Status of physics examples: $\eta \to \pi^-\pi^+\pi^0$

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SPD technical meeting

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Data types

- ECAL MC point (FairMCPoint):
  - Basket/Module/Cell/Layer/Material (int)
  - From FairMCPoint: Position/Momentum (TVector3), trackID/detID (int), eLoss (double)
- ECAL MC hit:
  - Basket/Module/Cell (int)
  - Energy (double)
  - Position of center (TVector3)
  - *MC points (?)
- ECAL cluster:
  - Hits (vector<MChit*>)
- ECAL Reco Particle:
  - Energy (double)
  - Position (TVector3)
  - possibly: PID (int), certainty estimate (double)

Data flow

MC point

Hit producing:
combine MC points within one cell (e.g. add up all points), energy calibration

MC hit

Clustering:
barrel/endcap merging (?), min.cell energy

Cluster

Reconstruction algorithm:
center of gravity, log.weighting, ML algos

RecoParticle

same class
(Clustering & Reconstruction
might be interconnected)

Data flow (η → π-π+π0)

MC point (ECAL/tracking)

Same flow as gitlab_test.sh / "fullchain" directory ?
6 separate scripts (simulation/hitProducing/reconstruction)

ECAL MC hit   Ideal track
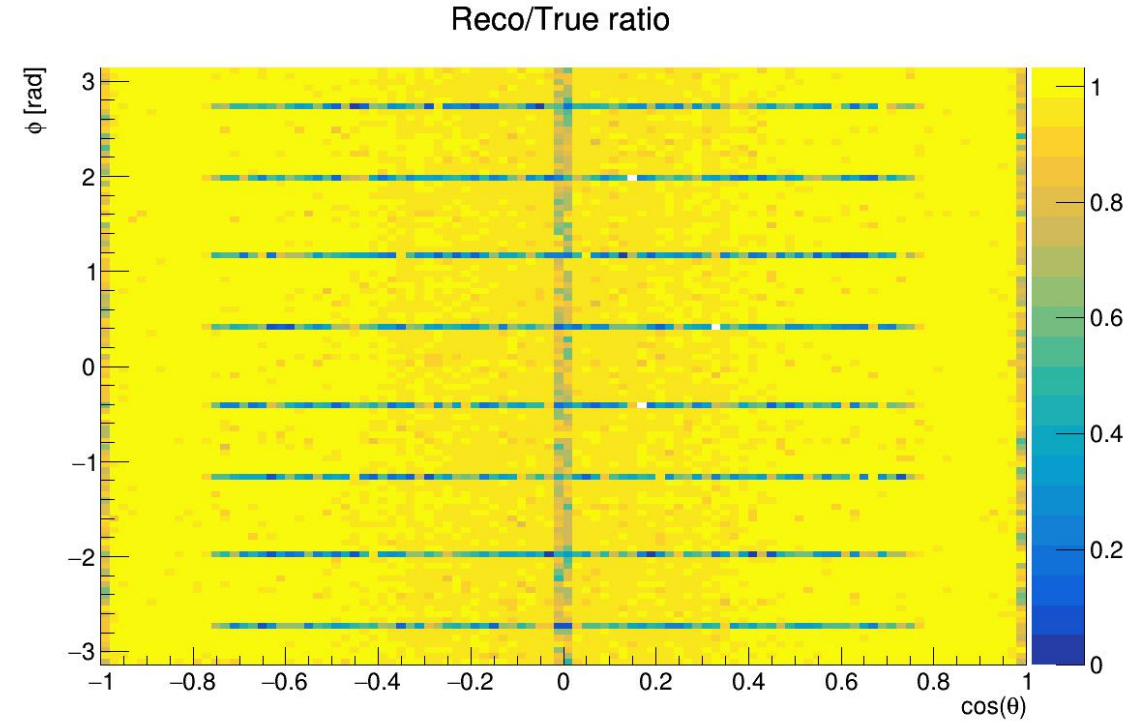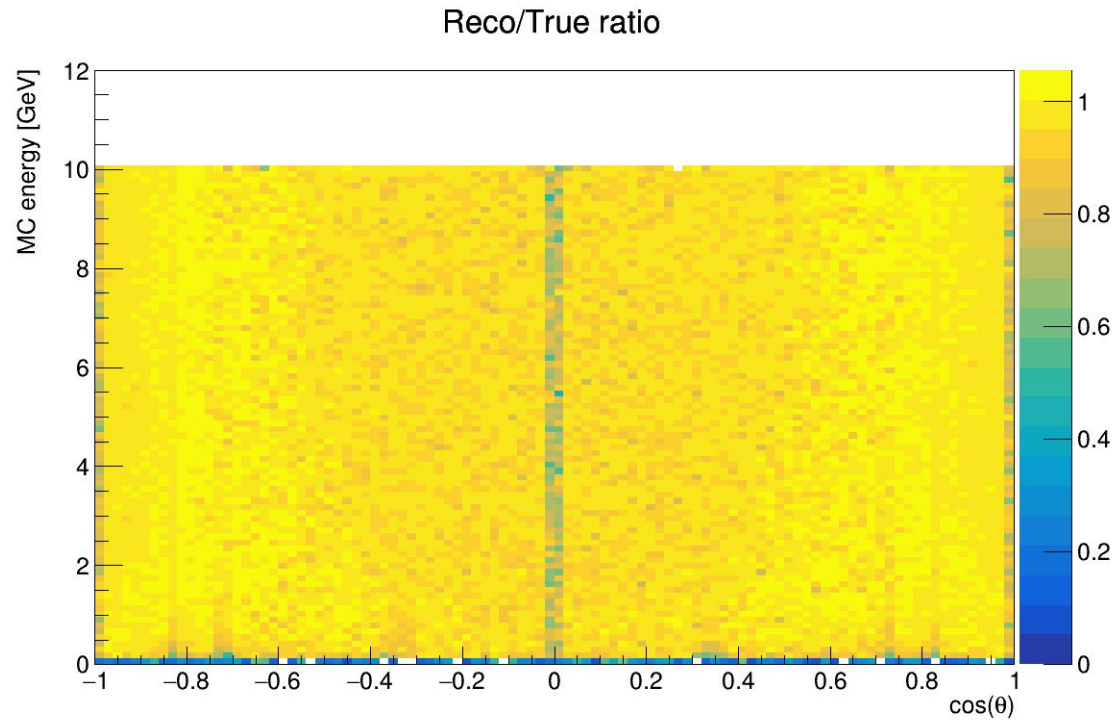
first pictures on η reconstruction: next week

then (<~2 weeks):
pushing to dev branch (code review etc.)
documentation

ECAL Cluster   Fitted track

η reconstruction

ECAL RecoParticle

First tests: photon energy: reco/MCtruth

Reco/True ratio

Reco/True ratio

The full chain works