LCD Monte Carlo Comparisons

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LBNL

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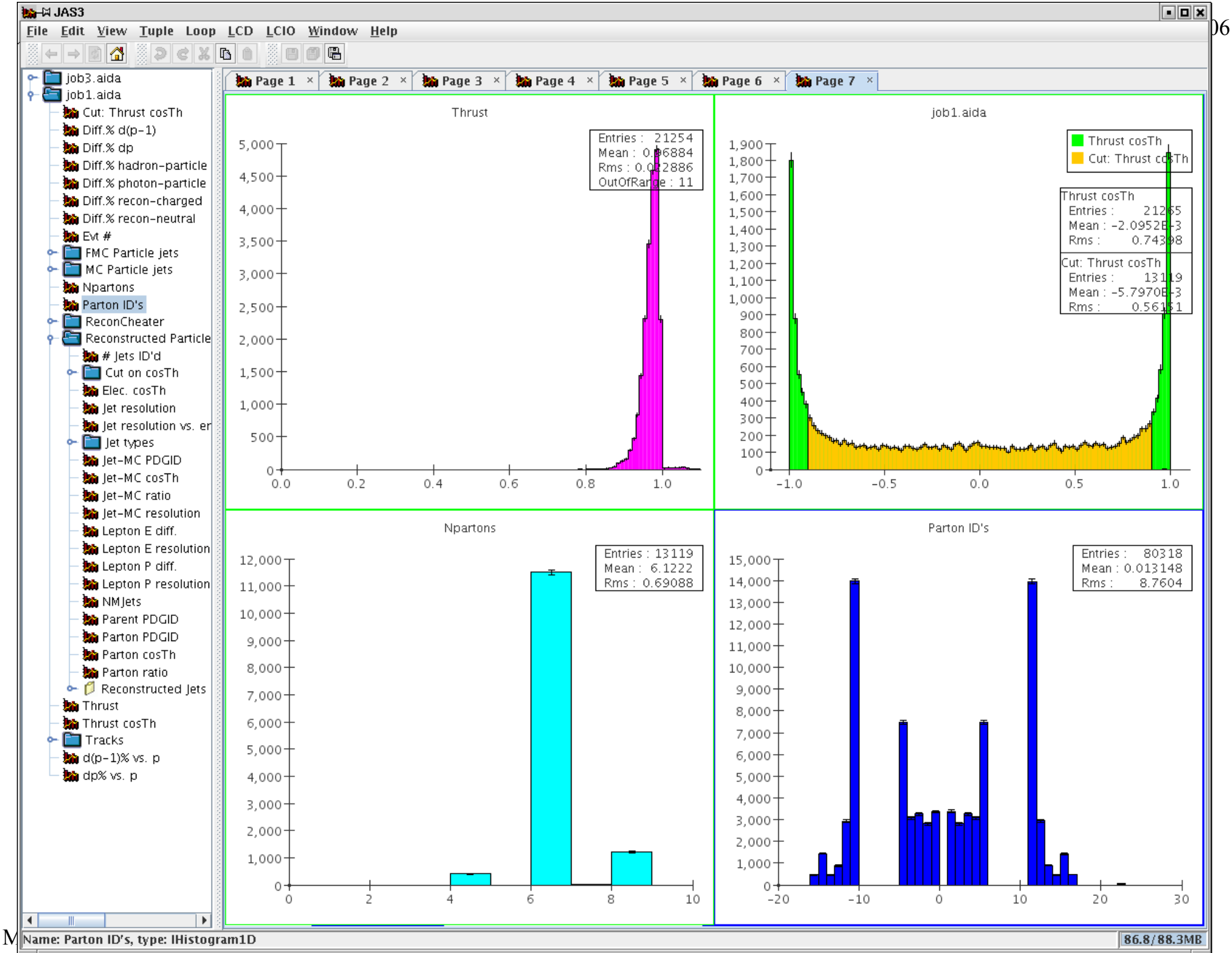
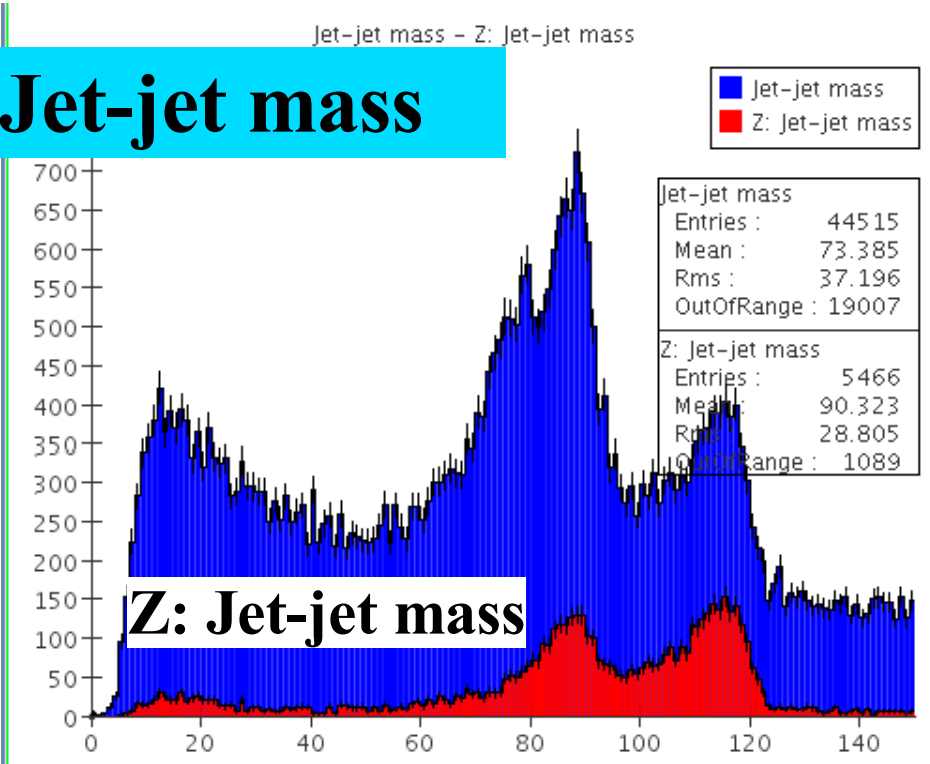
Mixed Jet Analysis

