VBF $H \longrightarrow hh \longrightarrow bb\tau\tau$ (lephad channel)

Puja Saha

20th May, 2016

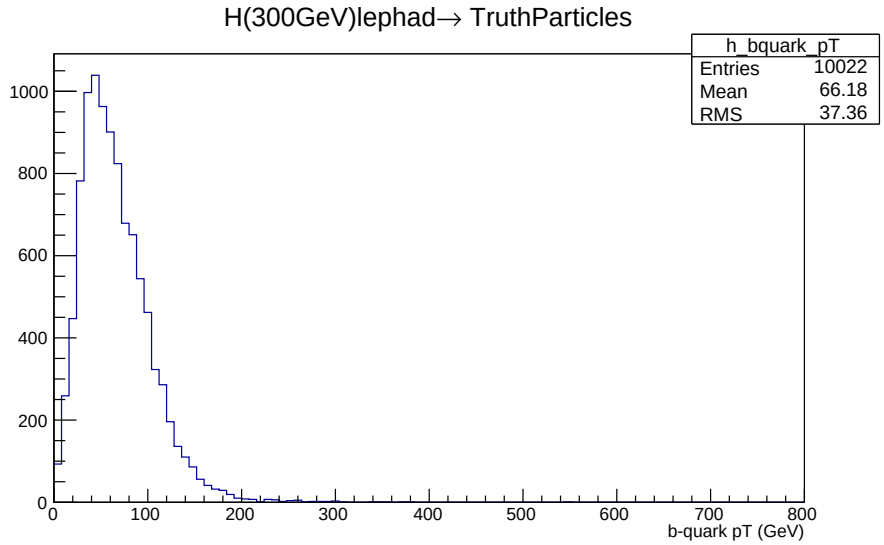
VBF generation parameters

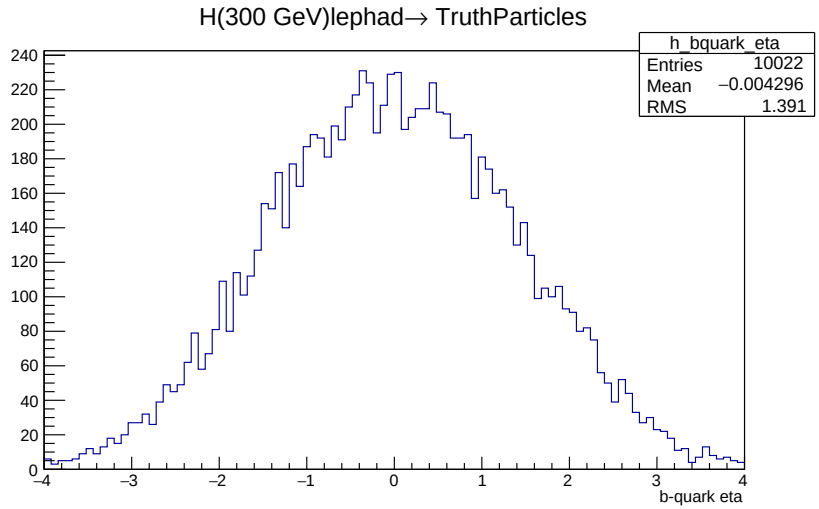
- This slides show the validation plots for the VBF $H \rightarrow hh \rightarrow bb\tau\tau$ (lephad channel) analysis for 300 and 600 GeV. 900 GeV is ongoing, will post later.
- Generator: Powheg.
- Parton shower, hadronization: Pythia8, EvtGen.
- This generation used the bug fix in XtoVVDecayFilterExtended.
- Setup : asetup 19.2.5.5,here,AtlasProduction.
- Lephad was generated before (ATLASMCPROD- 2402), DSID 343438-343446.
- The old integration files are used from the old lephad generation because there is no change in the powheg part.
- The integration file that I have used here are already in the SVN.(343439, 343442)
- I have uploaded the log files and the JO . I flipped the position of two filters this time, so if the official production gets approved then we need to update SVN with new JO.

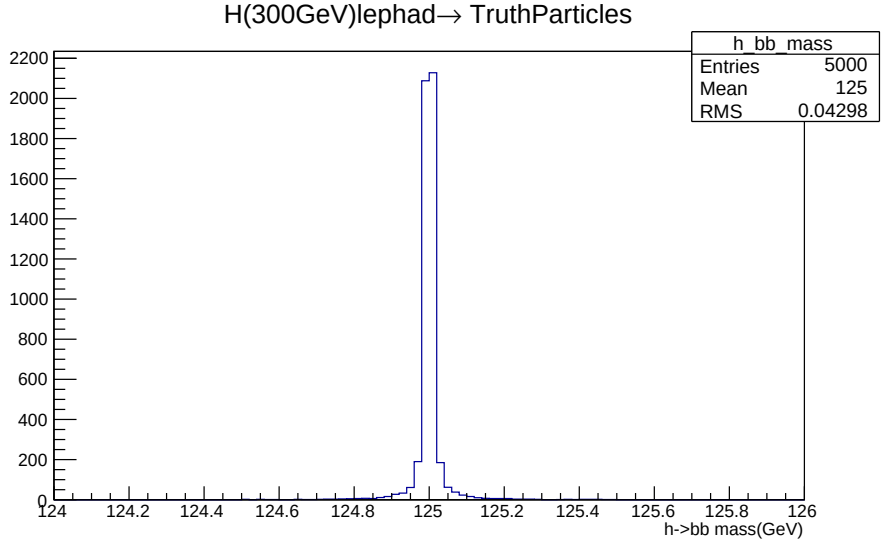
Validation Plots

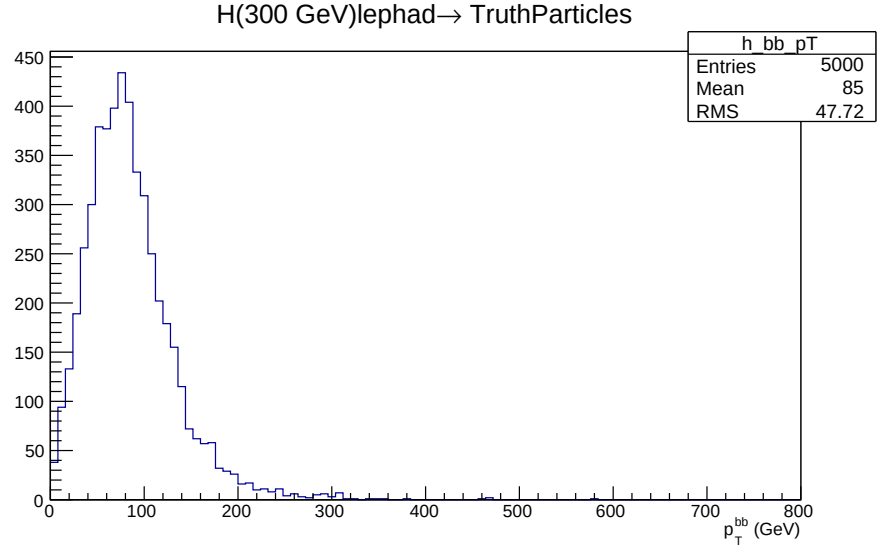
- VBF $H(300GeV) \rightarrow hh \rightarrow bb\tau\tau$ (lephad channel).

Validation Plots(bquarks)

