

# **Arbor Migration to CEPCSW**

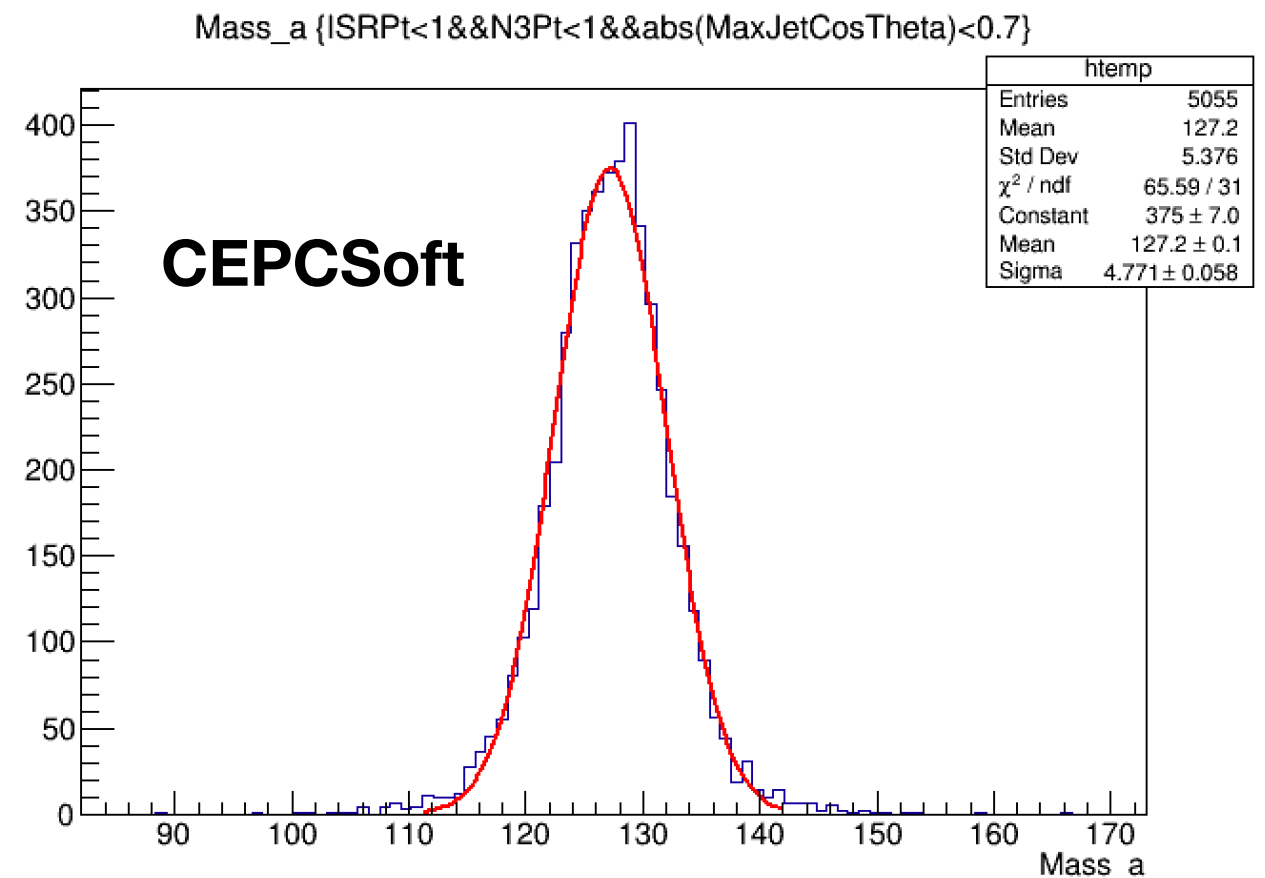
