status report on tt6q benchmark study

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Some remarks

❖ **Samples used in this report**
  ‣ tt_6f : yyuyyu, yyuyyc, yycyyu, yycyyc (new samples)
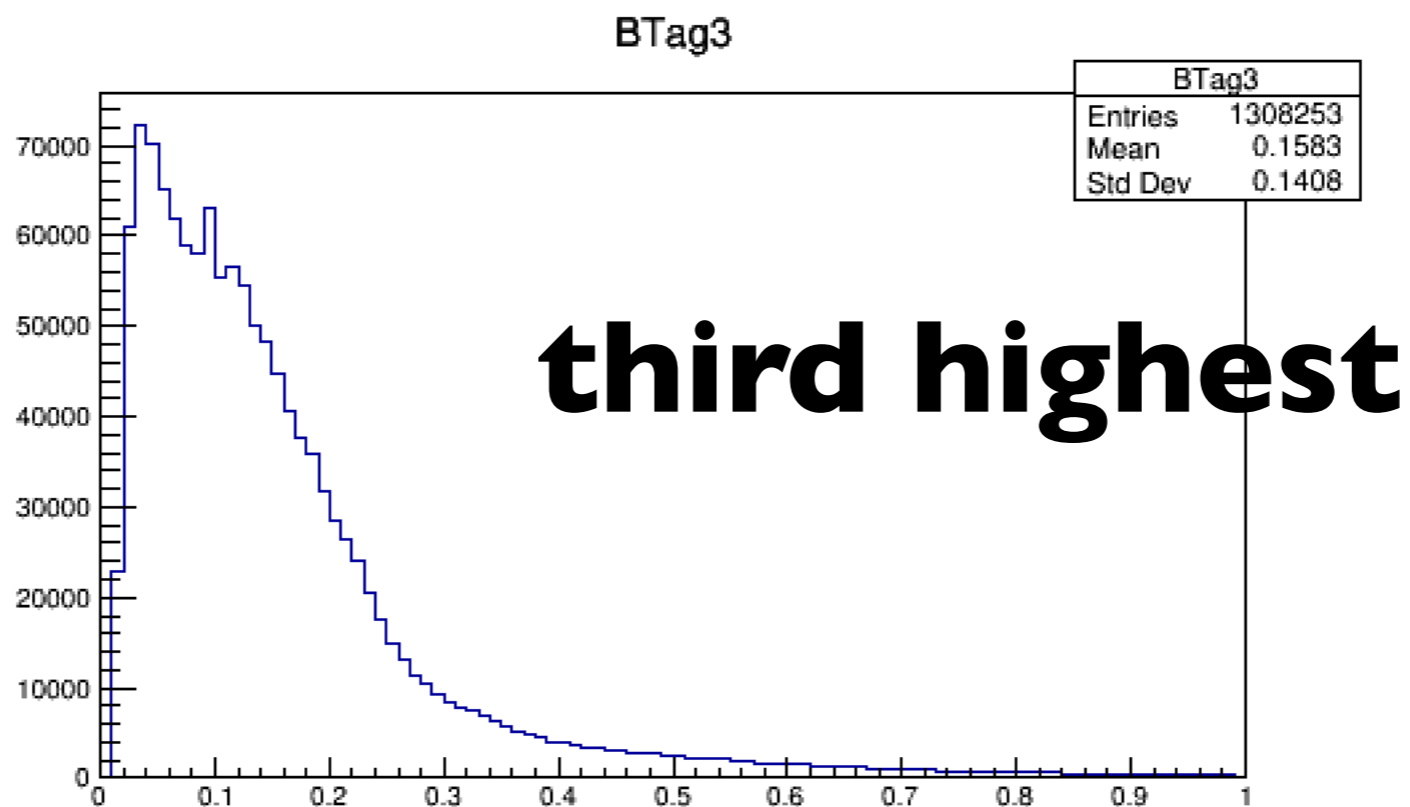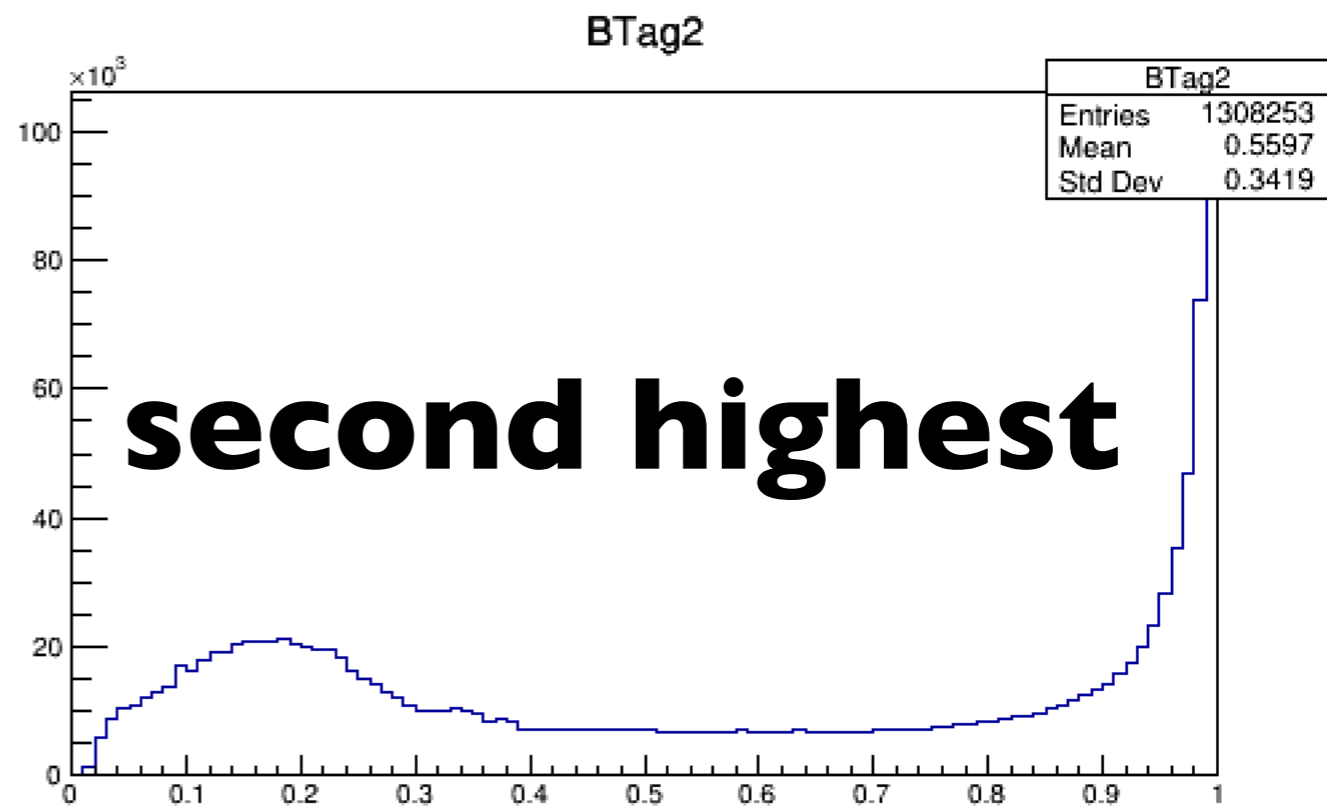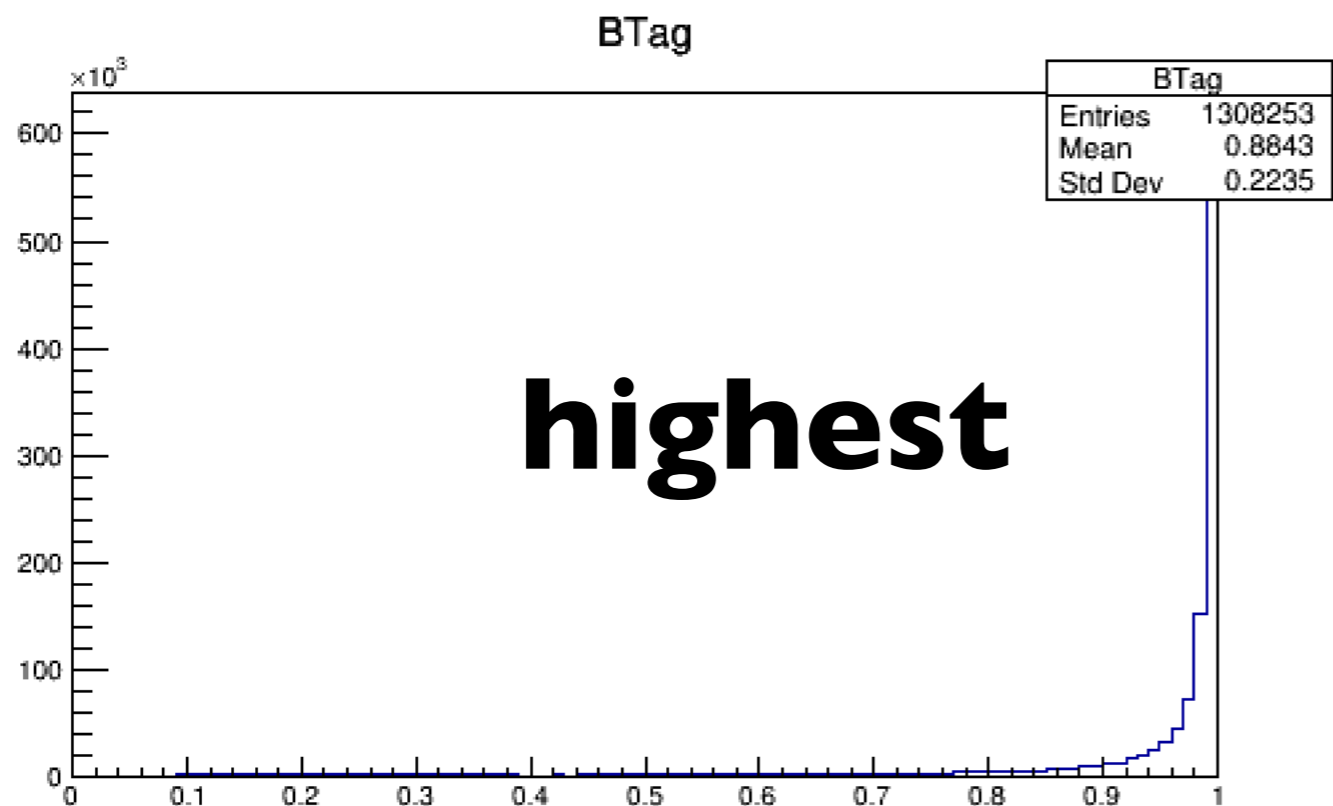 ‣ for now I5 samples only

