

tau update (2020/7/17, Daniel)

split MC taus into leptonic and hadronic decays

look at taus identified by isolated muon and electron tagging

same ww-semileptonic sample

rv02-01.sv02-01.mILD_l5_o1_v02_nobg.E250-SetA.I499998.P4f_ww_sl.eL.pR.n000.d_dstm_14705_0.slcio

same methodology

look at angle between initial MC fermion and reco objects

reconstructed object within 0.2 rad of MCparticle = “matched”

TaJet algorithm, all default parameters (ilcsoft v02-01-01)

for primary fermions, look at matching efficiency: reconstructed tau jet within 0.2 rad

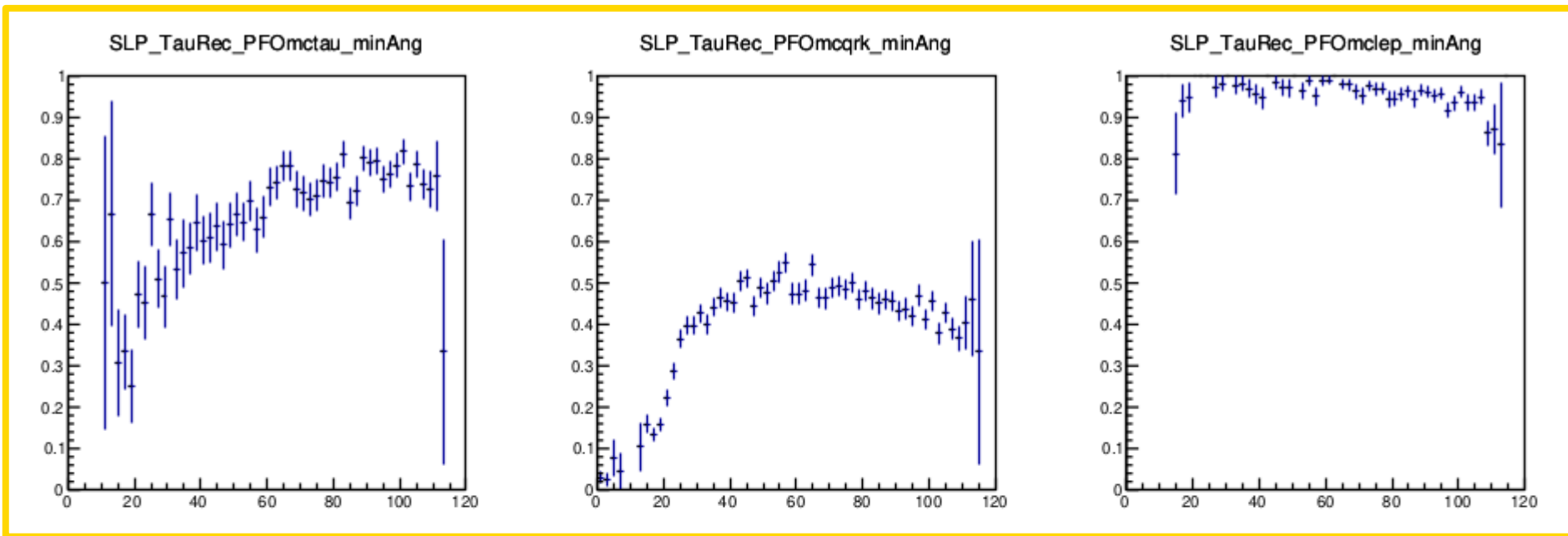
WW-semileptonic

MC tau