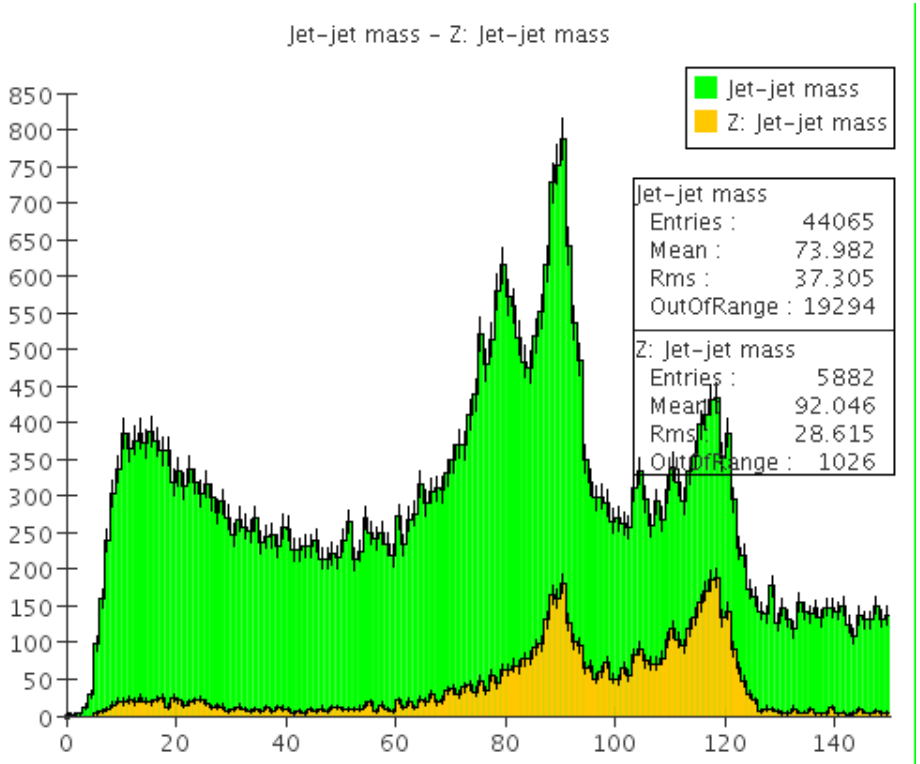
```
public class AnlEnergyFlow extends EventReco
{
  public static void main(String[] args) {
      LCSimLoop loop = ...
      JobProcessor processor = ...
      Driver analysis = new AnlEnergyFlow(parameters);

  AnlEnergyFlow(AnalysisParameters parameters) {
      add(new ShapeAnalysis());
      add(new MCFast(beamSpotConstraint,simple,seed));
      add(new SimDetModule());
      add(new MixedJetAnalysis());

public class MixedJetAnalysis extends AnalysisProcessor
{
  process(EventHeader event) {
      for (int itype=0; itype<ntypes; itype++) {
          if (itype==n && analyzeXXJets)
              getXXParticles();
          analyzeAllJets();
```