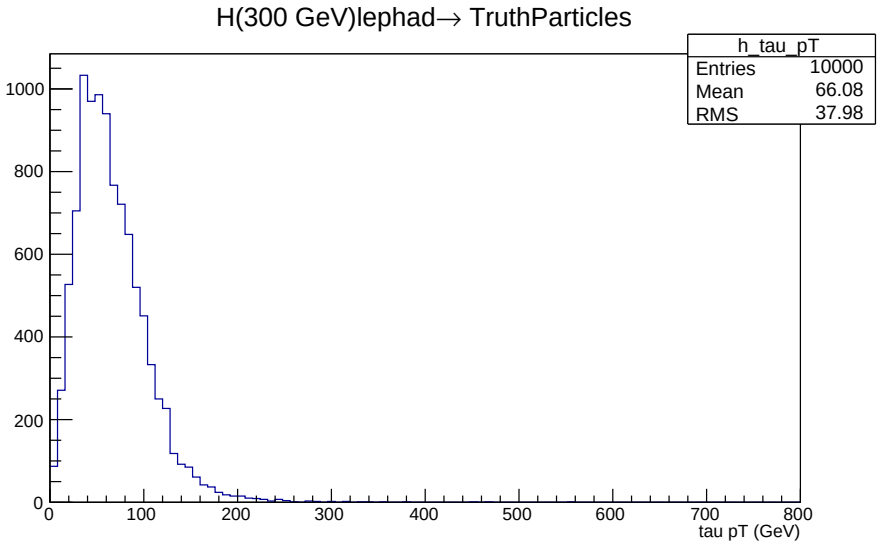


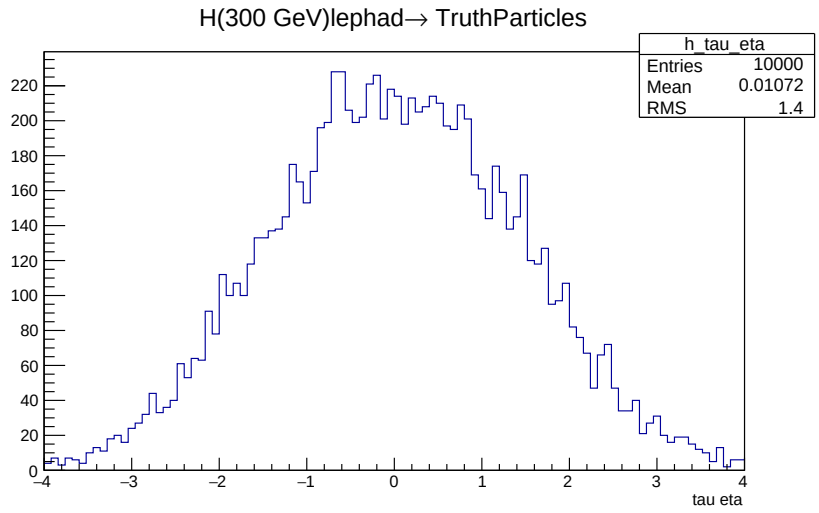


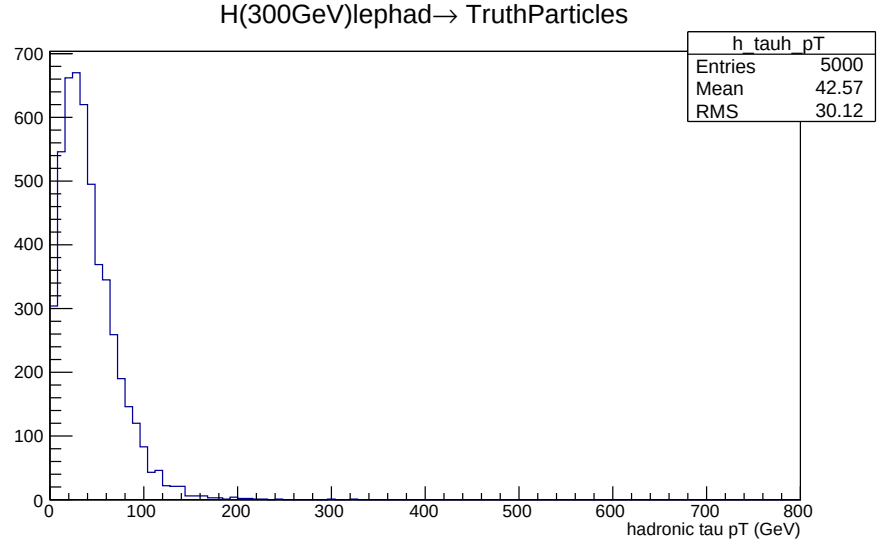


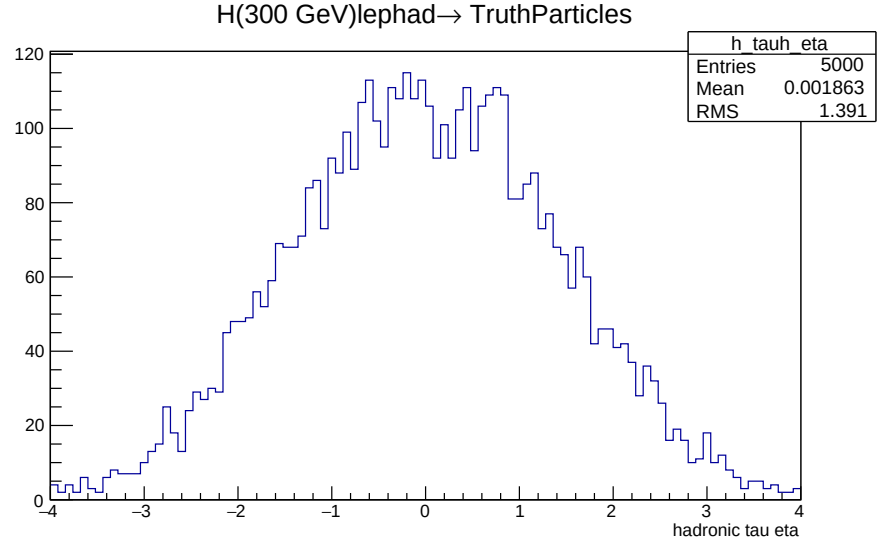


Validation Plots(Taus)

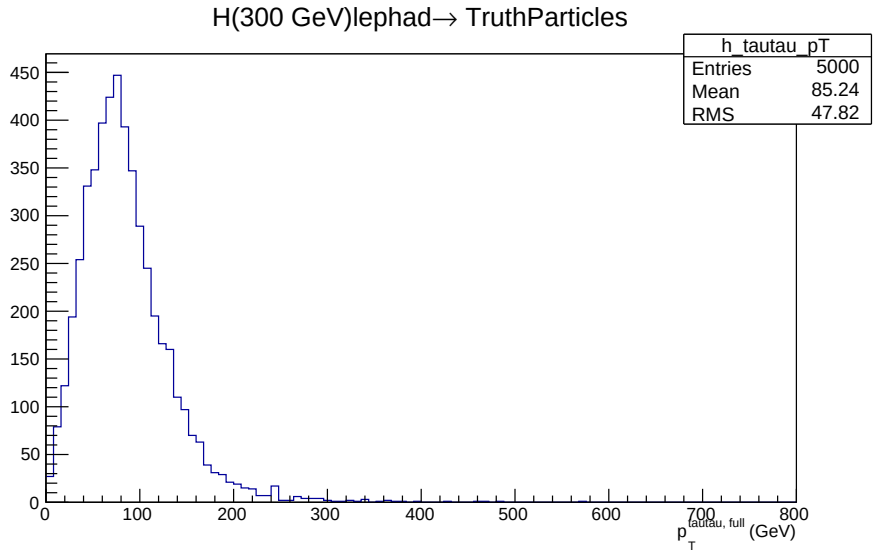


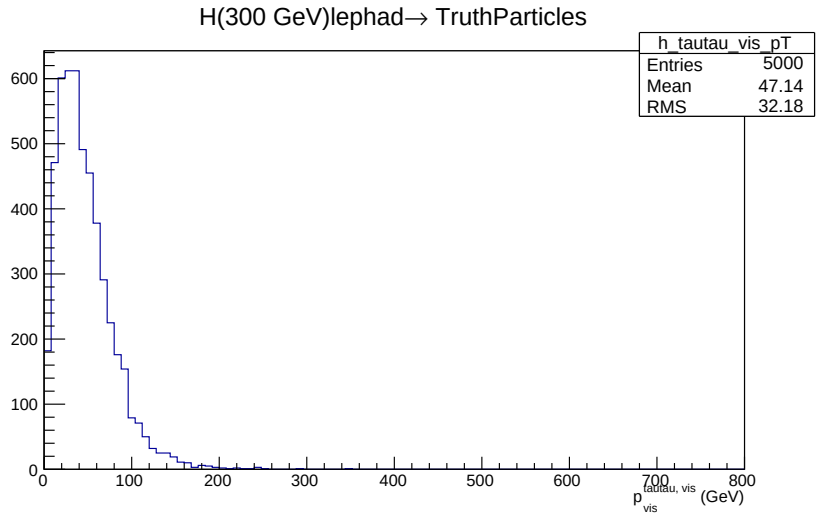


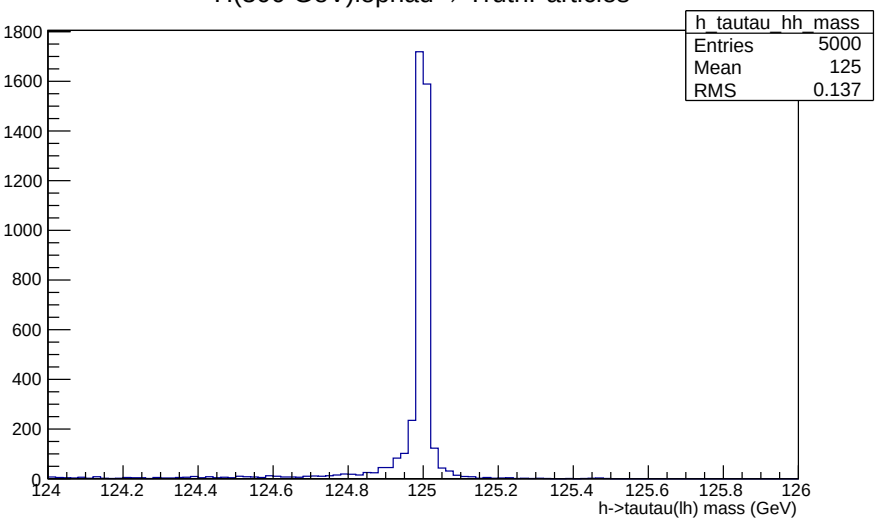


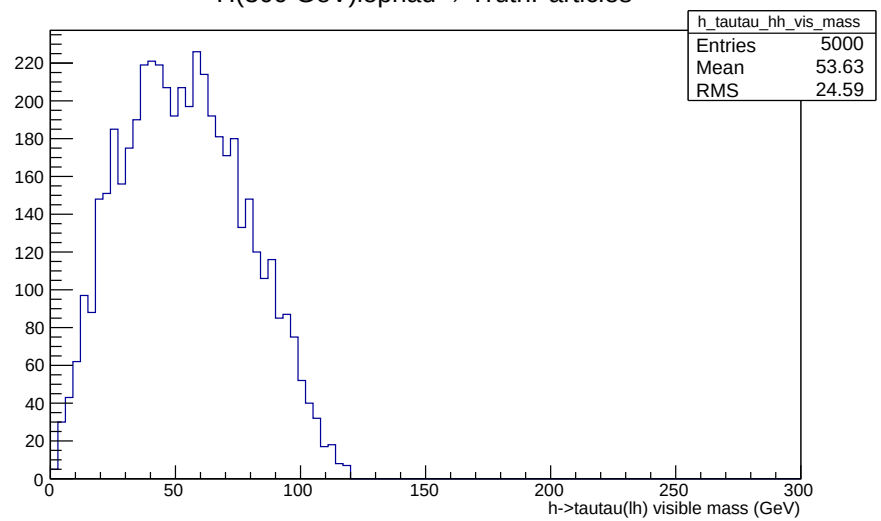


Validation Plots(di-tau)

