

CEPC Jet&Clusters

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new Release TDR24.12.0



- Sample under generation
 - In 4GB memory, 600/2000 jobs held due to memory limit.
 - Muon chamber issue fixed;
 - Most probably from Endcap calo geometry.
 - Fix time scale: Long. @Fangyi
 - In 6GB memory, job run successfully but limit resource.
 - Meantime <1000 jobs for 6GB in the same time for my account.
 - Bug found: Please wait for bug fixing.

Jet/Photon Performance:

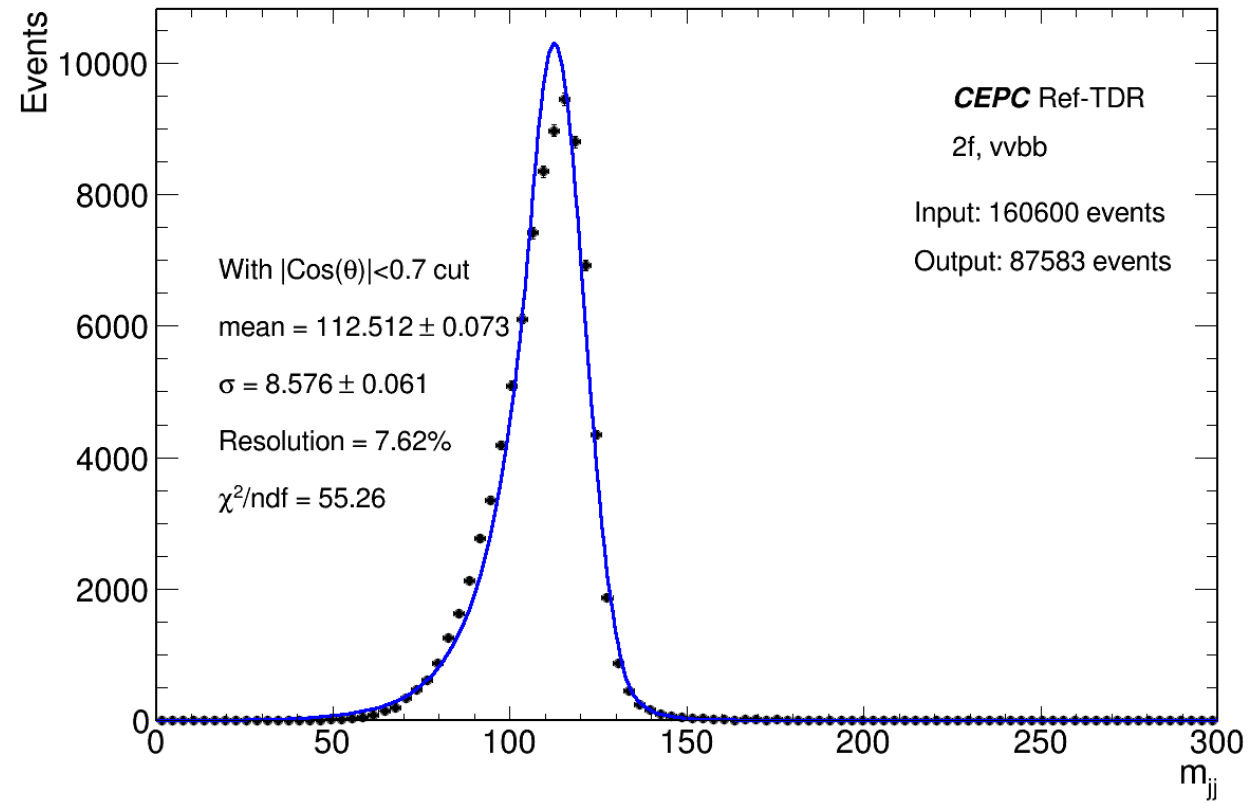
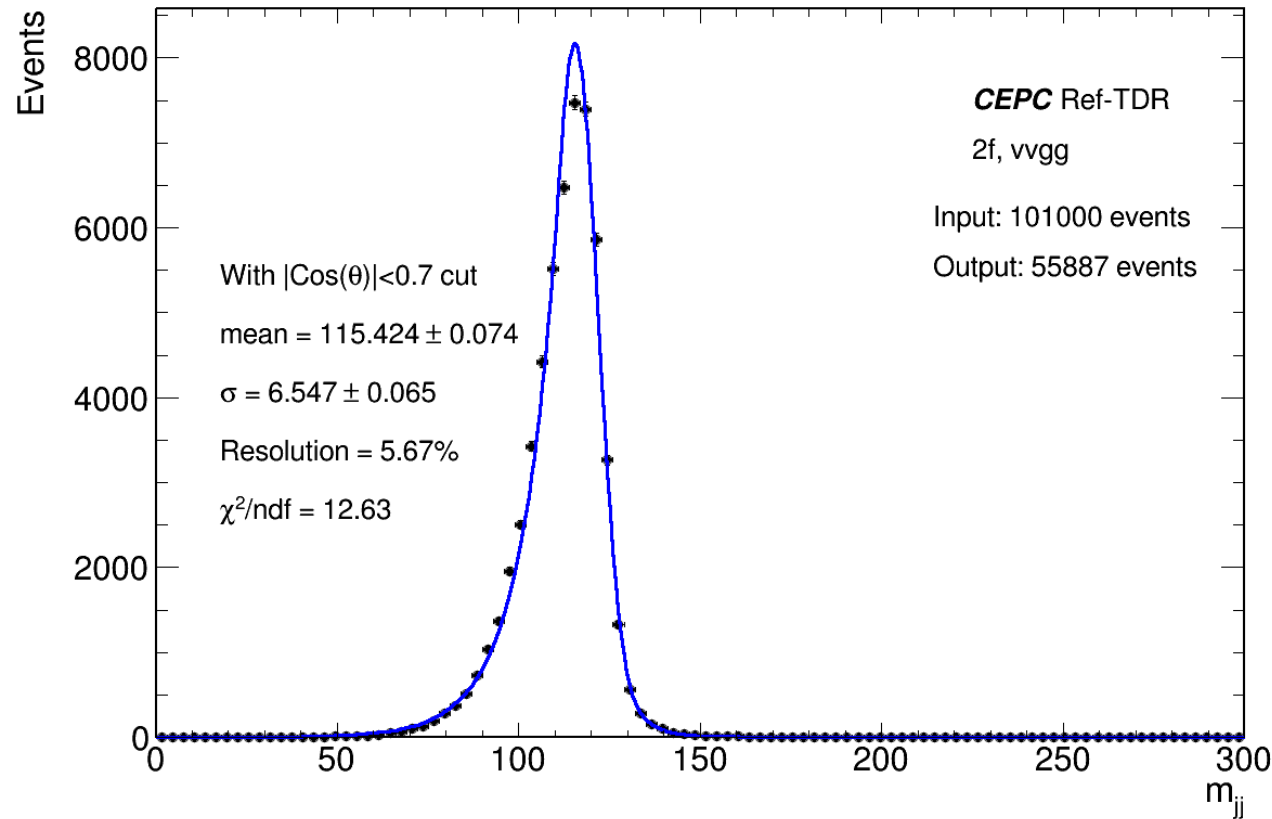


