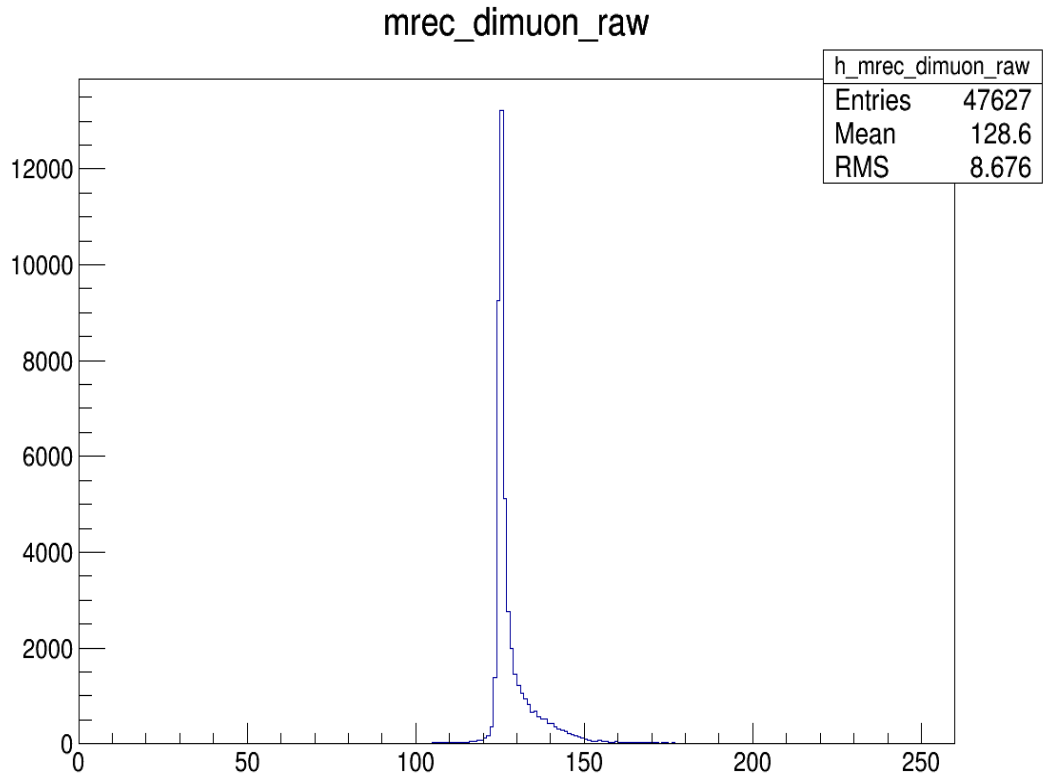
Three weeks' Report – Kong Lingteng

- Those weeks I was mainly working on repeating Ryuta's work, understanding codes and physical laws behind the analysis and the meaning of diagrams, etc.