JAS3
File Edit View Tuple Loop LCD LCIO Window Help
job3.aida
job1.aida
Cut: Thrust cosTh
Diff.% d(p-1)
Diff.% dp
Diff.% hadron-particle
Diff.% photon-particle
Diff.% recon-charged
Diff.% recon-neutral
Evt #
FMC Particle jets
MC Particle jets
Npartons
Parton ID's
ReconCheater
Reconstructed Particle
Jets ID'd
Cut on cosTh
Elec. cosTh
Jet resolution
Jet resolution vs. er
Jet types
Jet-MC PDGID
Jet-MC cosTh
Jet-MC ratio
Jet-MC resolution
Lepton E diff.
Lepton E resolution
Lepton P diff.
Lepton P resolution
NMJets
Parent PDGID
Parton PDGID
Parton cosTh
Parton ratio
Reconstructed Jets
Thrust
Thrust cosTh
Tracks
d(p-1)% vs. p
dp% vs. p
Page 1
Page 2
Page 3
Page 4
Page 5
Page 6
Page 7
Thrust
Entries : 21254
Mean : 0.96884
Rms : 0.02886
OutOfRange : 11
job1.aida
Thrust cosTh
Cut: Thrust cosTh
Thrust cosTh
Entries : 21265
Mean : -2.0952E-3
Rms : 0.74398
Cut: Thrust cosTh
Entries : 13119
Mean : -5.7970E-3
Rms : 0.56151
Npartons
Entries : 13119
Mean : 6.1222
Rms : 0.69088
Parton ID's
Entries : 80318
Mean : 0.013148
Rms : 8.7604
Name: Parton ID's, type: IHistogram1D
86.8/88.3MB

