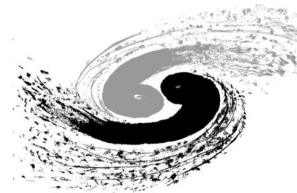
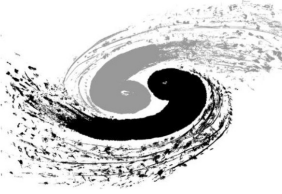


CEPC Update

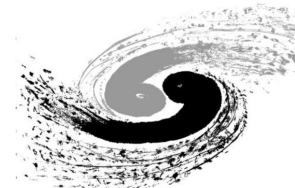
Zebing Wang



Full Sim Samples



| | Path | Events |
|-------|---|--------|
| nnHgg | /publicfs/cms/user/wangzebing/CEPC/CEPCSW/FullSim_Samples/Rec_TDR_o1_v01_E240_nnh_gg.root | 1360 |
| nnHuu | /publicfs/cms/user/wangzebing/CEPC/CEPCSW/FullSim_Samples/Rec_TDR_o1_v01_E240_nnh_uu.root | 1424 |
| nnHdd | /publicfs/cms/user/wangzebing/CEPC/CEPCSW/FullSim_Samples/Rec_TDR_o1_v01_E240_nnh_dd.root | 1421 |
| nnHss | /publicfs/cms/user/wangzebing/CEPC/CEPCSW/FullSim_Samples/Rec_TDR_o1_v01_E240_nnh_ss.root | 1373 |



Jet Reconstruction

- ee_kt algorithm for the jet reconstruction
 - Reconstruction level PFO (Reco)
 - Generator level particles (Gen)
- Selection
 - **Two jets $|\cos\theta| < 0.85$**

| Selection Eff | $\frac{N_{ \cos\theta_j < 0.85}}{N_{Total}}$ |
|---------------|---|
| Reco | 0.77 |
| Gen | 0.73 |

Table 1. Event cumulative efficiency for Higgs boson exclusive decay at the CEPC with $\sqrt{s} = 240$ GeV.

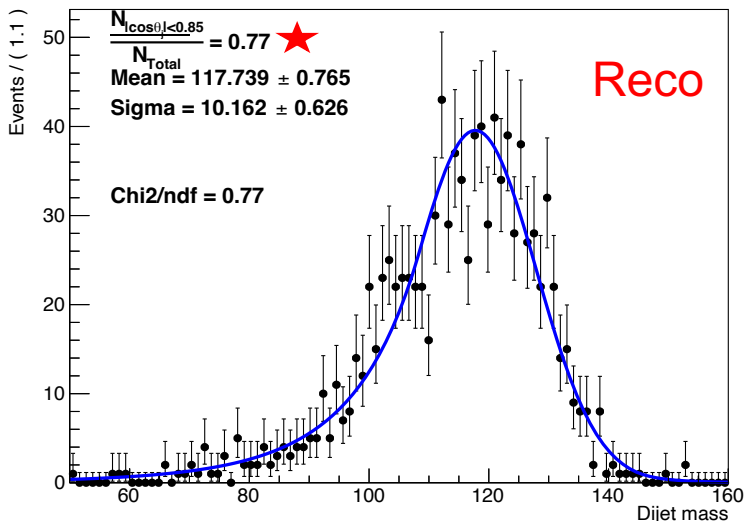
| | gg(%) | bb(%) | cc(%) | WW*(%) | ZZ*(%) |
|---|--------------|-------|-------|--------|--------|
| Pt_ISR < 1 GeV | 95.15 | 95.37 | 95.30 | 95.16 | 95.24 |
| Pt_neutrino < 1 GeV | 89.33 | 39.04 | 66.36 | 37.46 | 41.39 |
| $\text{Cos}(\text{Theta_Jet}) < 0.85$ | 67.30 | 28.65 | 49.31 | — | — |