❖ **Macros used in this report**
  ‣ https://github.com/ILDAnaSoft/ILDbench_ttbb4q
  ‣ with howto in Readme

❖ **Analysis flow (based on Amjad's code)**
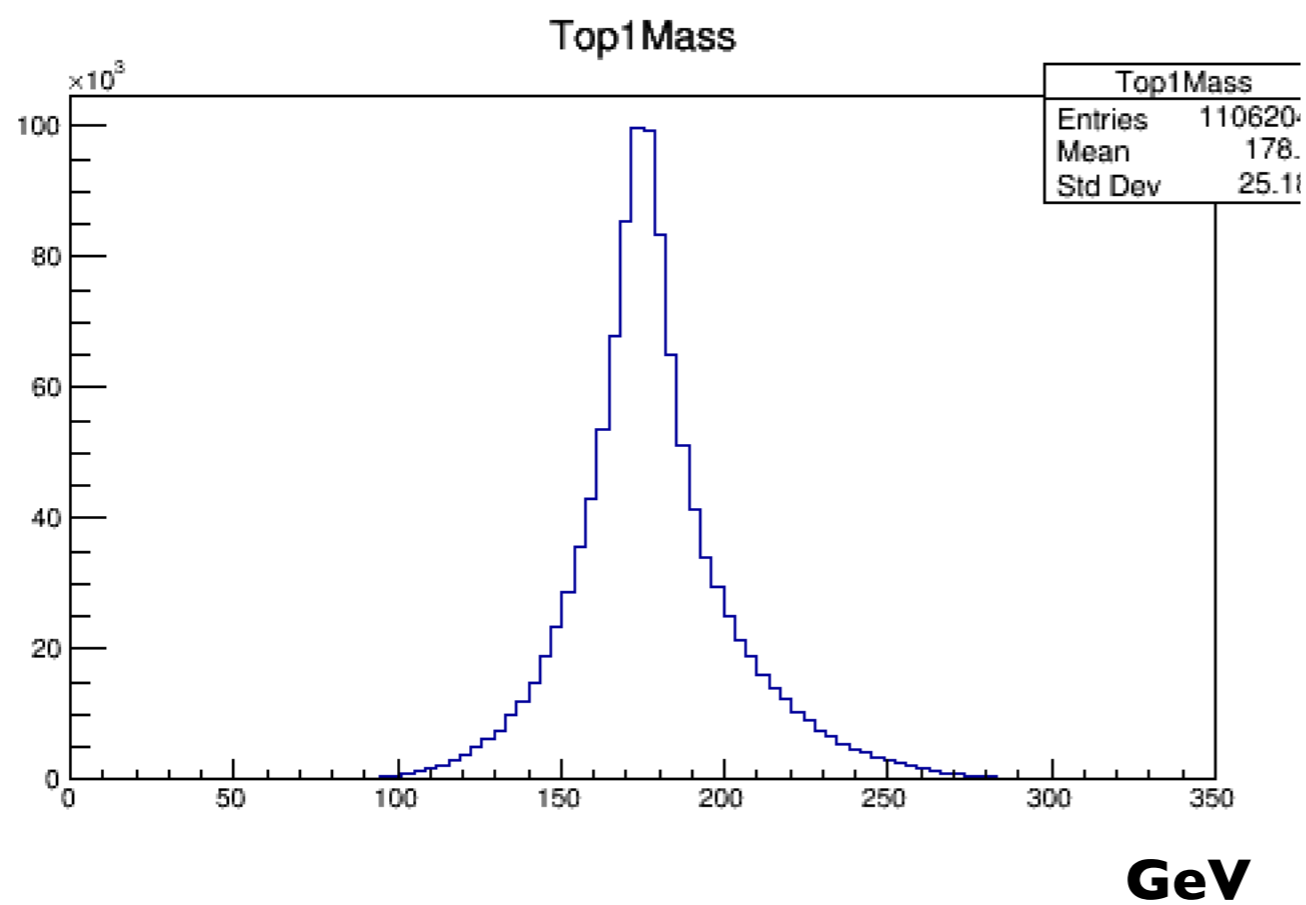 ‣ FastJet
  ‣ LCFIPlus (jet refiner + flavour tagging)
  ‣ ttbar (analyser) —> produce histograms

