Ep_inCT_No_PID_9



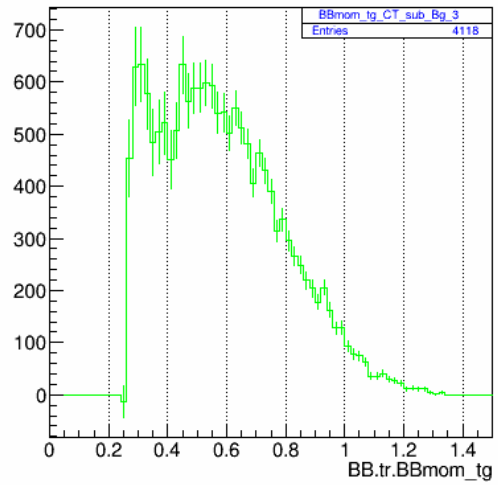
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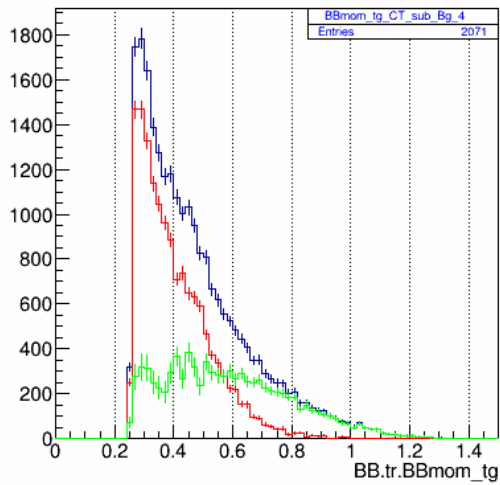
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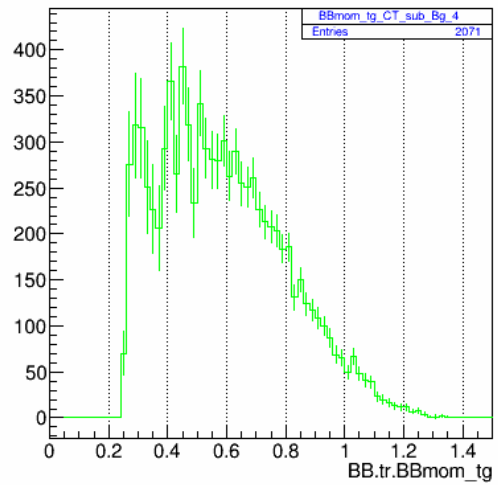
BBmom_tg_CT_sub_Bg_3



