Thoughts on $R(\Lambda_c^{(*)})$

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Disclaimer

$\Rightarrow$ This is not a status update, for this please see Anna's slide on the last SL meeting:
`https://indico.cern.ch/event/520811/`
$\Rightarrow$ I want to trigger/focus on the discussion.
$\Rightarrow$ One thing that has been updated is the trigger lines:
TopoX $\rightarrow$ **TopoXMu**

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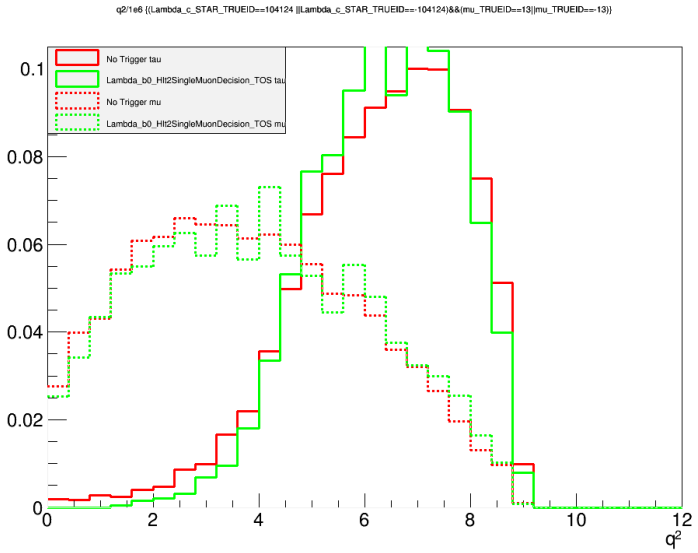
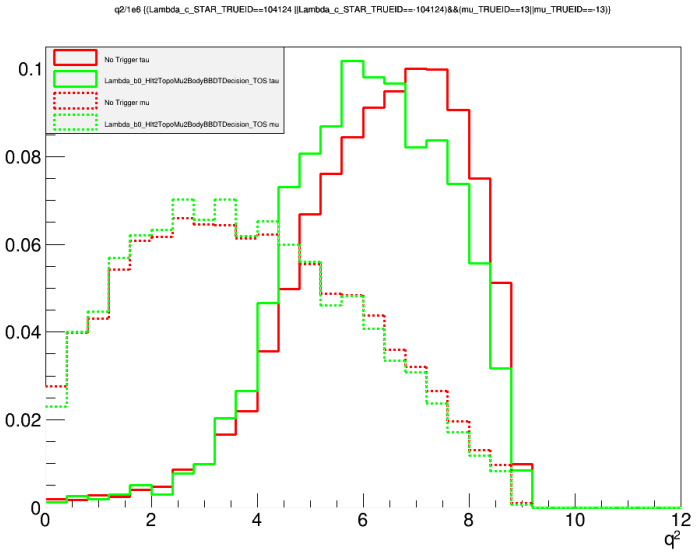
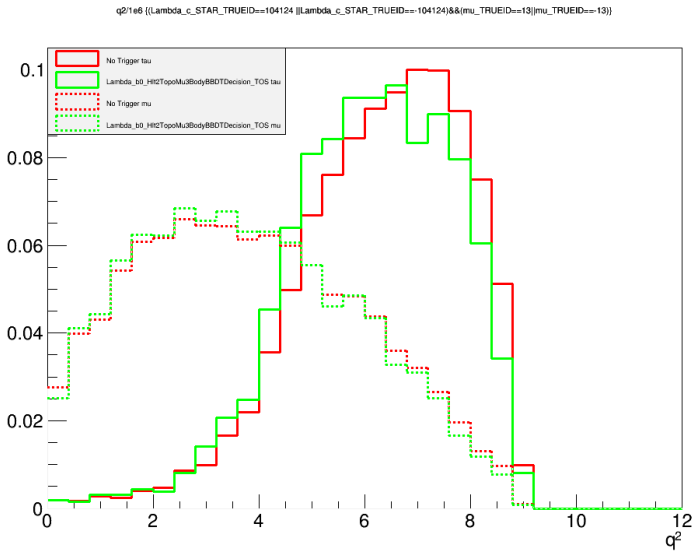
⇛ This is not a status update, for this please see Anna's slide on the last SL meeting:
`https://indico.cern.ch/event/520811/`
⇛ I want to trigger/focus on the discussion.
⇛ One thing that has been updated is the trigger lines:
TopoX → TopoXMu
⇛ This has a rather big impact on the efficiencies:

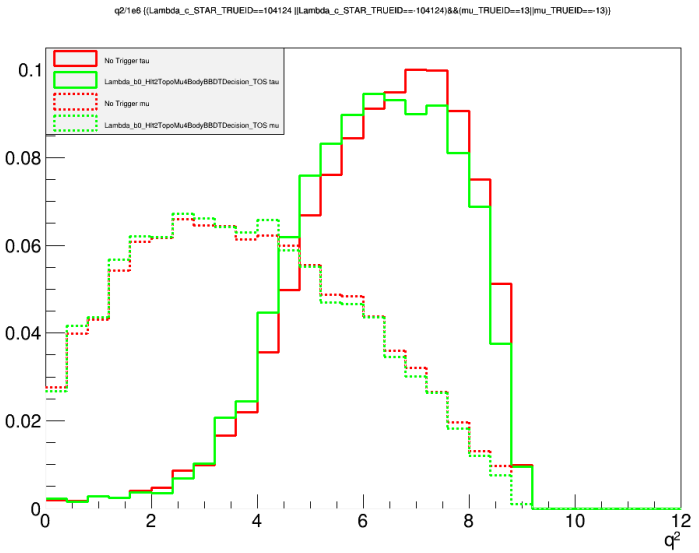
$\epsilon_{trig(Topo)\|Sel}$	25 %
$\epsilon_{trig(TopoMu)\|Sel}$	32 %