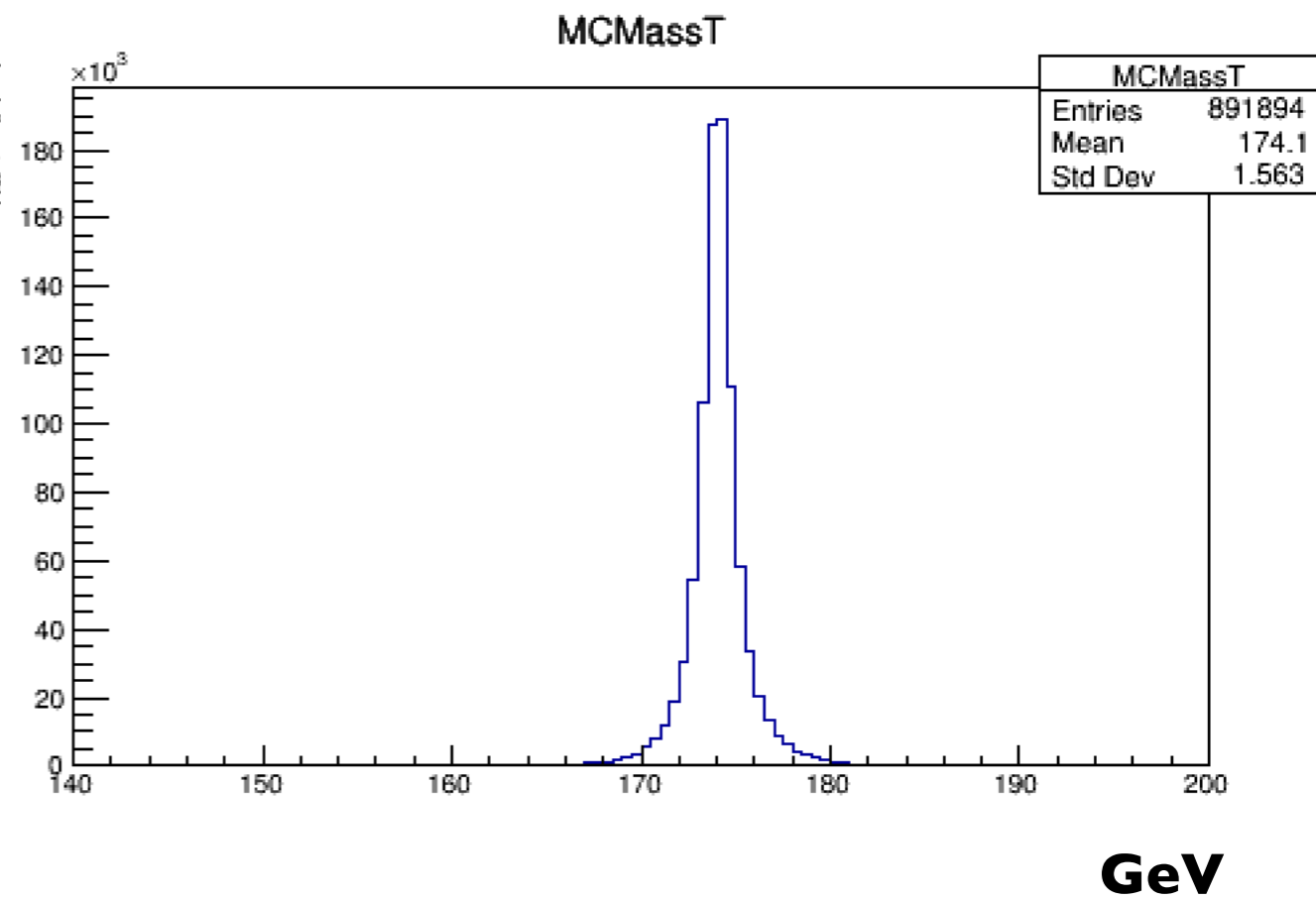❖ **All plots/numbers shown in this report are very preliminary.**
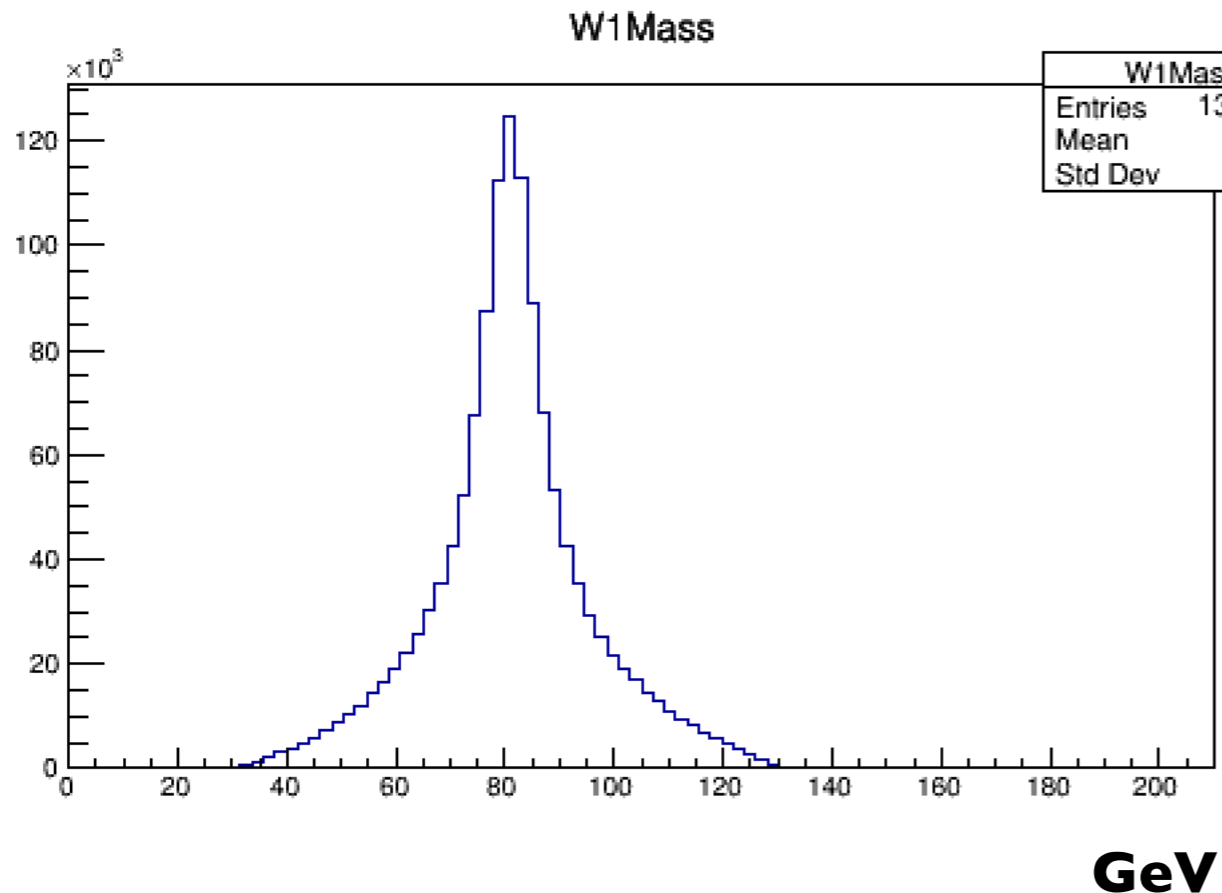
Example plots (btag)