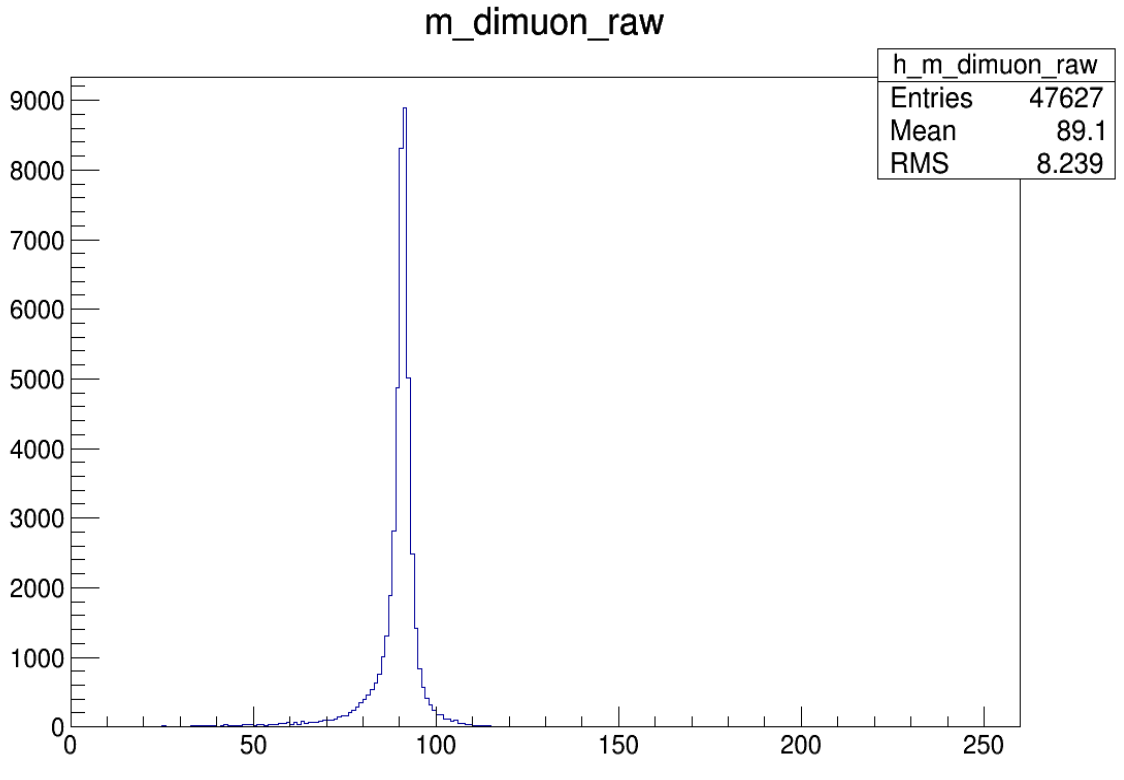
Sample path

- signal_slcio_dir=/besfs/groups/higgs/data/SimReco/wo_BS/CEPC_v4/higgs/smart_final_states/E240.Pllh_zz.e0.p0.whizard195/
- nnhzz_slcio_dir=/besfs/groups/higgs/data/SimReco/wo_BS/CEPC_v4/higgs/smart_final_states/E240.Pnnh_zz.e0.p0.whizard195/
- mmh2ww_slcio_dir=/afs/ihep.ac.cn/users/k/kiuchi/h2zz/TestFullSim/reconstruction/output/e2e2h_ww/
- mmh2zz_slcio_dir=/afs/ihep.ac.cn/users/k/kiuchi/h2zz/TestFullSim/reconstruction/output/e2e2h_zz/
- mmh2tt_slcio_dir=/afs/ihep.ac.cn/users/k/kiuchi/h2zz/TestFullSim/reconstruction/output/e2e2h_e3e3/
- **Not sure whether mmh2zz sample is same with Yongfeng.**

Z(->μμ)H(->ZZ*)

