



Universität Hamburg

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First Look into PHYS14 Samples

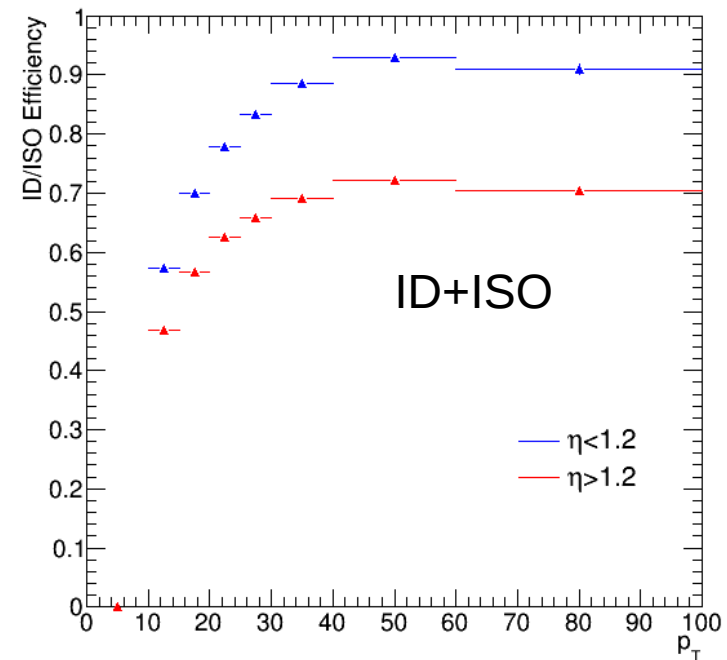
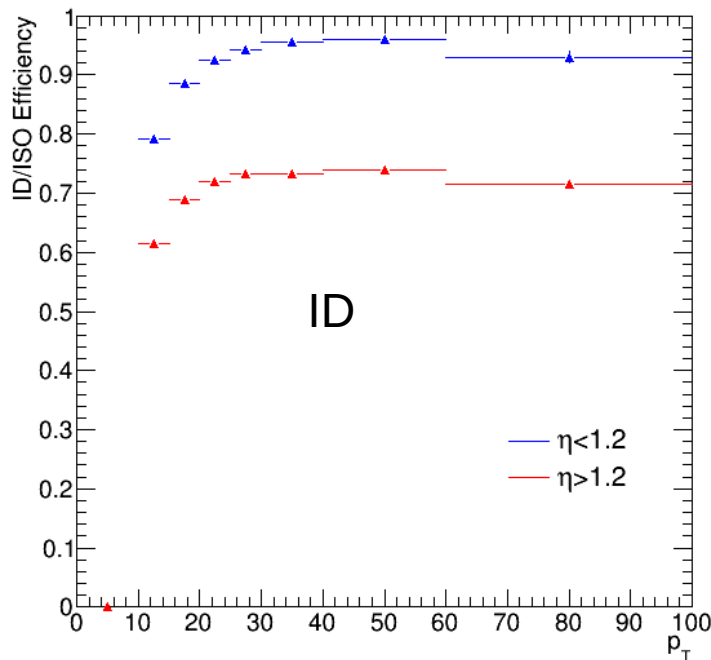
Joint DESY/UHH Higgs Meeting, 10.02.2015

