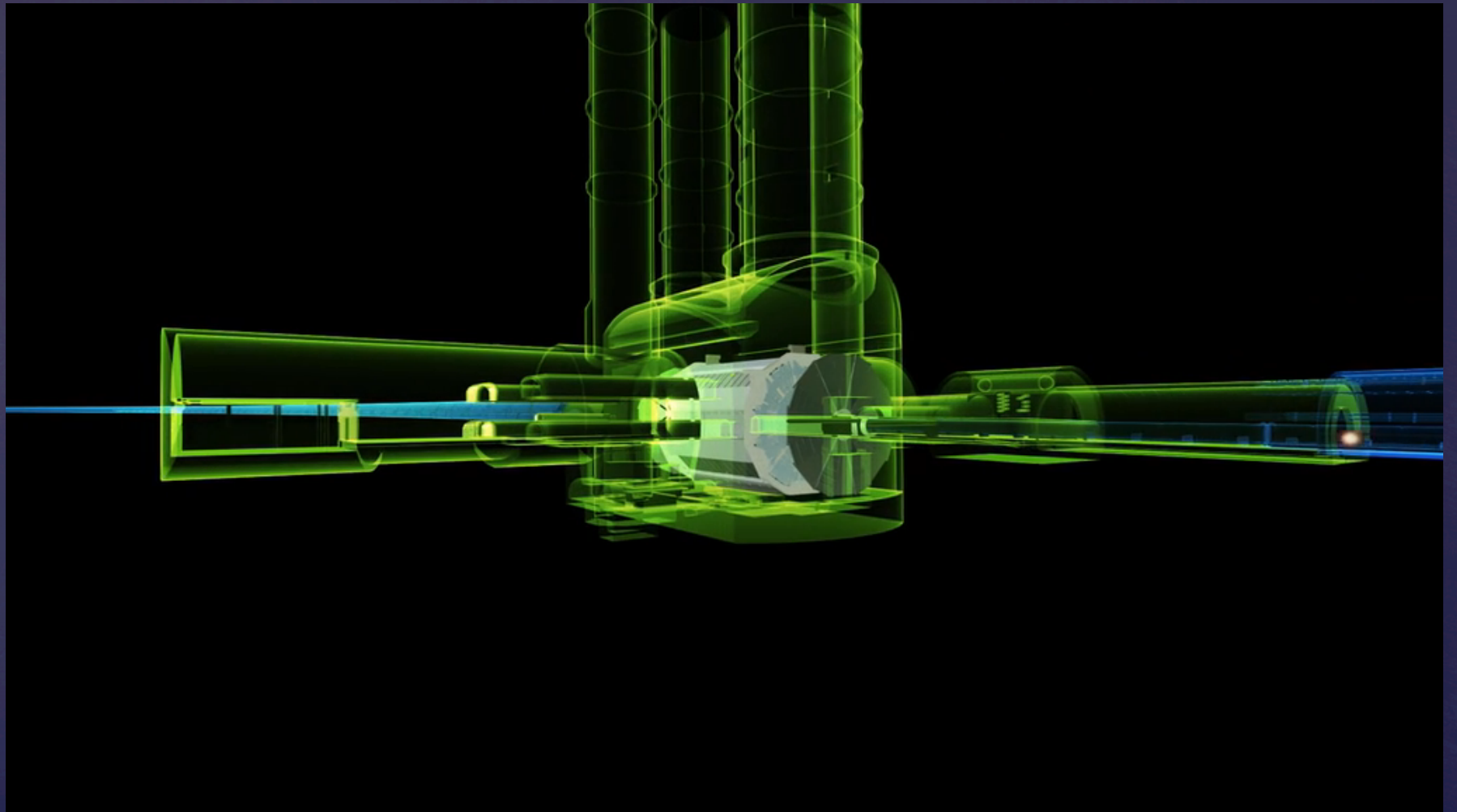


Higgs to $\gamma\gamma$ as a Probe of New Physics

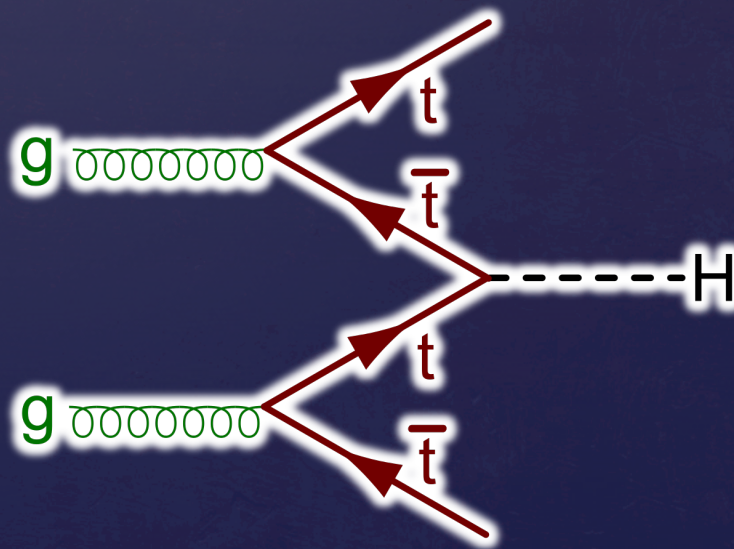