Example plots (top mass reco/mc)

reco   **mc**

Example plots (W mass reco/mc)

W1Mass

W1Mass	
Entries	1308253
Mean	81.01
Std Dev	14.71

MCMassW+

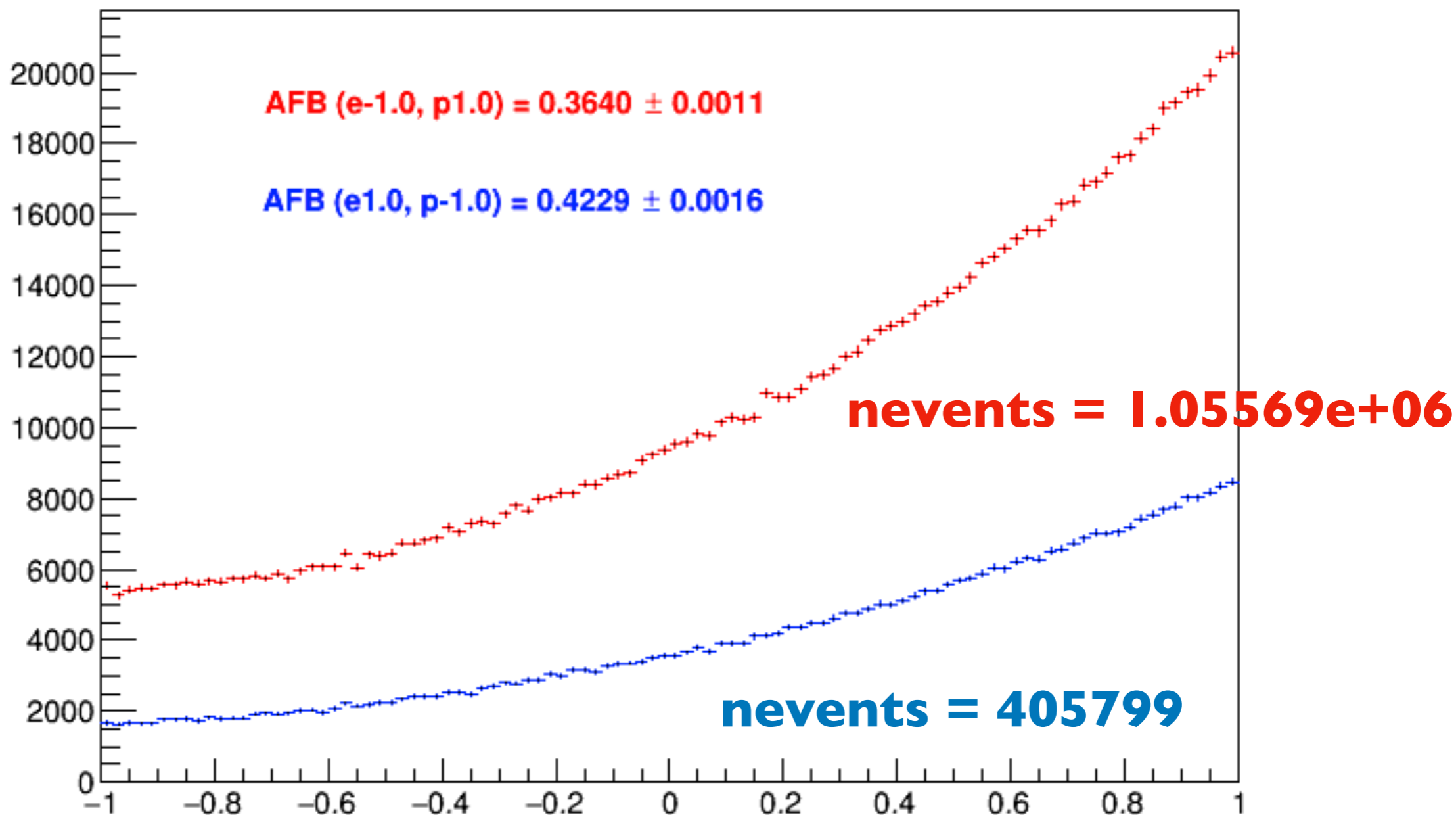| MCMassWp	
Entries	1646154
Mean	80.34
Std Dev	3.505

