Answers to questions raised by conveners on EW penguin, Vol3.

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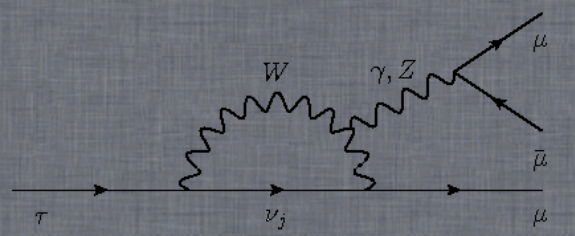
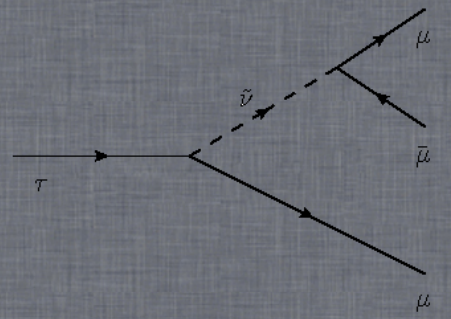
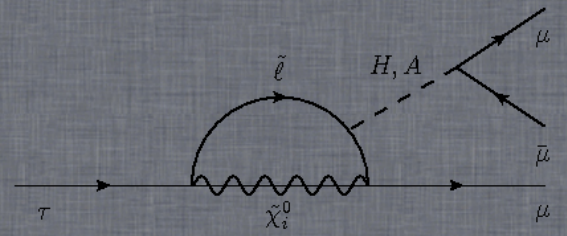
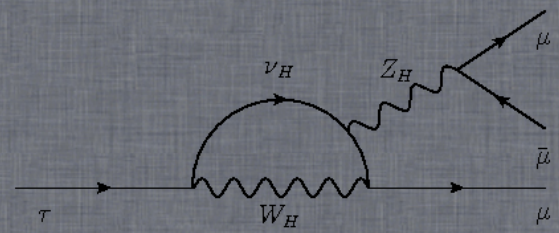








Lets make calculations really slowly

Let's take just the stripping line(this is incomplete because of the the offline cuts)(J/ψ veto is applied everywhere):

- total: 10835
- dimuon[1]: 9085
- efficiency: 83%

[1] mu1ID==13 and mu2ID==13

Lets make calculations really slowly

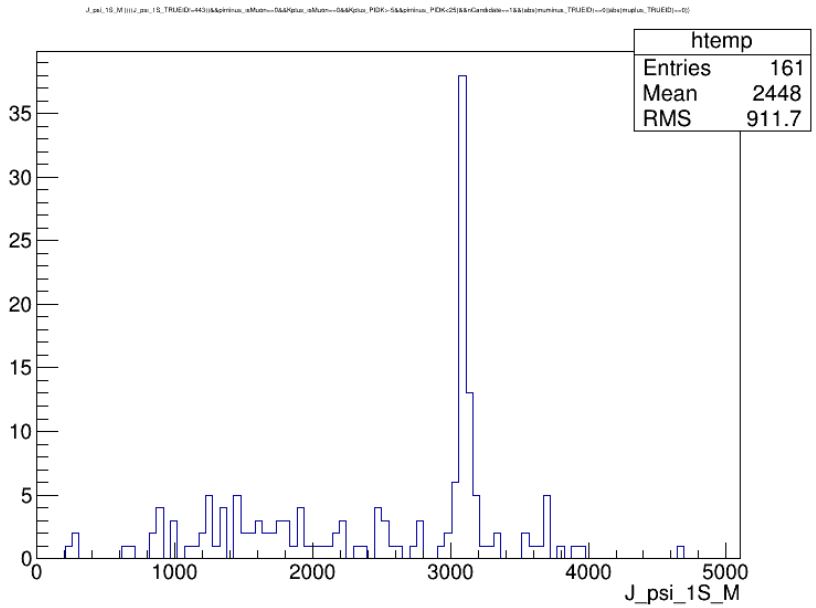
Immediately after stripping we have the following cuts:
piminusisMuon=0 KplusisMuon=0 KplusPIDK>-5 piminusPIDK<25

- total: 4708
- dimuon[1]: 4333
- efficiency: 92%

[1] mu1ID=13 and mu2ID=13

Lets make calculations really slowly

then we discovered that muID==0 are still muons: MU1ID=0 or Mu2ID=0(reminder we have Jpsi veto!):



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Lets make calculations really slowly

So we require that muons have some real truth matched ID different form zero:

- total: 4547
- dimuon[1]: 4333
- efficiency: 95.3%

Cross check: 161(ghots events, see plot) + 4547 = 4708(no ghost cut). All consistent!

[1] mu1ID=13 and mu2ID=13

Lets make calculations really slowly

Then we play with PID cuts. Putting a cut grater then 5(3). With this cuts:

- total: 1956
- dimuon[1]: 1939
- efficiency: 99% (97,4%)

[1] mu1ID=13 and mu2ID=13

Lets make calculations really slowly

Why do ghosts change so much and why are they harmless:

- As Mitesh wanted I am VETOing J/ψ.
- Of coz we have a lot of those.
- Is turns out that the ghost ratio is 0.5%.
- Even 0.5% from 13879 J/ψ makes a difference cuz they are treated as non-muon bck.

Please note that $161/4547$ is not the ghost rate.

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SPARES

After the pure stripping we are applying:

1. Kismuon=0 and piismuon=0
2. KpidK>5 and piPIDK<25

Starting from 10835 applying following number of events remain:

1. 8833
2. 5662