

# My Next Steps for Tau-ID or what can electron+muon to for taus

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more urgent that optimization the  
reconstruction on MC:

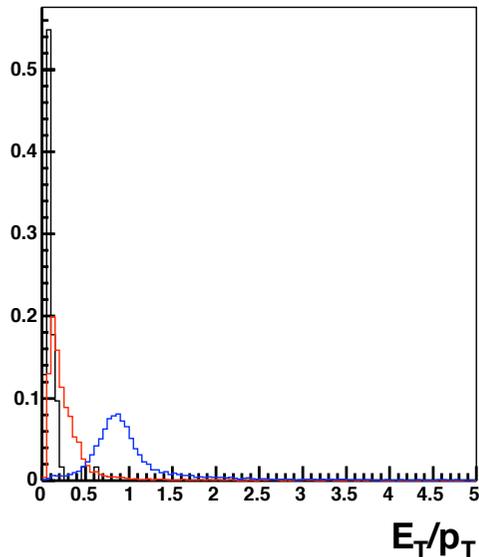
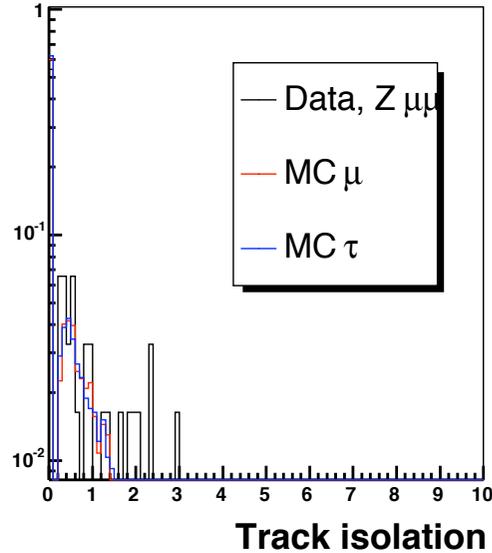
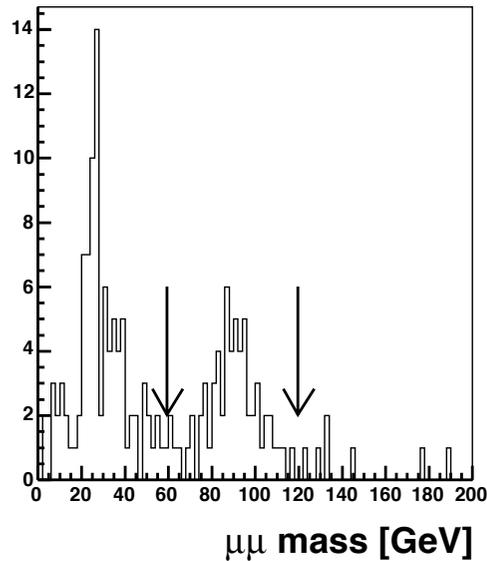
look the data

Abid, Christina, Serban: find signal  
understand reco performance in data vs MC  
use “other” signals

# First: using $Z \mu \mu$

- We expect more differences in Data-MC for tracking than calorimeter based variables
- tracking efficiency: use  $Z$  muons,  $Z$  electrons as for LP (exclude matching!)
- tracking isolation:
  - muons often make tau objects with low ET
  - look at their “ettr” : should be just like for taus
  - $Z$  makes selection of “isolated” muons possible

# First: using $Z \mu \mu$



- Gustaaf's DIMU tmb-trees
- require two medium muons,  $n_{\text{seg}}=3$ , track-match, "other" mu is isolated in CAL
- look for tau object having the muon track as leading track

# First: using $Z \mu \mu$ (II)

- track matching:
  - for tracking, a muon looks just like a single charged pion
  - look at the second closest track: distance,  $p_T$ , invariant mass....

# Then: using electrons

- Calorimeter based variables:
  - compare QCD MC to non-iso data
  - but what does this tell us about narrow objects?
  - we can't "really" select clean taus without biasing the sample (at least)
  - but we can look at electrons
  - needed: a way to select isolated pions....

# Preliminary time plan

- “Ettr” track isolation + pi-track match
  - code is there and debugged, but DIMU skim is `_large_`
  - then make plots: end of this week
- QCD background: find QCD tmb-tree or make them, non-iso mu background MuTrk
  - port code from ntuple to tmb-tree
- same goes for electron study: use DIEM tmb-tree from Gustaaf