Daniel Troendle for the UHH Higgs Team

Run-II lepton(mu,e) efficiencies, MET and Jets

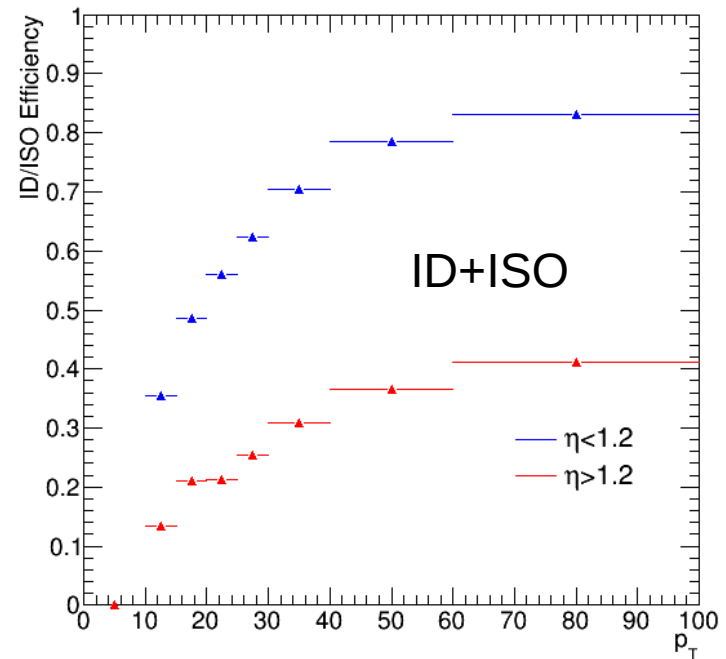
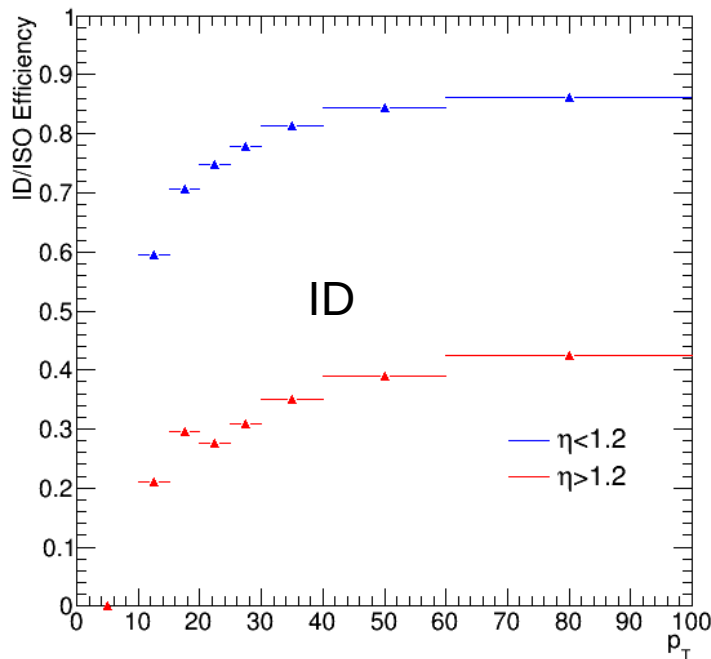
- CMSSW723_patch1
- DYJetsToLL Pythia8 → PU 20 -BX 25ns
- AODSIM files used in the next slides
- MINIAOD → still need to fix ntupler to run over miniAOD files...

Muon ID (+ISO) efficiency: Run-I Tight cuts + same isolation calculation (dB corrected)