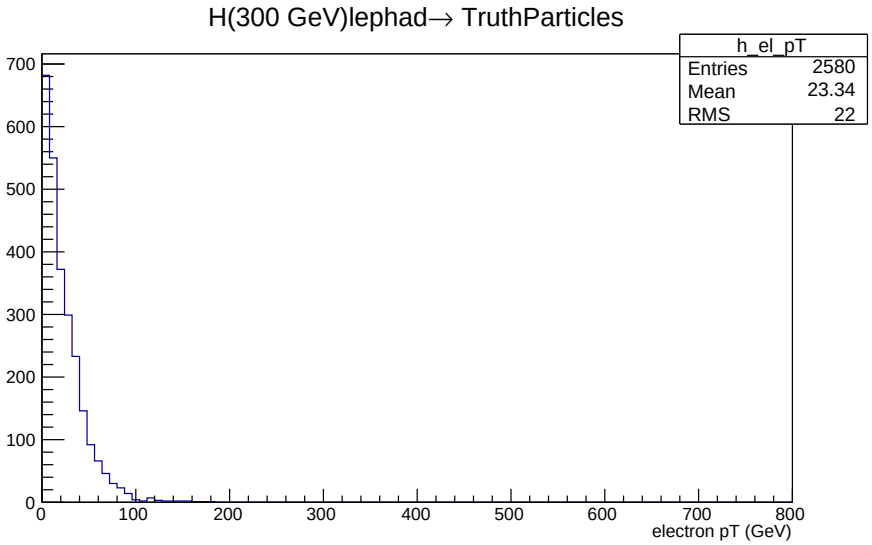


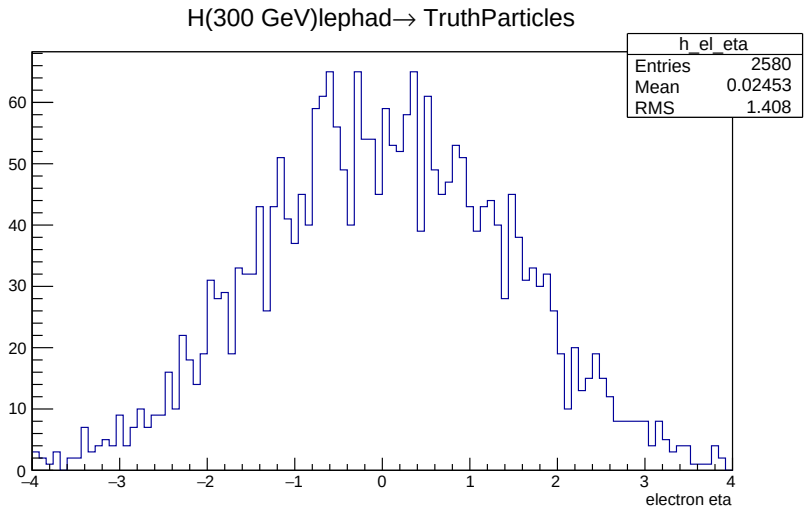


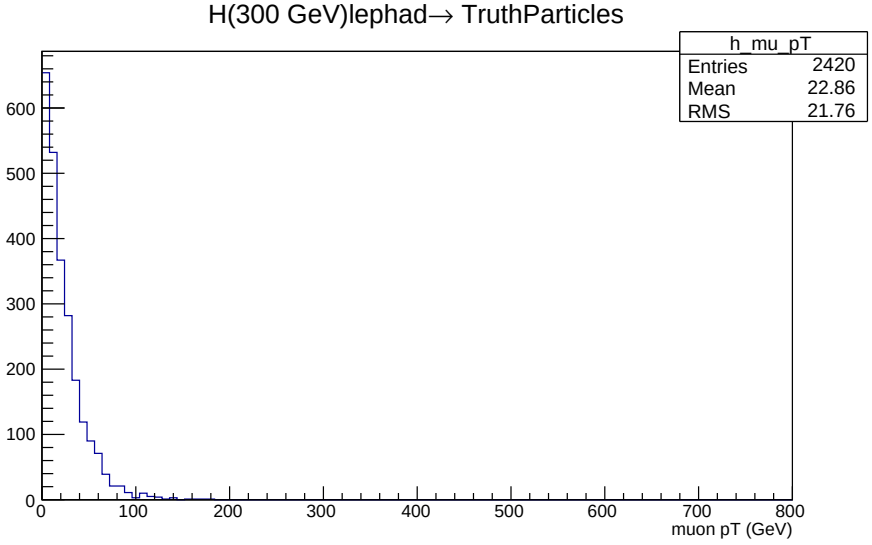


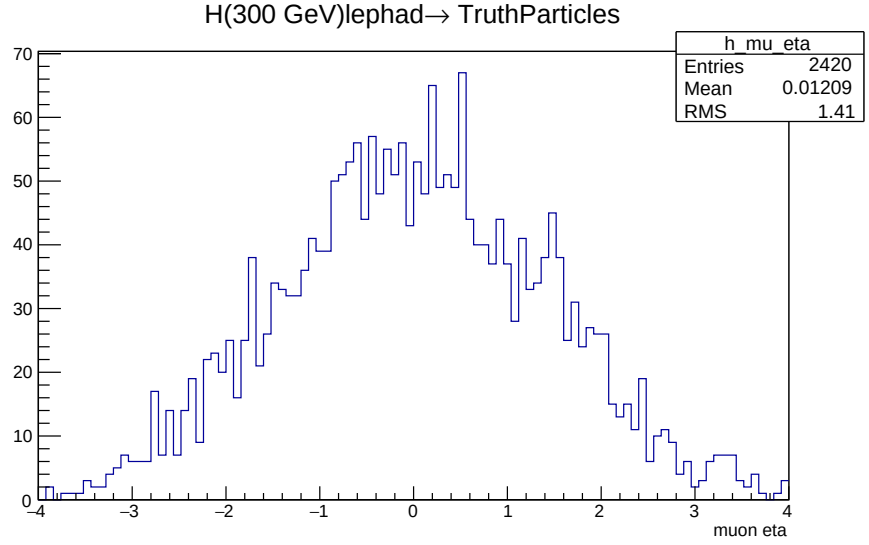


Validation Plots (e/mu)