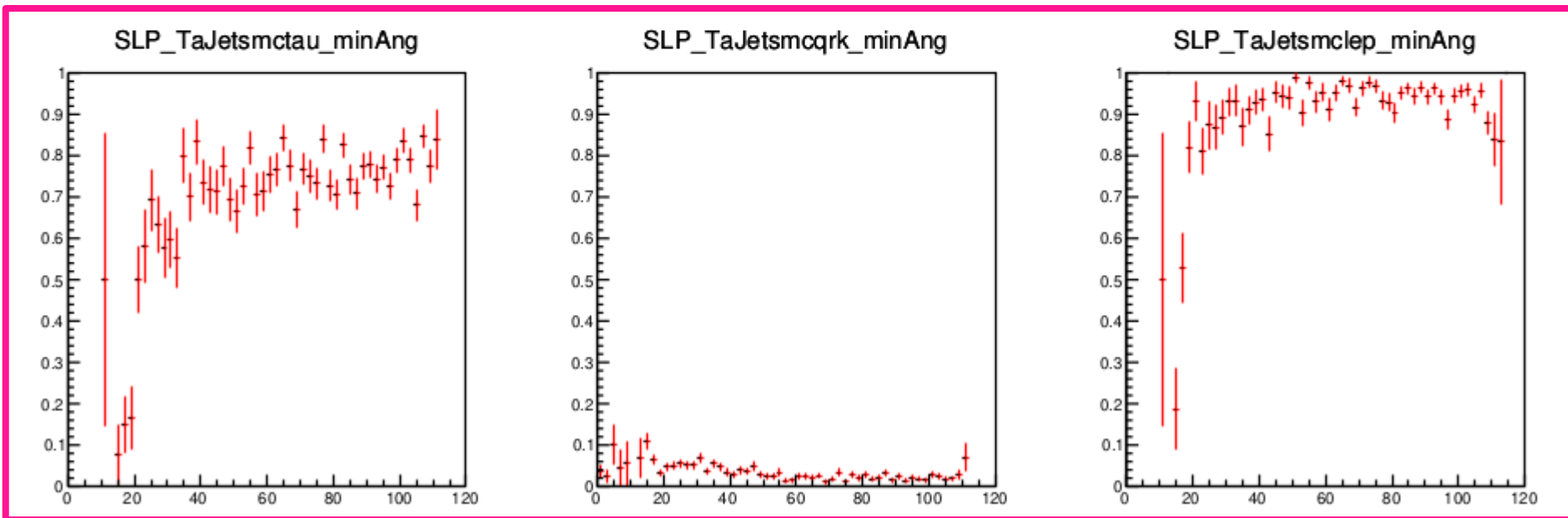
MC quark

MC muon

matching efficiency



TauFinder (Astrid)



TaJet (Taikan)

MC fermion energy [GeV]

TaJet

reconstructed as

elec

muon

tau

e or mu or tau

muon

quark

primary MC fermion

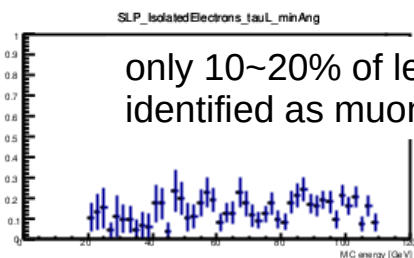
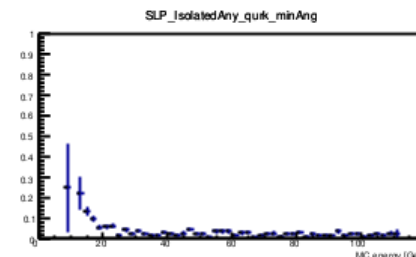
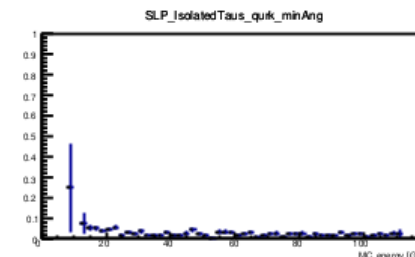
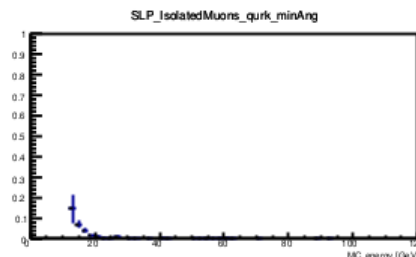
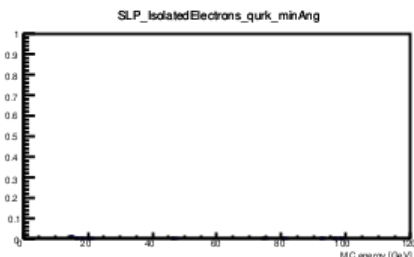
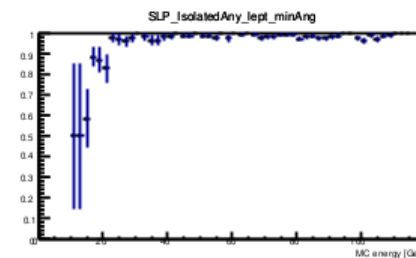
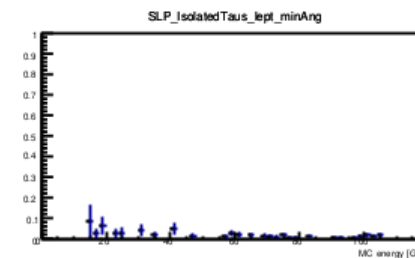
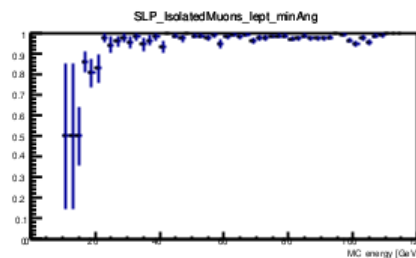
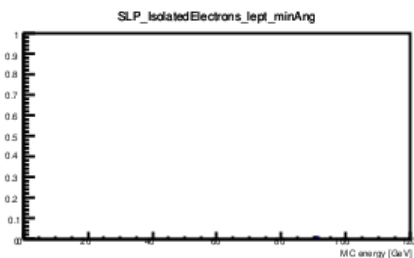
tau (leptonic)