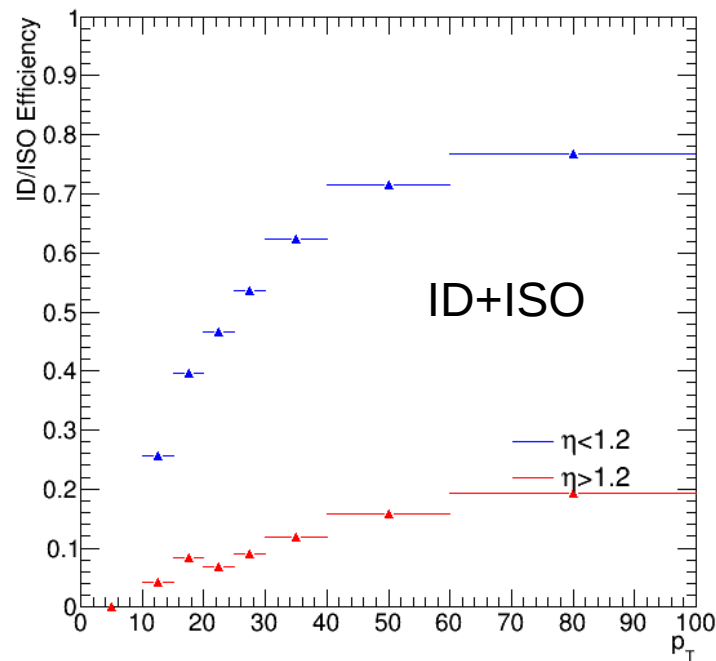
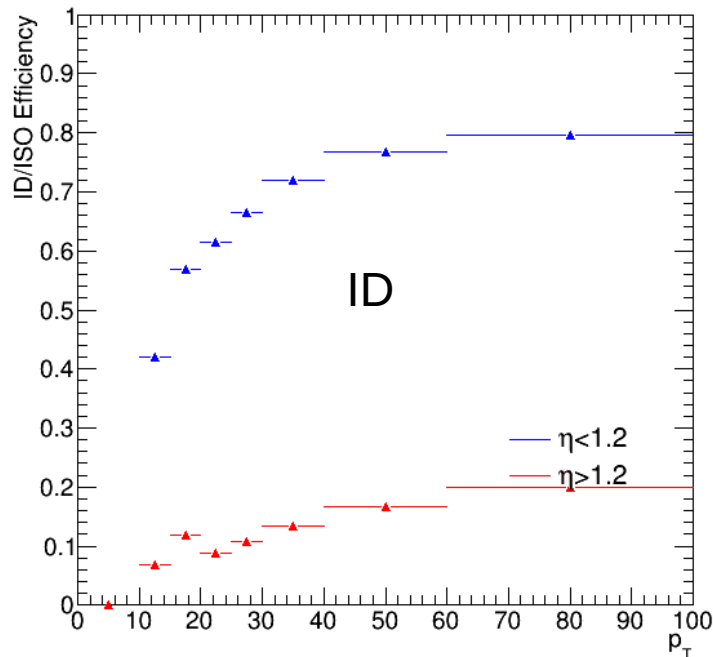


Leptons matched to generator leptons (Pythia8 → status 23: hard interaction!)

Electron ID (+ISO) efficiency: CSA14 MVA training + Run-I isolation calculation (dB corrected)



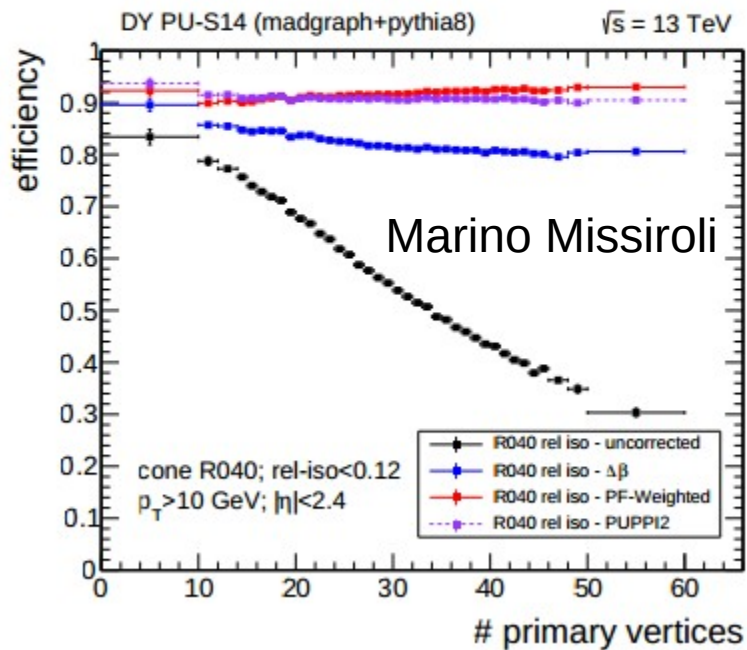
Electron ID (+ISO) efficiency: **PHYS14** MVA training + Run-I isolation calculation (dB corrected)



Need to check high eta region! Revisit cuts on MVA output!

Muon Isolation Run-II

$$Z \rightarrow \mu\mu$$



Two new techniques:

- 1.) PF-Weighted
- 2.) PileUpPerParticleIdentification

Need to implement them in current UHH ntuples!

