SvtxCaloEval code

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Status

- I wrote Truth evaluator for SiCalo reconstructed track.

- Uploaded to github
  - Still debugging…
- Writing manual for my module

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- I want to use SiCalo track for INTT detection efficiency

Manual

- I’m writing manual for my module
  - How to use with a sample code
  - What they are doing

- Some additional things will be also in
- Brief explanation for
  - Svtx/Calo Eval classes in github
  - SvtxTrack(Structure of PHActsSiliconSeeding)
  - RawCluster to TowerInfo connection for Calorimeter
  - Particle info. In PHG4Particle

General

- SvtxCaloEval.h is a module to check
  - “**All Silicon/Calo clusters are from same particle**”
- For Simulation study

- This will return true/false for given track
- If true, particle information is also provided

- https://github.com/taka3514/SiCalo/blob/main/SvtxCaloEval/SvtxCaloEval.cc

How to use

- Constructor
  - SvtxCaloEval(PHCompositeNode *topNode, const std::string& svtxName, const std::string& caloName);
- svtxName is SvtxTrackMap node name
- caloName is RawClusterContainer node name
- Don't forget to run
  - void next_event(PHCompositeNode* topNode);
- For each process_event()

How to use

- Enter your combo of SvtxTrack and CaloCluster
  - bool SvtxCaloEval::isSvtxCaloTruth(SvtxTrack* track, RawCluster* cluster);

- If that return true,
  - std::set<int> SvtxCaloEval::get_SvtxCalo_trkId()
- will return a list of track id which is assigned for all PHG4Particle individually.

- Then, you can get corresponding particle information with
  - std::map<int, TrackData> track_map;
- Enter your track id as a key

Particle information

- Please receive track_map by auto
  - auto trackmap = “instance name”->track_map;
  - auto trackinfo = trackmap.at(key);

- This “track info” has info
  - Acts::Vector3 trackinfo.momentum
  - Acts::Vector3 trackinfo.vertex
  - double trackinfo.charge
  - double trackinfo.energy
  - int trackinfo.pId

Another thing I want to do

- I’m now working on INTT detection efficiency.

- I’m planning to use Svtx Calo matched track without TPC
  - Requiring enough isolated MVTX clusters