GeV

GeV

reco
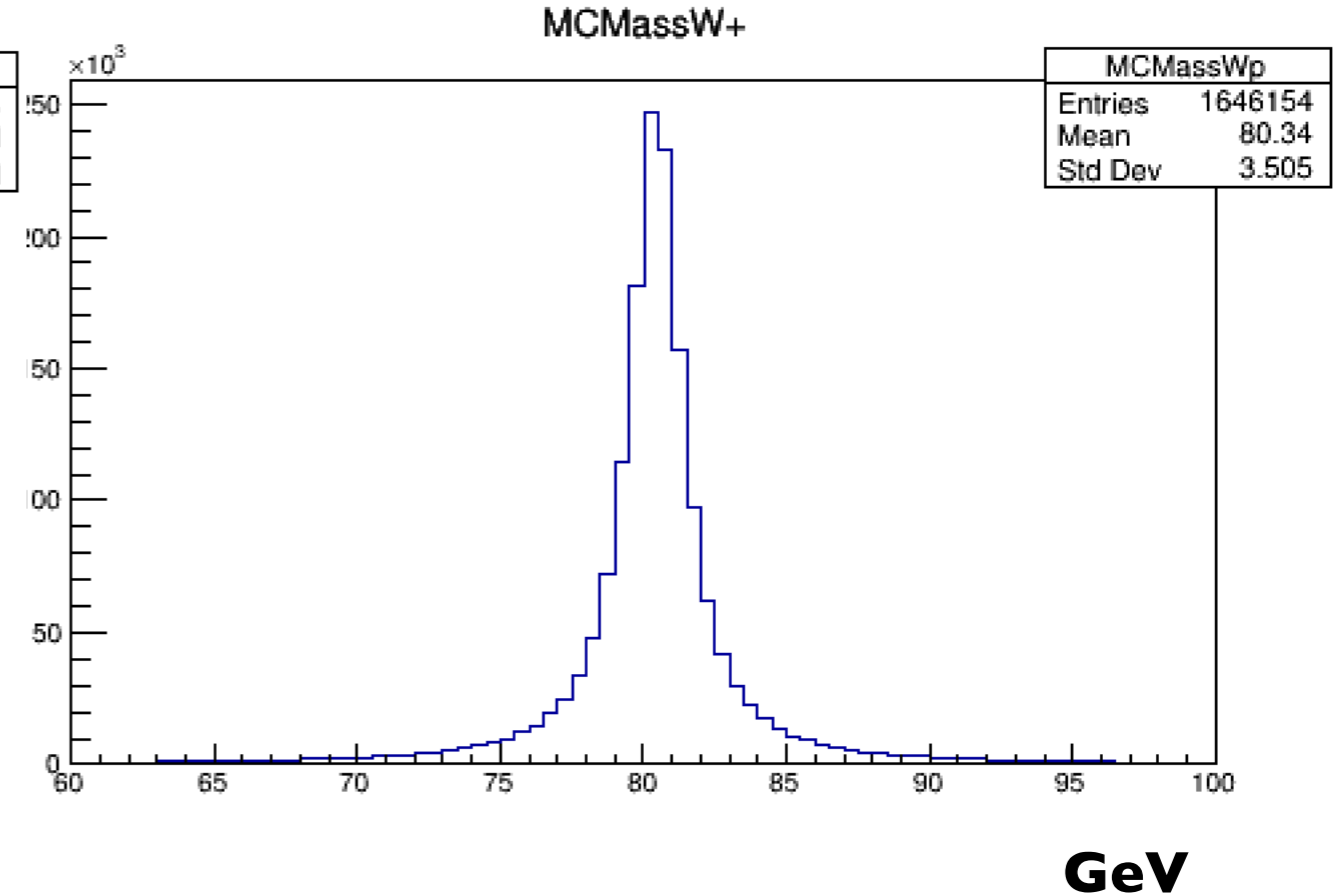
mc

**and many others…
I haven't checked everything yet.
so far no apparent problems
(though LCFIPlus issue may change
flavor tagging plots)**

Test plots (top polar angle MC)