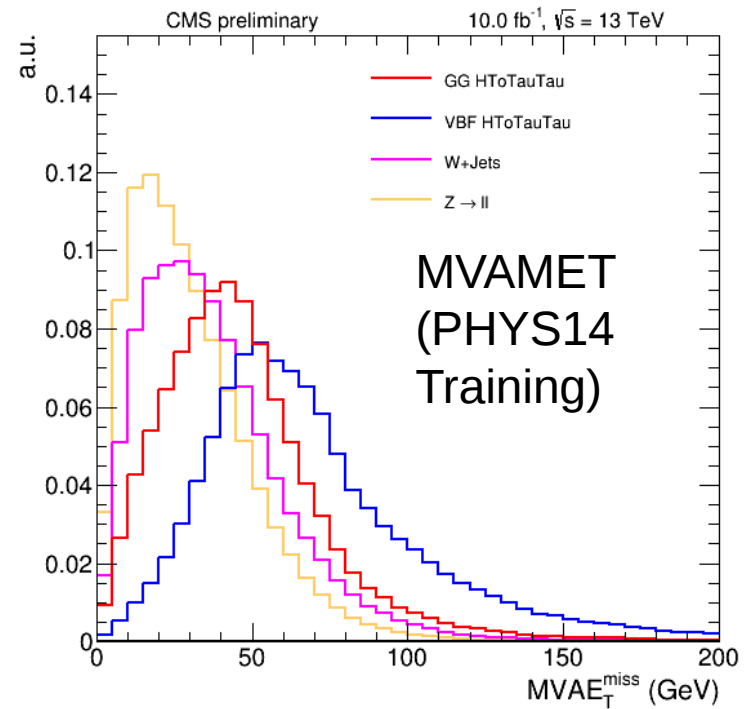
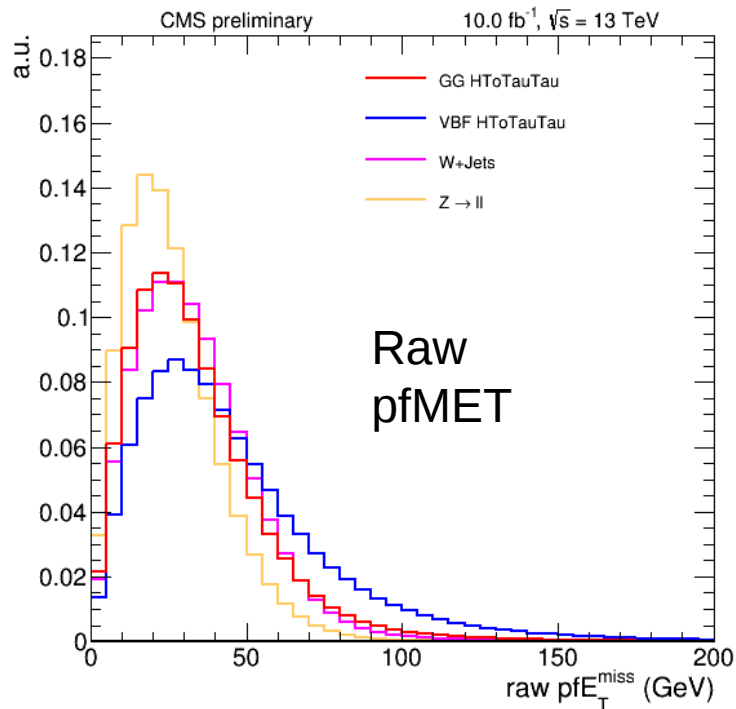
<https://indico.cern.ch/event/346365/contribution/2/material/slides/0.pdf>

MET+Jets in Phys14

- Raw PFMET vs MVA Met with PHY14 training
- Corrected Ak4PFJets (Ak4PFJetsCHS used in miniAOD as default!)
- PileUpMVAID recipe:
https://twiki.cern.ch/twiki/bin/view/CMS/MVAMet#CMSSW_7_2_X_requirements_slc6_MiniAOD
 - Code seems buggy → from time to time invalid reference used (nullptr) and code crashes → handmade fix, need to validate with experts!