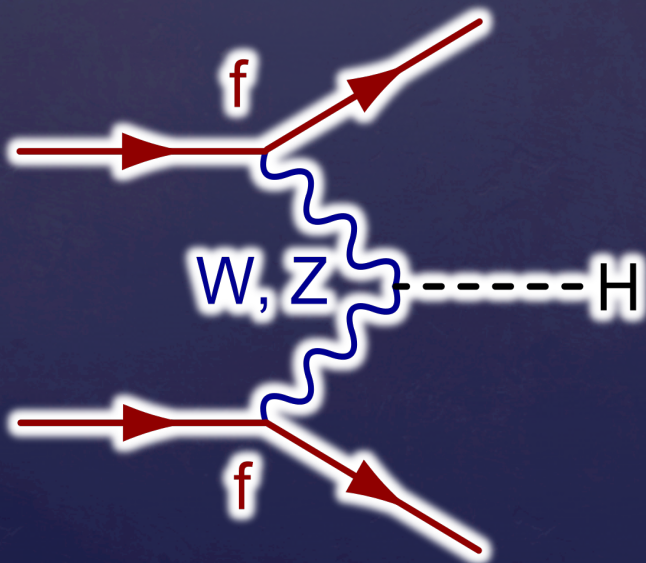
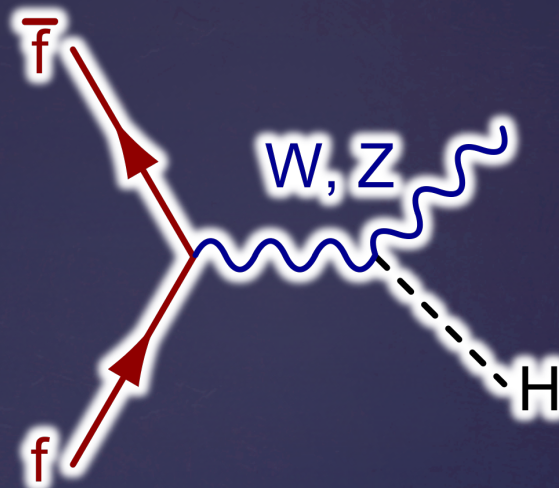
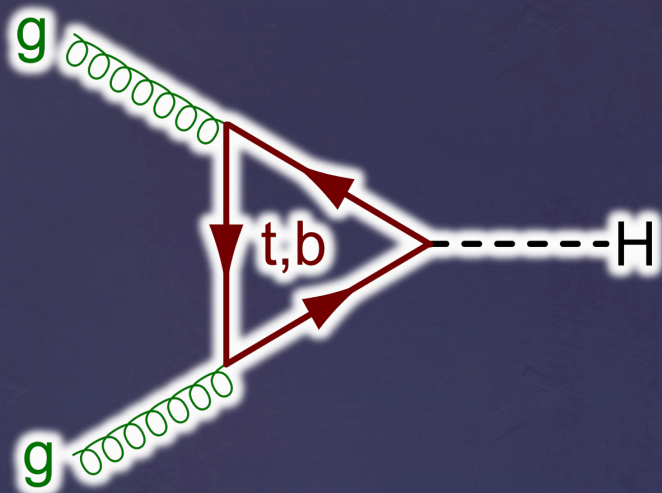
{ The Preparation of a General Search Tool