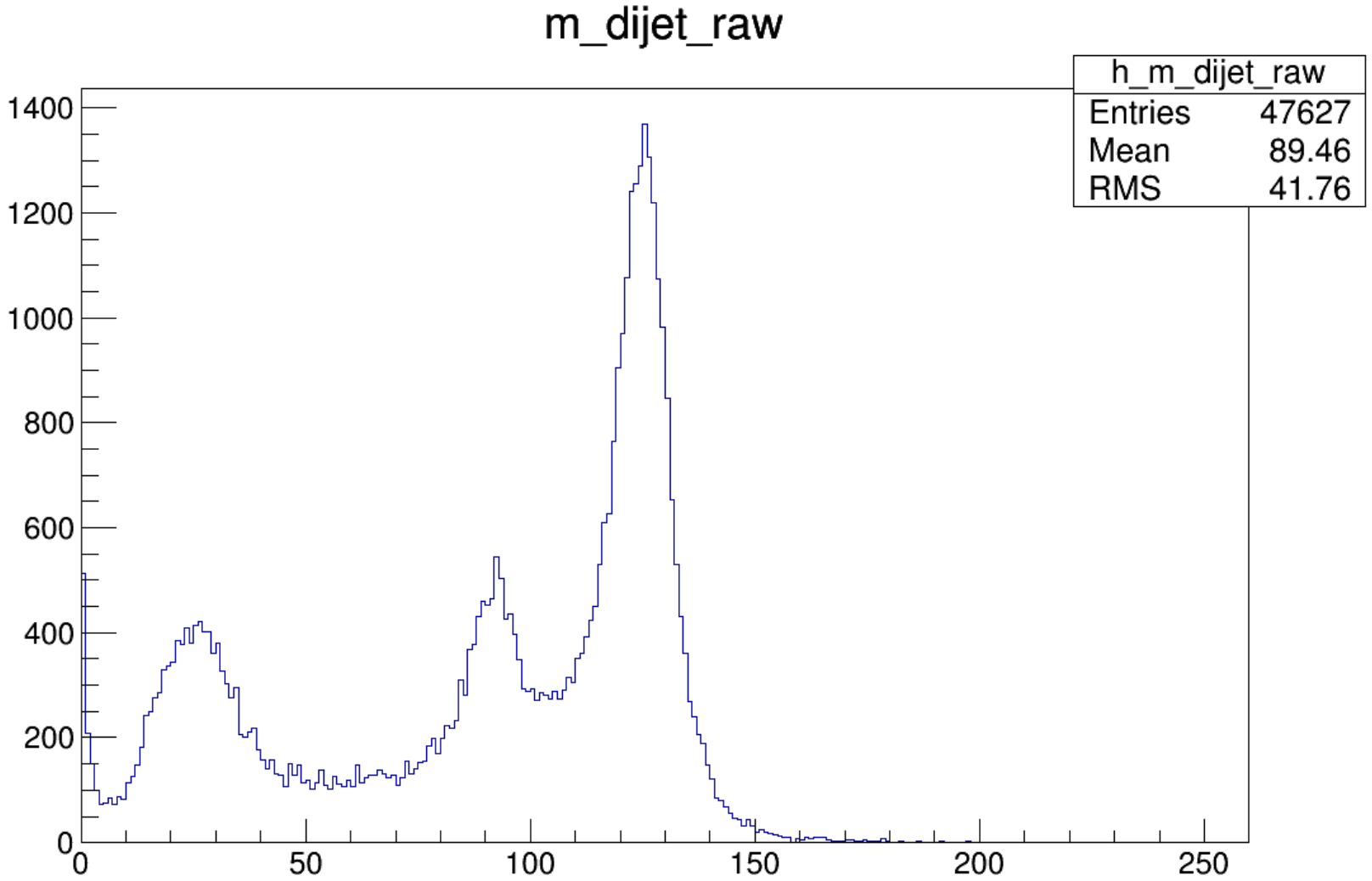


Recoil mass of dimuon

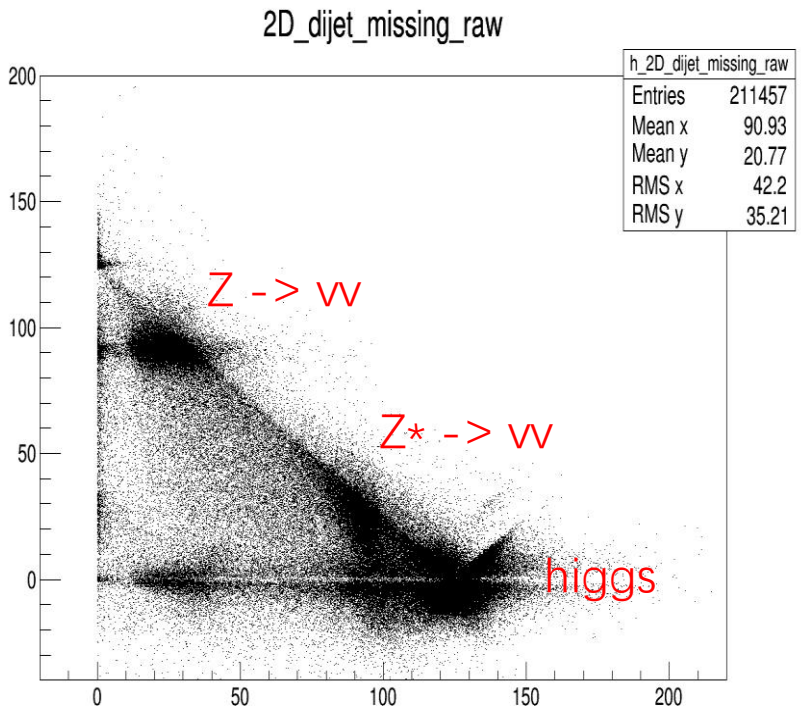


Invarient mass of dimuon