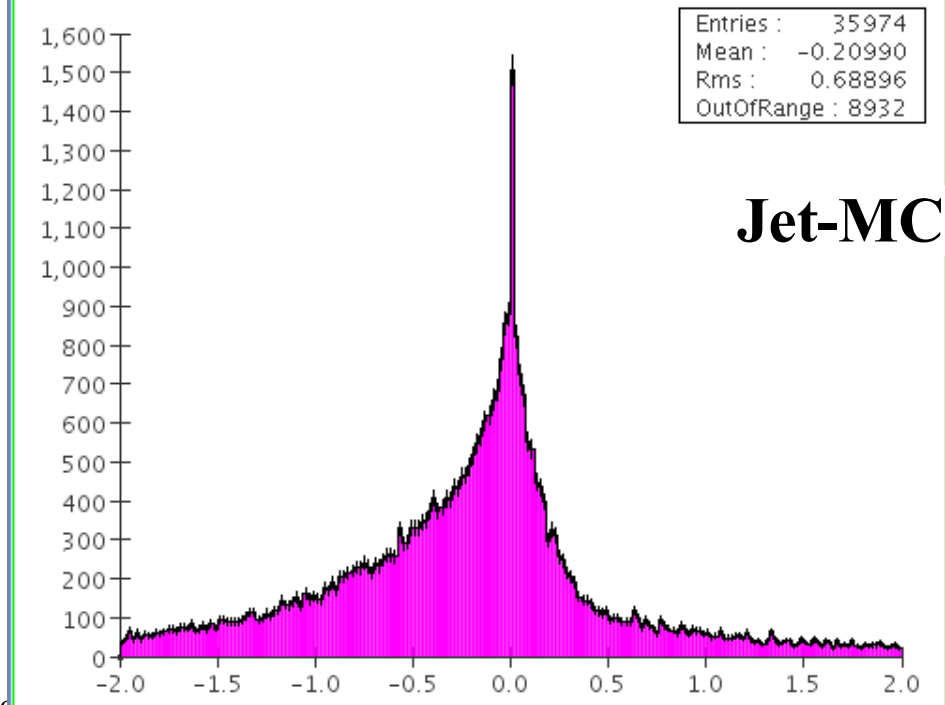
Jet-jet mass



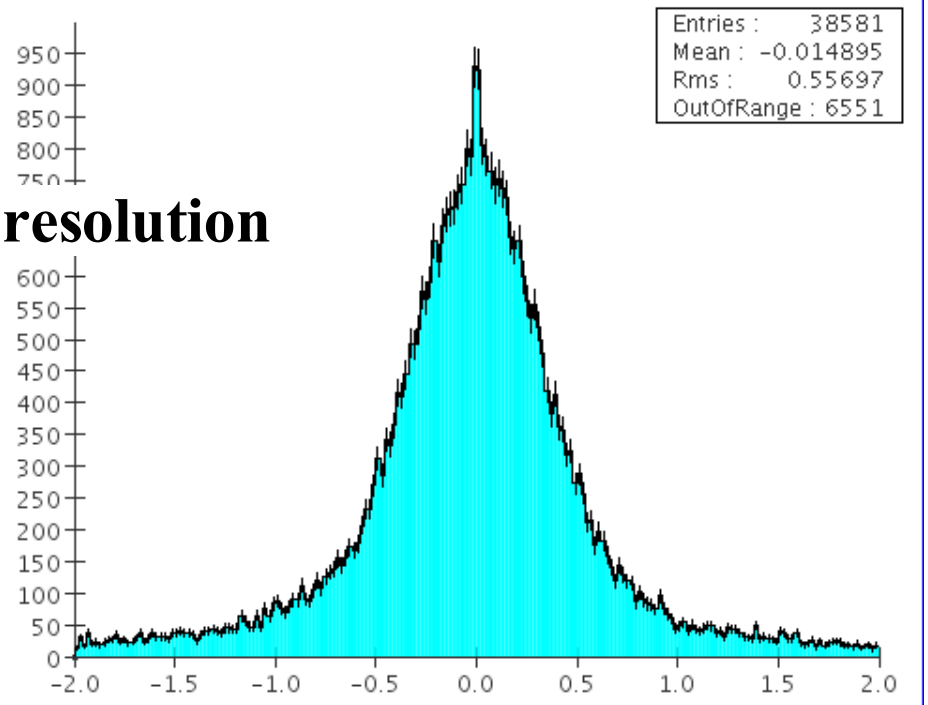
Z: Jet-jet mass



ReconCheater



Fast Monte Carlo



Jet-MC resolution

Fast Monte Carlo

For **sidaug05** track & cluster simulation

Parameters:

Cluster

JETParameterization: false
JETResolution: 0.30
JETHadDegradeFraction: 1.0
JETEMEnergyFraction: 0.285
JETHadEnergyFraction: 0.713

EMOnset: 0.1
EMSharpness: 999999.