tau (hadronic)

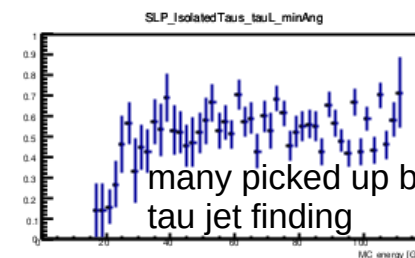
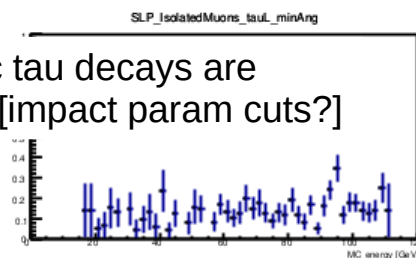
taus (all)

“reco efficiency”

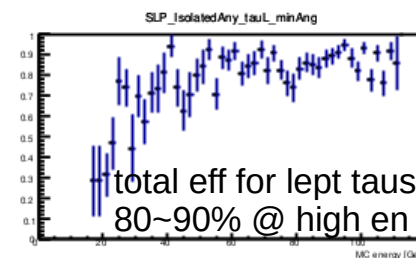
MC energy



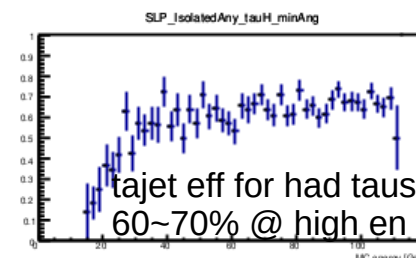
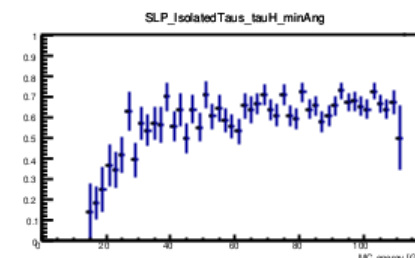
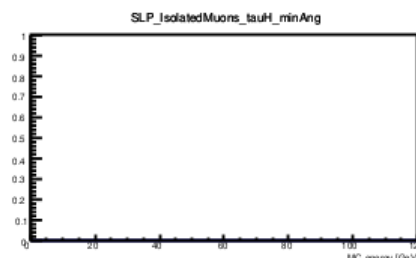
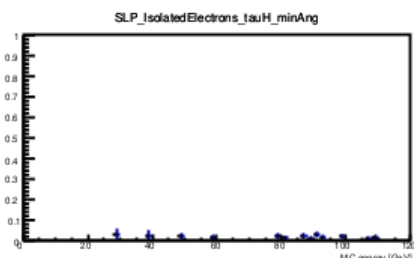
only 10~20% of leptonic tau decays are identified as muon/elec [impact param cuts?]



many picked up by tau jet finding



total eff for lept taus: 80~90% @ high en



tajet eff for had taus: 60~70% @ high en