Kaicheng Li

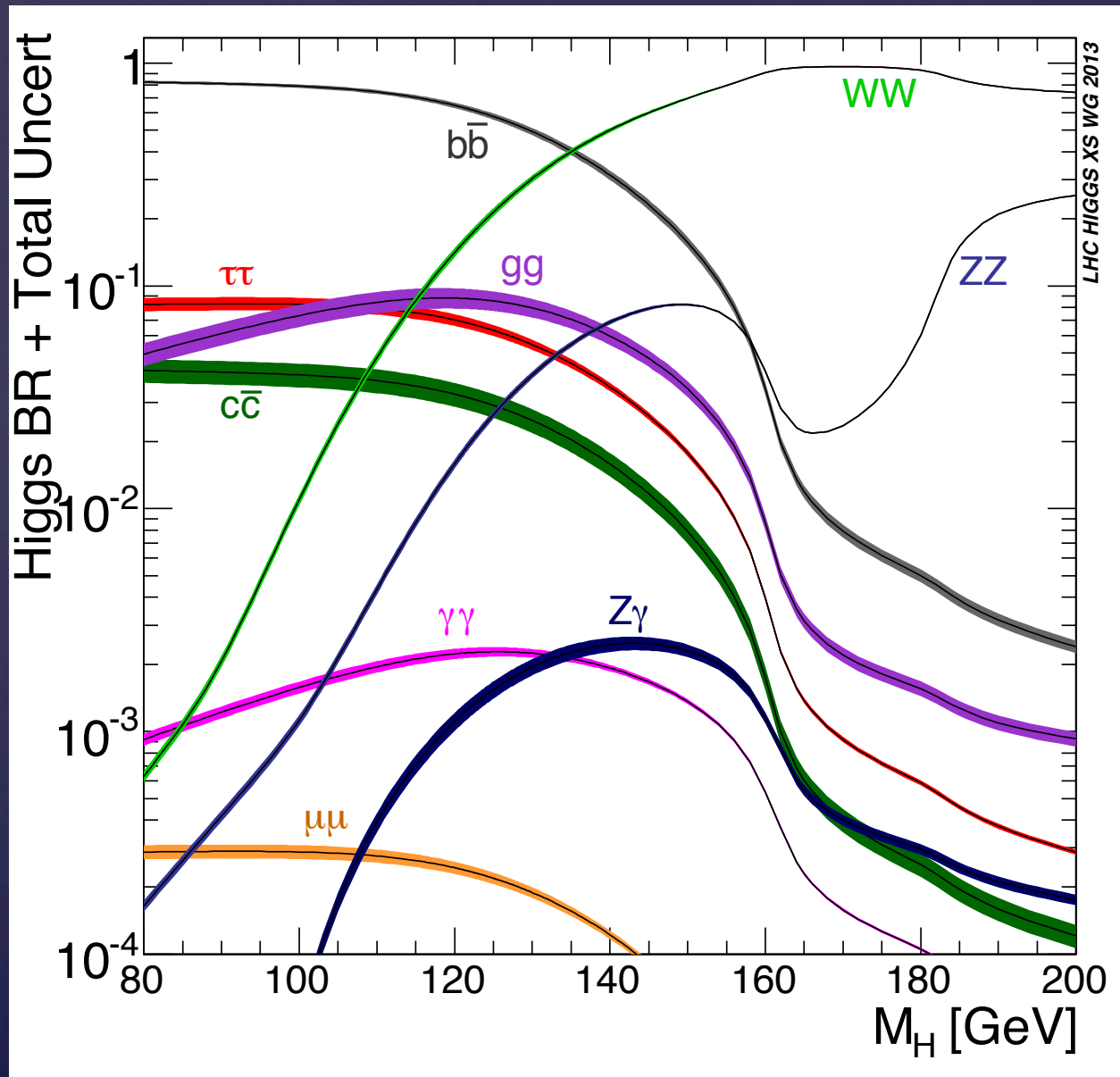
Mentor: Magda Chelstowska



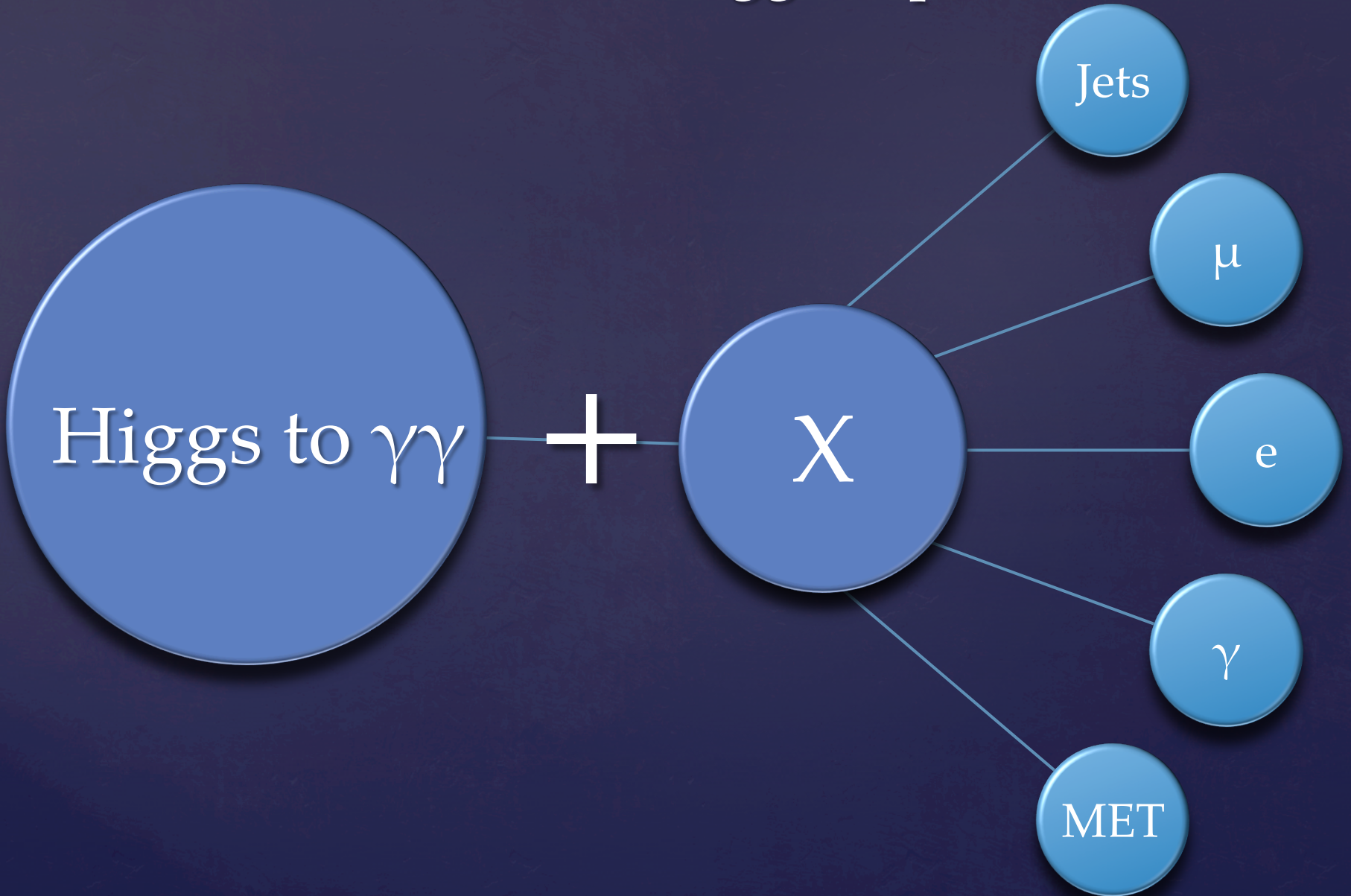
Higgs Main Production Modes