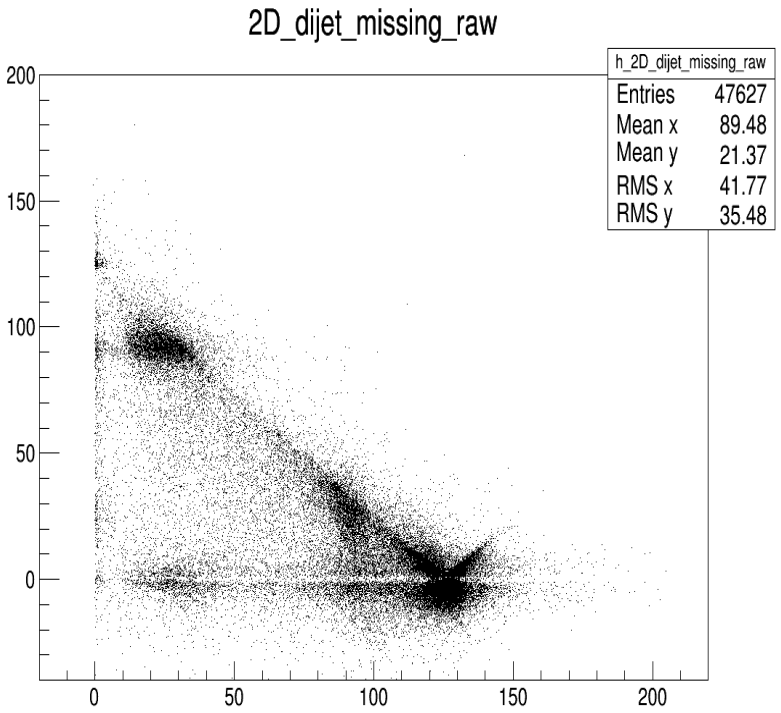
Invariant mass of two-jets(Z(->μμ)H(->ZZ*))



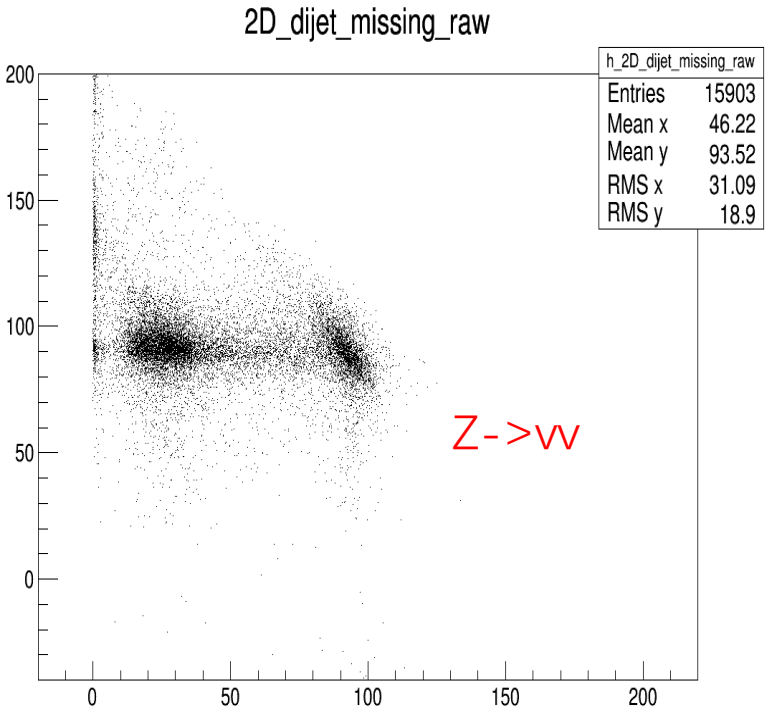
Missing mass



Z(->ll)H(->ZZ*)