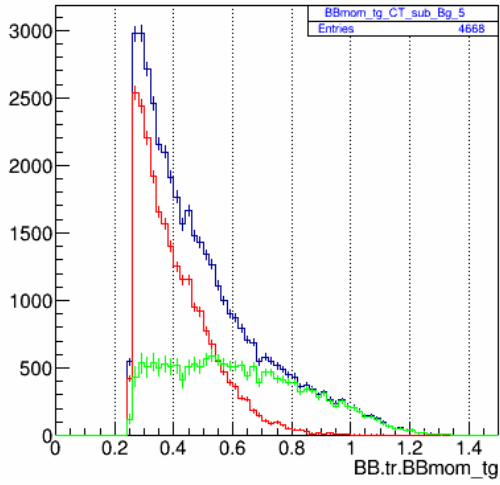
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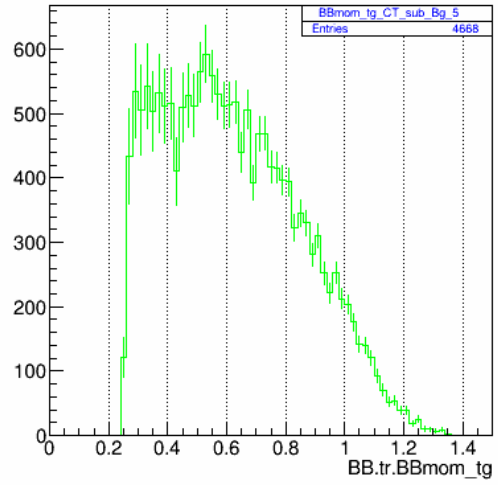
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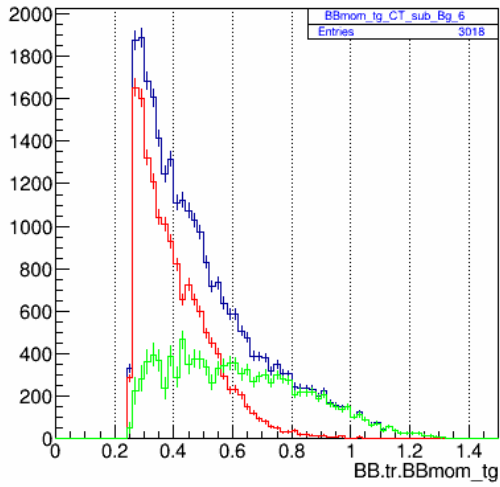
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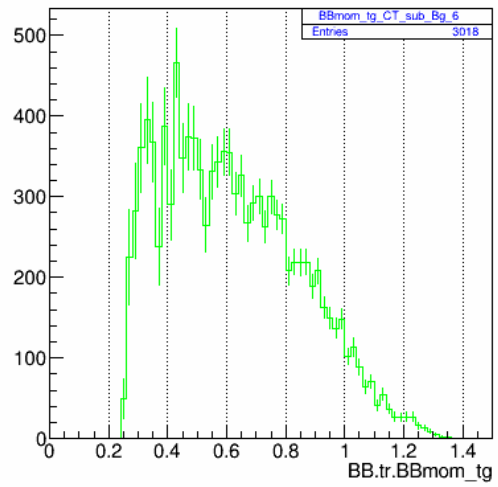
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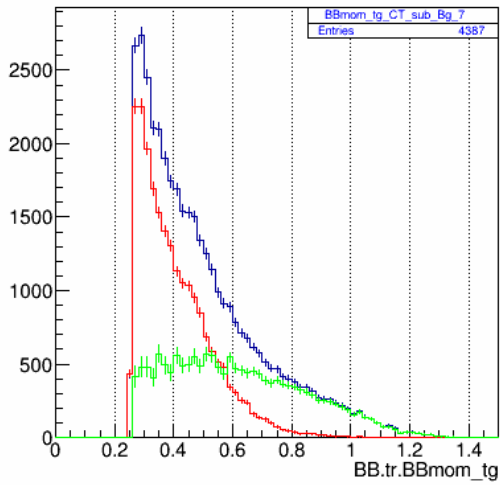
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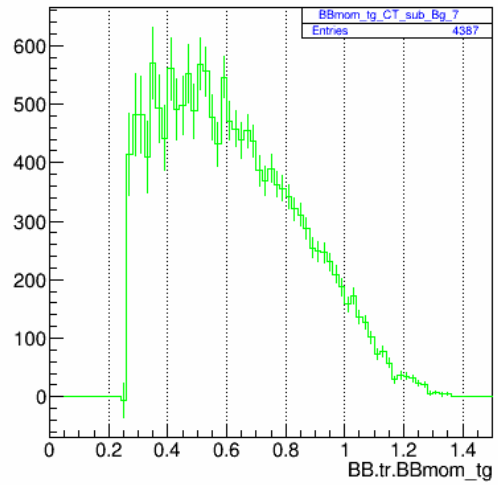
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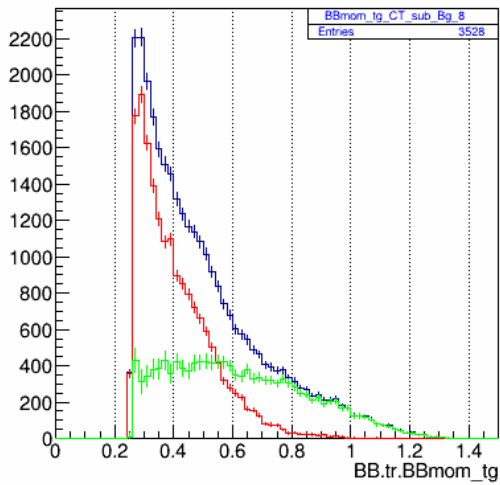
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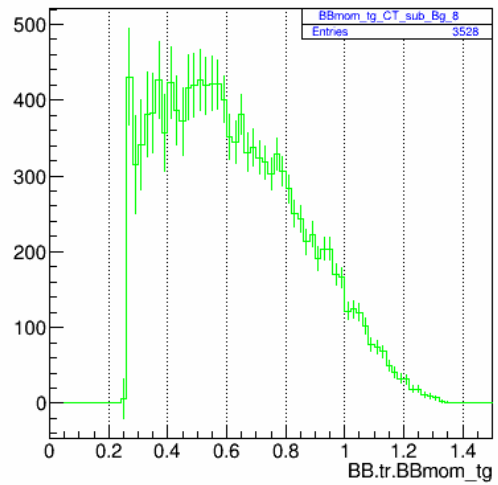
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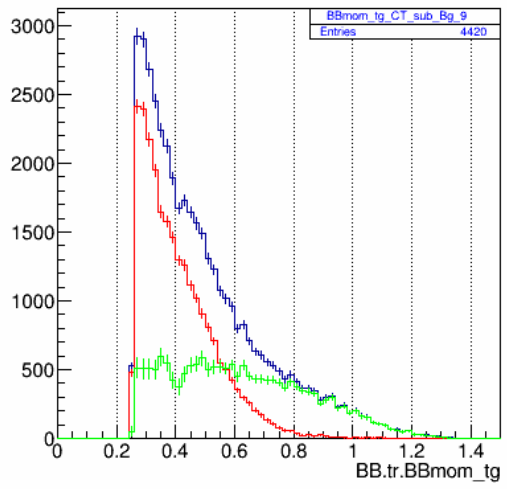
BBmom_tg_CT_8



BBmom_tg_CT_sub_Bg_8



BBmom_tg_CT_9



BBmom_tg_CT_sub_Bg_9