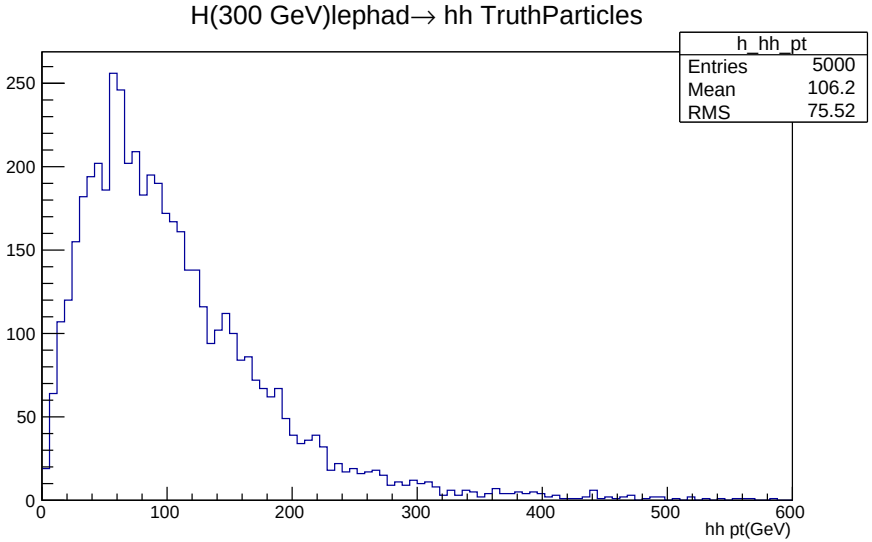


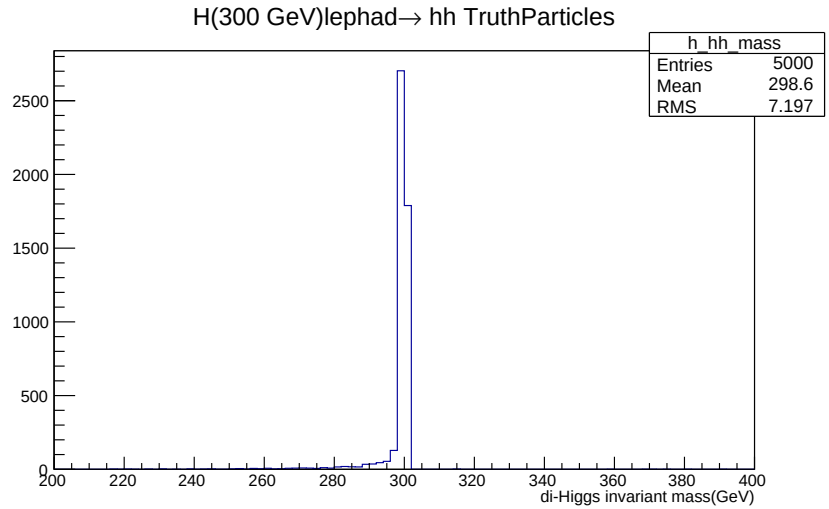


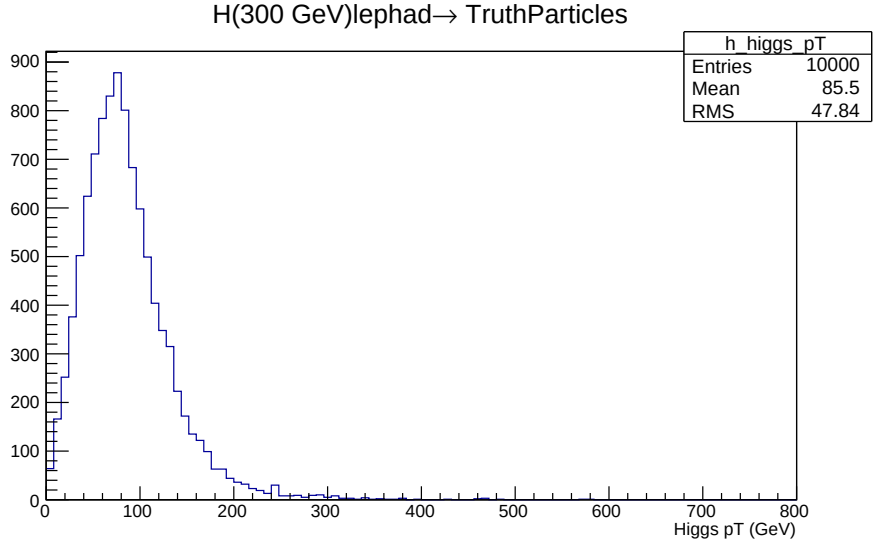




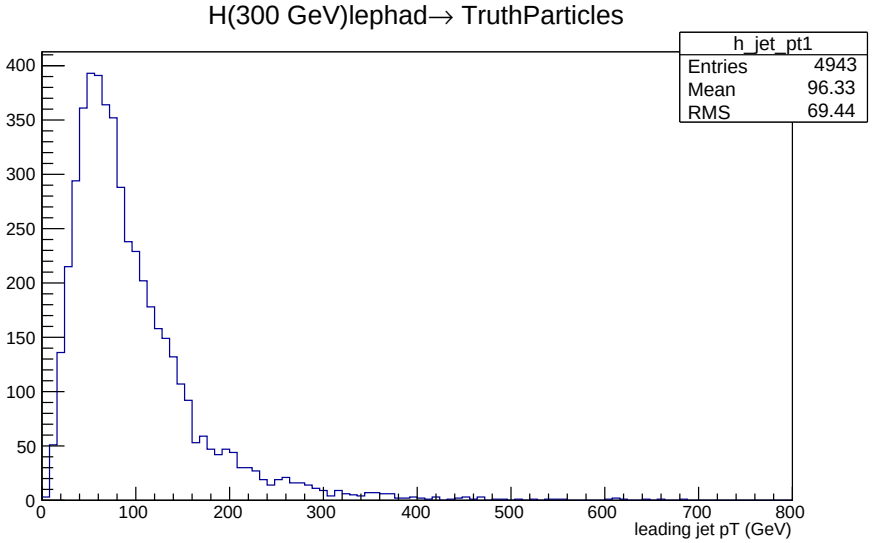
Validation Plots(Higgs and Jets)

