Trigger impact on MVA

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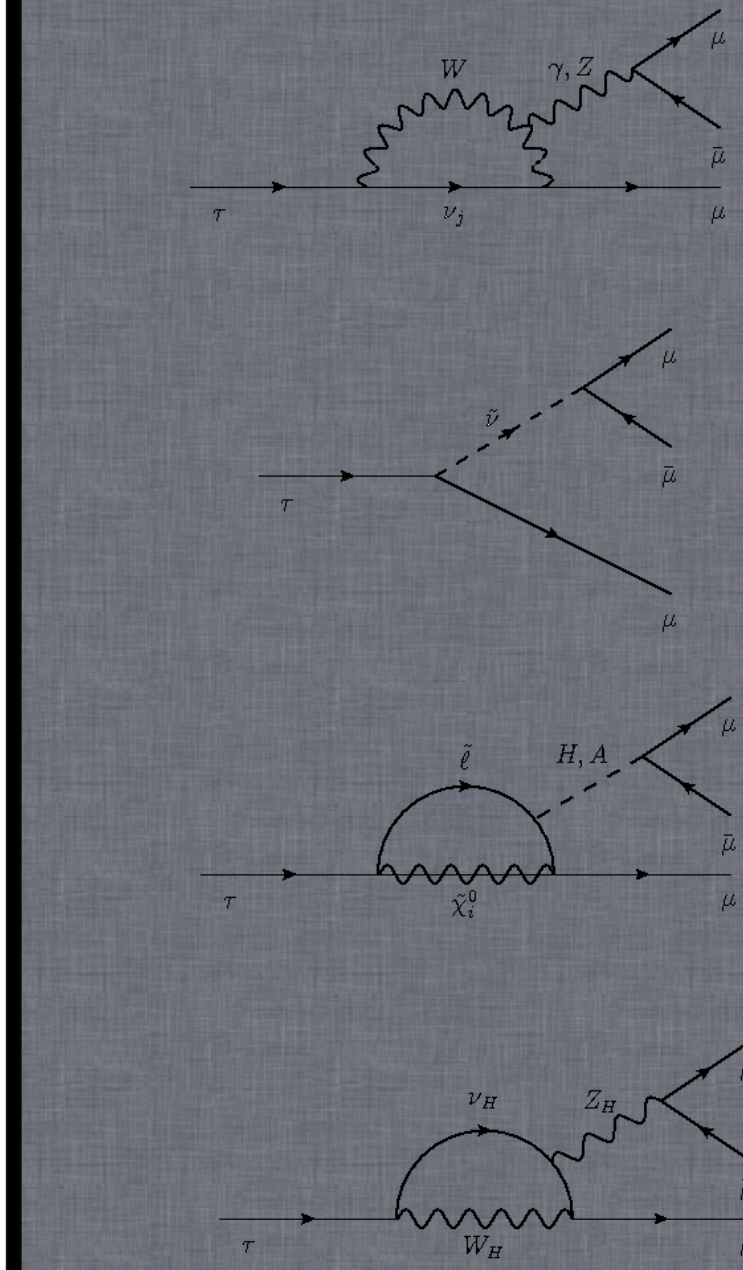
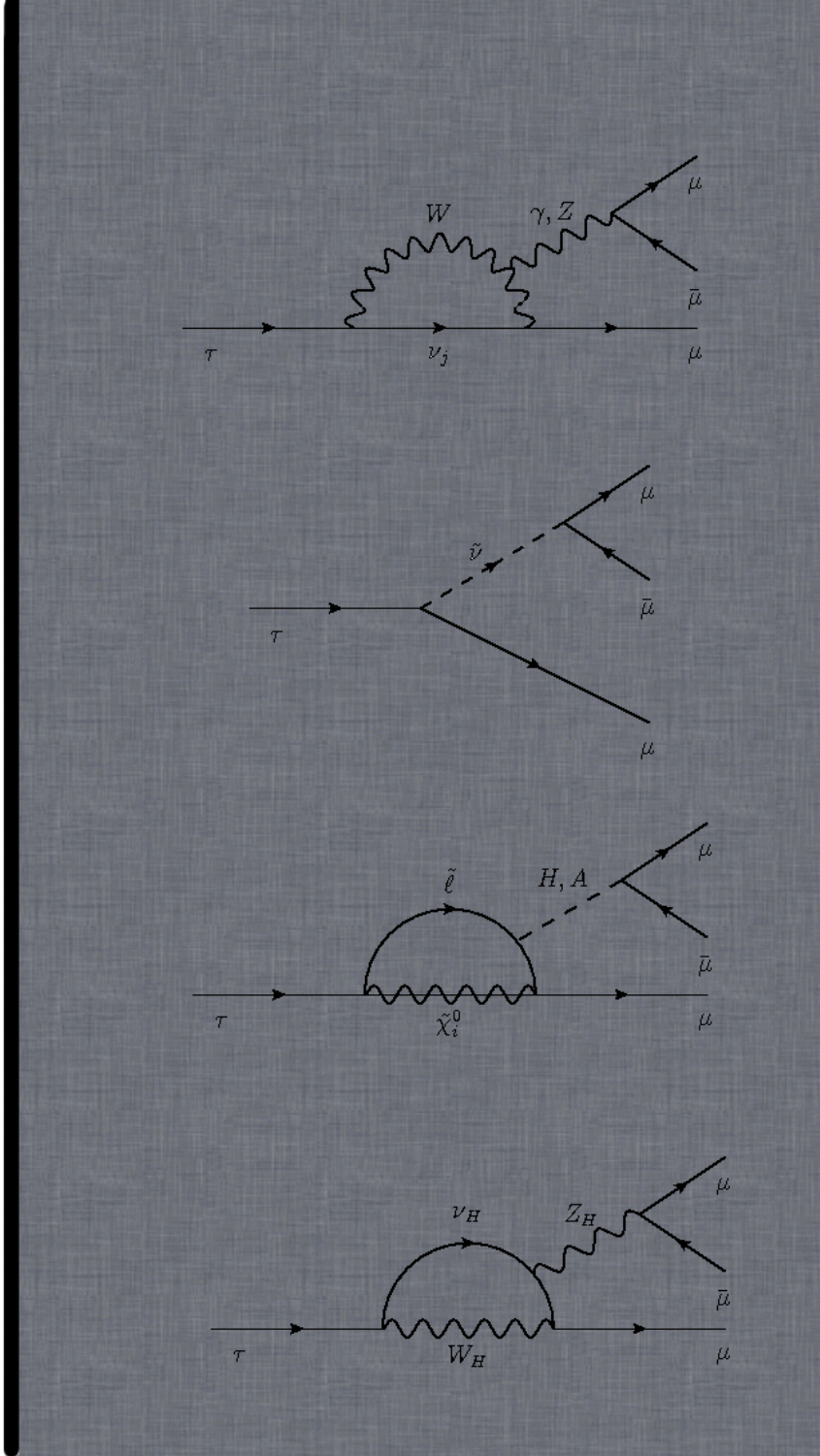


Impact of the trigger for the distributions



Trigger efficiency

let's look on the implications of trigger[1] for our classifier studies:

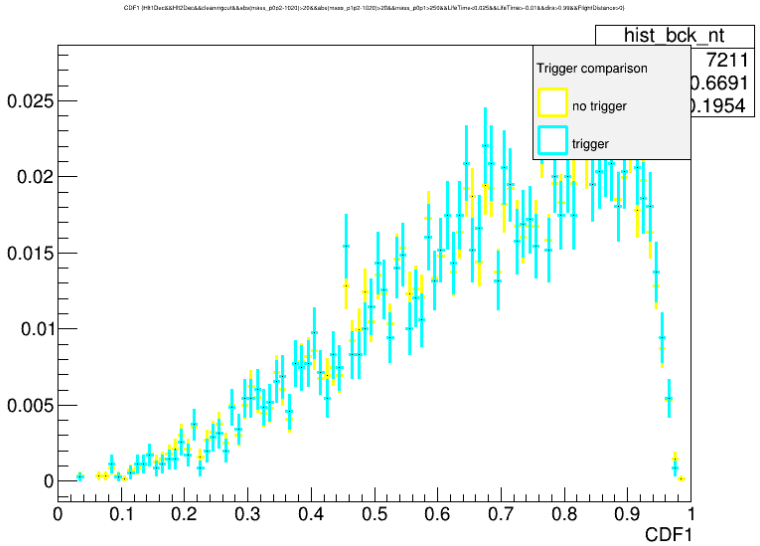
- Signal efficiency ($\epsilon_{trig} = \frac{n_{evets,preselection+trig}}{n_{evets,preselection}}$)
  $\epsilon_{trig} = 0.928385$
- $\epsilon_{c\bar{c}} = 0.607188$
- $\epsilon_{b\bar{b}} = 0.624879$

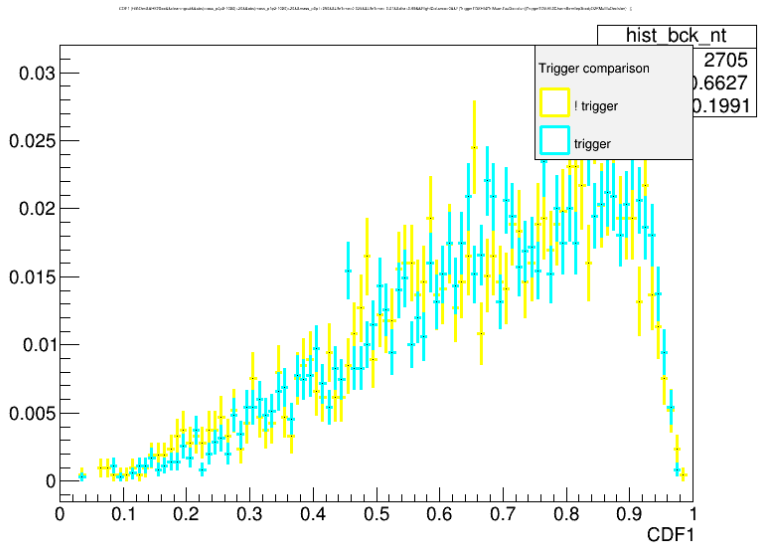
1. Loosing over $\frac{1}{3}$ of training events is very not nice ;(
2. But maybe they look very similar to our triggered bck? Would explain why BDT didn't learn how to reject them efficiently.

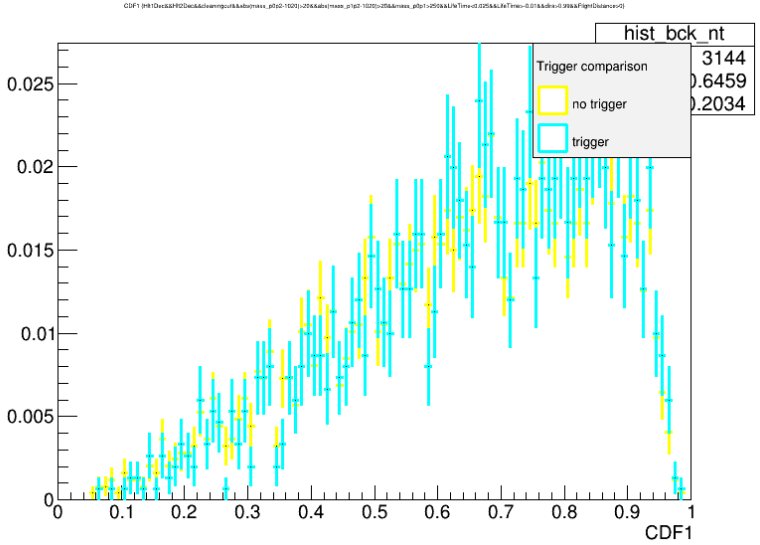
[1] TriggerTOSHlt2TriMuonTauDecision|| TriggerTOSHlt2CharmSemilep3bodyD2KMuMuDecision

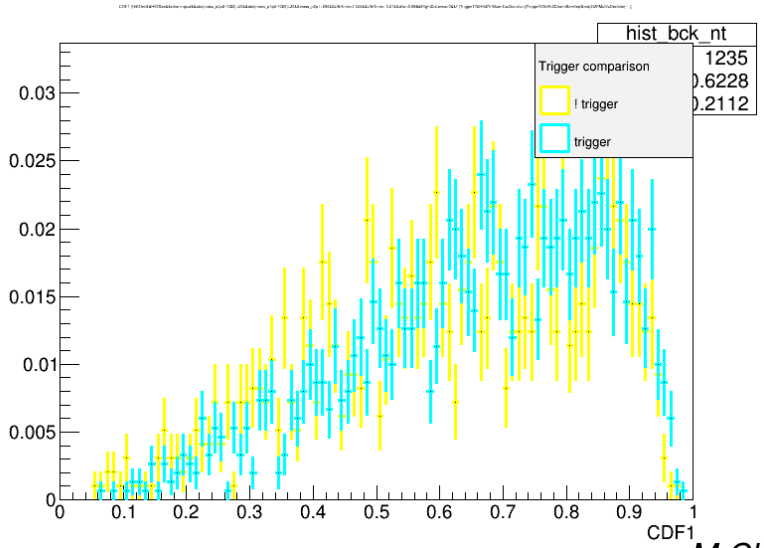
Distributions

UP row $b\bar{b}$, down $c\bar{c}$









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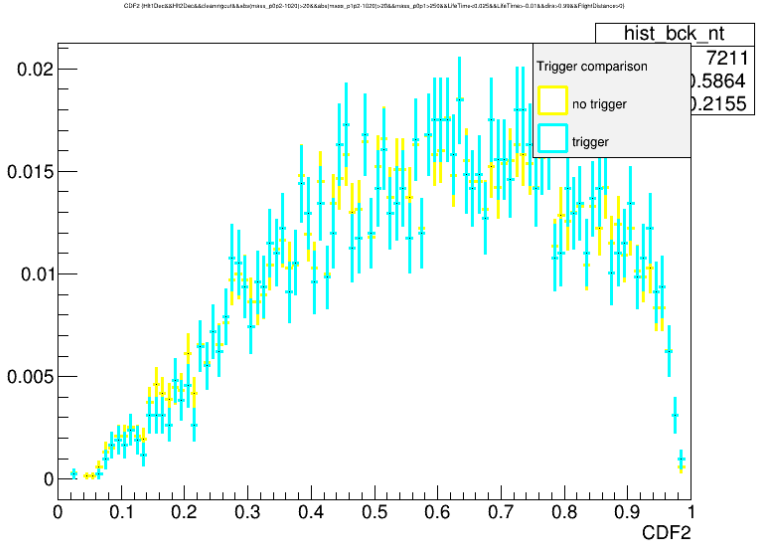