Higgs Main Decay Modes



A General Search in the Higgs Diphoton Channel



The Histogram Templates

ggF

VBF

ZH

WH

ttH

Di-Higgs



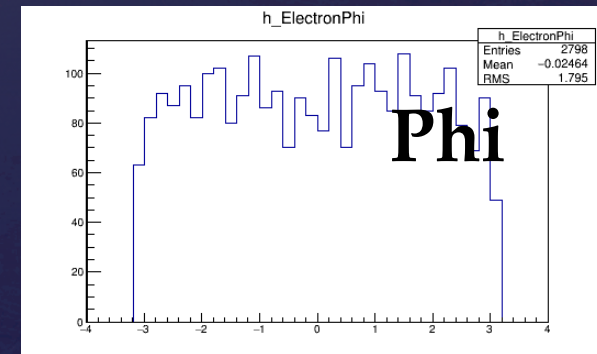
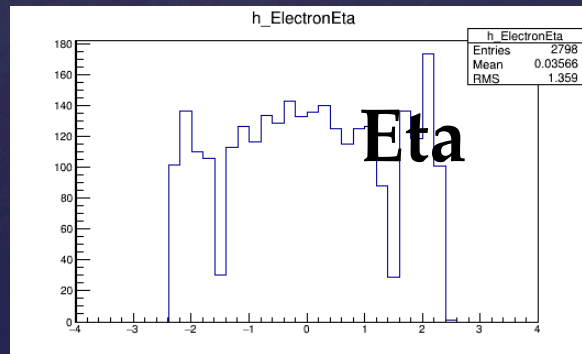
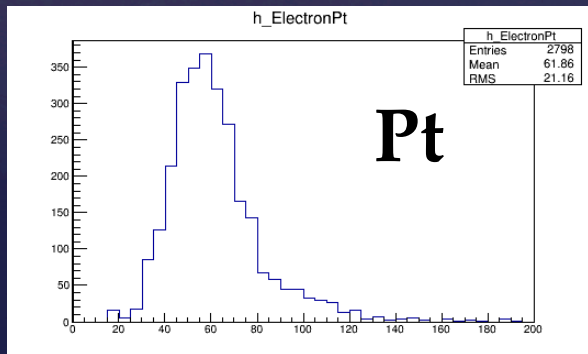
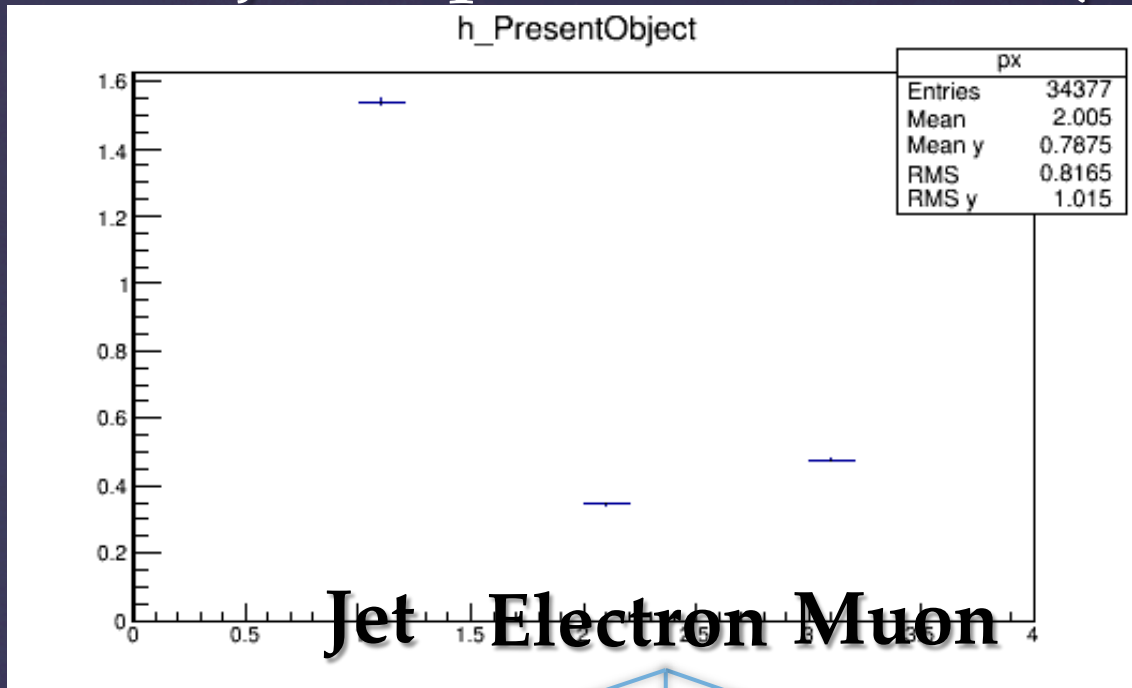
$bb\gamma\gamma$

