ZH Branching ratio study

ILC physics and software meeting
Oct. 01. 2010
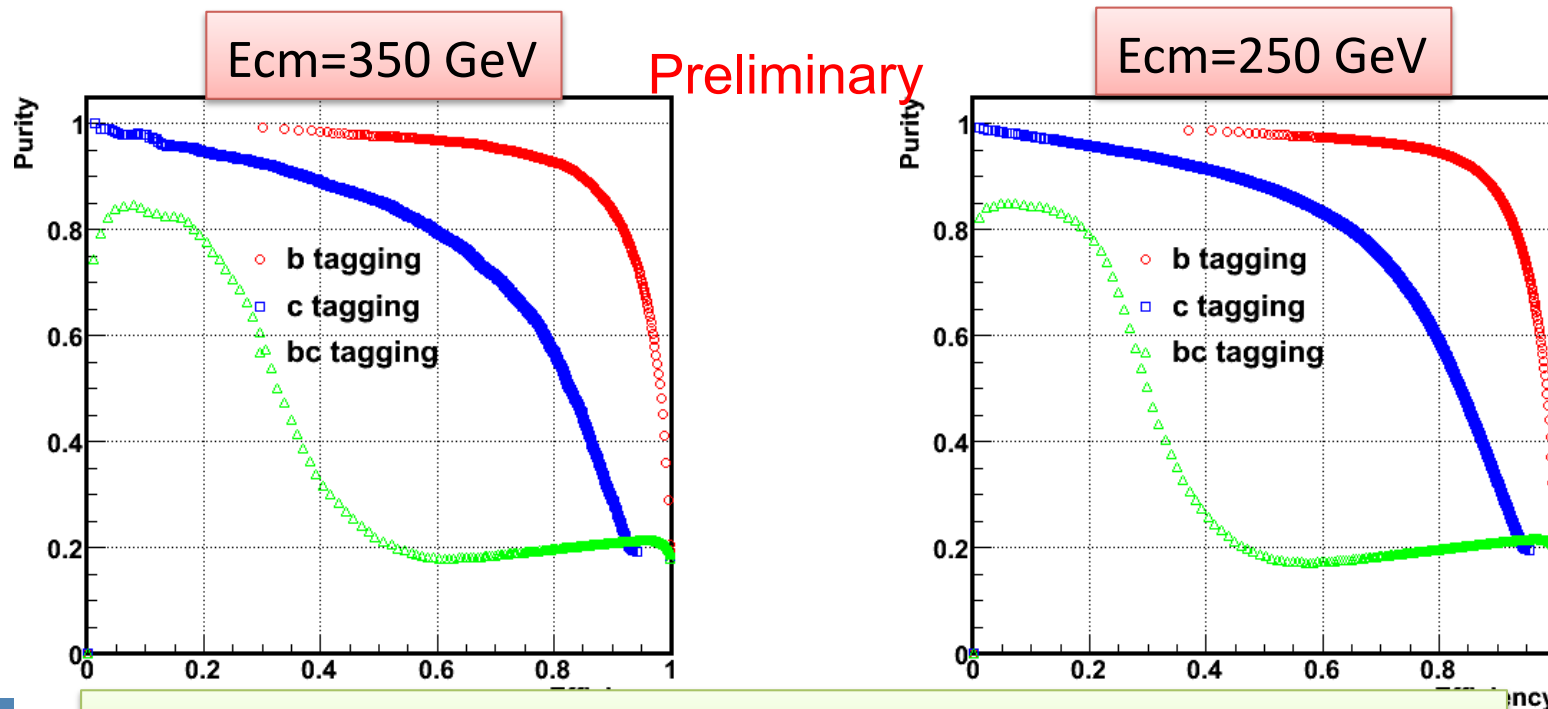
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Status from last week

- Comparison of Ecm=250/350 GeV sample
  - Flavor tagging efficiency vs. purity
  - ZH→qqH, Z→qq sample has checked

- Try to compare with vvqq (vvZ→vvqq sample)
  - Need to consider the right evaluation strategy for comparison

- tt background samples are prepared by Miyamoto-san
  - Including tt cross section threshold enhancement
  - Analysis code makes memory consumption for merged data sample

vvqq (pseudo Z→qq) sample analysis

- e+e-→vvqq (vv+2j) reconstructed with forced 2 jet
  - No parent key finds in "MCParticlesSkimmed"
  - ZZ/WW inclusive SM bkg data for now

- Difference from 91 GeV will be boost effect

Ecm=350 GeV

Preliminary

Ecm=250 GeV

○ b tagging
□ c tagging
△ bc tagging

Significant difference does not find, bc tag should understand

tt̄ background sample at 350 GeV

- tt̄ background including threshold enhancement generated by Miyamoto-san.
  - Generator : physsim
  - Detector and reconstruction : ilcsoft v01-06
  - Data samples : merged DST samples (30000 events)
  - /data5/samples/grid/users/miyamoto/samples/simulated/ILD_00/CMS_350.merged

- Analysis problem in merged DST file
  - Analysis job makes huge memory consumption (~2.5 GB)
    → Miss memory release? I can not find the reason for now.
    → Analysis process stop abnormally for large # of entries file

  Individual file includes small # of events → Not becomes problem at that time

Not happen at this event every time,
it looks caused by huge memory consumption…
Memory usage increase over 2GB over 10000 event

############## evt = 14567 ##############

Error: Symbol G__exception is not defined in current scope anl.C:49:
Error: type G__exception not defined FILE:/home/ono/ilcsoft/cms_350/
zh2qqh_chi2/prod/./anl.C LINE:49
*** Interpreter error recovered ***

Individual files do not use so much memory size

Generated root files become empty.

Now copy all the individual files via grid and re-analyze