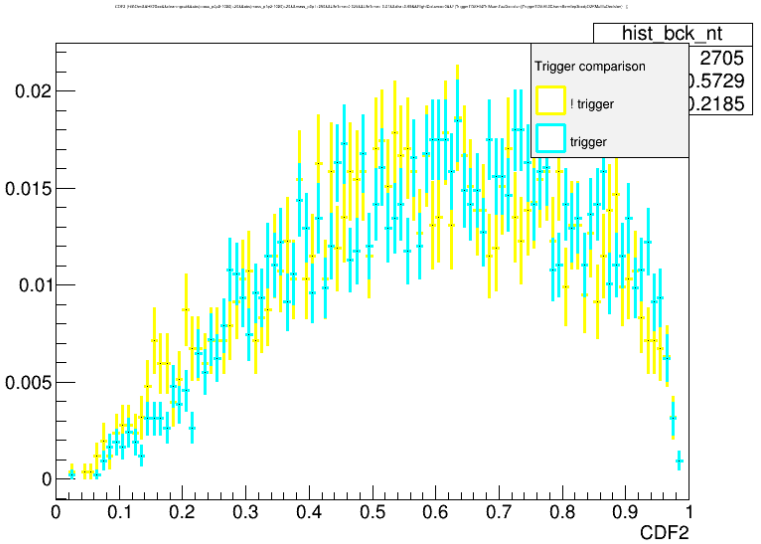

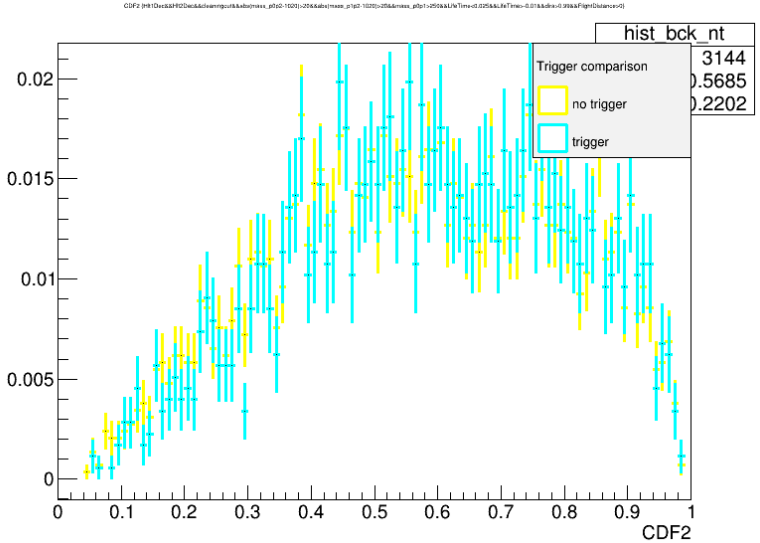

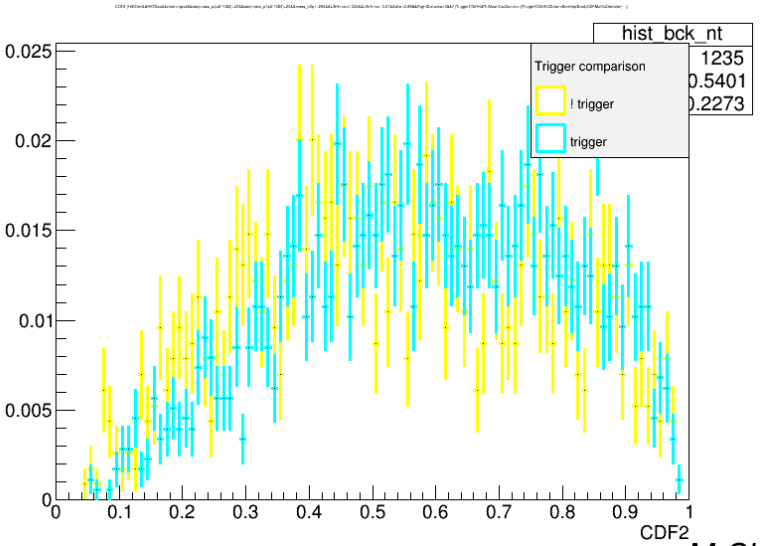

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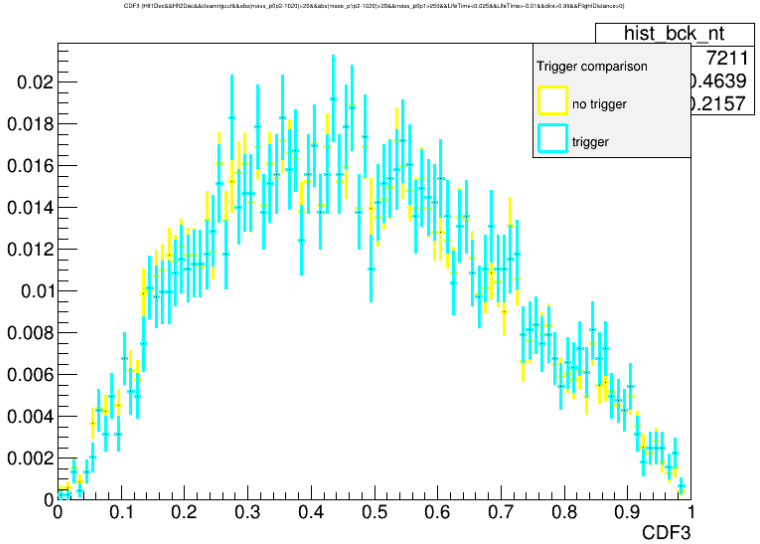

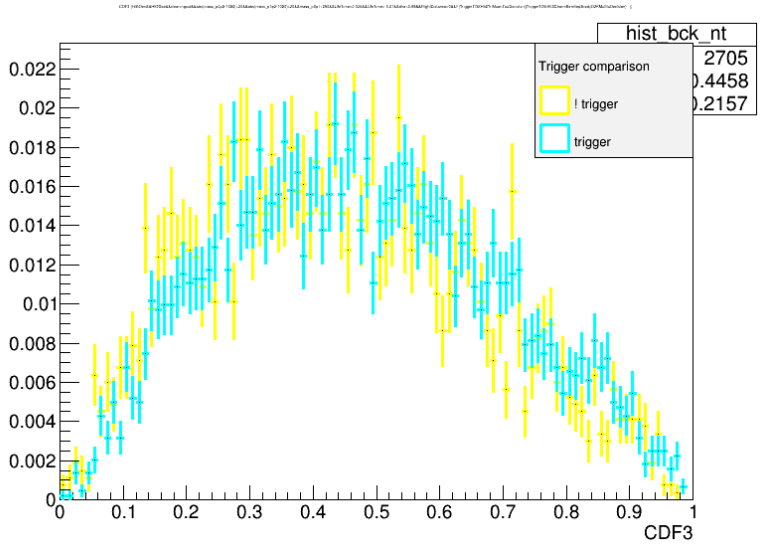

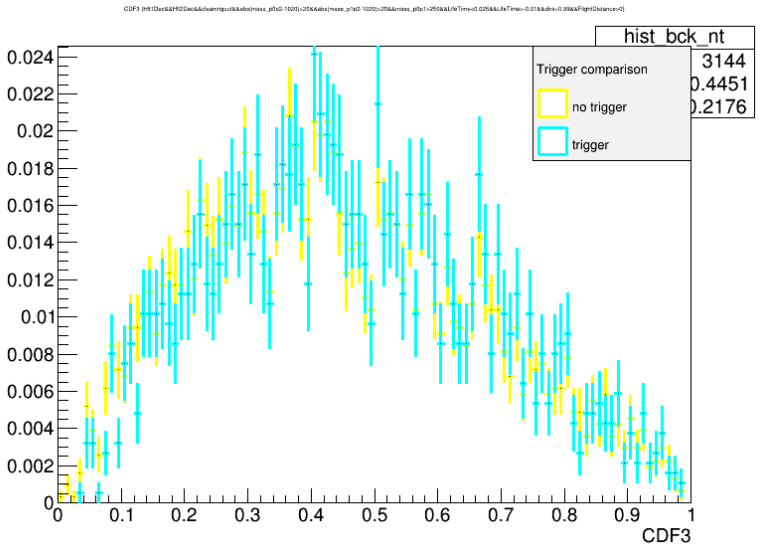

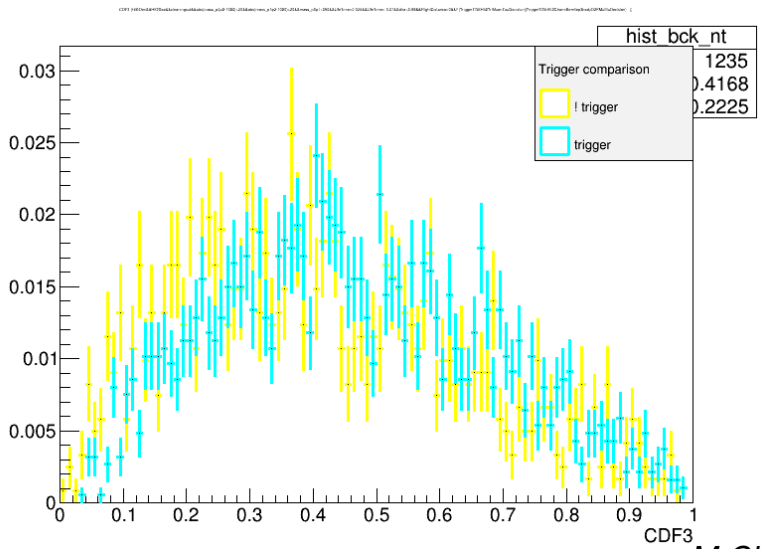

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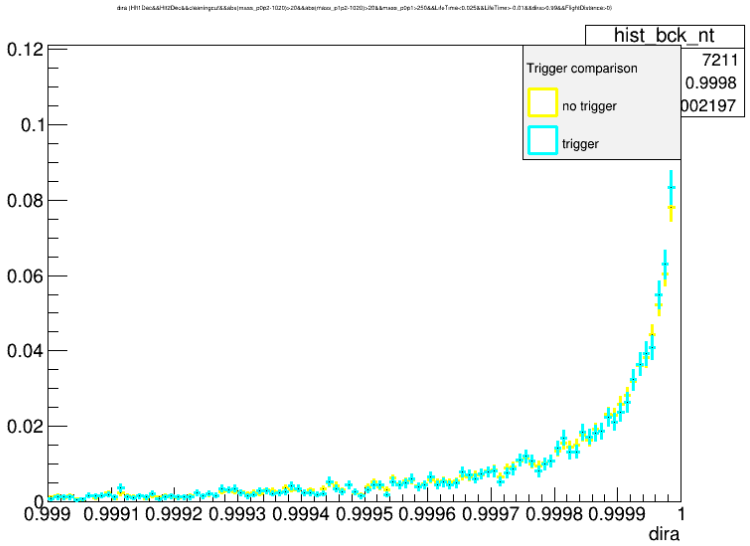

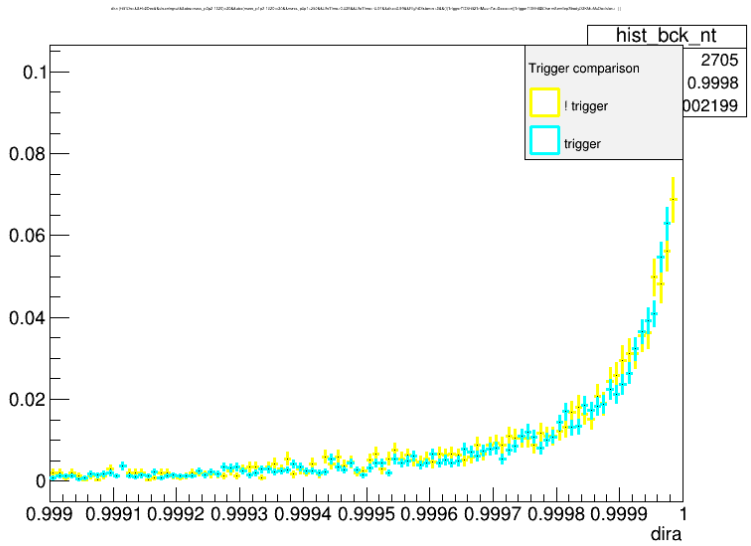

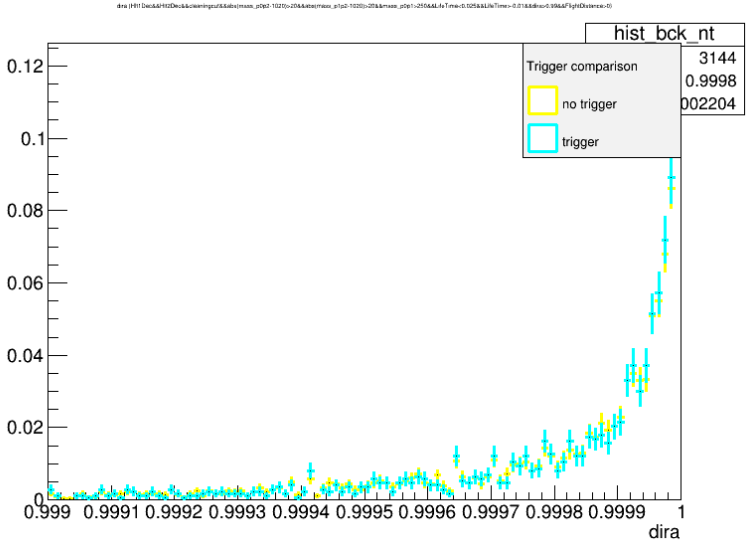

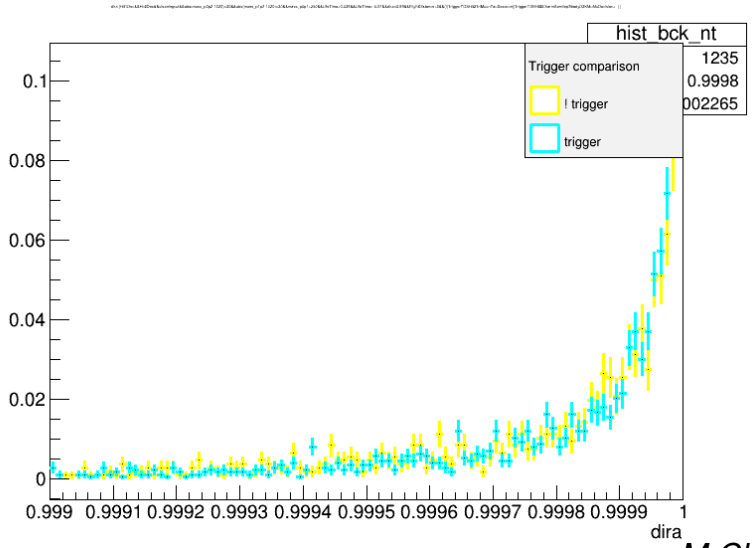

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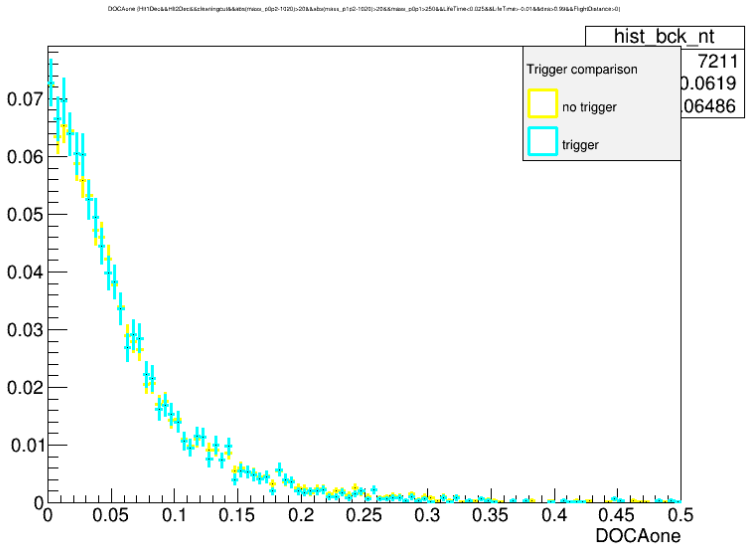