Higgs

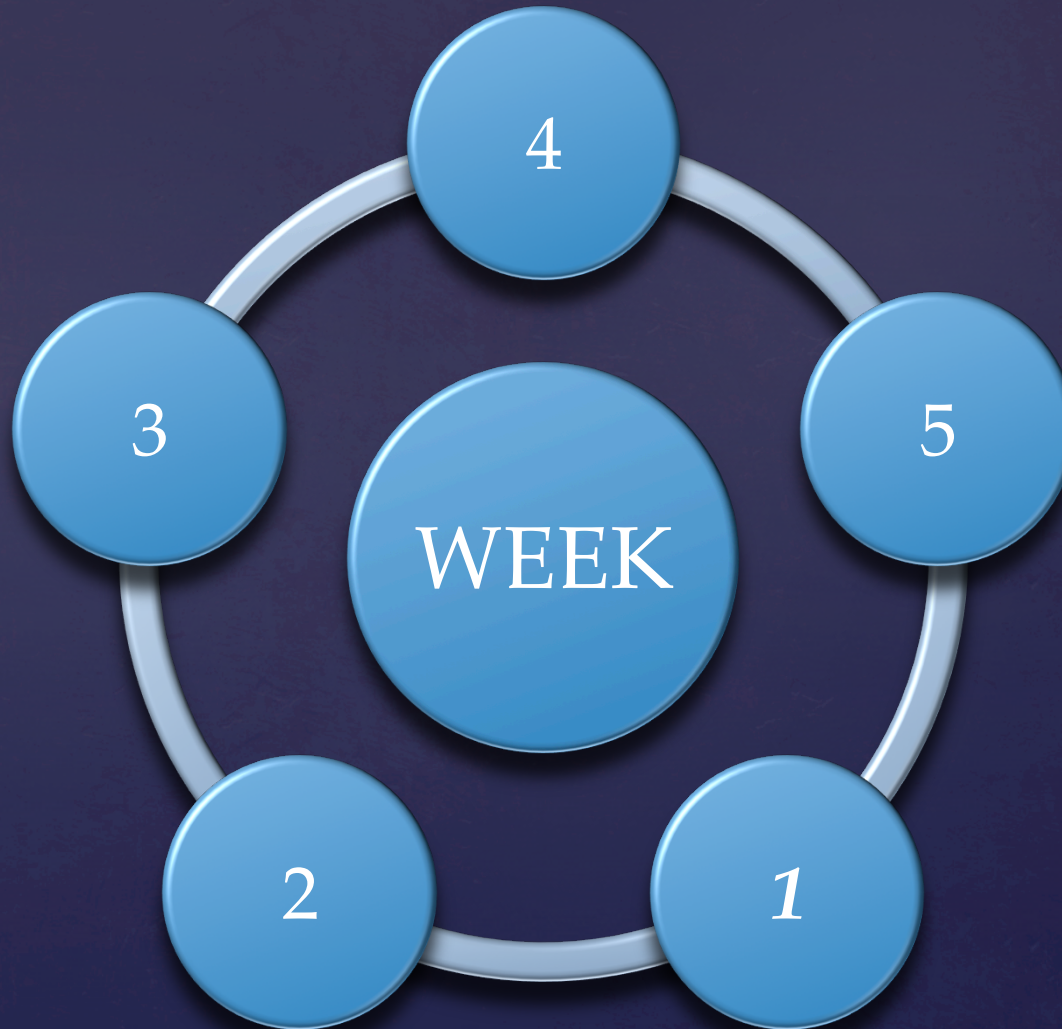


$\gamma \gamma + \text{DM}$

of objects present in $H \rightarrow \gamma\gamma$



My progress





Registration