luminosity : 4000fb-1 (LR:40%, RL:40%)
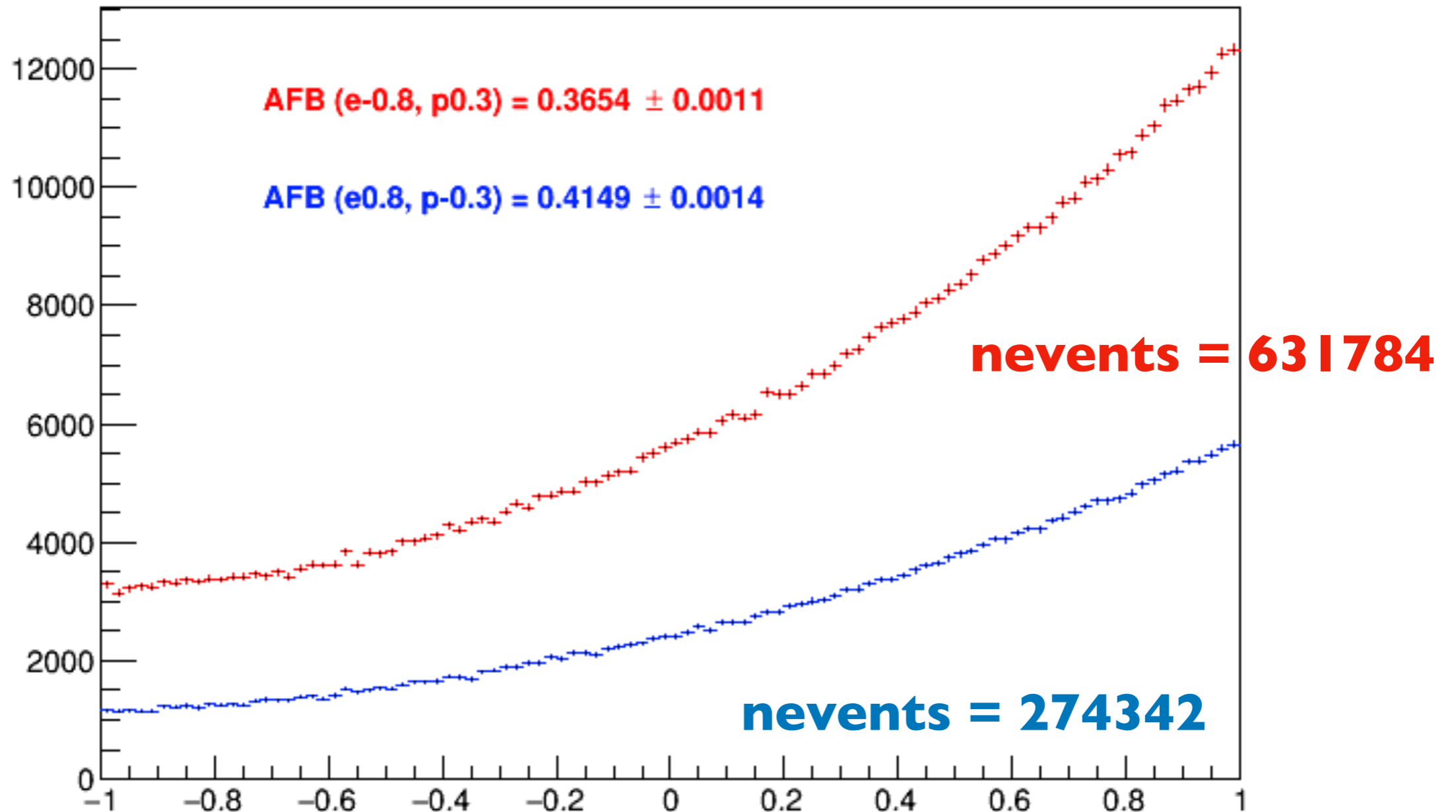**LR : (e-,e+) = (-1,+1), RL : (e-,e+) = (+01,-1)**

MCCosthetaT

AFB (e-1.0, p1.0) = 0.3640 ± 0.0011

AFB (e1.0, p-1.0) = 0.4229 ± 0.0016

nevents = 1.05569e+06

nevents = 405799

Test plots (top polar angle MC)