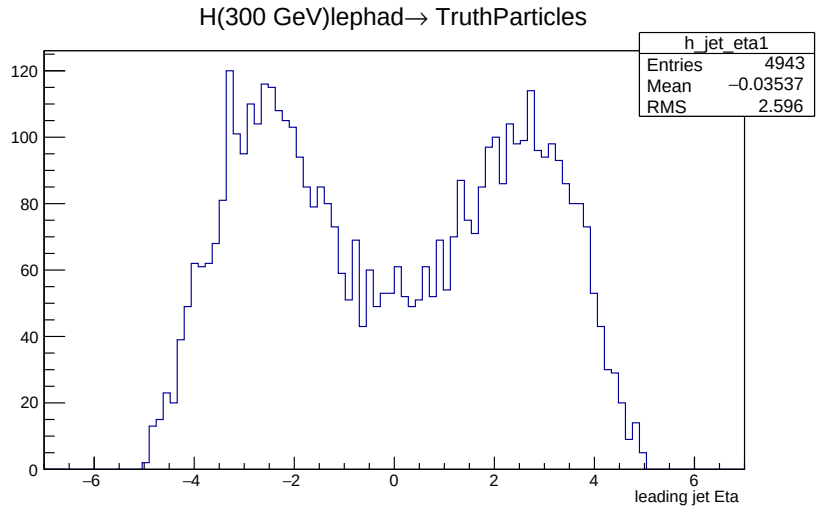


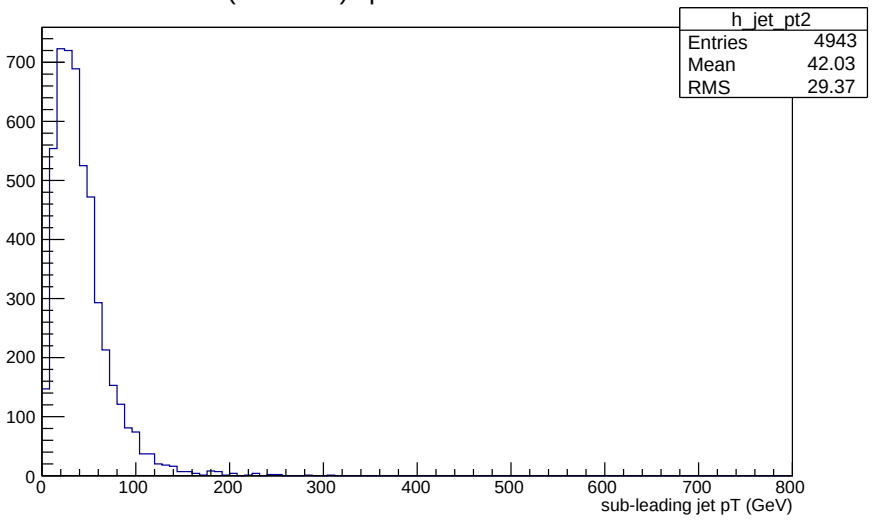


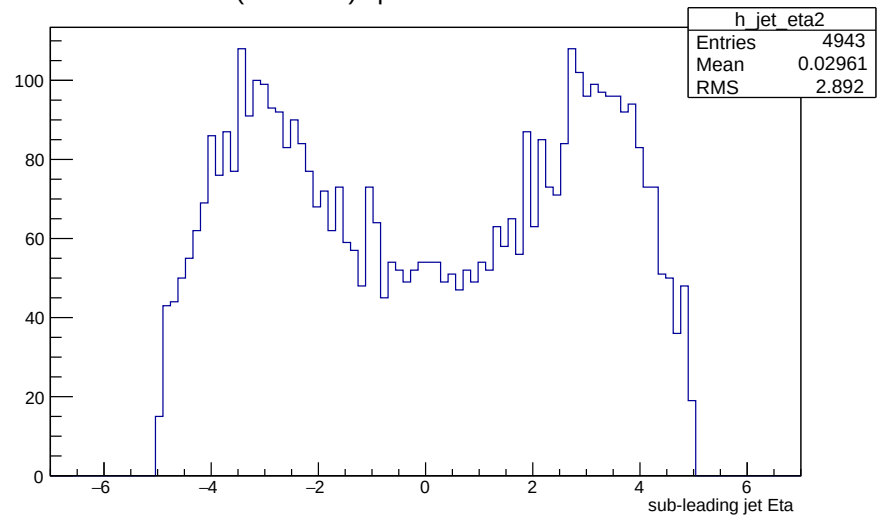


Validation Plots jets

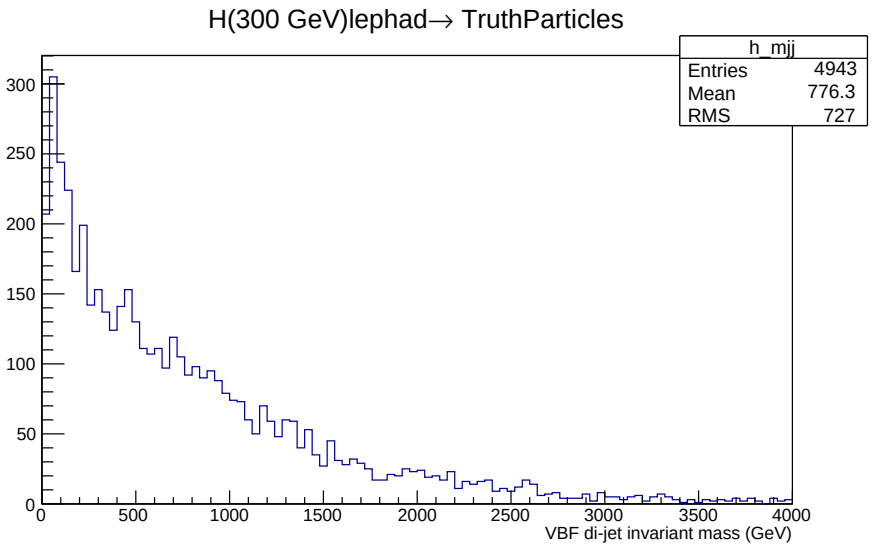


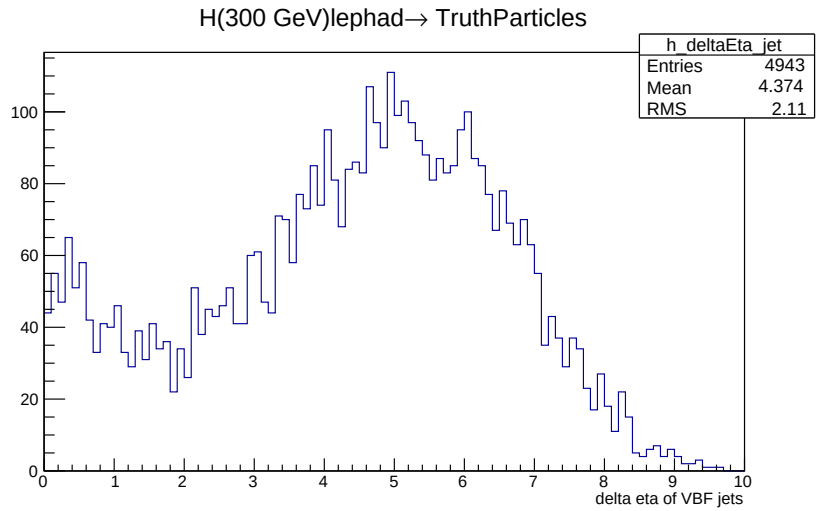






Validation Plots jets

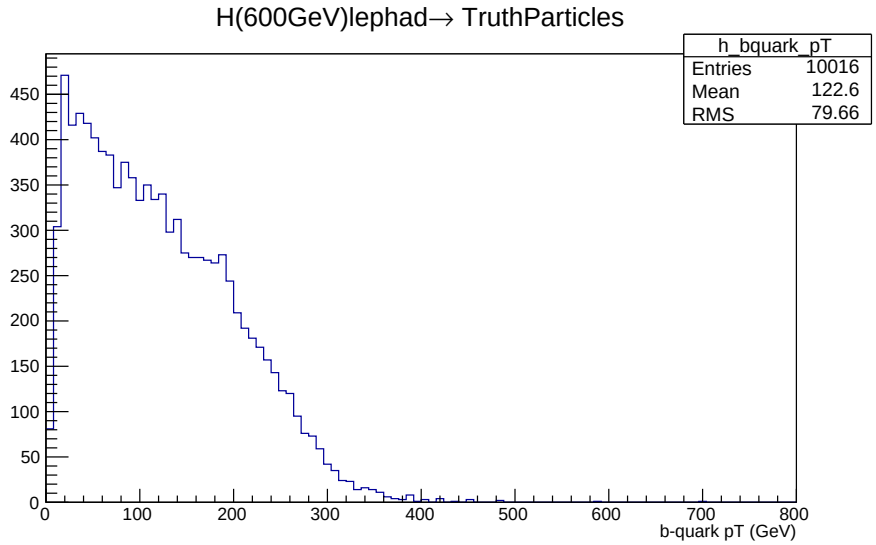


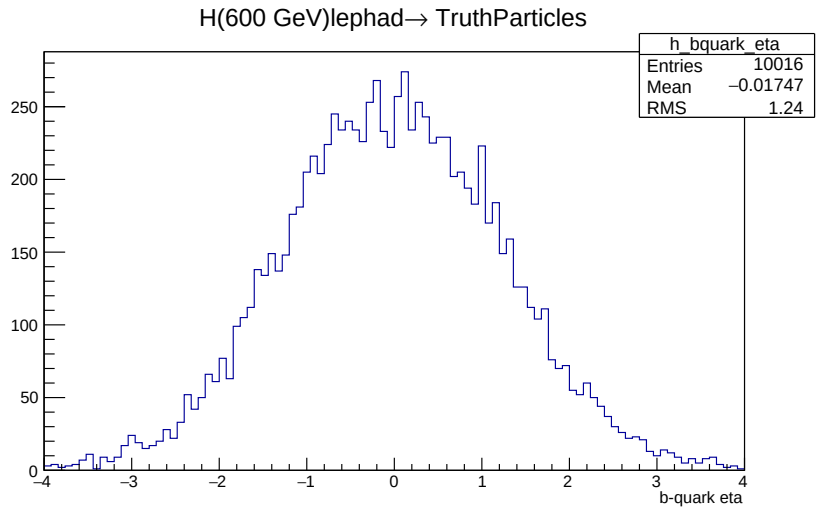


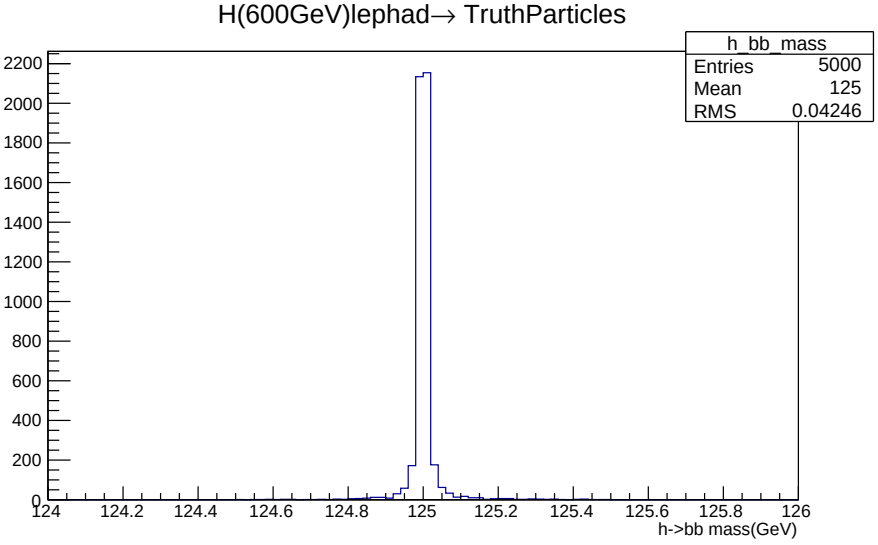
Validation Plots

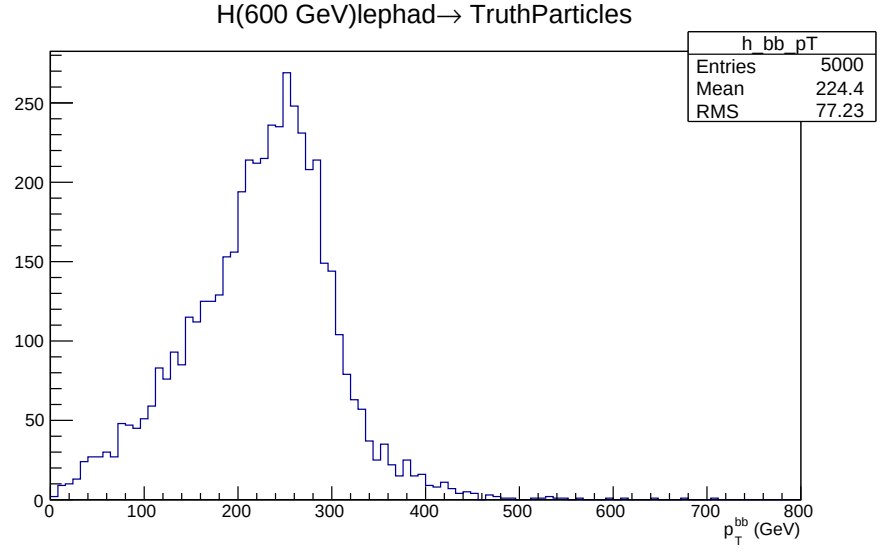
- VBF $H(600GeV) \rightarrow hh \rightarrow bb\tau\tau$ (lephad channel)

Validation Plots(bquarks)