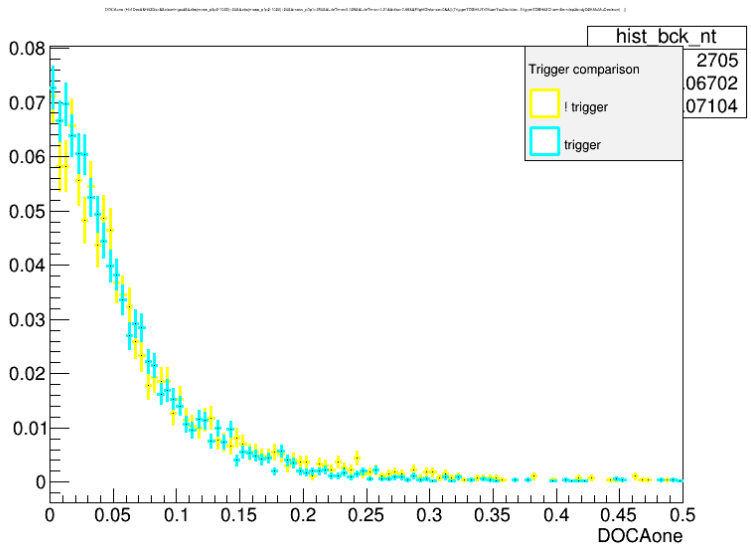

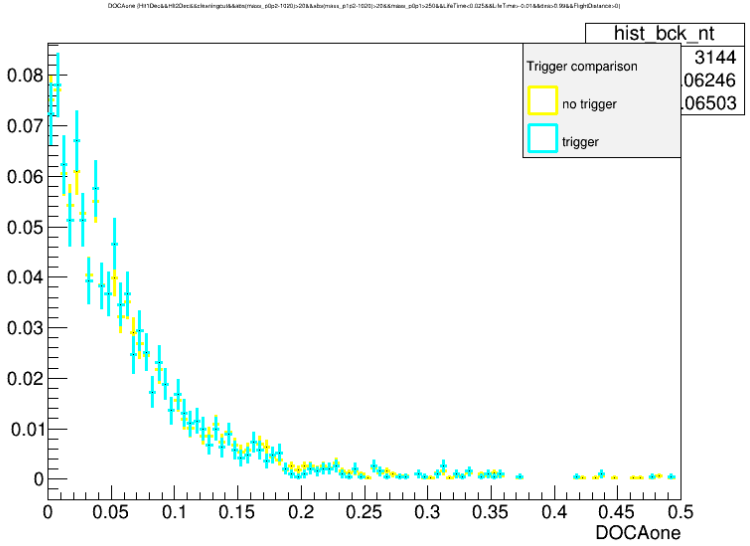

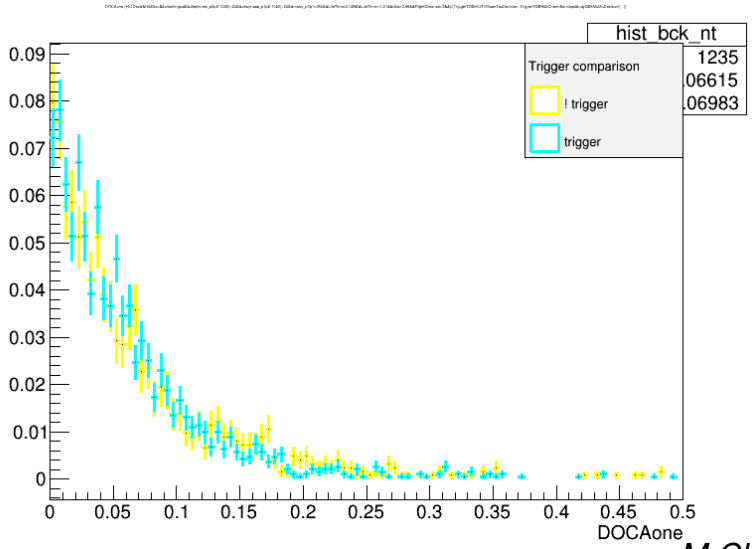

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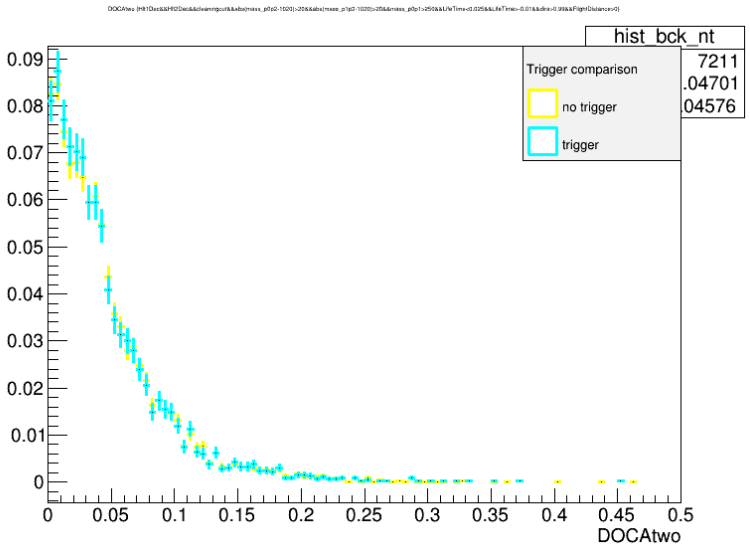

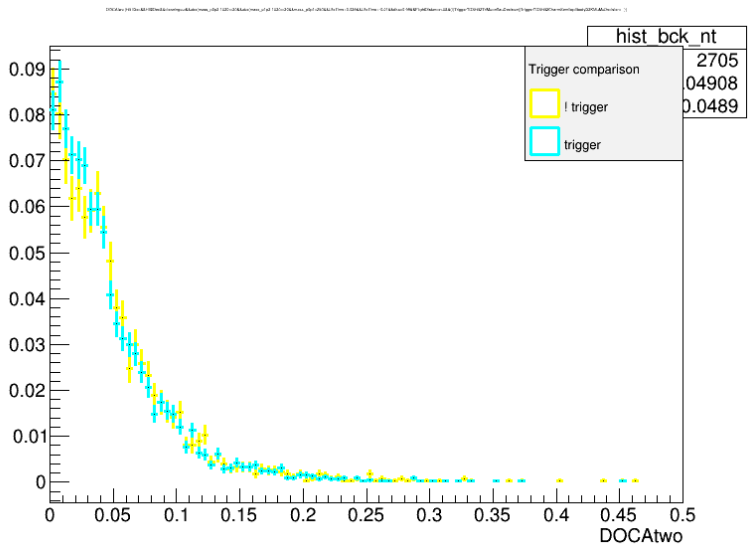

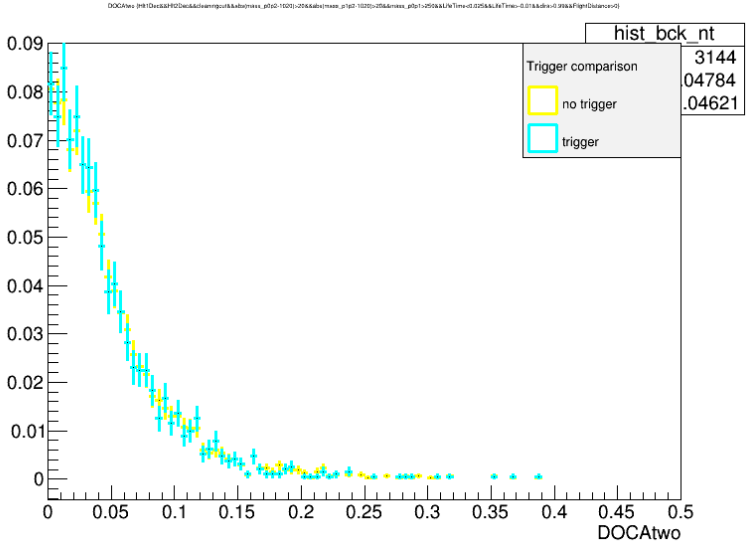

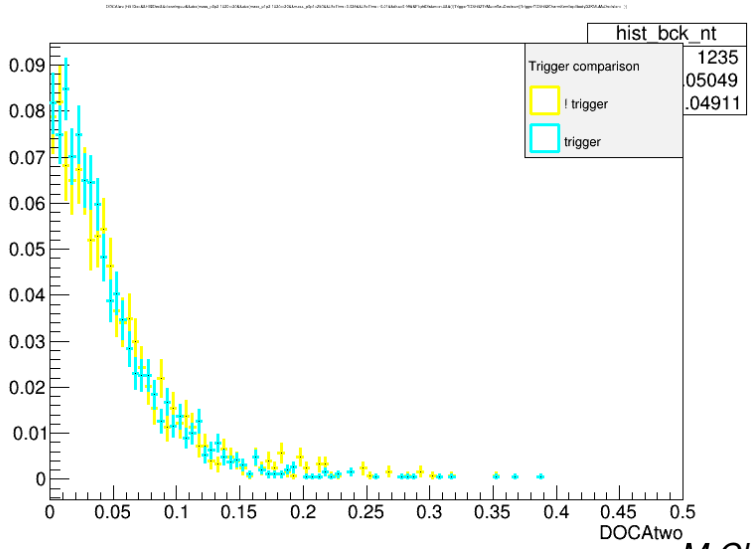

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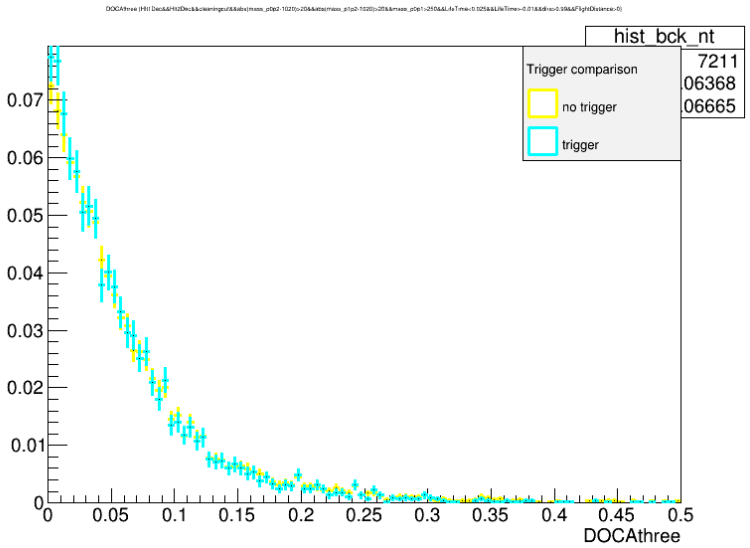

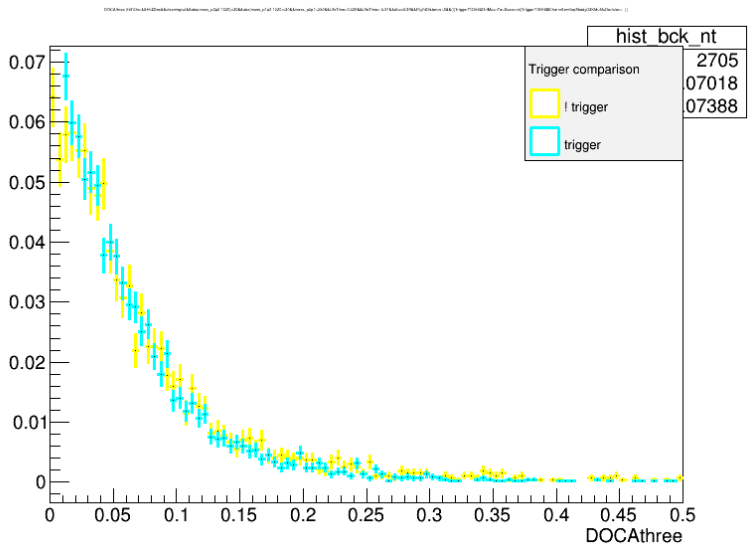

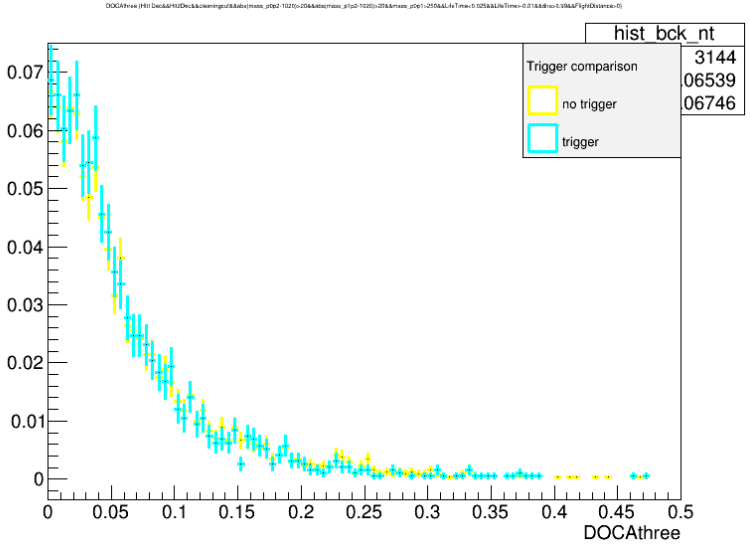

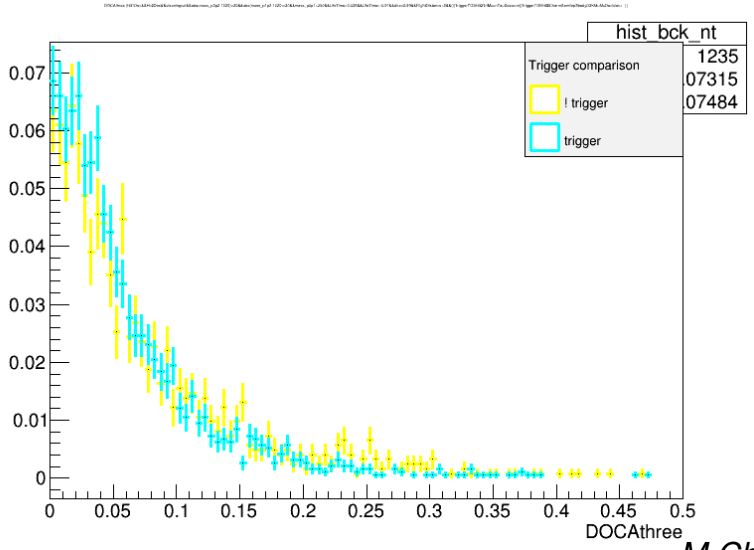

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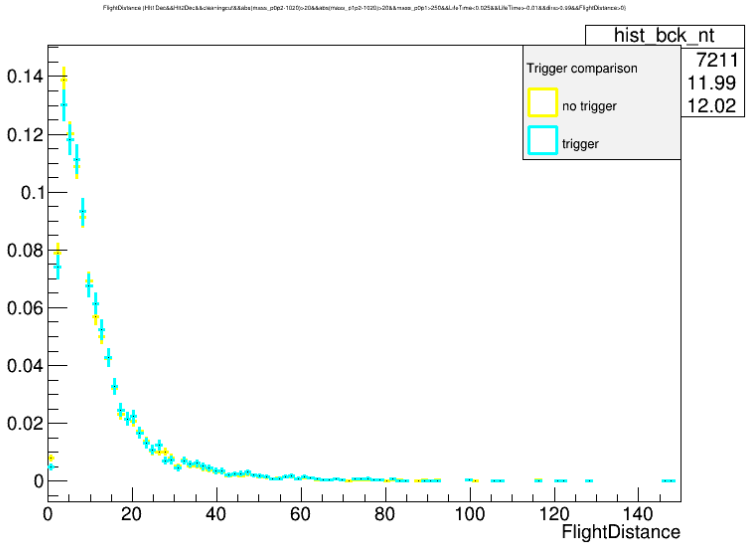