$$\frac{67.30}{89.33} \approx 0.75$$

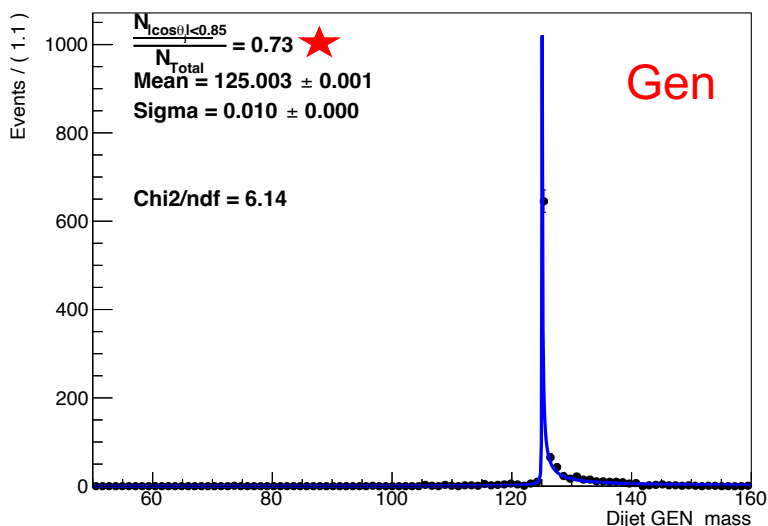
Matched



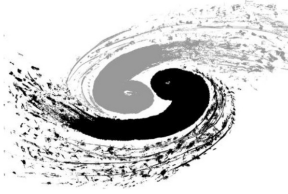
DSCB fit to nnHgg dijet mass



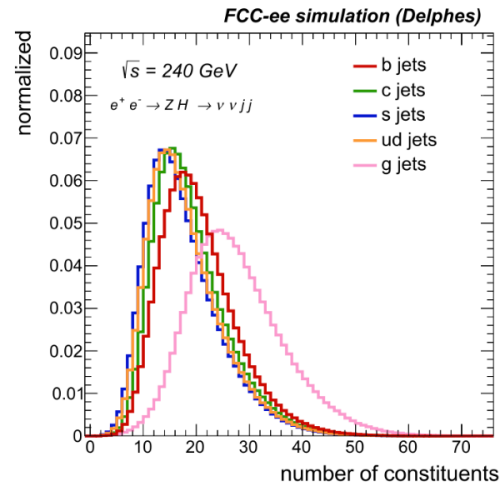
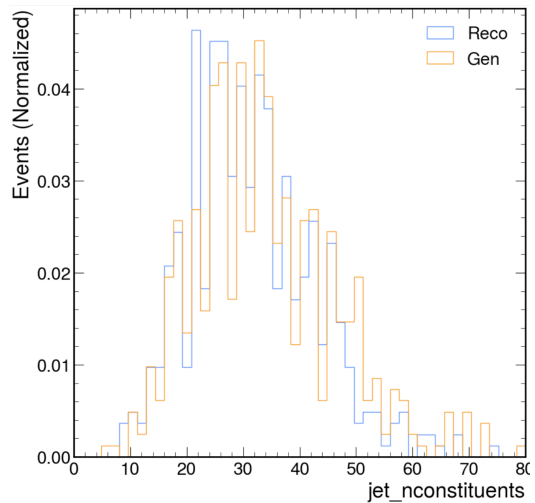
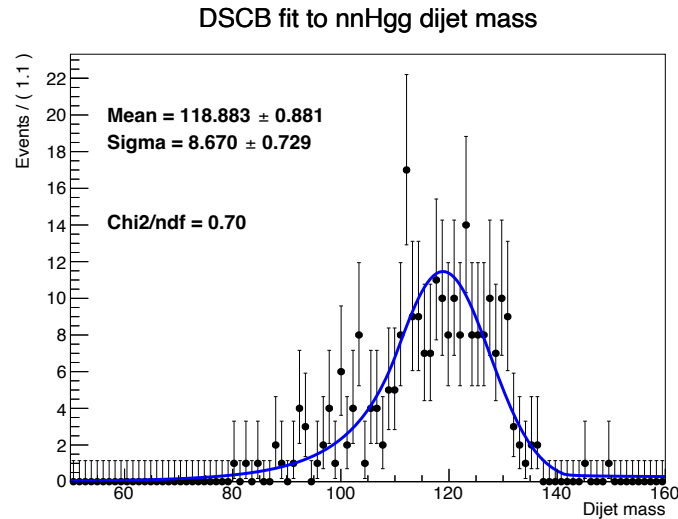
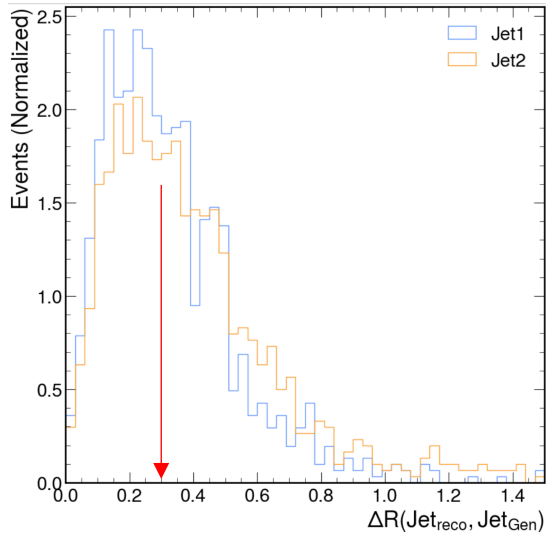
DSCB fit to nnHgg dijet mass