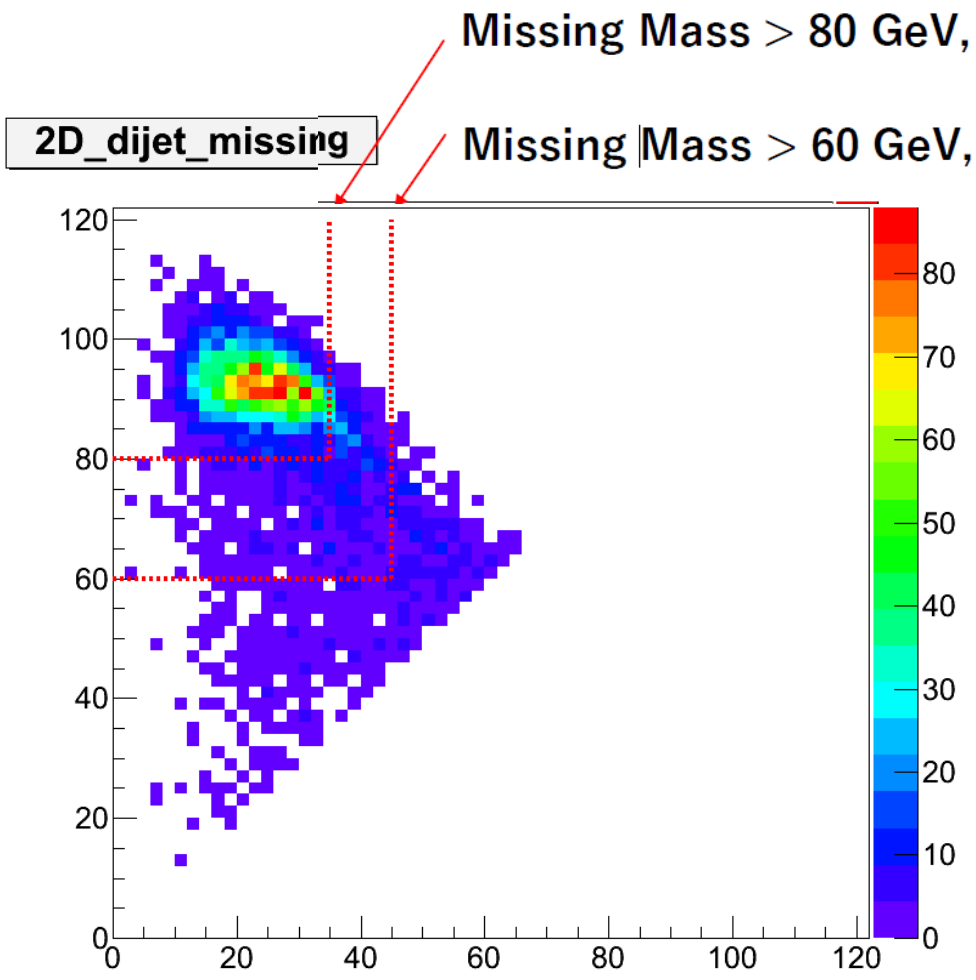


Z(->uu)H(->ZZ*)



Z(->vv)H(->ZZ*)

Cut we are using now (from Ryuta)



	Signal
Missing mass> M(di-jets)	145
80 < M(dimuon) < 100	133
120 < RecM(dimuon) < **135**	118
N(pfo) >15	99
Pt(total visible) > 10	93
Min angle > 0.3	87
Missing Mass & M(dijets)	61
Pt(jet1) > 3 & Pt(jet2) > 3	54
N(lepton)<3 (==2)	52

Further step suggested by Ryuta

- About the cut: the order of the cut may be changed, the cut maybe too much, and we may use BDT instead of human cut.