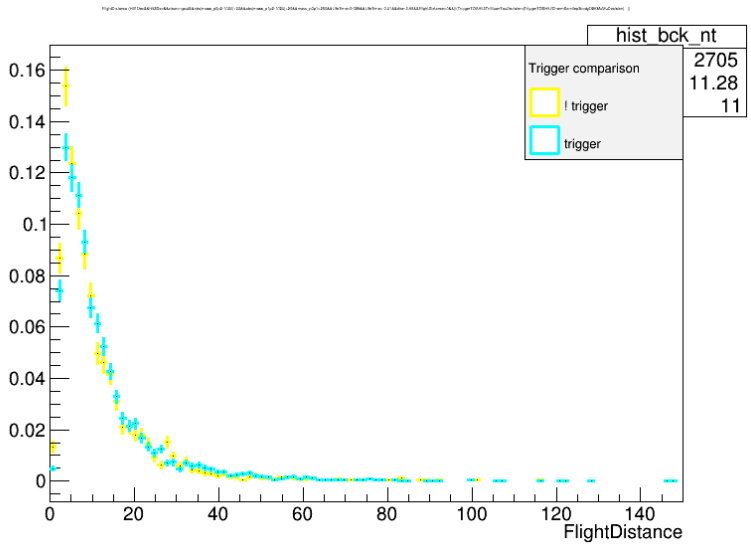

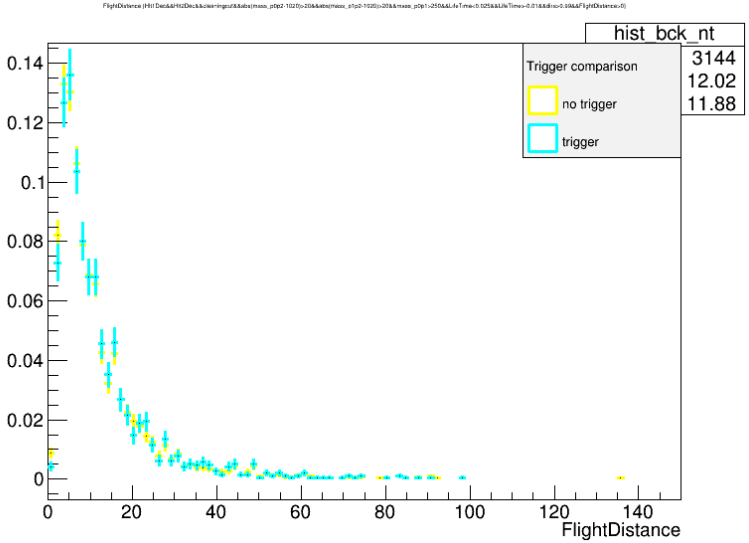

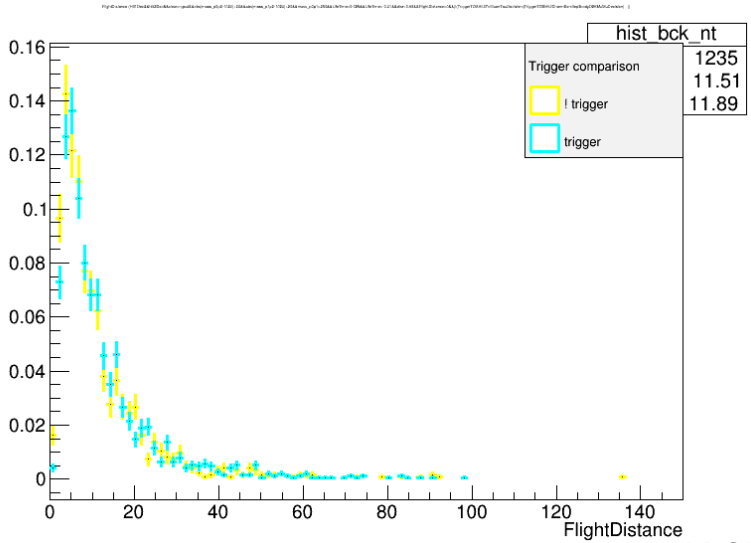

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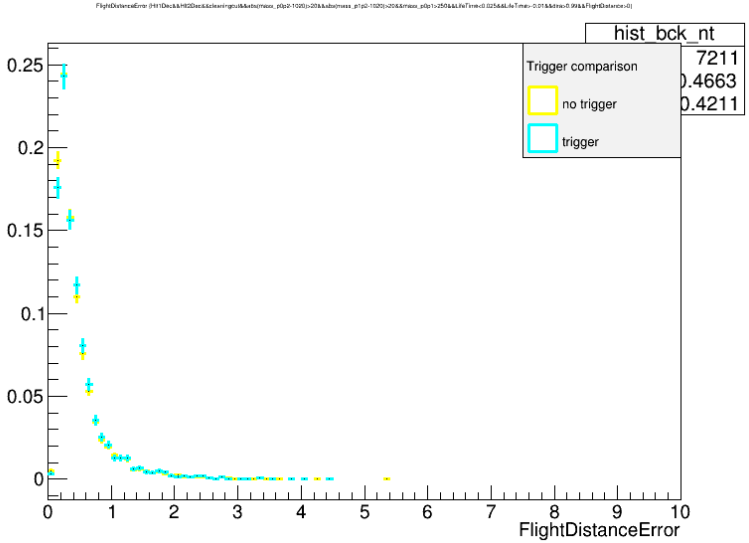

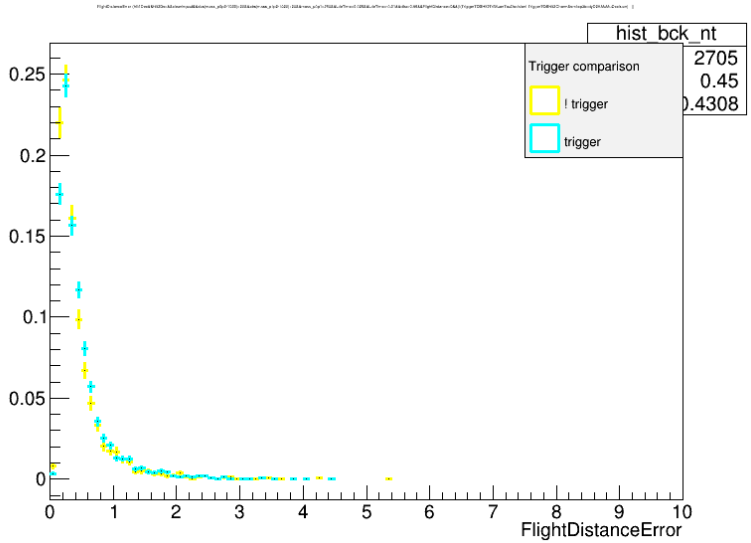

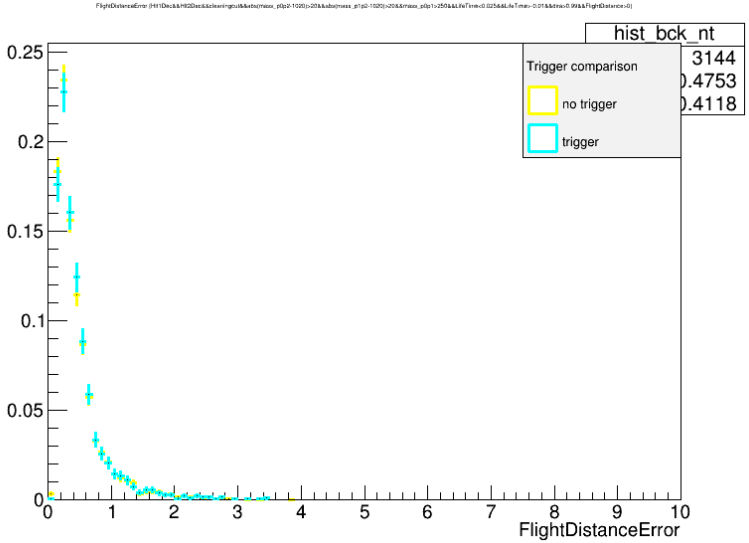

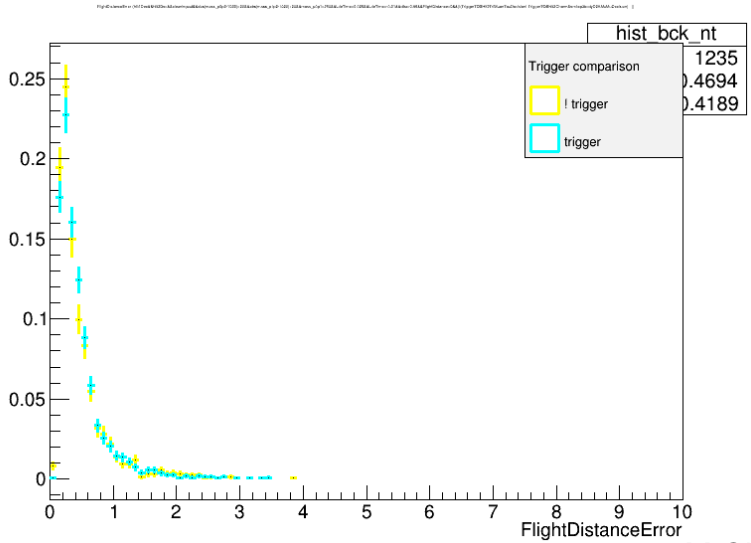

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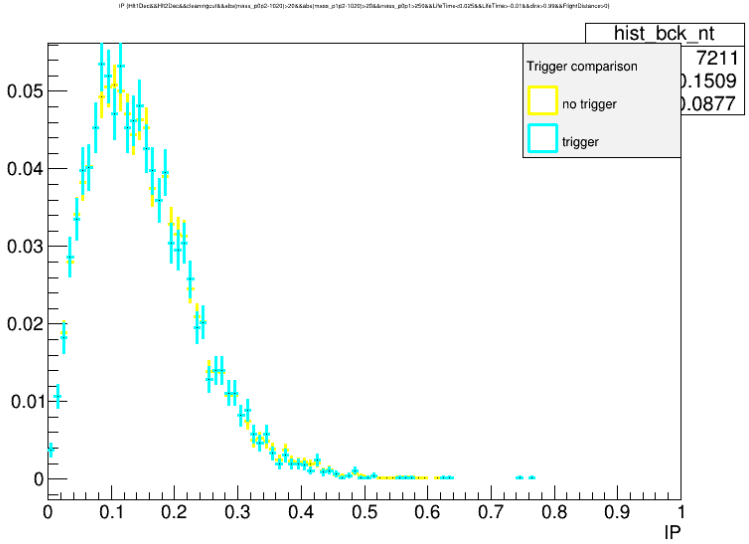

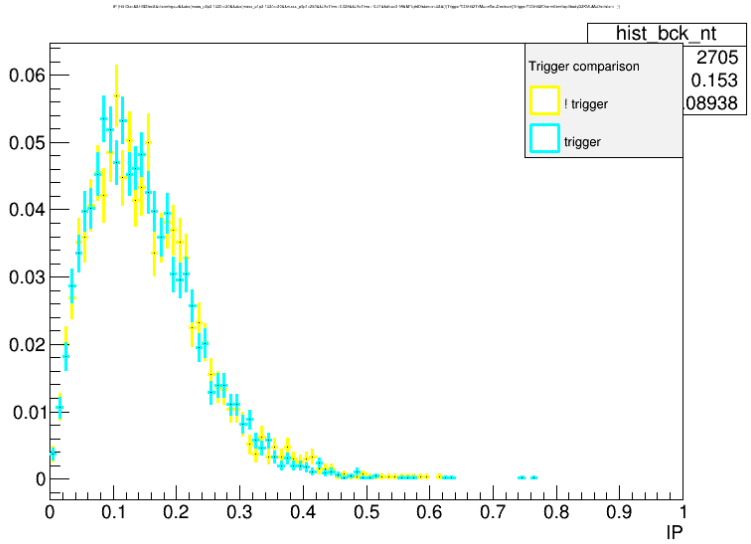

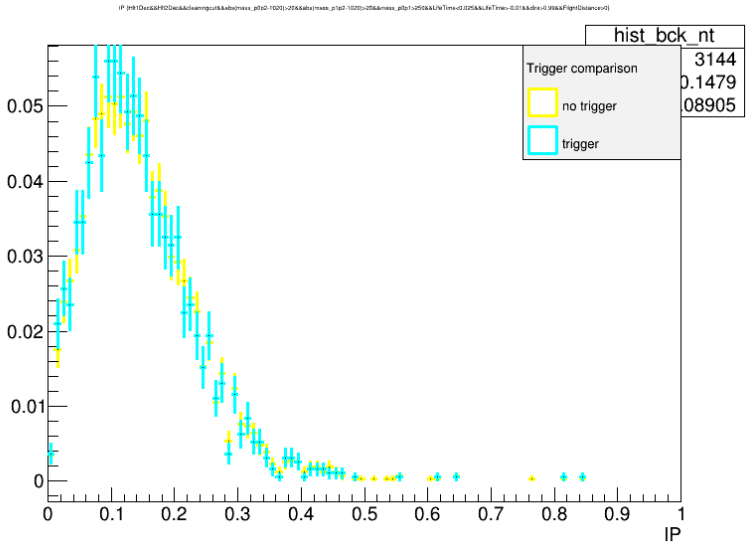

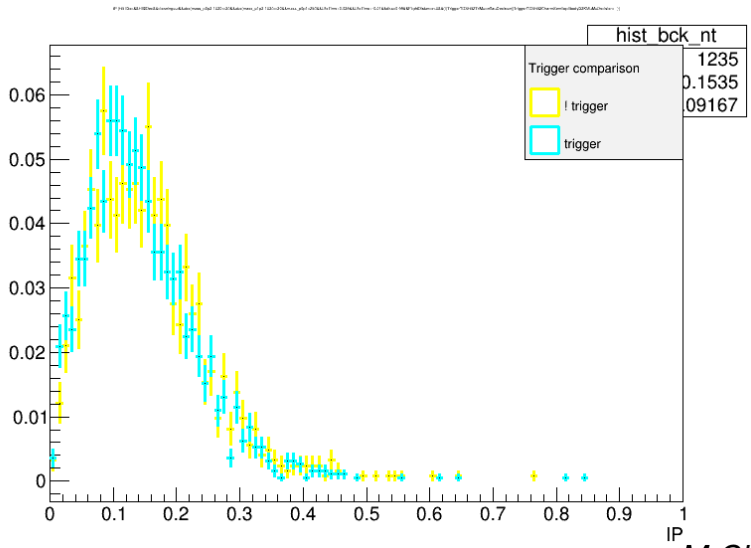

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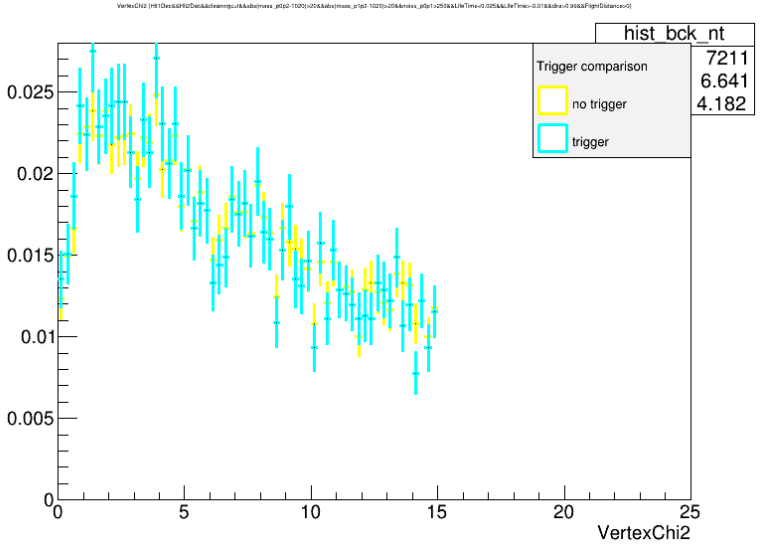