EMResolution: 0.18
EMConstantTerm: 0.00
EMPositionError: 0.1
EMAlignmentError: 0

HADOnset: 0.2
HADSharpness: 99999.

HADResolution: 0.60
HADConstantTerm: 0.0
HADPositionError: 1.0
HADAlignmentError: 0

ID Efficiency

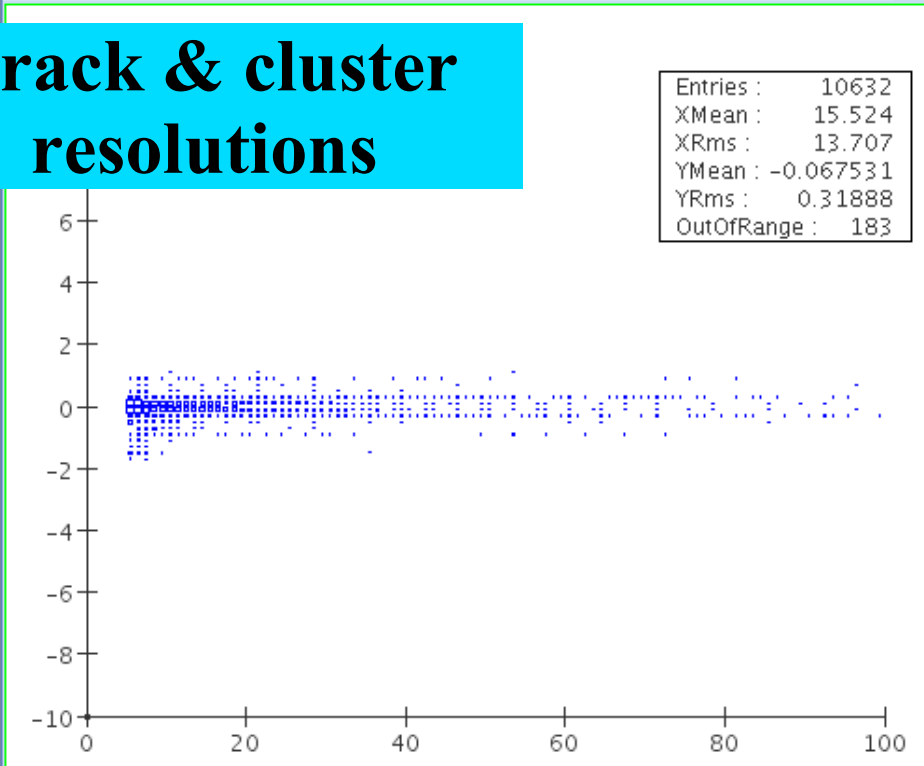
Electron: 1.0
Muon: 1.0
Proton: 0.0
Kaon: 0.0
Neutron: 0.0
wt_charged_track_calorimeter_energy: 0.0