Trigger impact

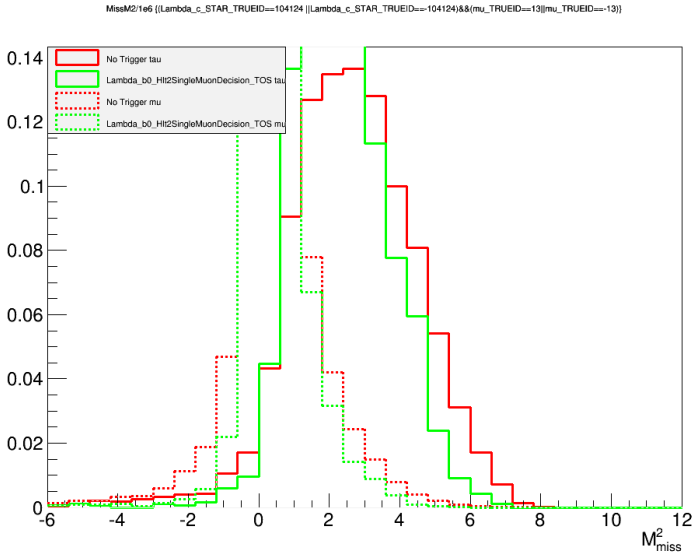


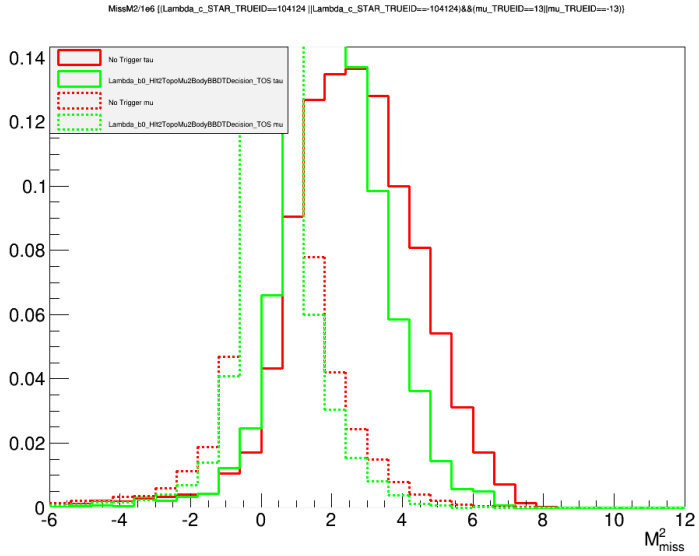


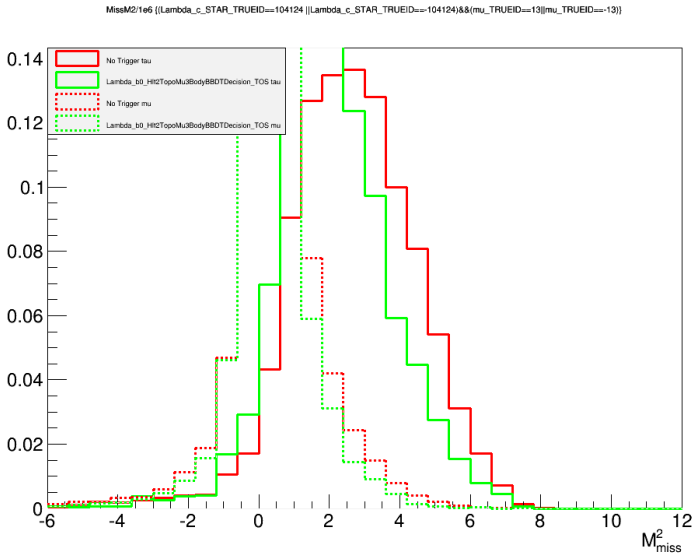


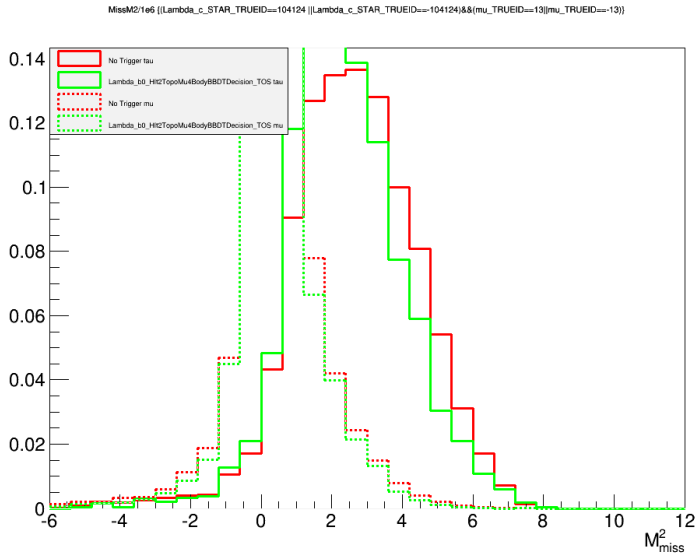


Trigger impact





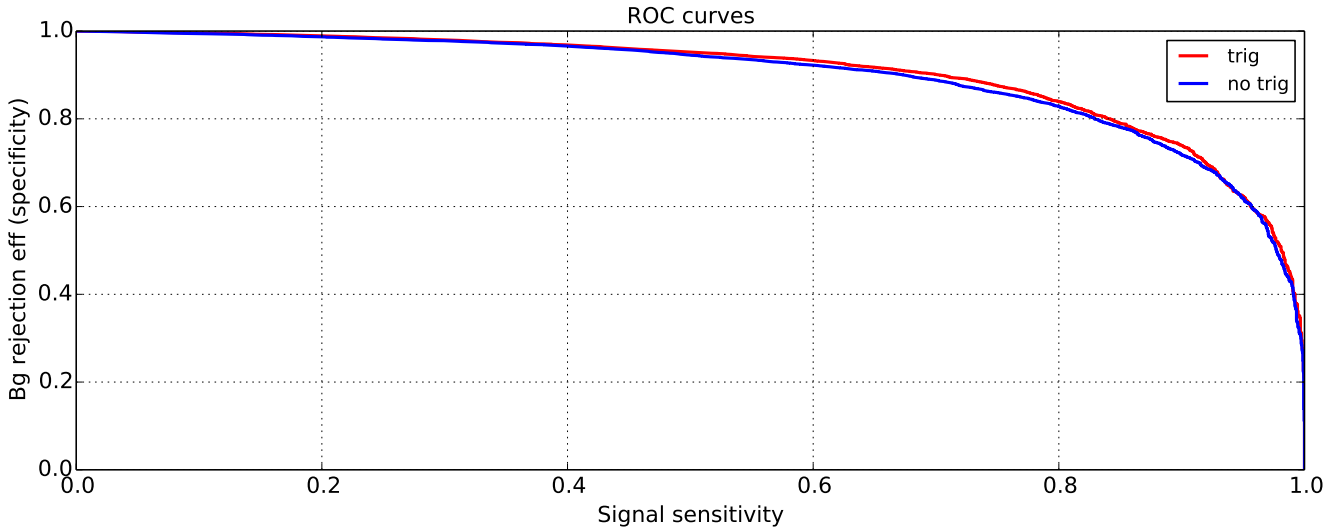




Thoughts on the trigger

⇛ So at first looks the trigger is also bias for us but doesn't look so bad.

⇛ Lets test this by:



Plans, discussion triggers!

⇛ Check that the trigger bias is under control!

⇛ Now about the strategy:

- Train a MVA to distinguish τ from μ.
- A additional BDT to reject the double charm background.
- 3D fit ala $R(D^*)$.
- Something more that can work and is worth looking at?
- Isolation variables to fight the charm.

⇛ We want to be responsible: Before we ask for $\mathcal{O}(800)M$ MC events we want to be sure we really need it! → currently running TOY MC to estimate the amount needed.

⇛ The analysis will be extended with a $R(\Lambda_c^+)$ state in the final version.

⇛ Strong support from theorists (Danny van Dyk) in calculating the form factors. From preliminary studies it looks like the distributions are not super sensitive to form factors! The strategy will be defined once we know more from them!

Backup