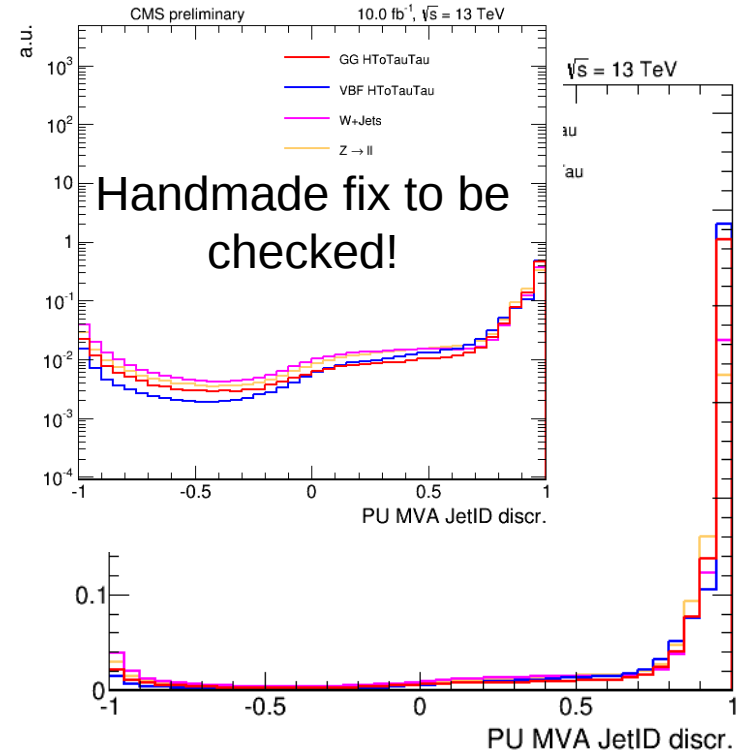
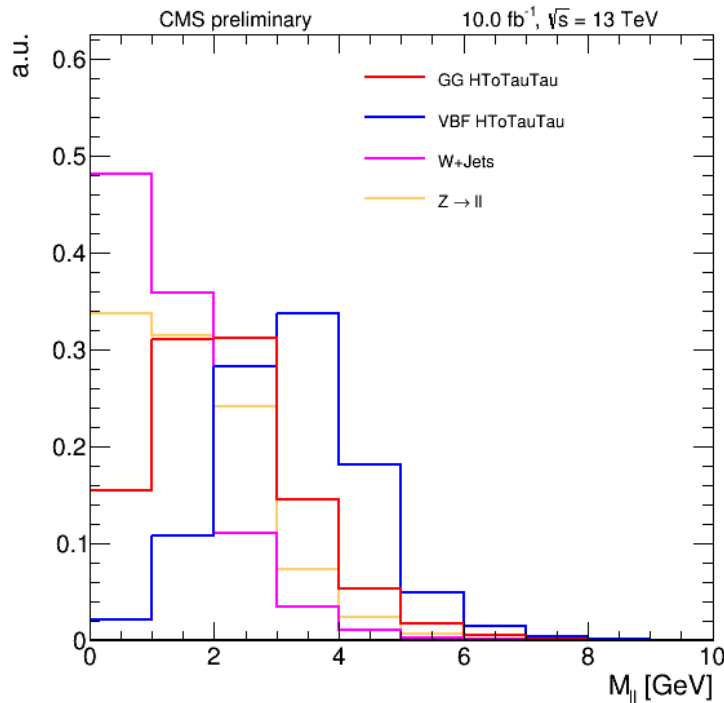
MET in Phys14

NO SLECTION APPLIED!



Need to check my MVAMET implementation!!!

Jets in PHYS14 (corrected ak4PFJets)



Summary

- Missing pieces (object wise):
 - Btagging
 - Different MET calculations to be implemented (T1Met, pfNoPuMET, PUPPI,...)
 - New isolation techniques to be implemented
 - Switch to AK4PFJetsCHS
- Adjust ntupler to run over miniAOD as well
- Port ntupler to CMSSW73X/74X...