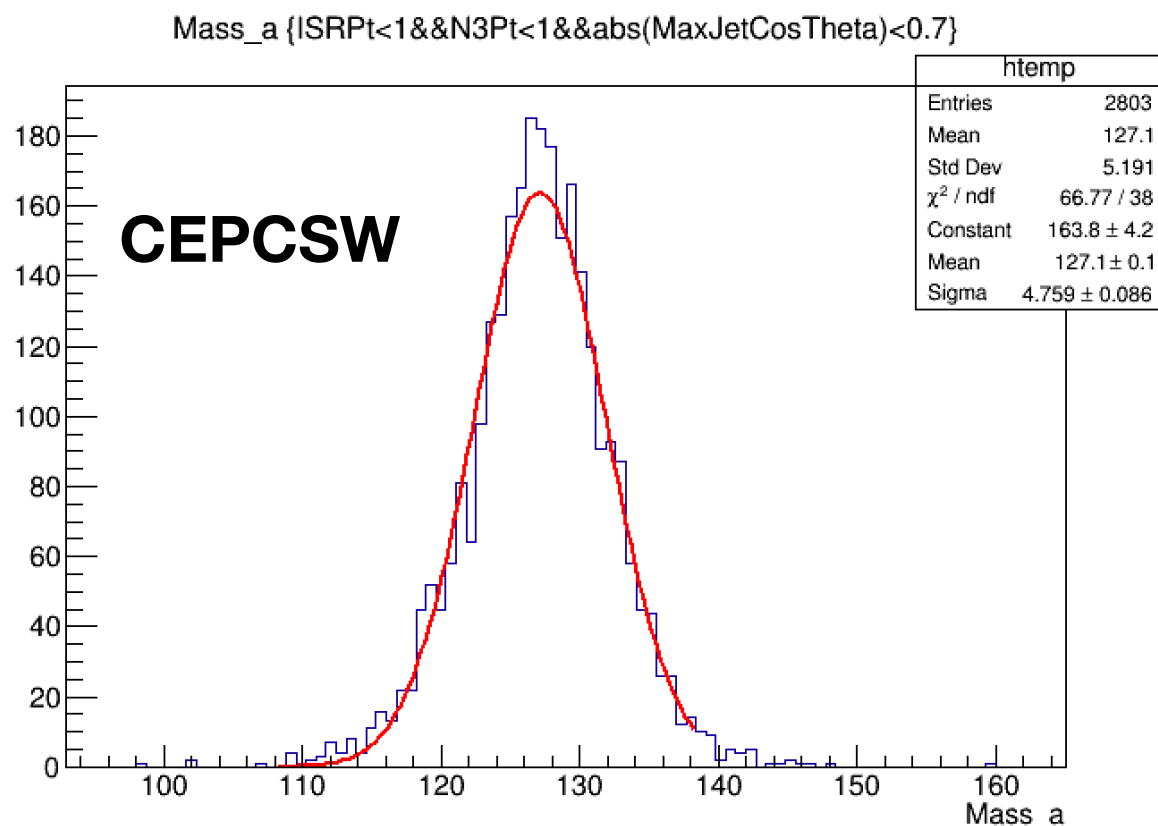
Dan YU  
2021/01/25