- Try differential plots
- Use back-to-back cut in current dijet sample to mimic jet1/2 impact.
 - $\Delta R \geq 2$, as one example.
- Further cooperation with software/hardware group
 - Please dig in CEPCSW code.
 - A preliminary JetOrigin code: `/cefs/higgs/zhangkl/CEPCSW/Analysis/JetOrigin/src`
 - Truth matching, Track matching, PDGID identification.....

24.12 Sample:

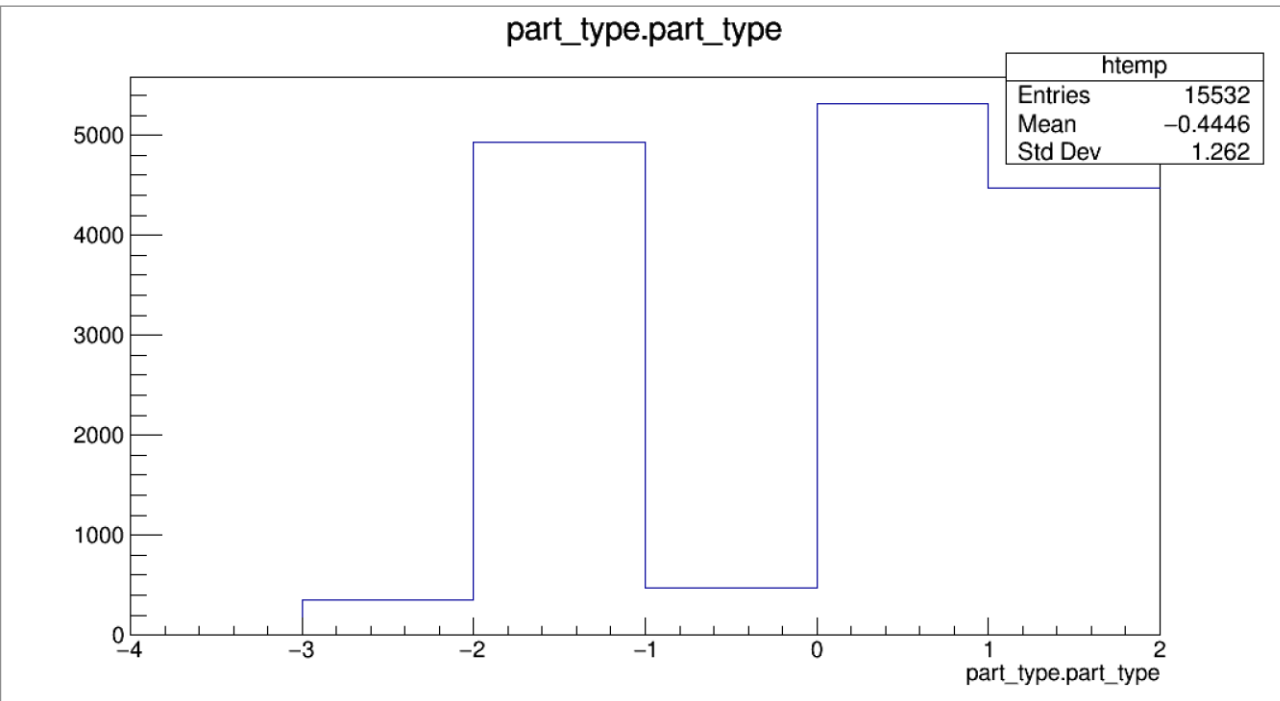


Energy missing?
It seems that HCAL not included in current sample.
Already report to Fangyi. Fix soon.



Quick Look on POI:

vvbb, 200 events, 400 jets, 15532 PFOs.



- **34.2%**: Unmatched.
- **28.8%**: Truth + Track Matched
- **3.4%**: Truth Matched + No track.
- **31.7%**: Truth DeltaR matched, but E $1\% < (R-T)/T < 10\%$ cut;
- **2.25%**: Truth E matched, but $0.1 < \text{DeltaR} < 0.4$ cut;
- About 2/3 PFO can roughly match with truth components.

Matched PDGid

Pi:K:P = 90:9:1.

If all gamma from Pi0, >95% recognizable PFOs are from Pi+, Pi-, Pi0 for b jets.