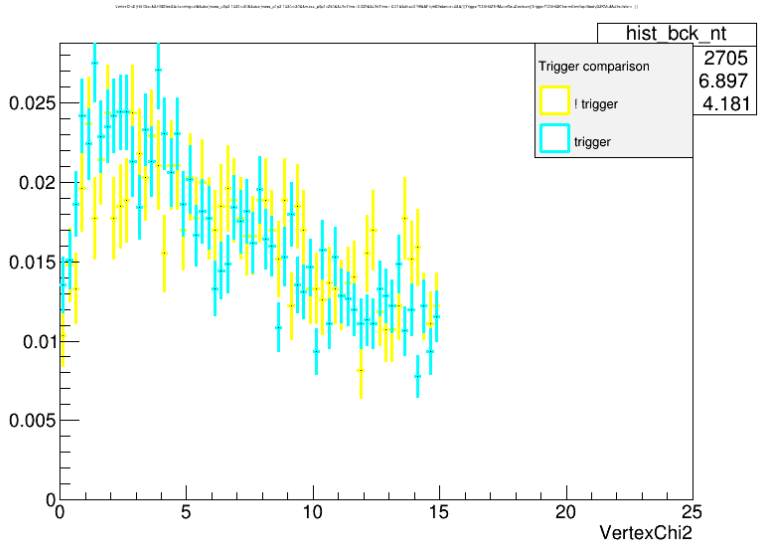

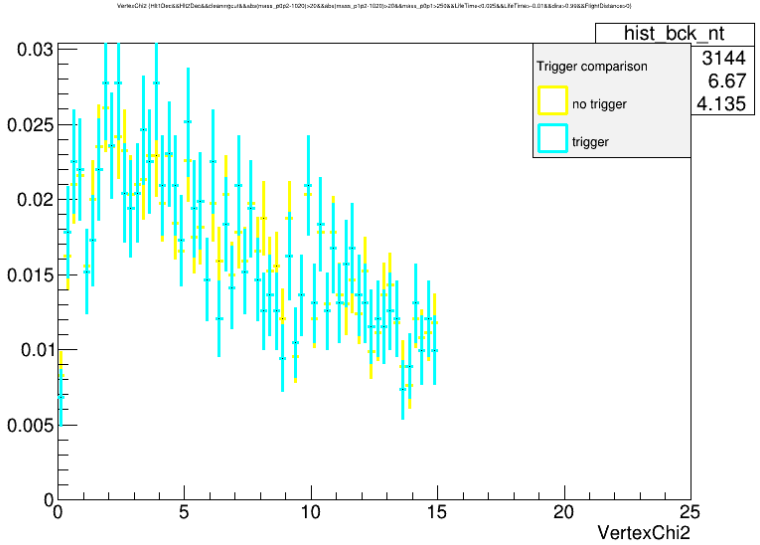

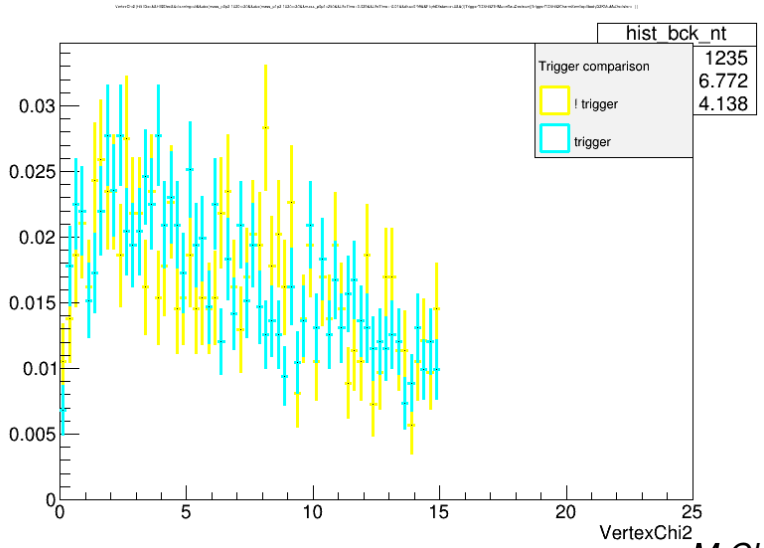

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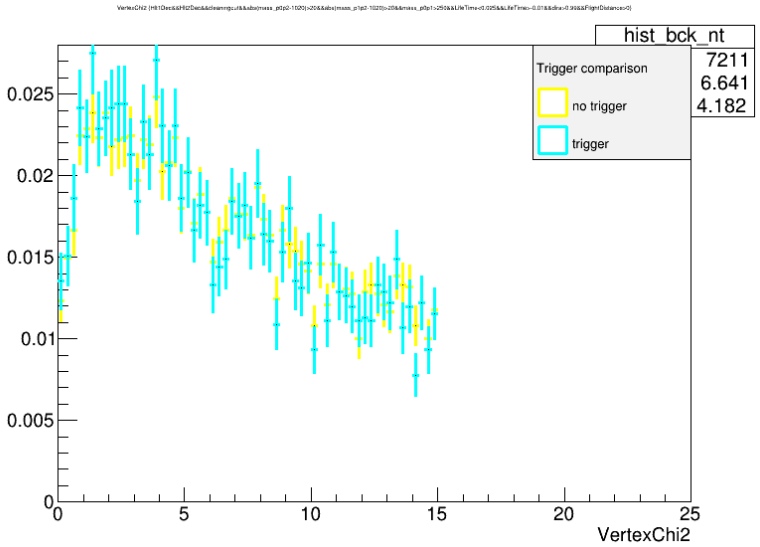

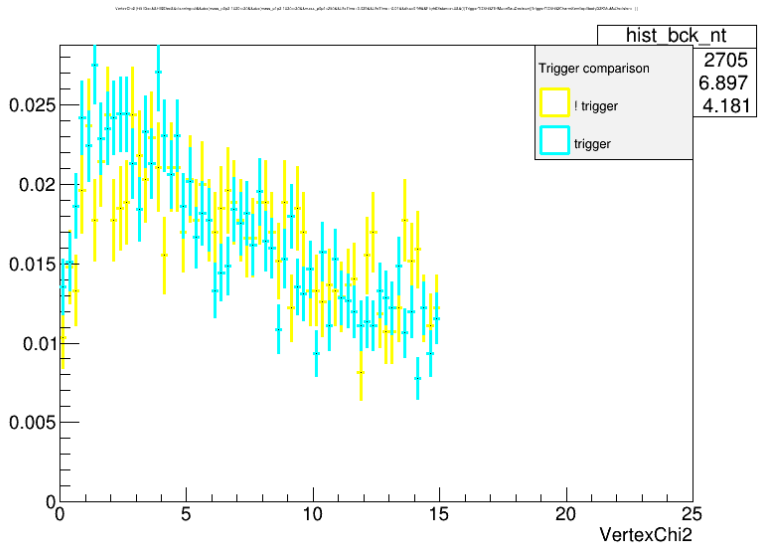

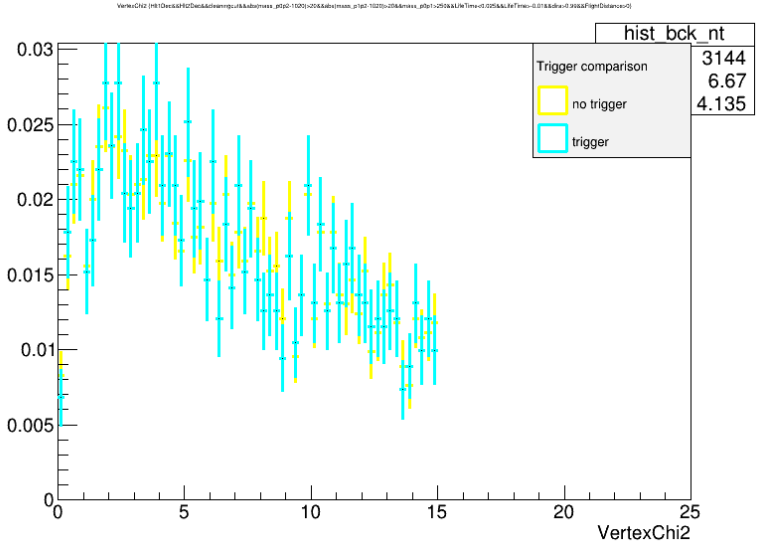

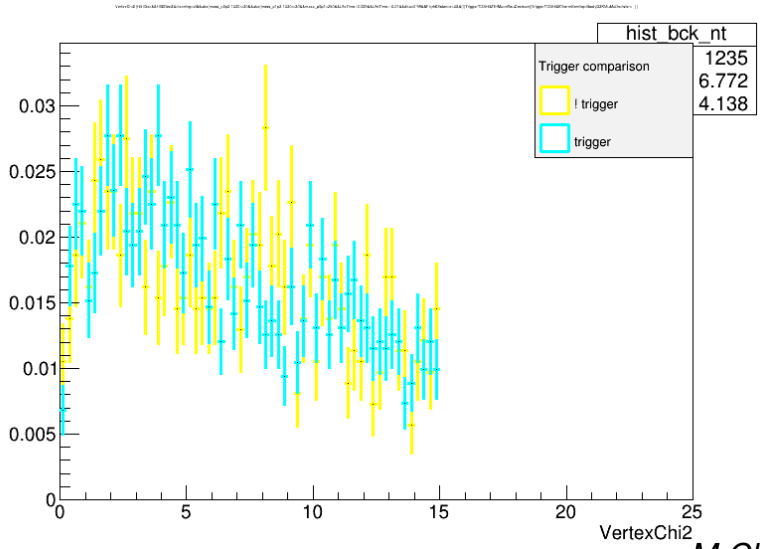

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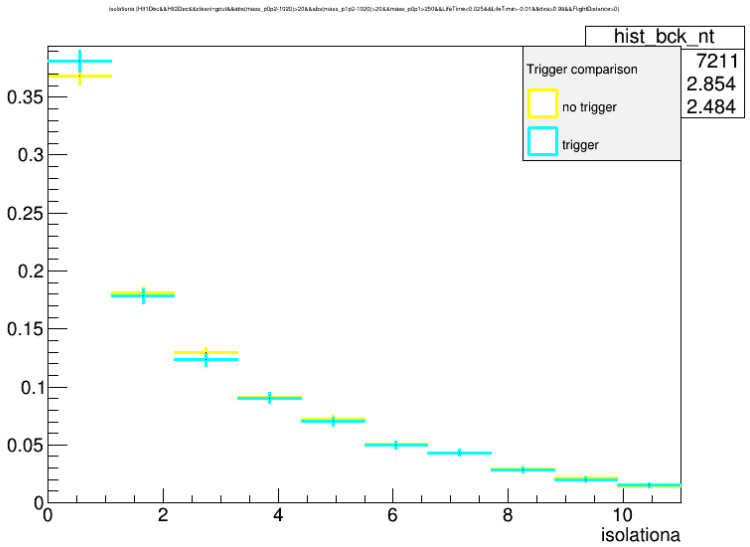

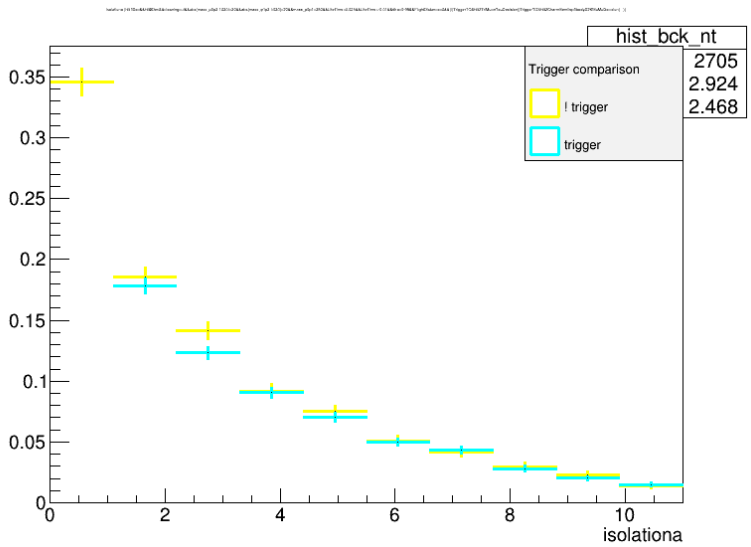

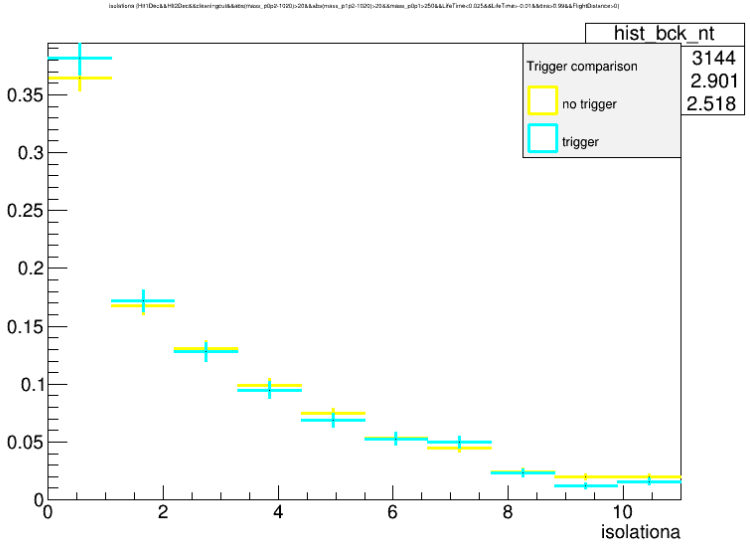

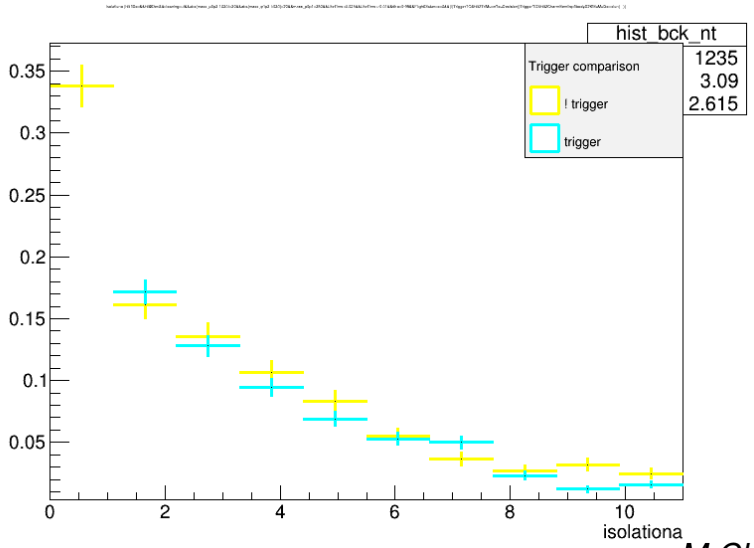

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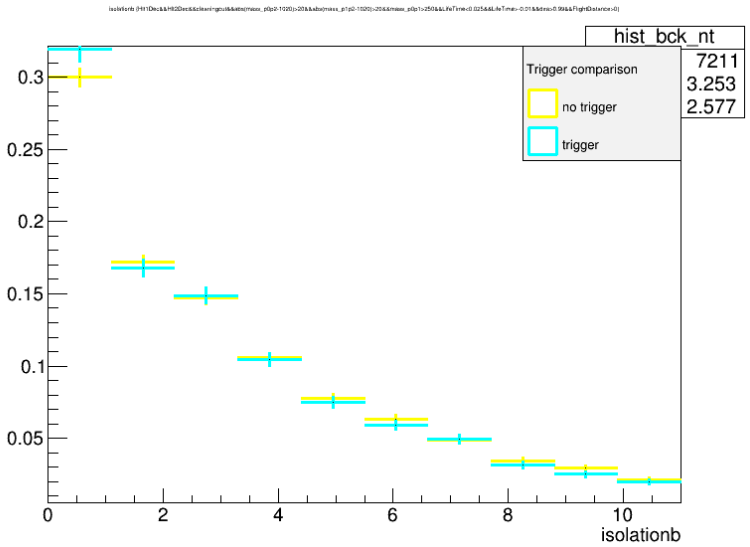