# Arbor in CEPCSW

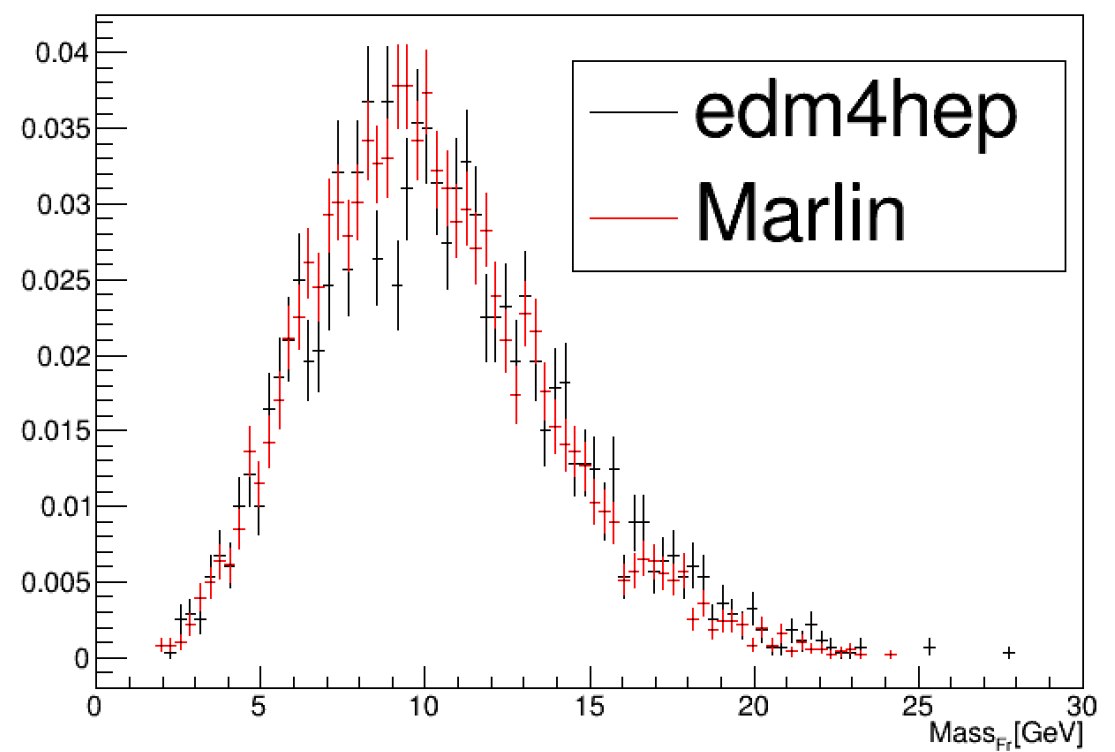
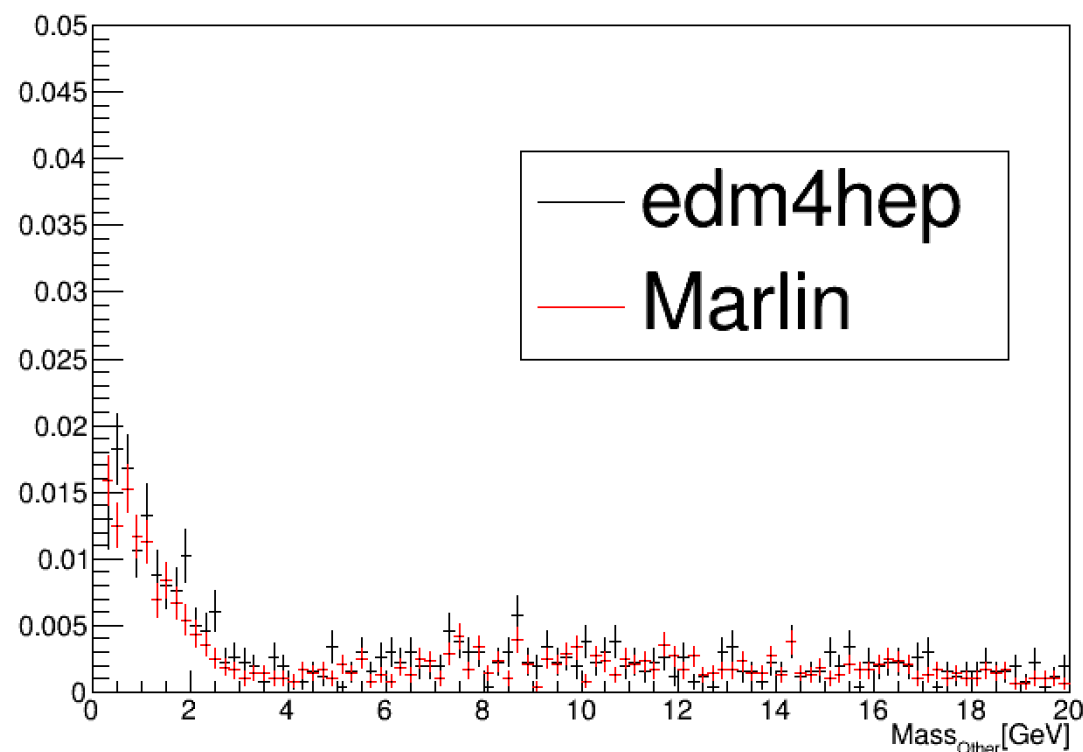
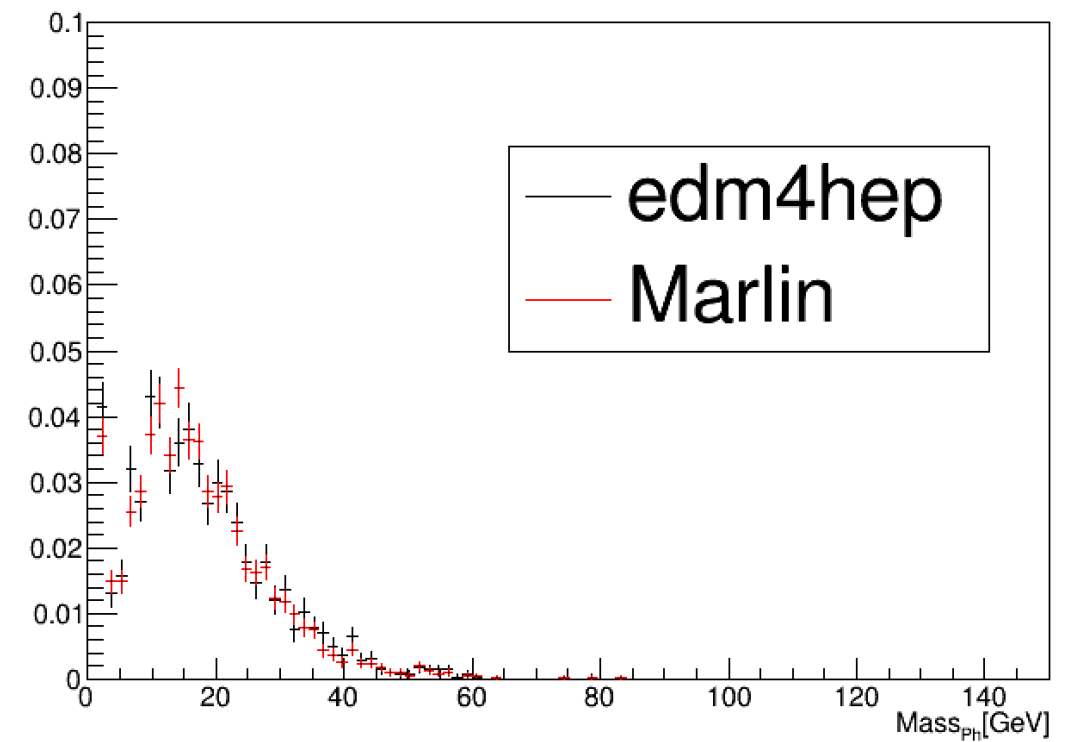
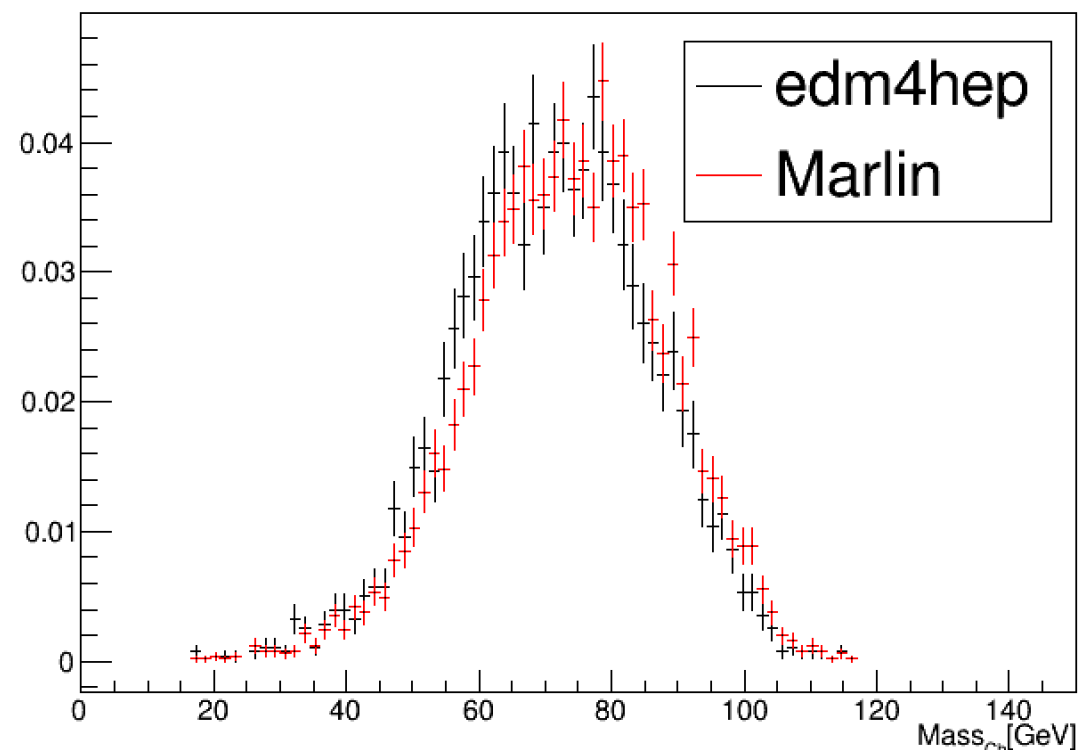
- Migration finished
- 2 modules:
  - MarlinArbor: Clustering (CalorimeterHits->Clusters)
  - BushConnect: Track & Cluster Linking, primary PID (Clusters + Tracks ->ReconstructedParticles)
- Many thanks to Tao for answering questions