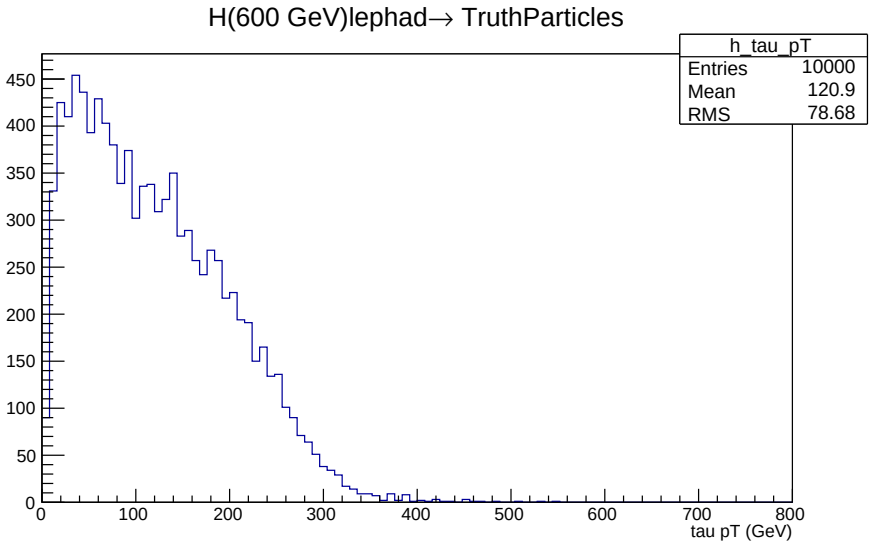


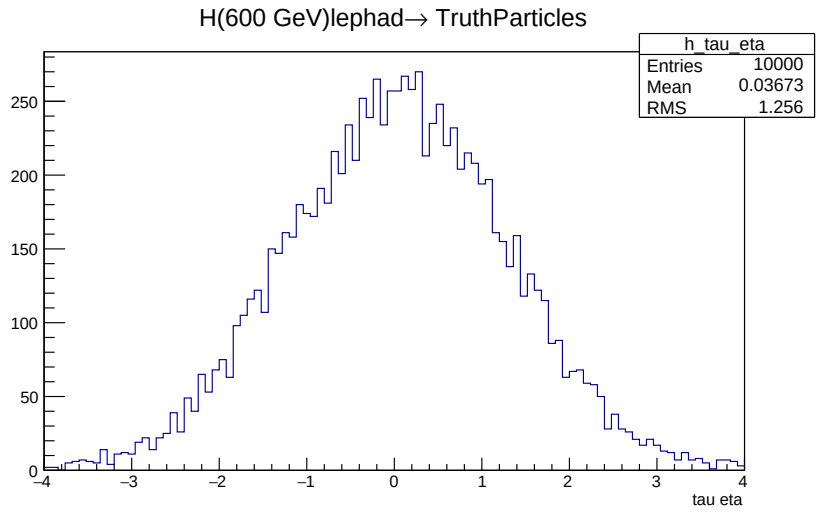


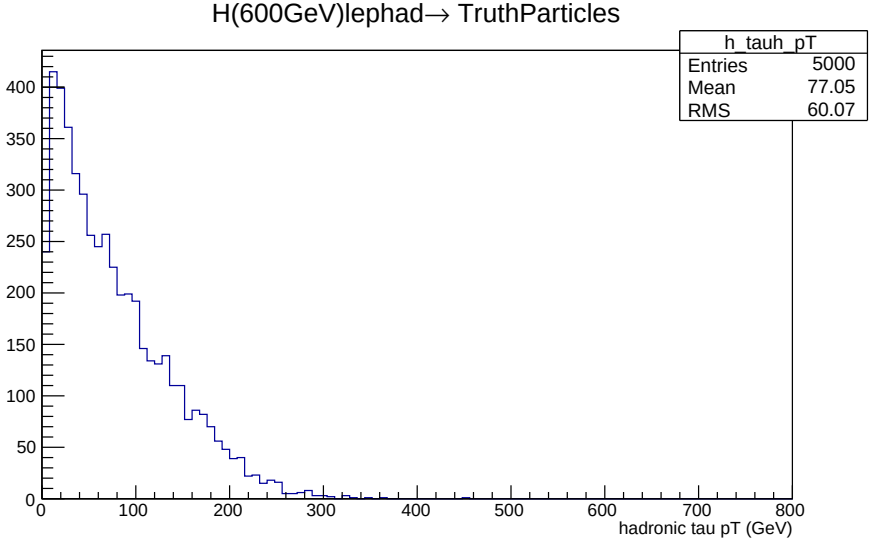


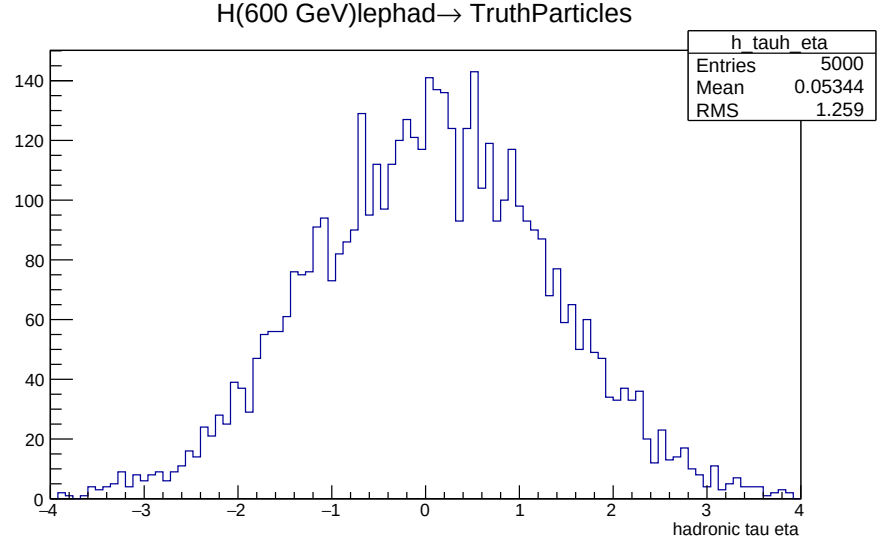


Validation Plots(Taus)

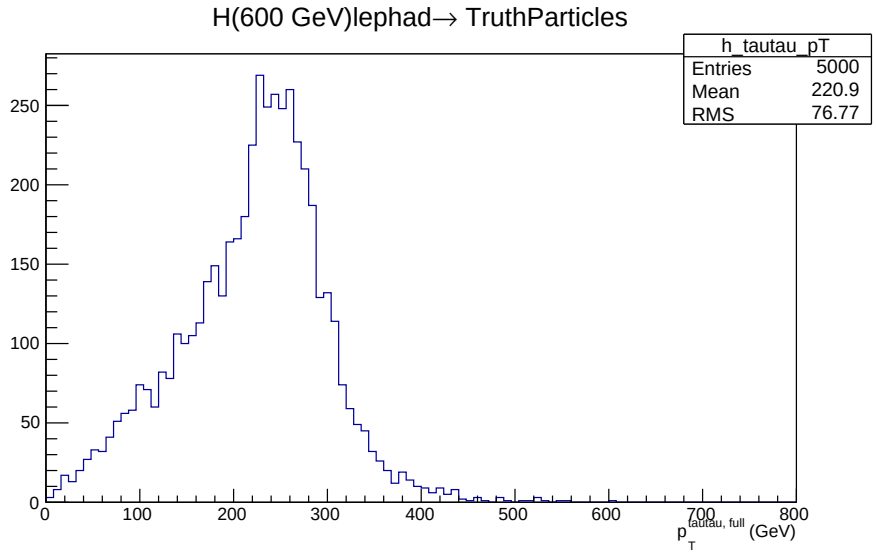


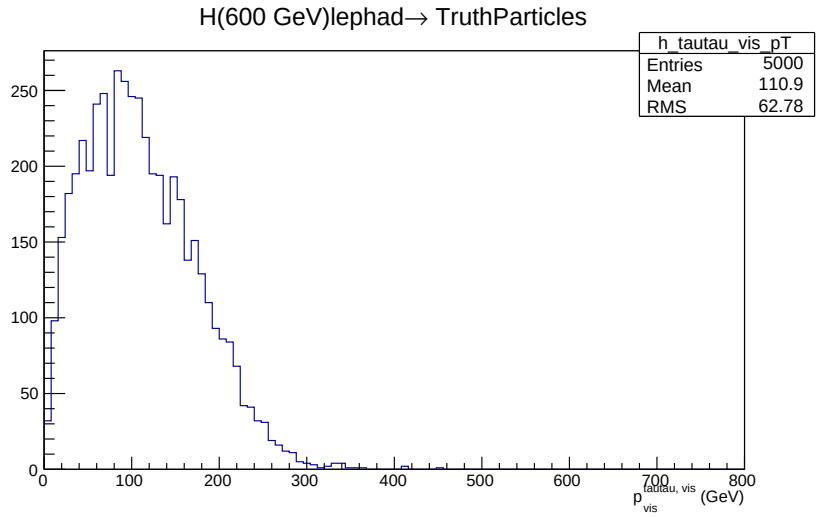


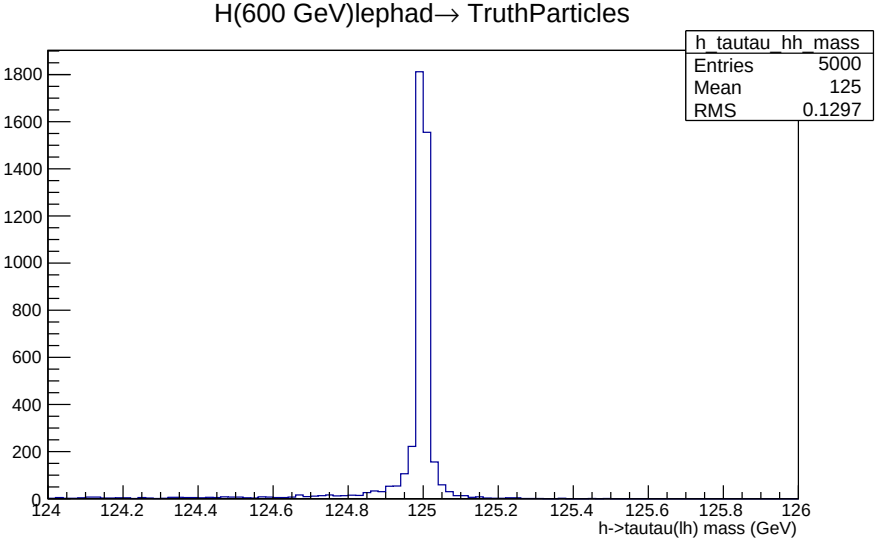


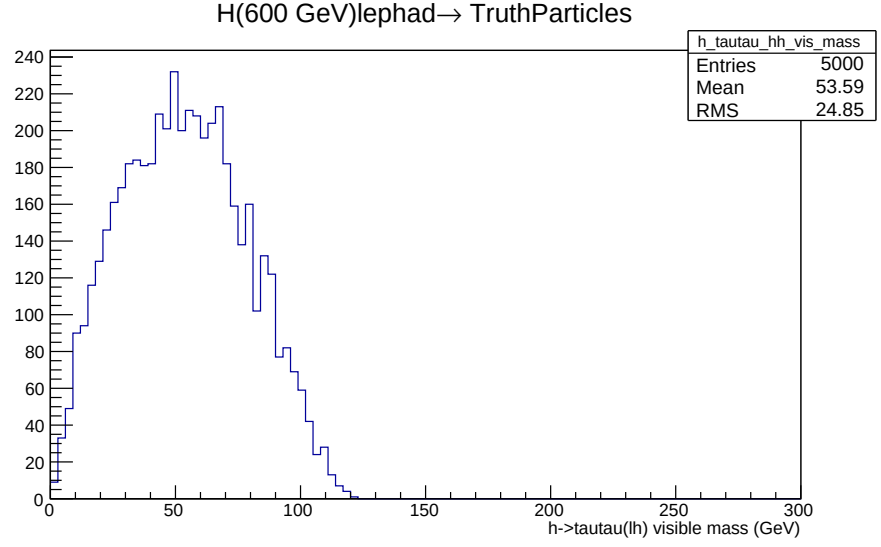


Validation Plots(di-tau system)