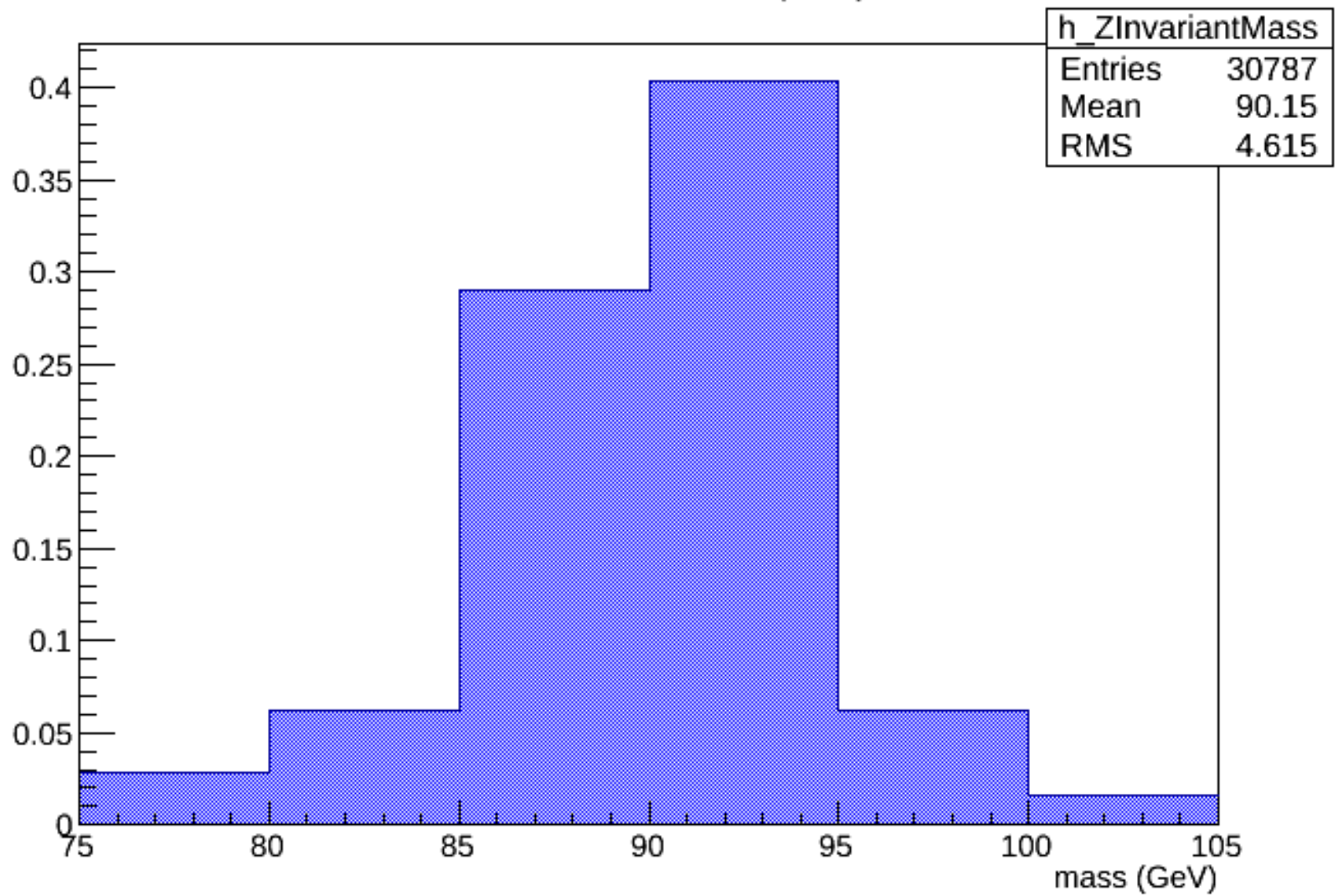


ATLAS Offline Software Tutorial



xAOD & the Invariant Mass of Z to $\mu\mu$

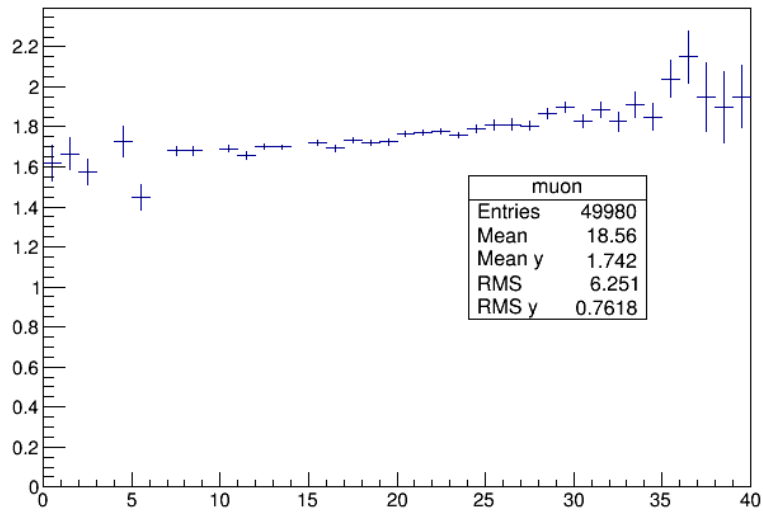
Z Invariant Mass (MC)