# Comparison

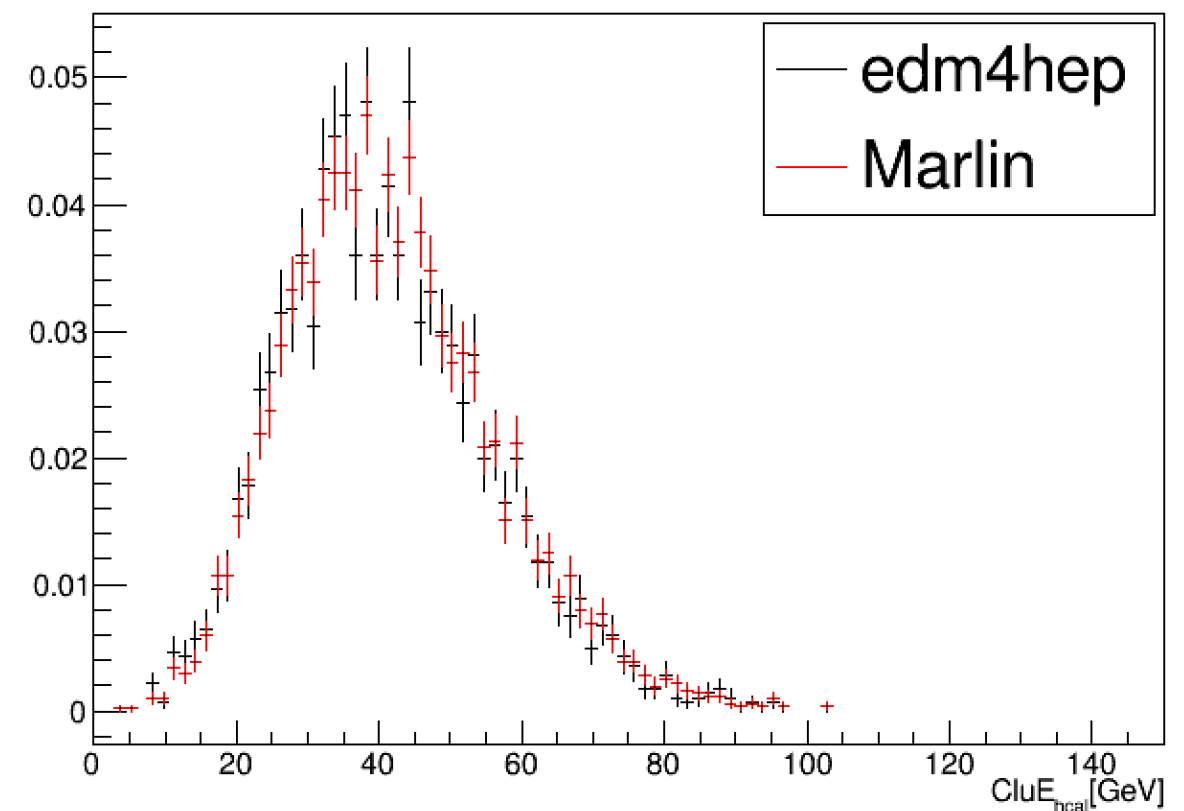
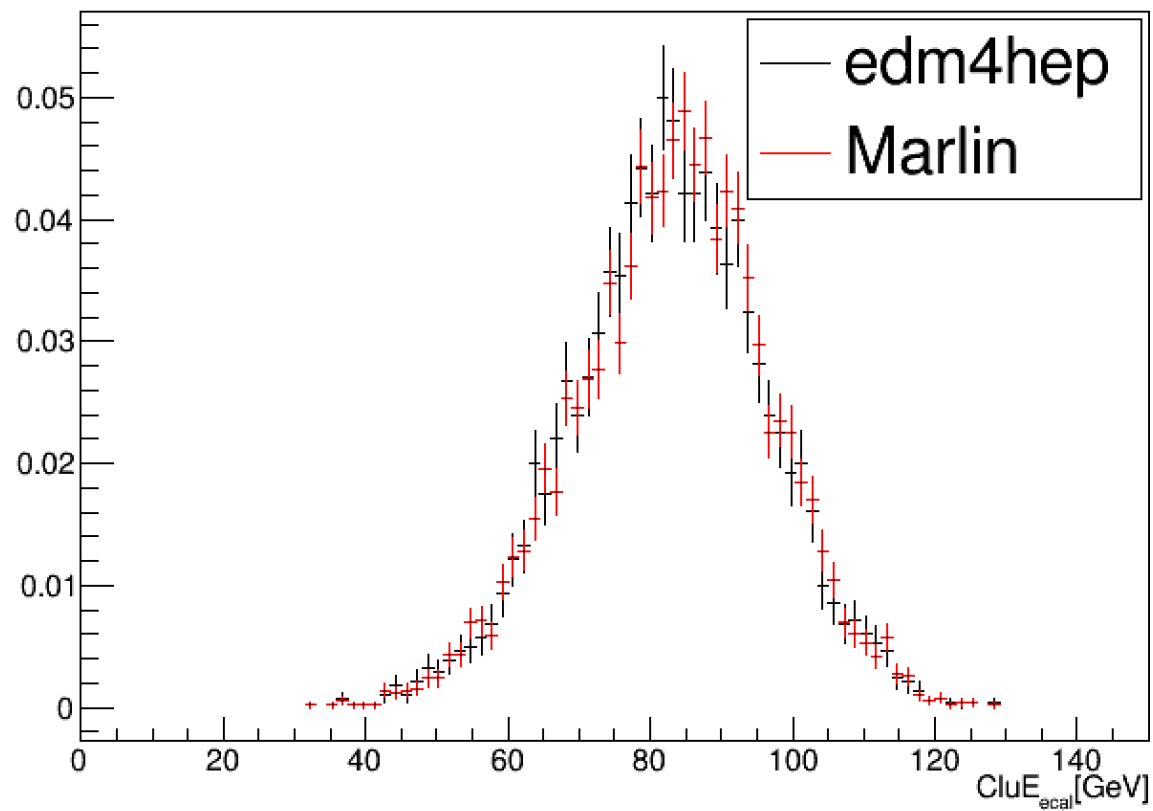
- Use simulated  $nnH(H \rightarrow gg)$  lcio as input, tracking & track digitization in cepcsoft
- Use cepcsw for calo digitization, reconstruction, and analysis
- Result: Higgs mass, same as in cepcsoft (BMR~3.8%)



# Comparison — PFOs



# Comparison — Clusters



# Questions

- TrackerHitPlane cannot be converted to TrackerHit
- Sometimes incomprehensible break... need expert help
- How to use condor?
- Other validation?

# Hope to Add

- Write edm4hep files when read Icio
  - save output at certain stage and use it as input afterwards, no need to run all the chain again and again
- Common Cell ID
- skip events
  - Important for debug...
- Get rid of breaks due to lacking of some collections
  - try?

# Next

- Lepton ID
  - Need: TrackerHitPlane
- Druid
  - Need: get a certain event with the event number
- Frank's reply

the equivalent would be the ROOTReader. Have a look at [https://github.com/key4hep/EDM4hep/blob/master/test/read\\_events.h](https://github.com/key4hep/EDM4hep/blob/master/test/read_events.h) for a (templated) example on how to use this.

It does not yet have a method for reading a specific event with a given run end event number, though...