luminosity : 4000fb-1 (LR:40%, RL:40%)
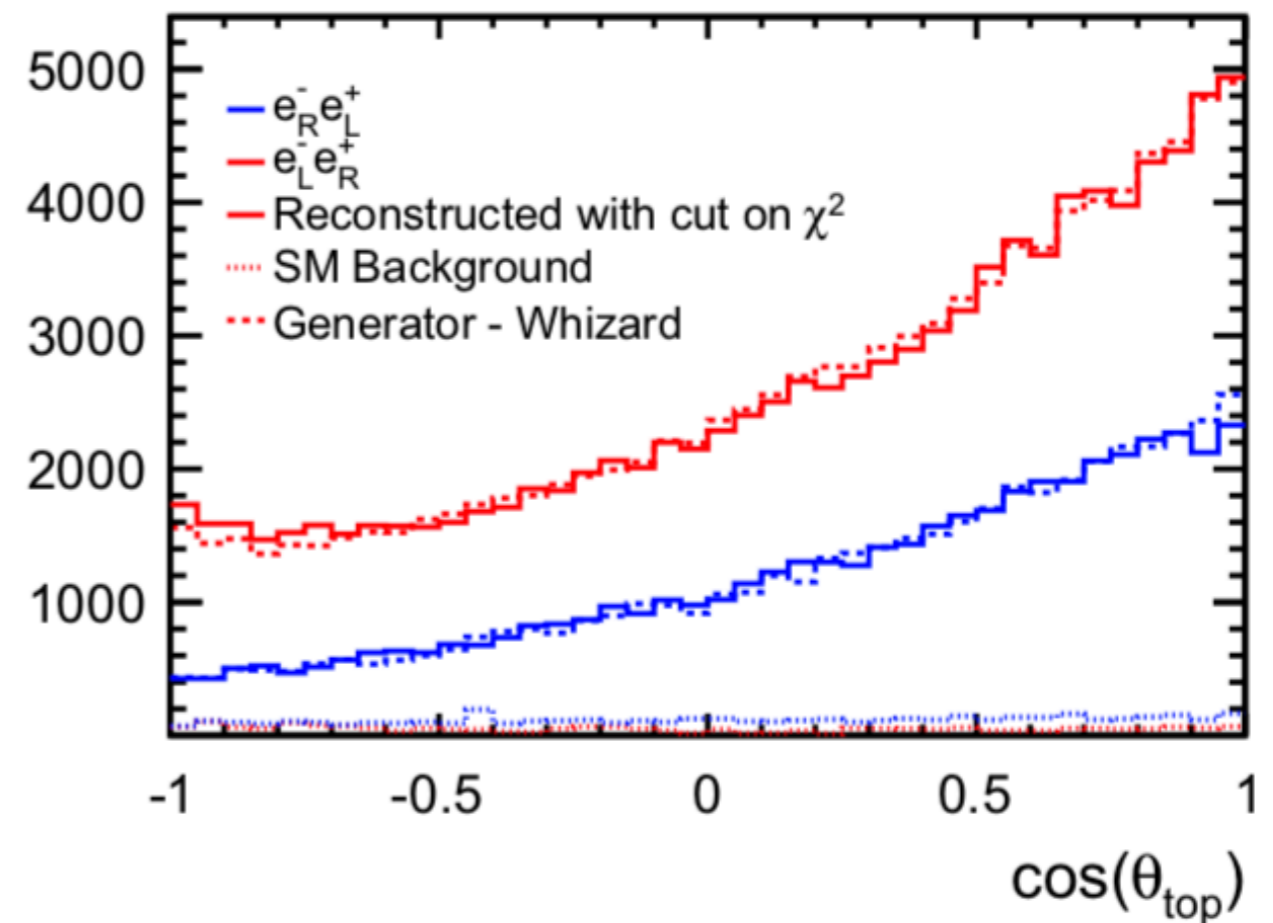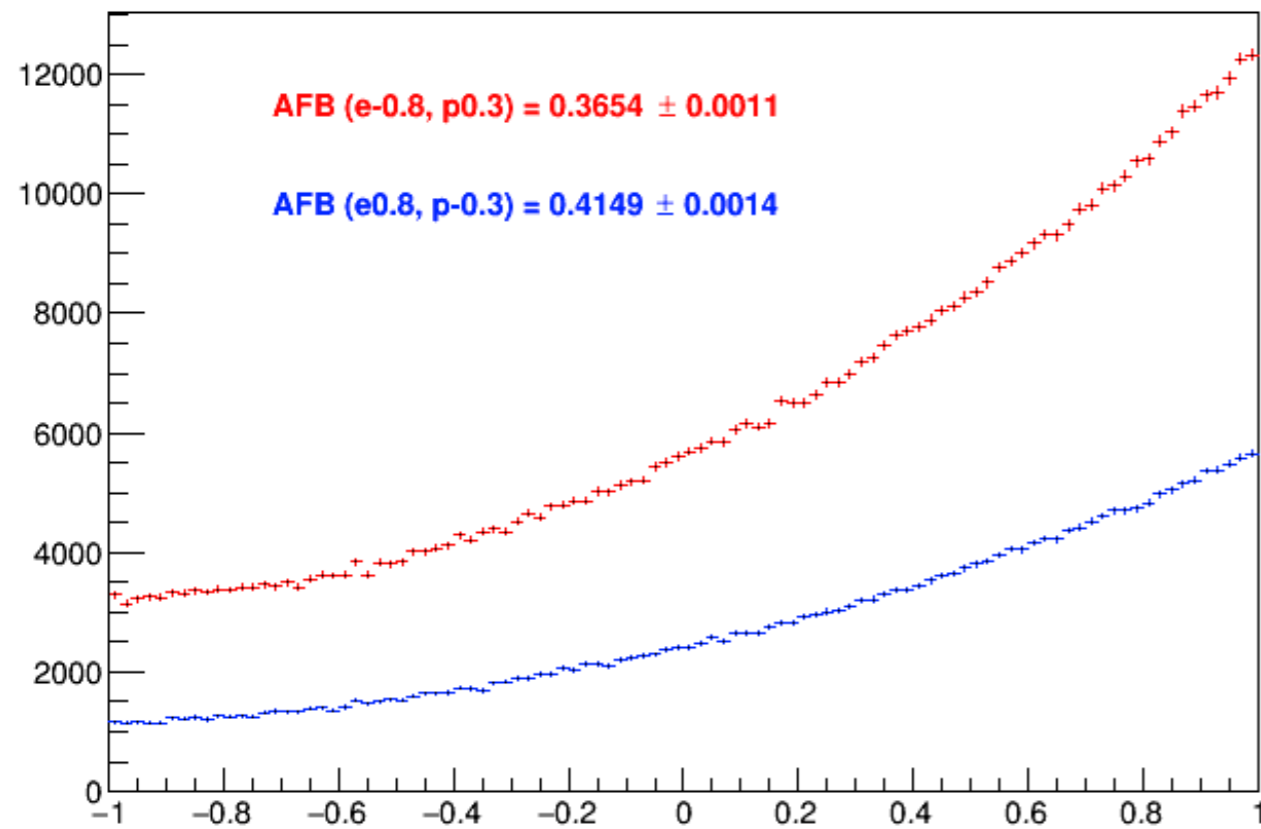**LR : (e-,e+) = (-0.8,+0.3), RL : (e-,e+) = (+0.8,-0.3)**

MCCosthetaT

AFB (e-0.8, p0.3) = 0.3654 ± 0.0011

AFB (e0.8, p-0.3) = 0.4149 ± 0.0014

nevents = 631784

nevents = 274342

Comparing with a reference

M. S. Amjad et al.,

Eur. Phys. J. C (2015) 75:512

MCCosthetaT

AFB (e-0.8, p0.3) = 0.3654 ± 0.0011

AFB (e0.8, p-0.3) = 0.4149 ± 0.0014

checking consistency with the previous study...

Summary

❖ **We have started looking at new samples.**

  ‣ No technical problem (crash etc.) found so far.

  ‣ Started from MC level

  ‣ LCFIPlus issue must be solved for studies with reco events.