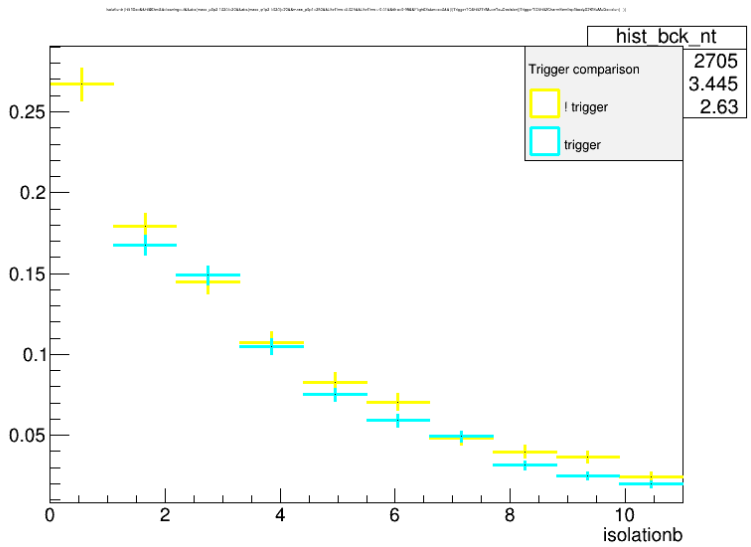

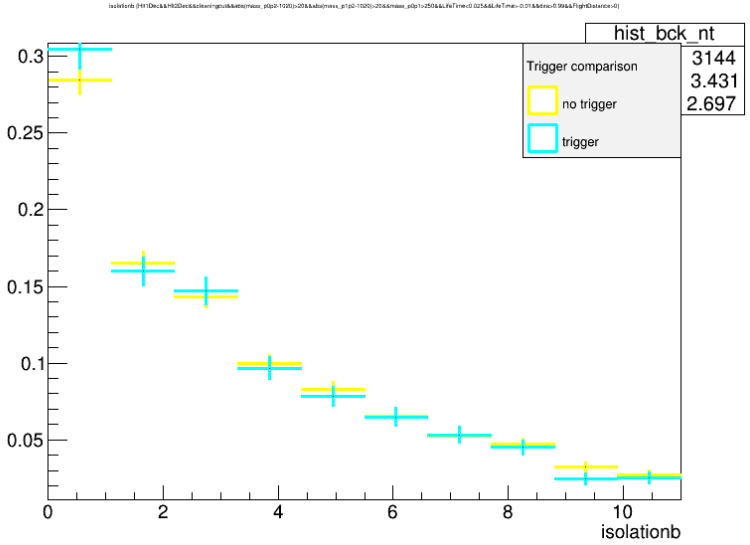

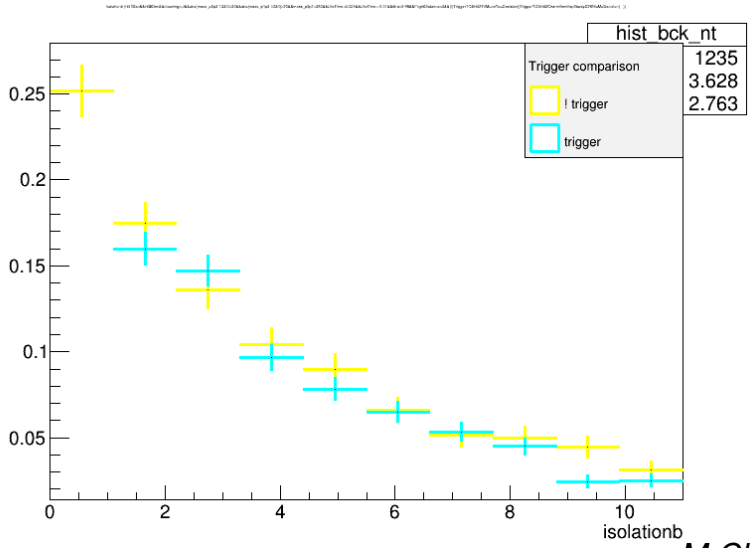

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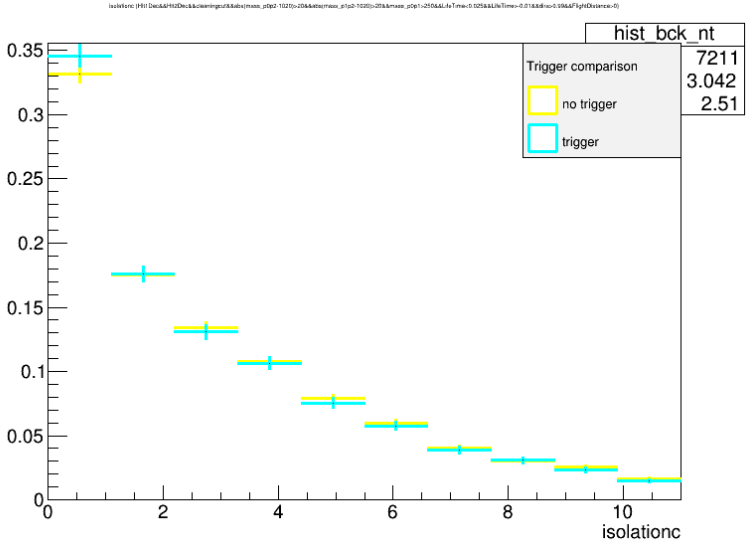
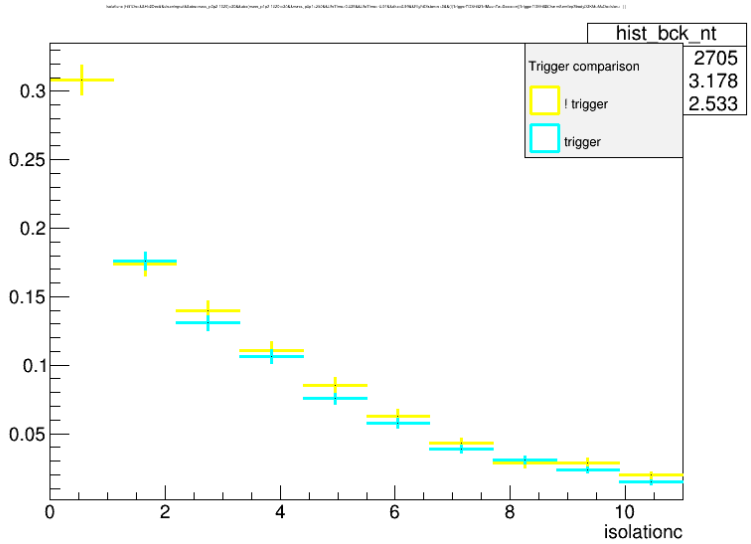
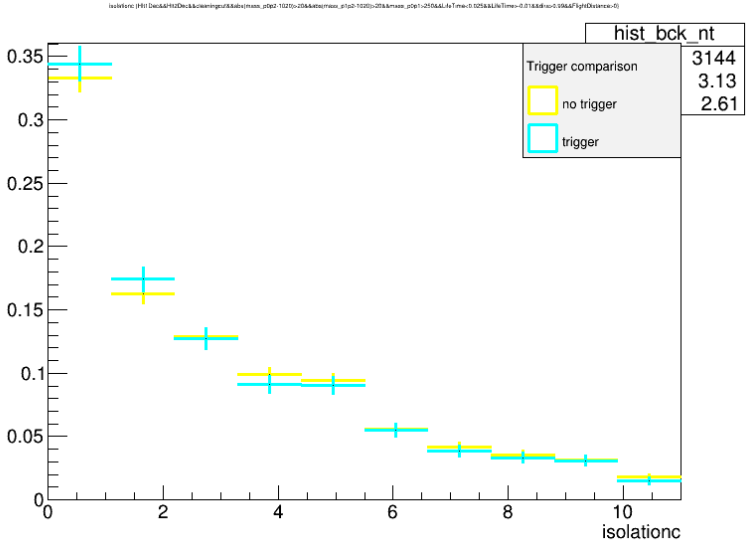
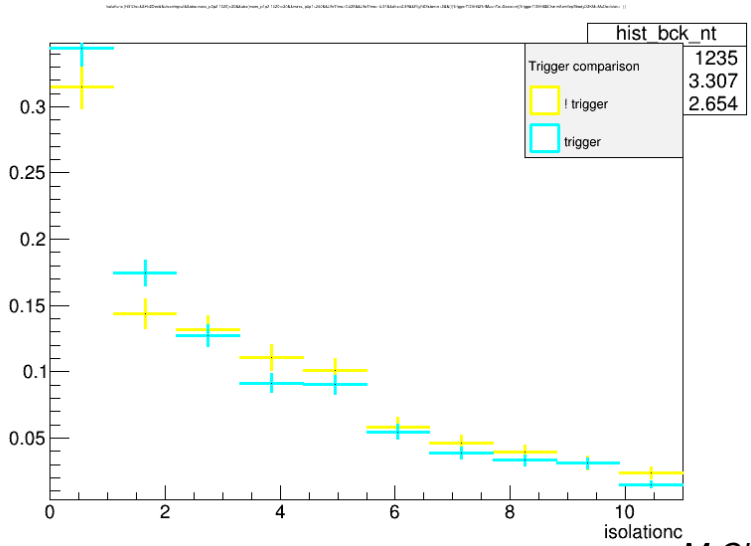
Distributions

UP row $b\bar{b}$, down $c\bar{c}$









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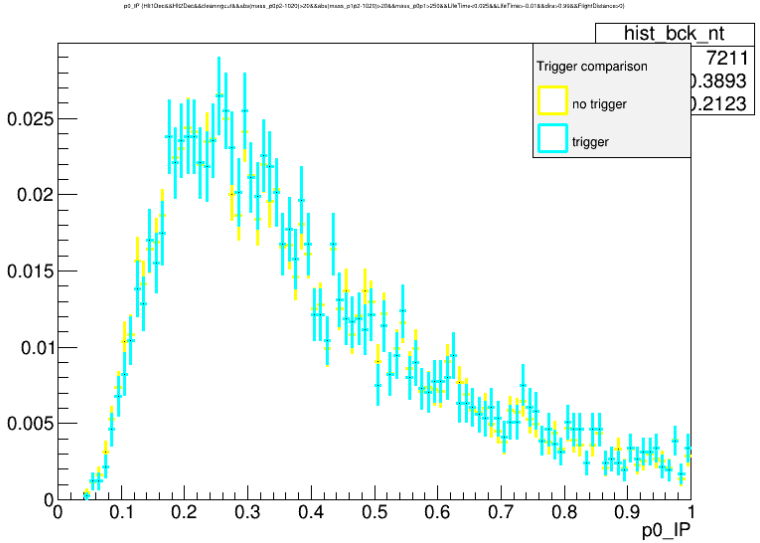
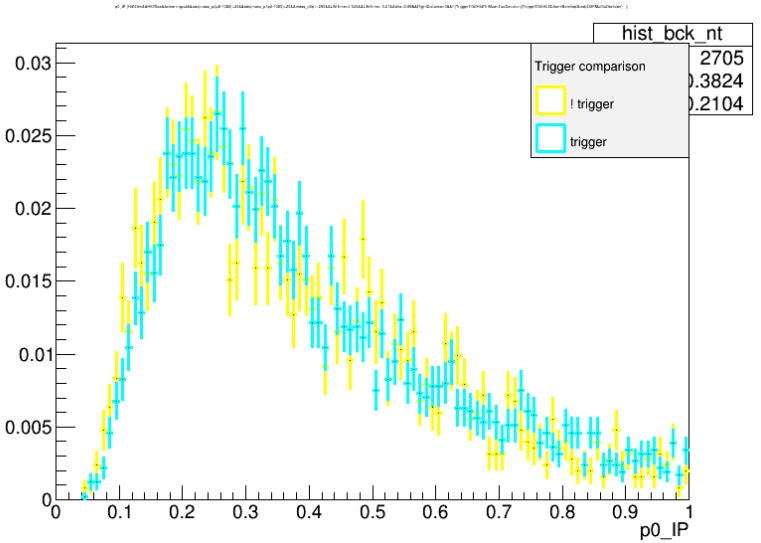
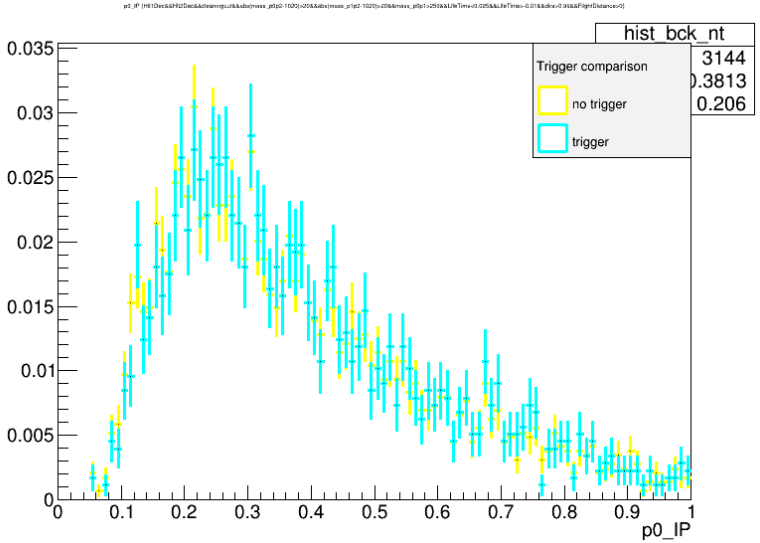
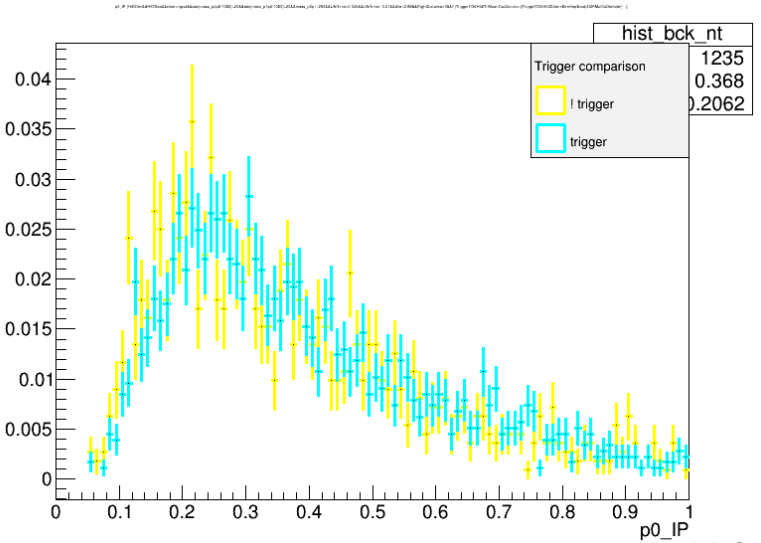
Distributions