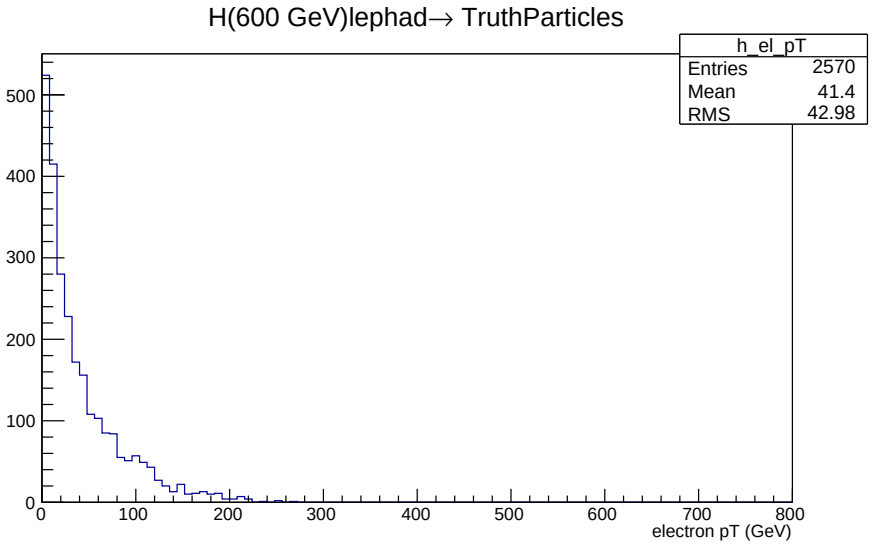


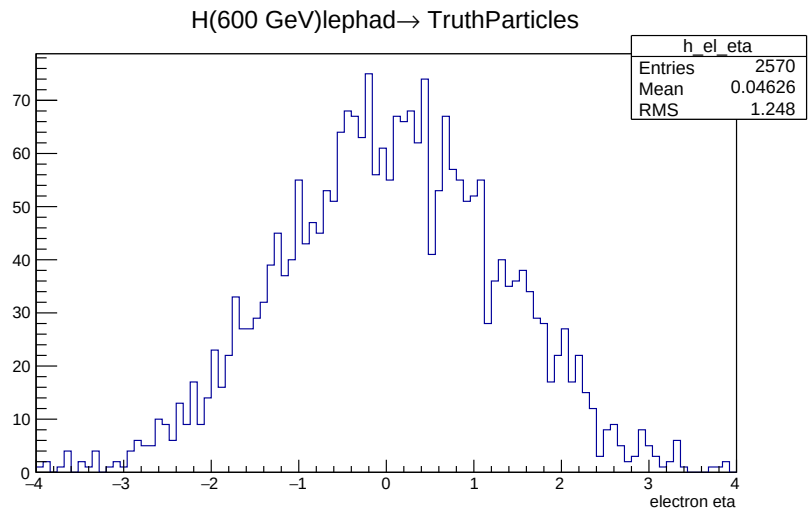


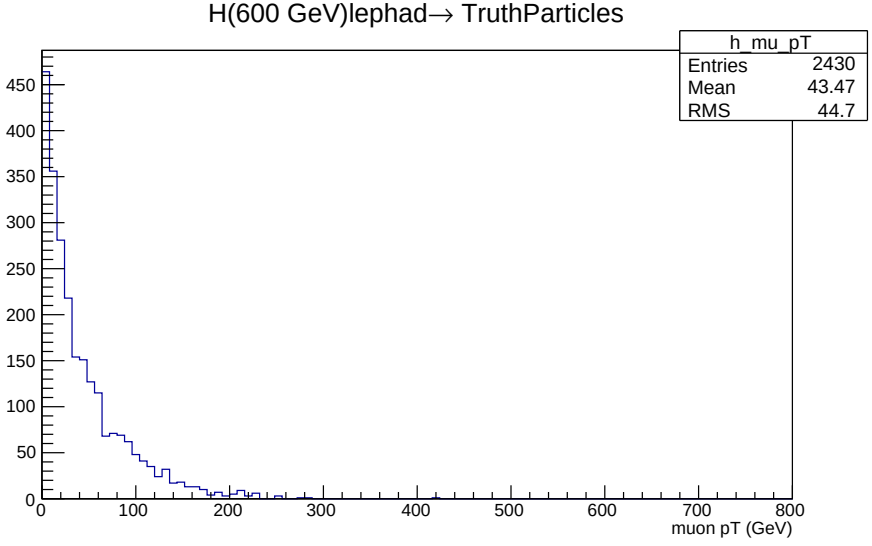


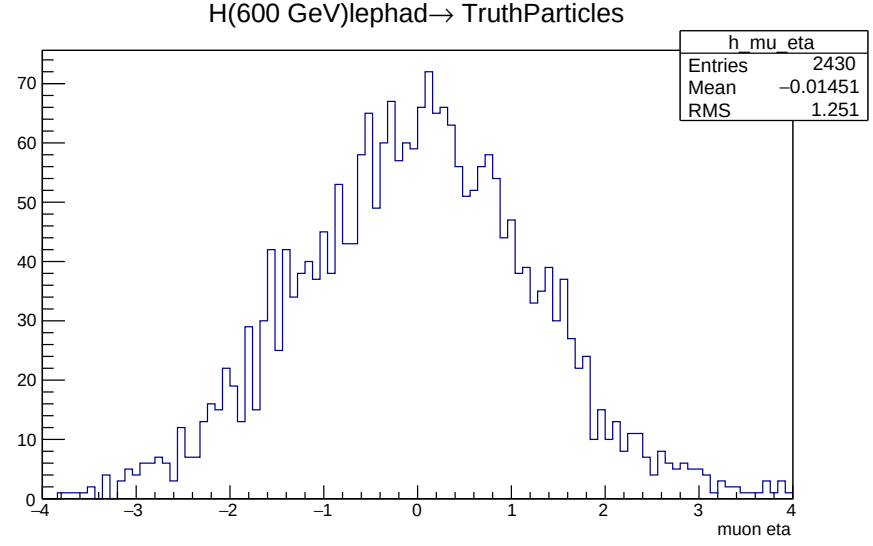


Validation Plots e/mu

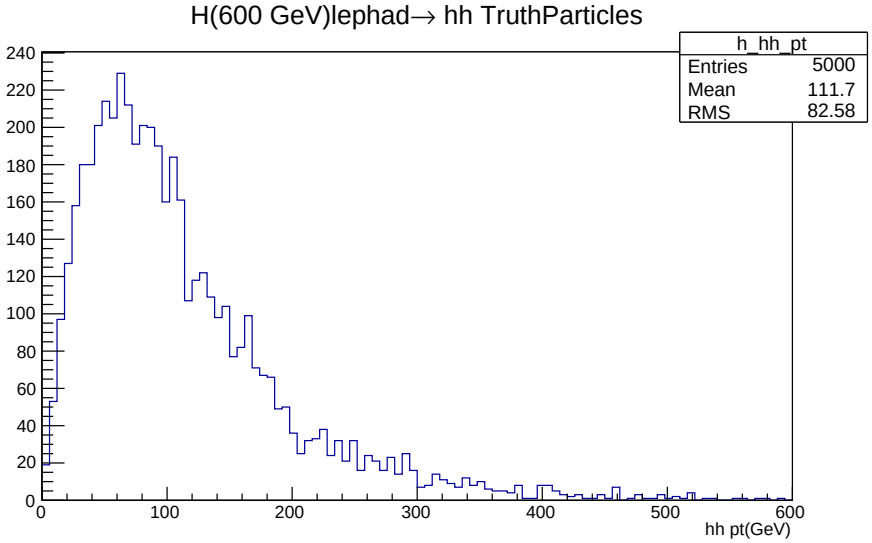


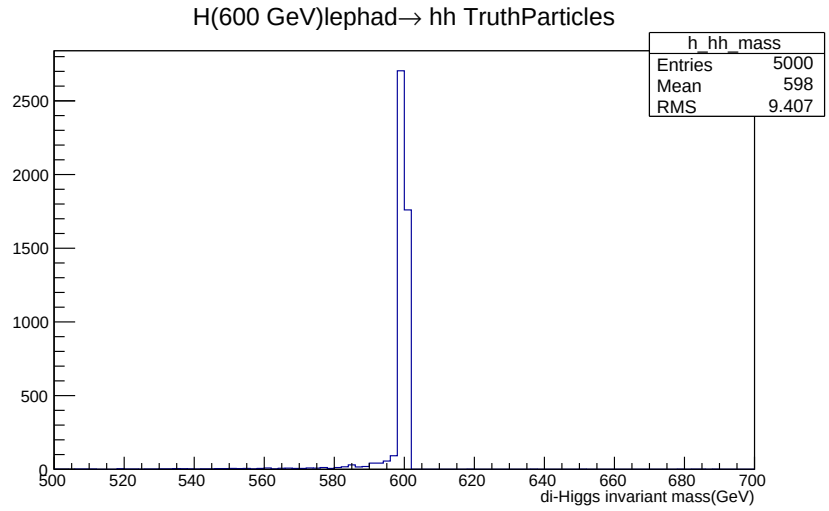


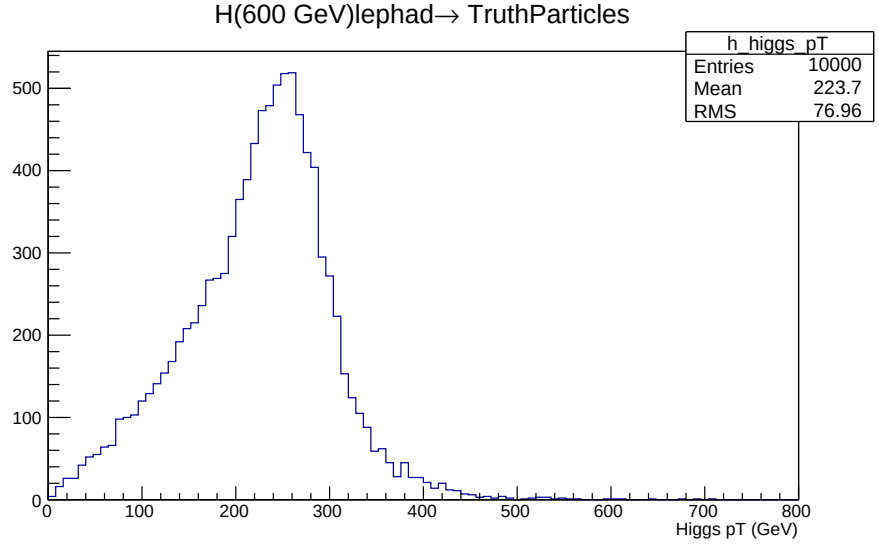