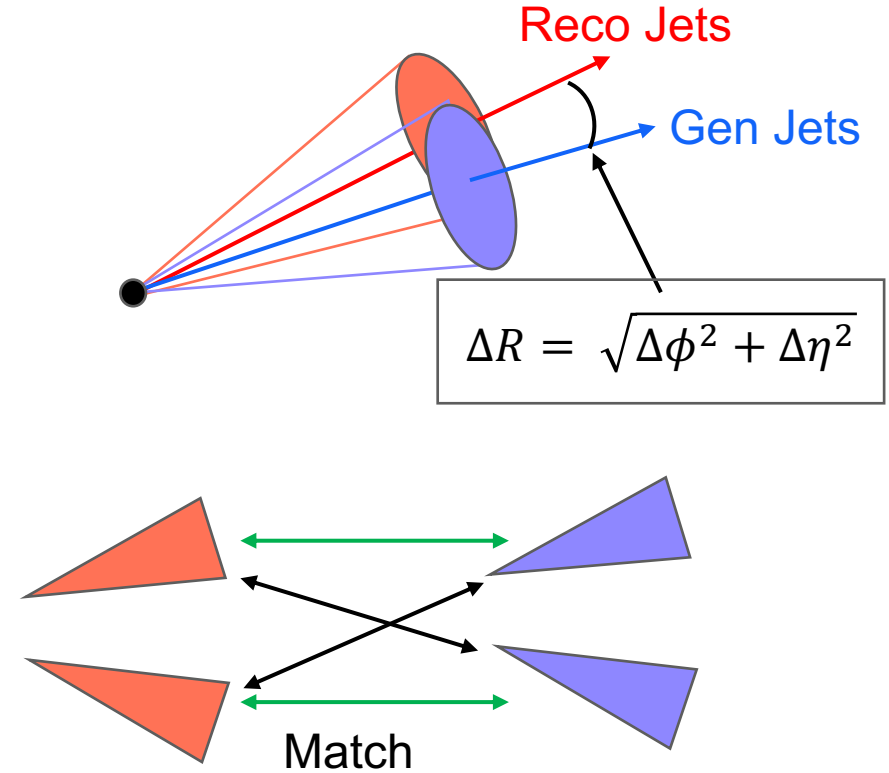
Jets Gen Level Match



- Reco jets Gen match
 - $\Delta R < 0.3$

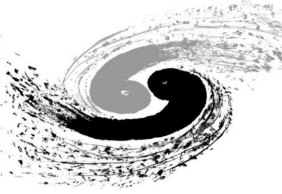


(a)