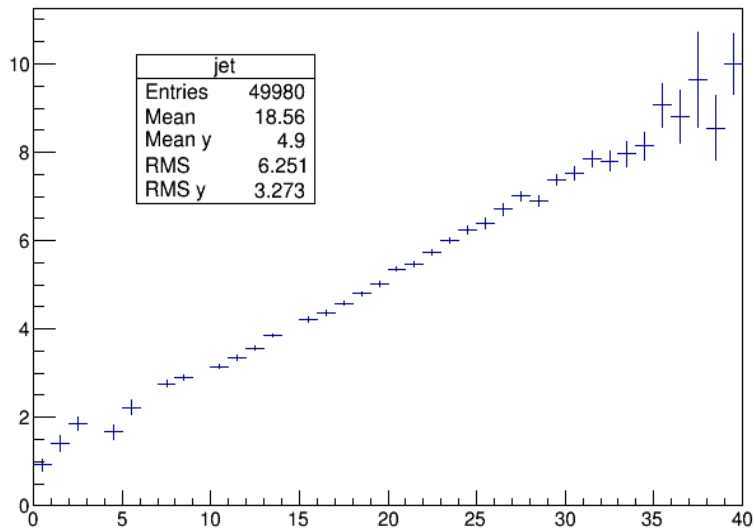


xAOD & Combined Performance Tools

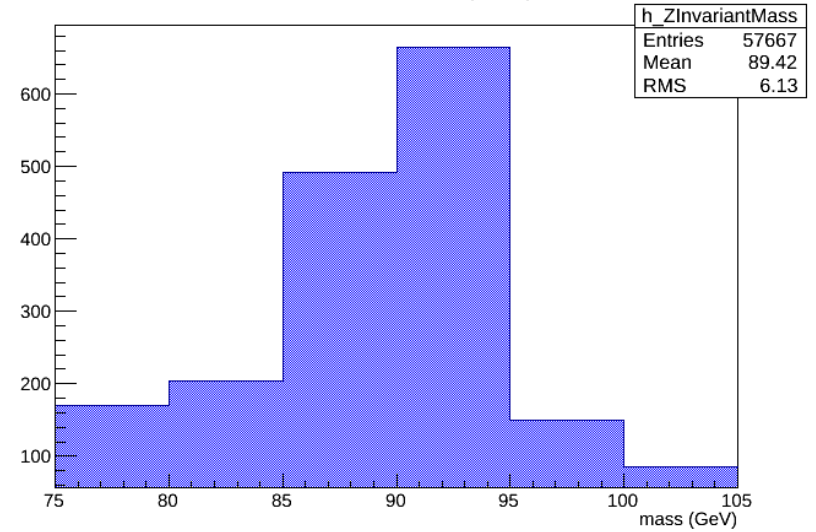
meanMuon_versus_Pileup_MC



meanJet_versus_Pileup_MC



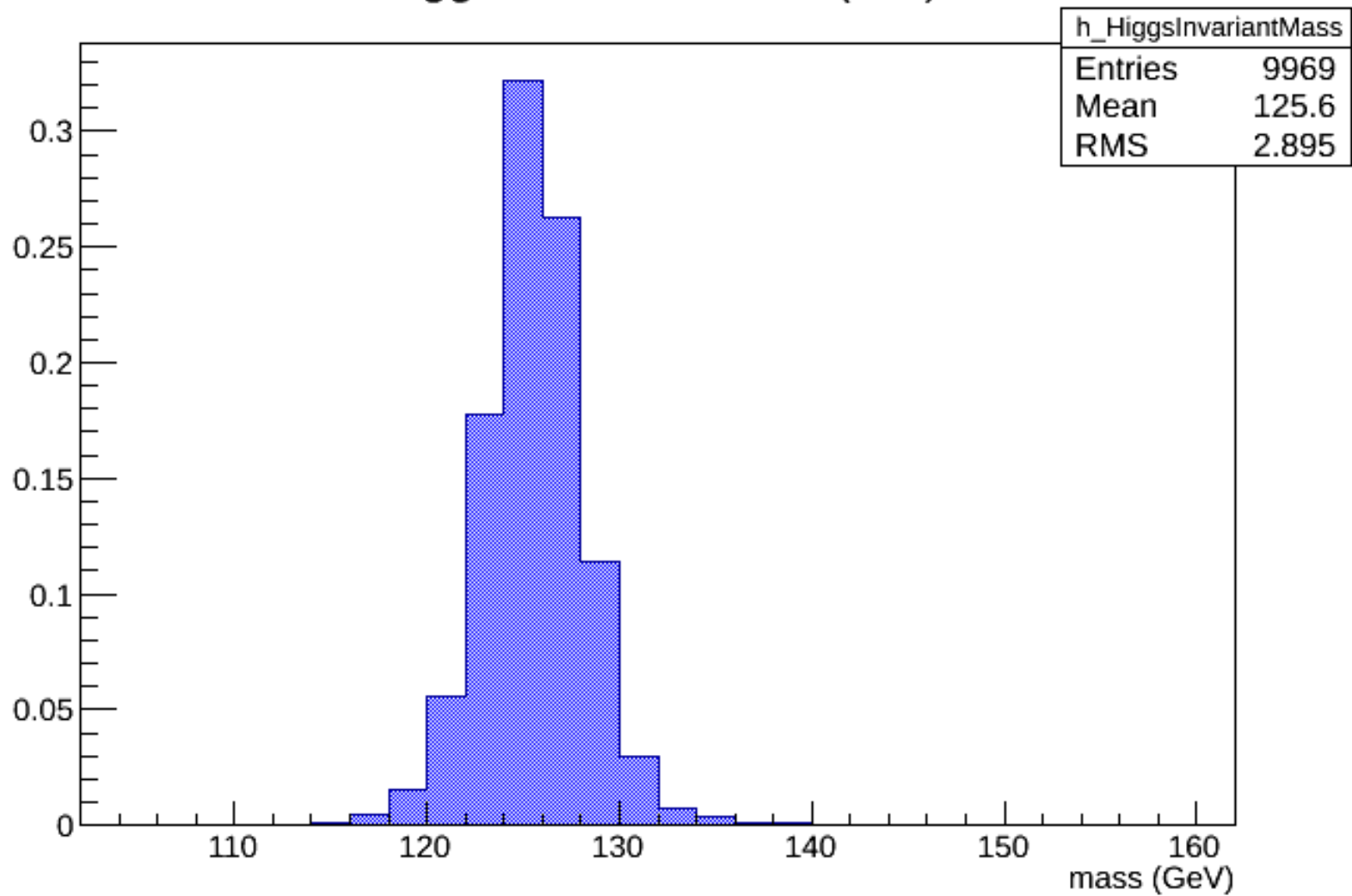
Z Invariant Mass (data)





xAOD & the Invariant Mass of Higgs to $\gamma\gamma$

Higgs Invariant Mass (MC)



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