UP row $b\bar{b}$, down $c\bar{c}$









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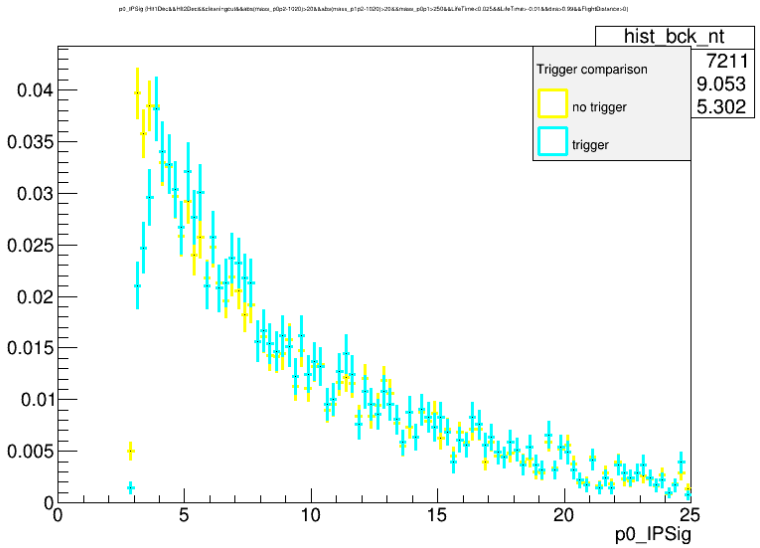
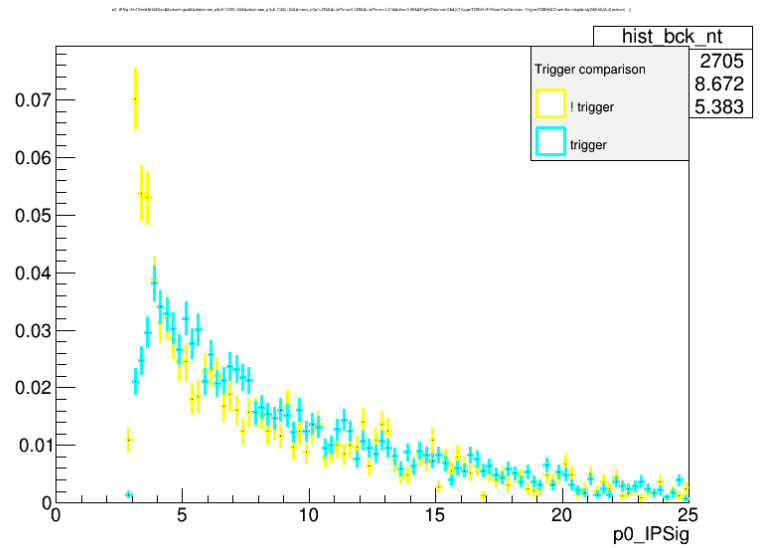
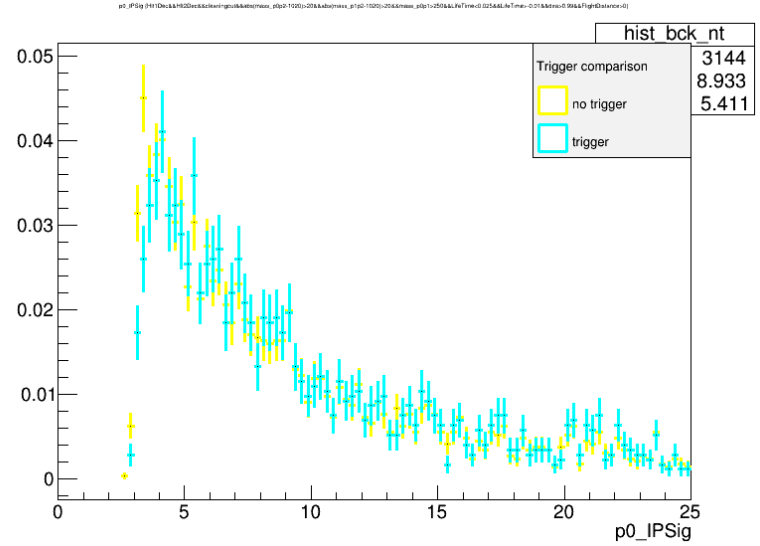
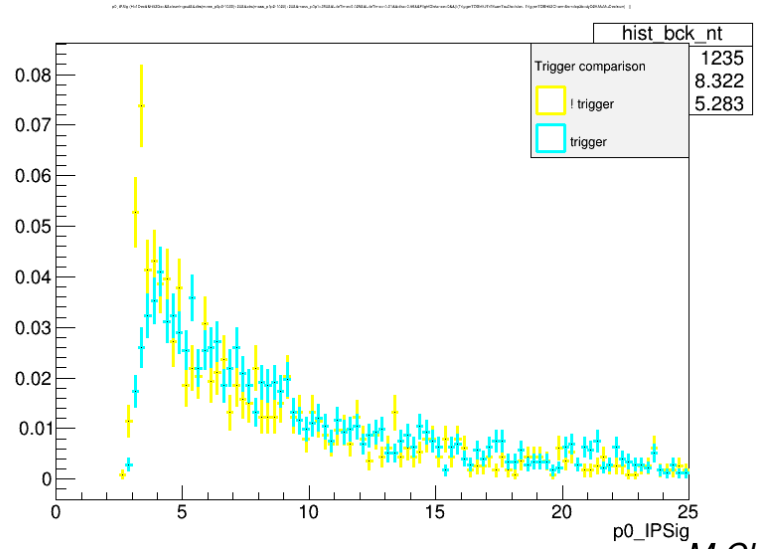
Distributions

UP row $b\bar{b}$, down $c\bar{c}$









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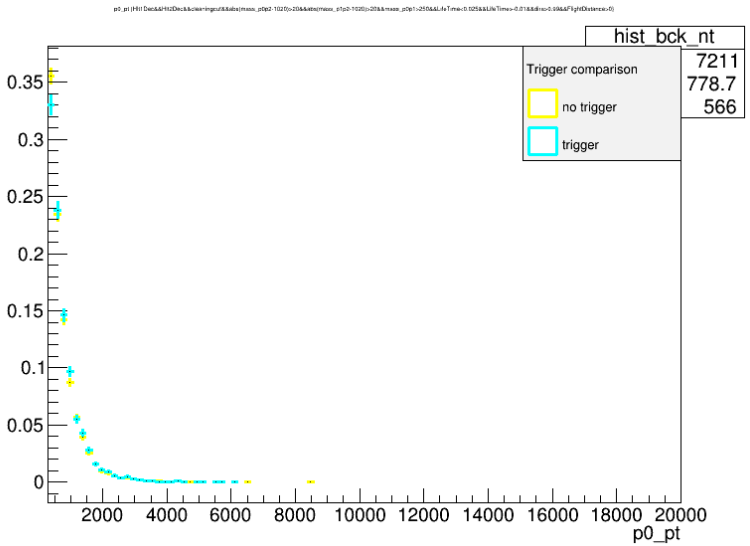
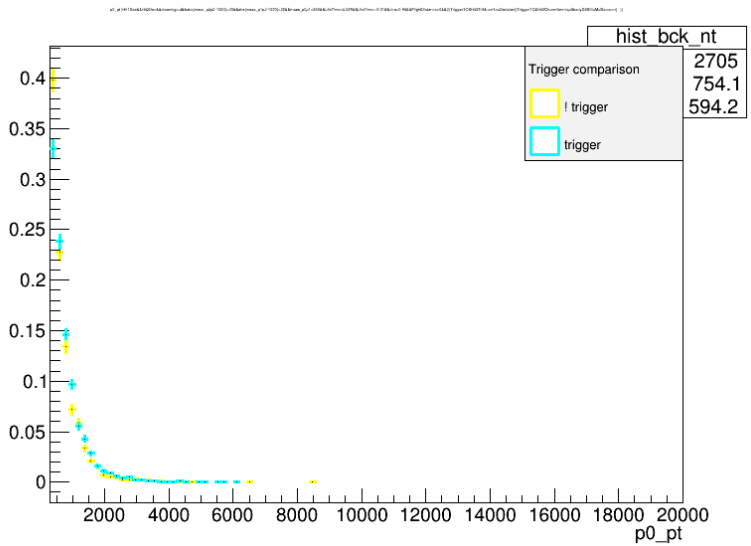
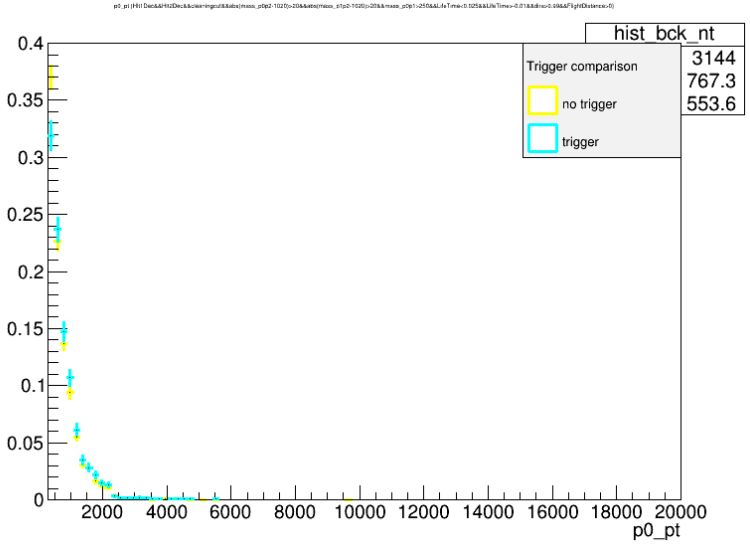
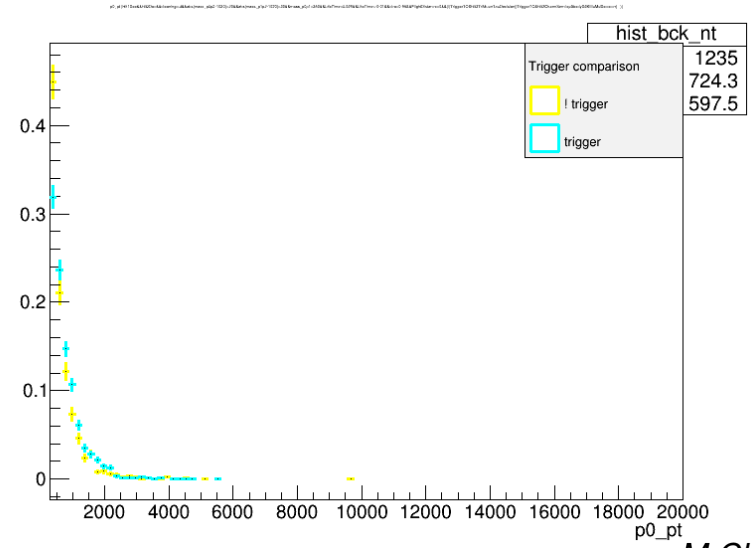
Distributions

UP row $b\bar{b}$, down $c\bar{c}$









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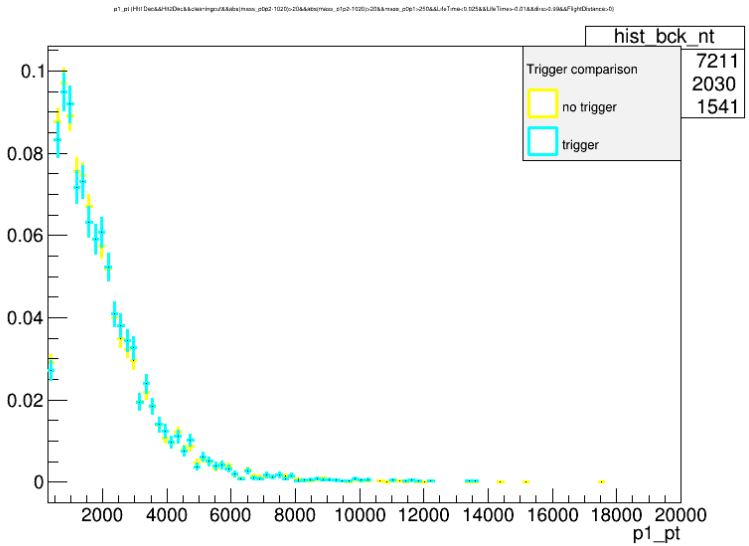
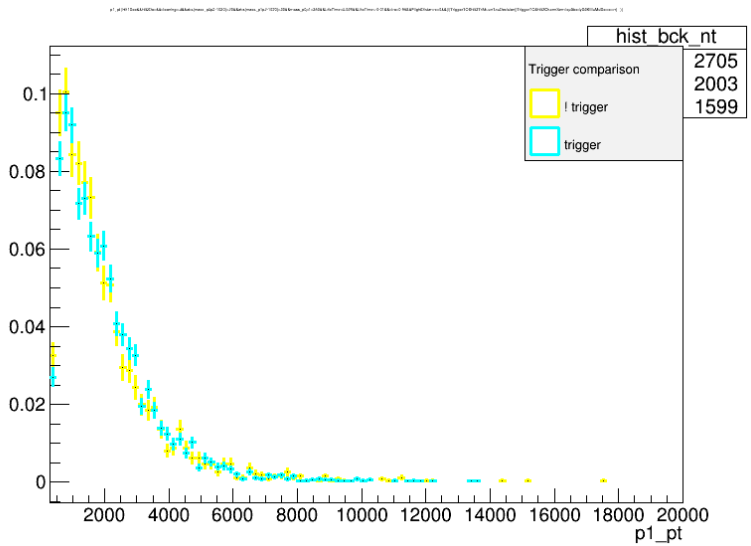
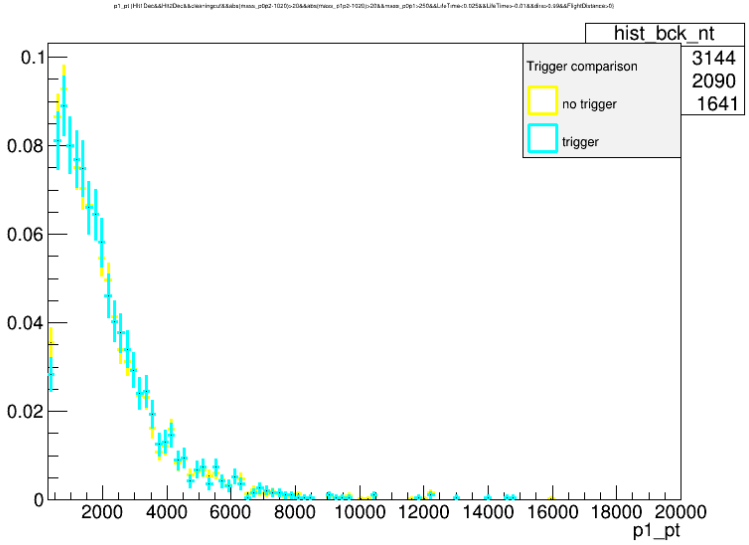
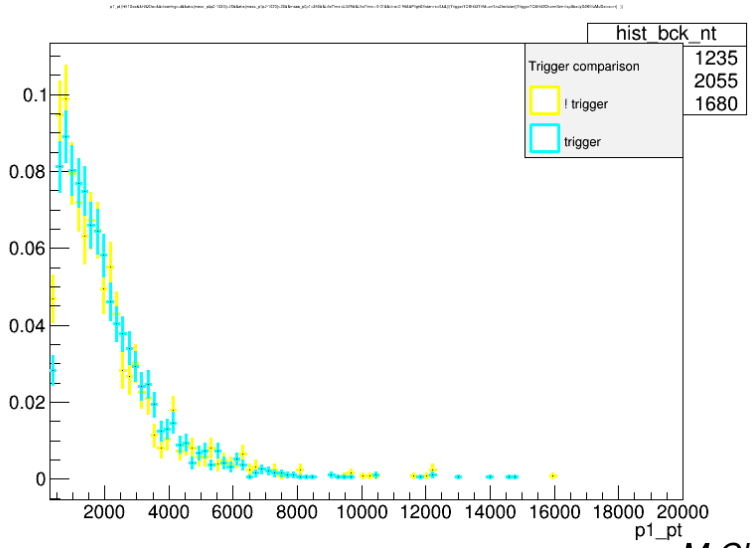
Distributions

UP row $b\bar{b}$, down $c\bar{c}$









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Distributions

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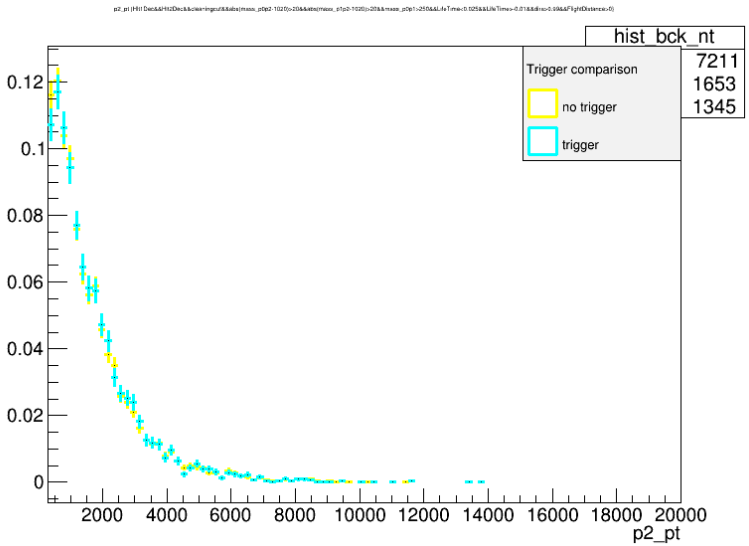