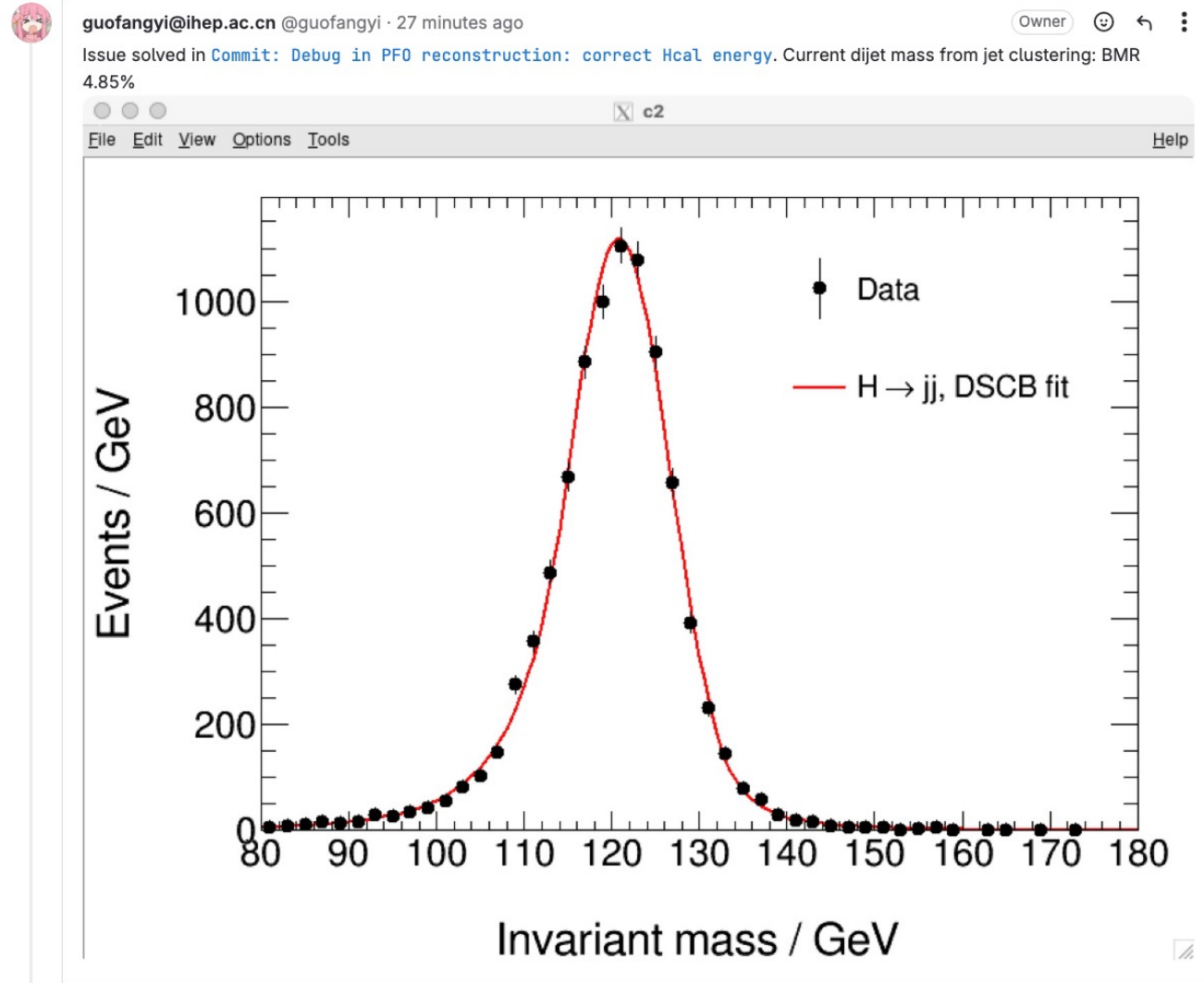


| Selection Eff | Efficiency |
|-------------------------|------------|
| $ \cos\theta_j < 0.85$ | 0.77 |
| $\Delta R < 0.3$ | 0.19 |

PFO Issue For Jet Reconstruction



Activity



- Missing Hcal Cluster energy
 - Solved and will update the CEPCSW in future

谢谢