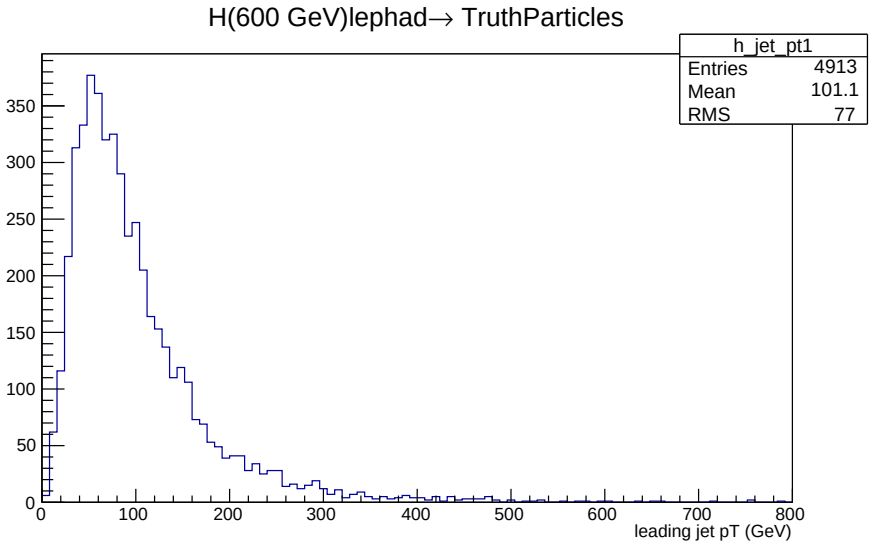
Validation Plots(Higgs)

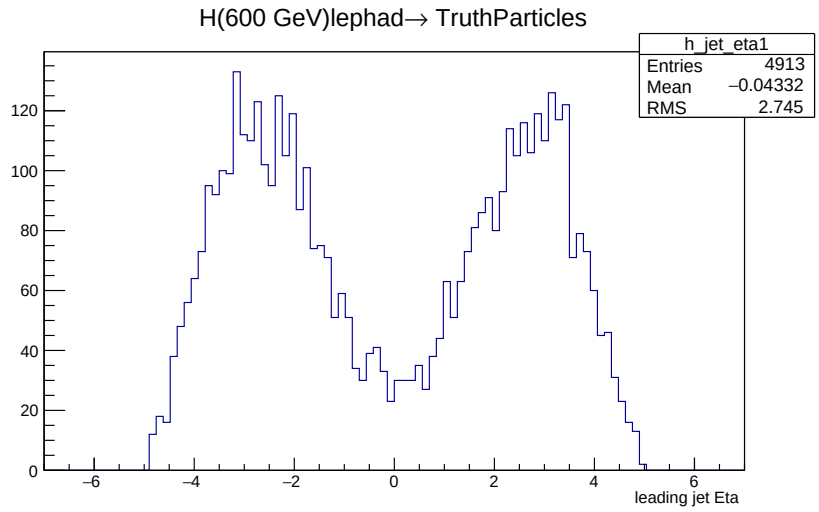


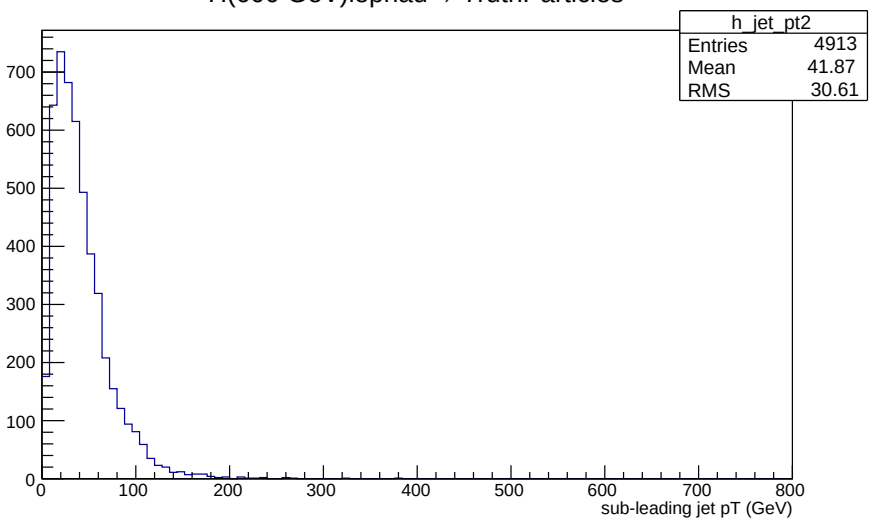


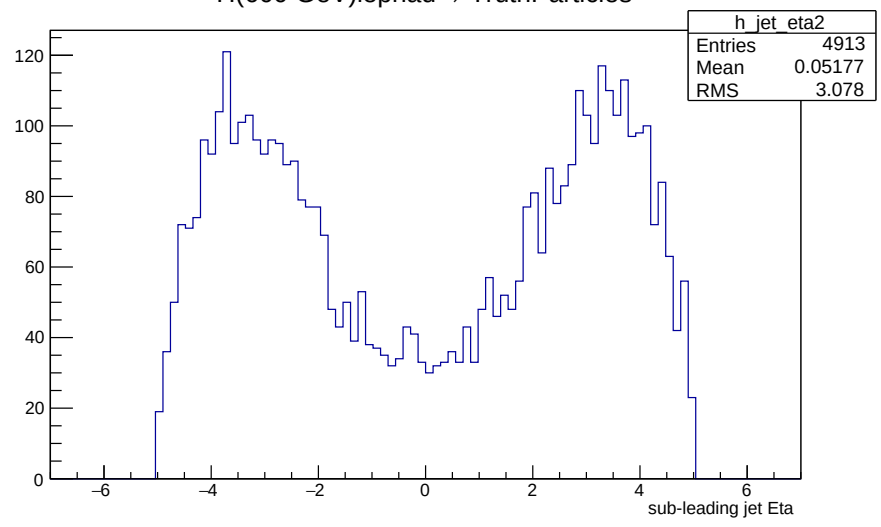
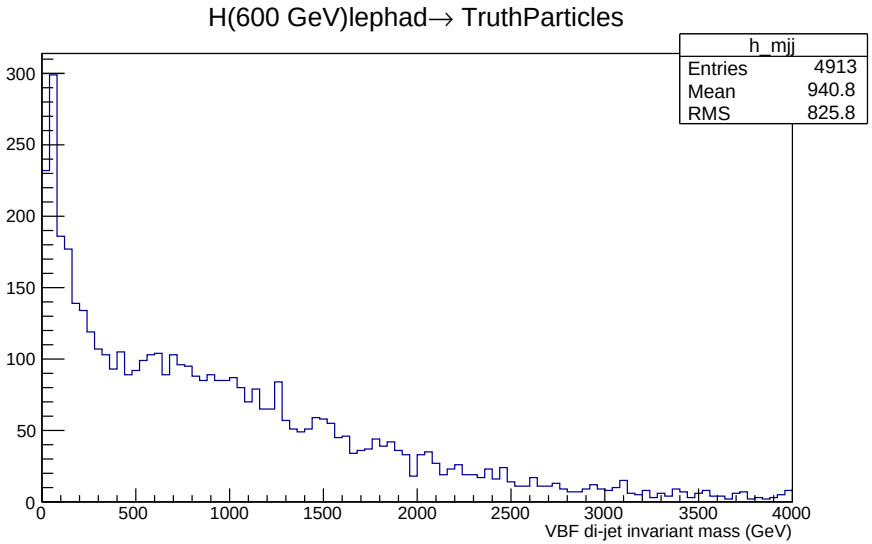
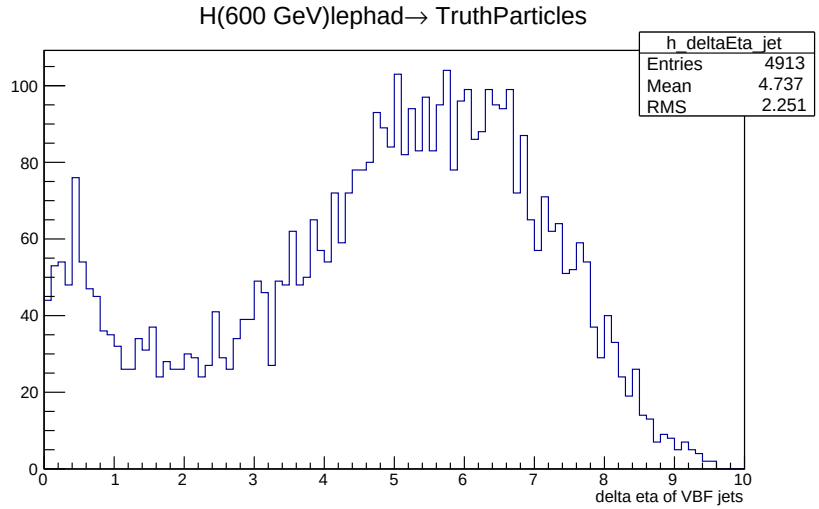


Validation Plots jets









Validation Plots jets