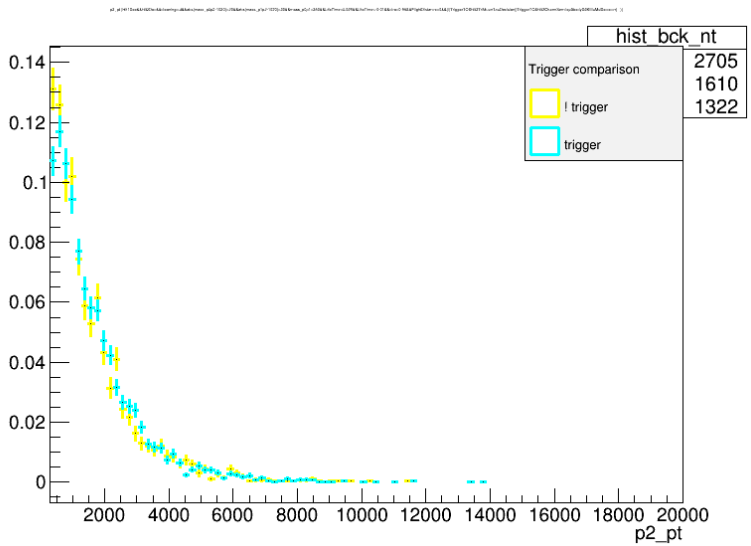

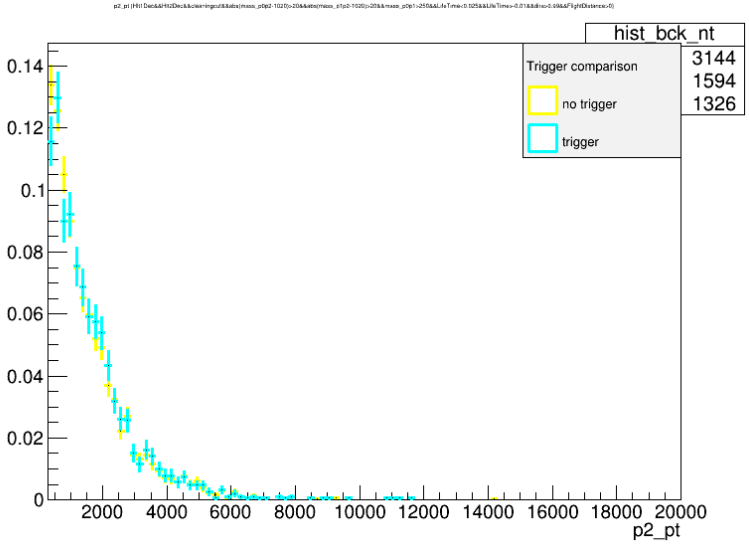

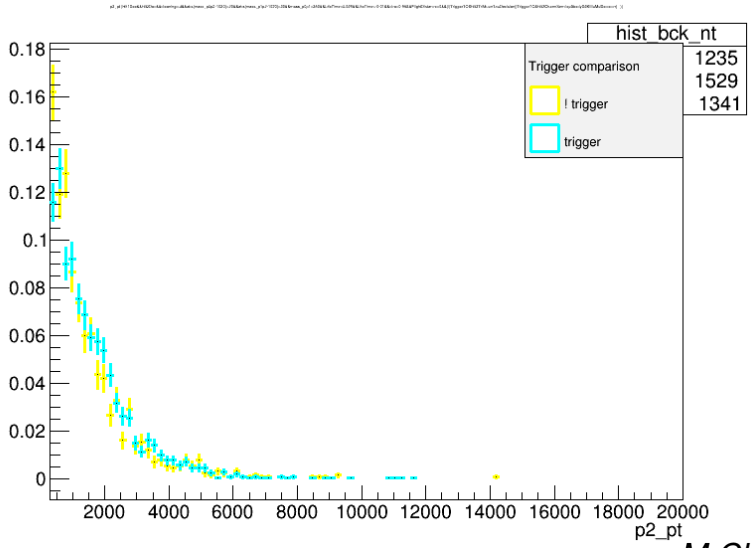

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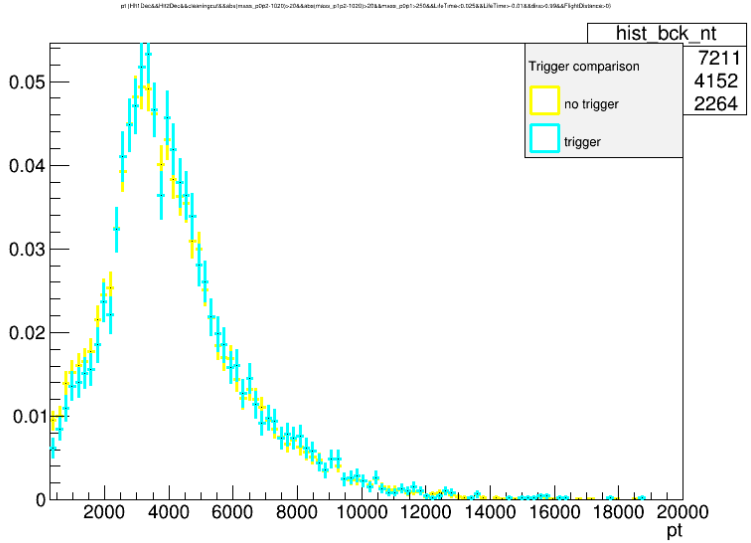
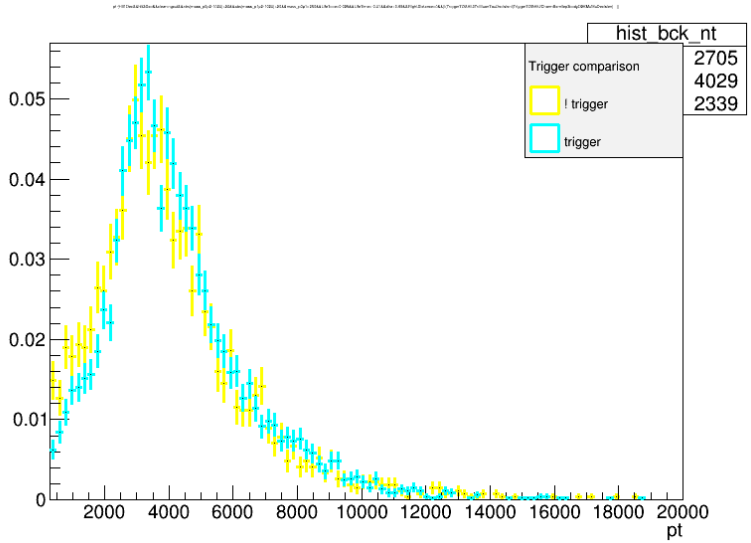
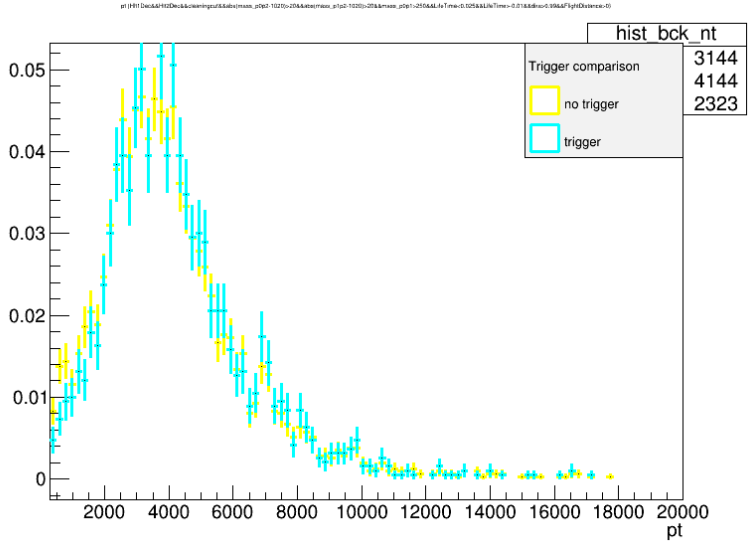
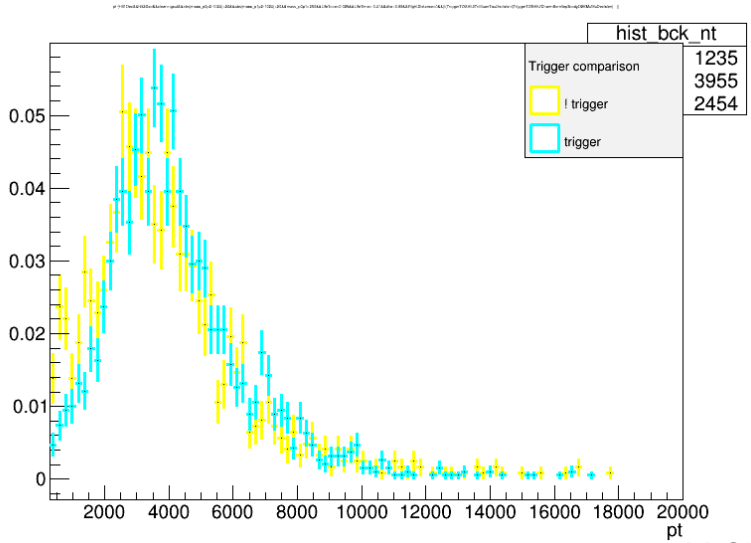
Distributions

UP row $b\bar{b}$, down $c\bar{c}$









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Distributions

- There are same small hints: IP Significance is a bit different, and they are worse isolated
- Was hopping to see something more.
- Maybe the answer is the correlations inside BDT?

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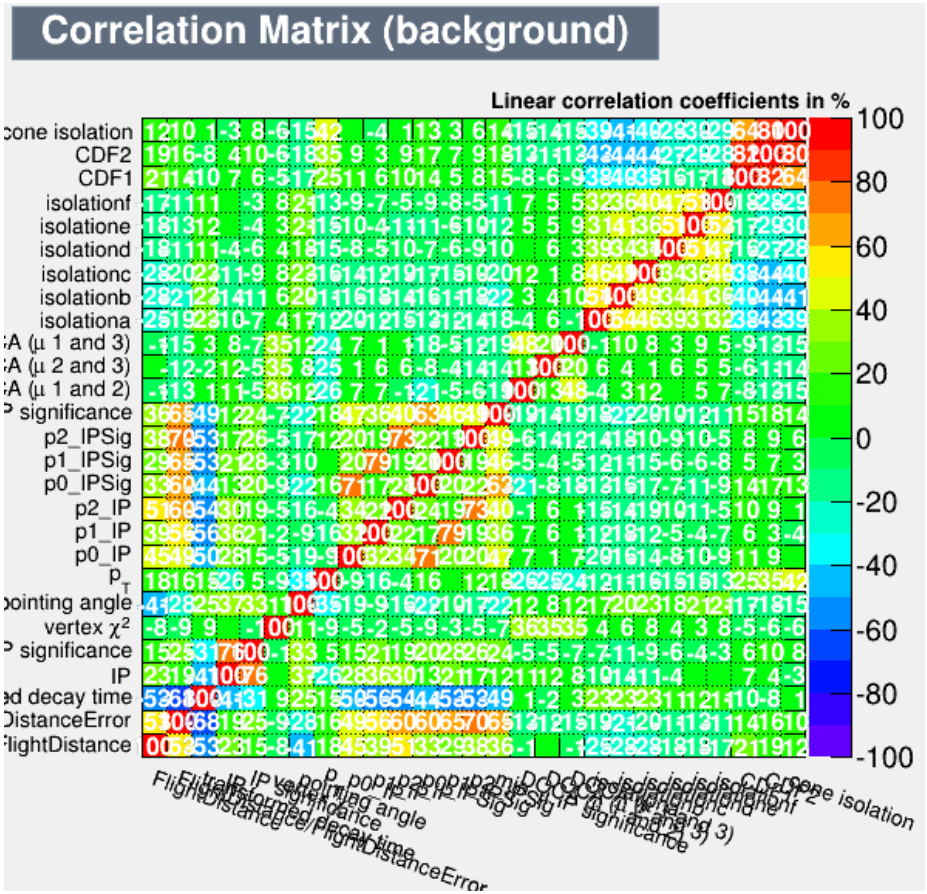
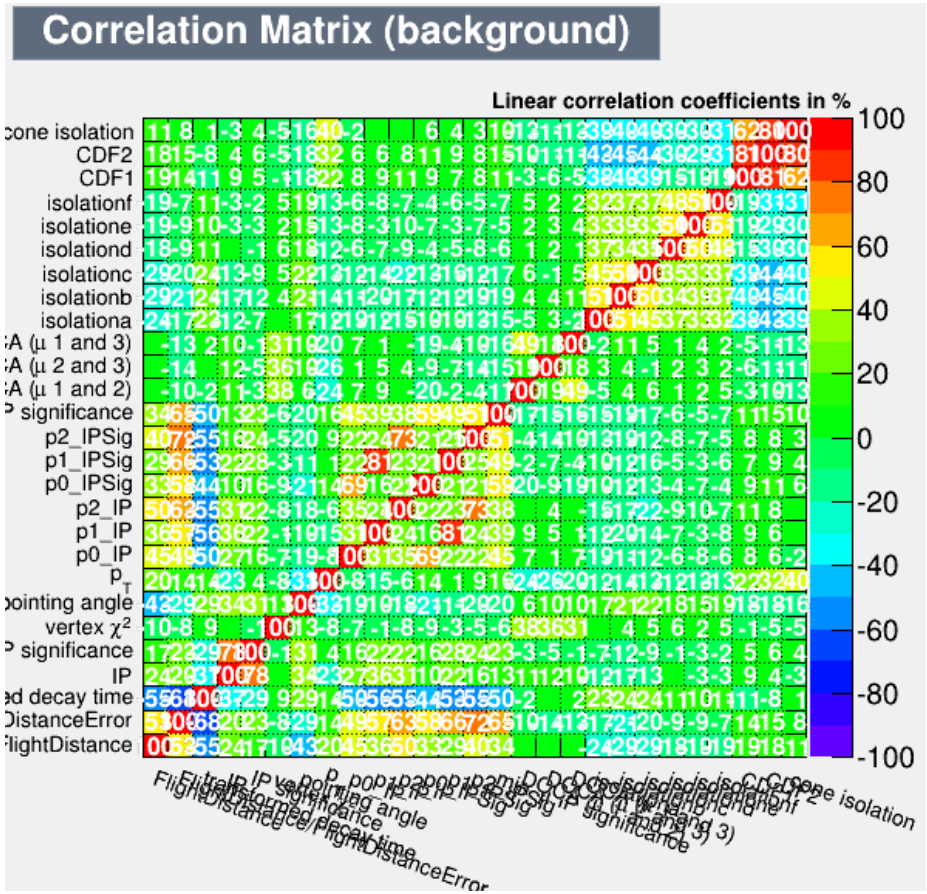
Distributions





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Distributions

- Again nothing, wrrrrrrrrrr :(
- Last day I had a chat with Paul and he suggested to train 2 classifiers(with trigger veto and without) and to test them on data.
- Seems like definite way.

BDT comparison

- Did a fast preliminary test yesterday.
- Looks like we gain on selecting the trigger on the TMVA level.(VERY preliminary!)

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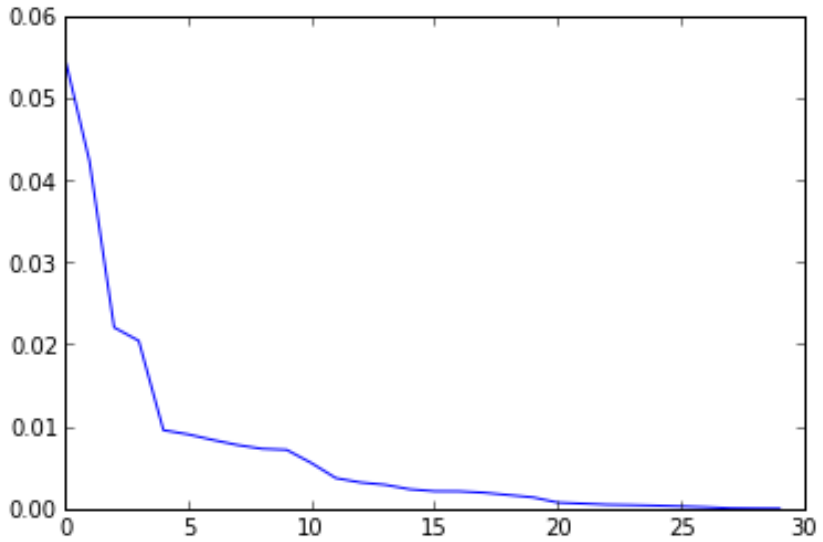
Number of variables in BDT

- i asked my self a question how much variables we need to put inside our BDT.
- You don’t want to put to much, or to little.
- Used the lasso method.
  LINK



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