SimpleTrack

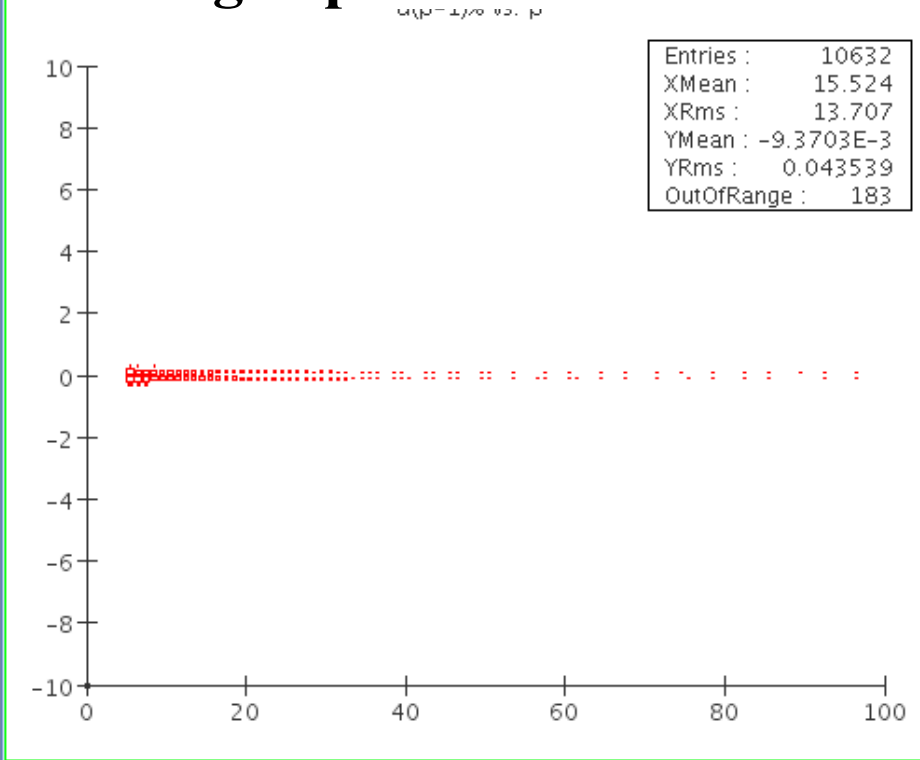
ConstantTerm: 0.00002
ThetaTerm: 0.001
TanLambdaErrorScale: 1.000
PhiErrorScale: 1.000
D0ErrorScale: 1.000
Z0ErrorScale: 1.000

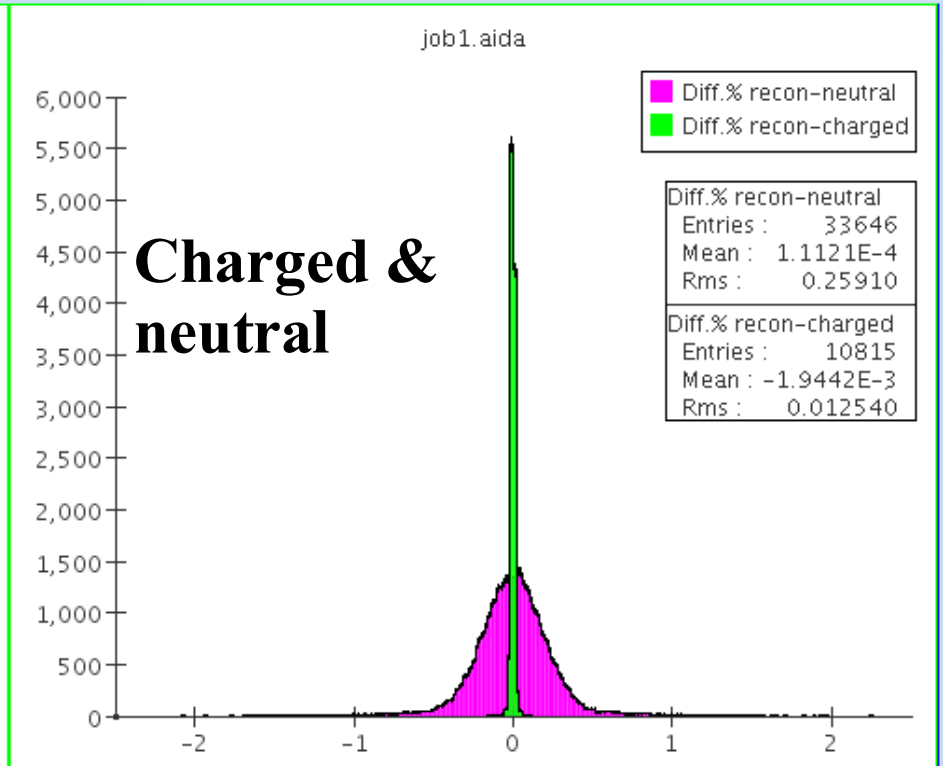
Note: Set JETParameterization = true in Cluster parameters and charged calorimeter weight to 1.0 in the ID Efficiency parameters for Jet simulations.

Track & cluster resolutions

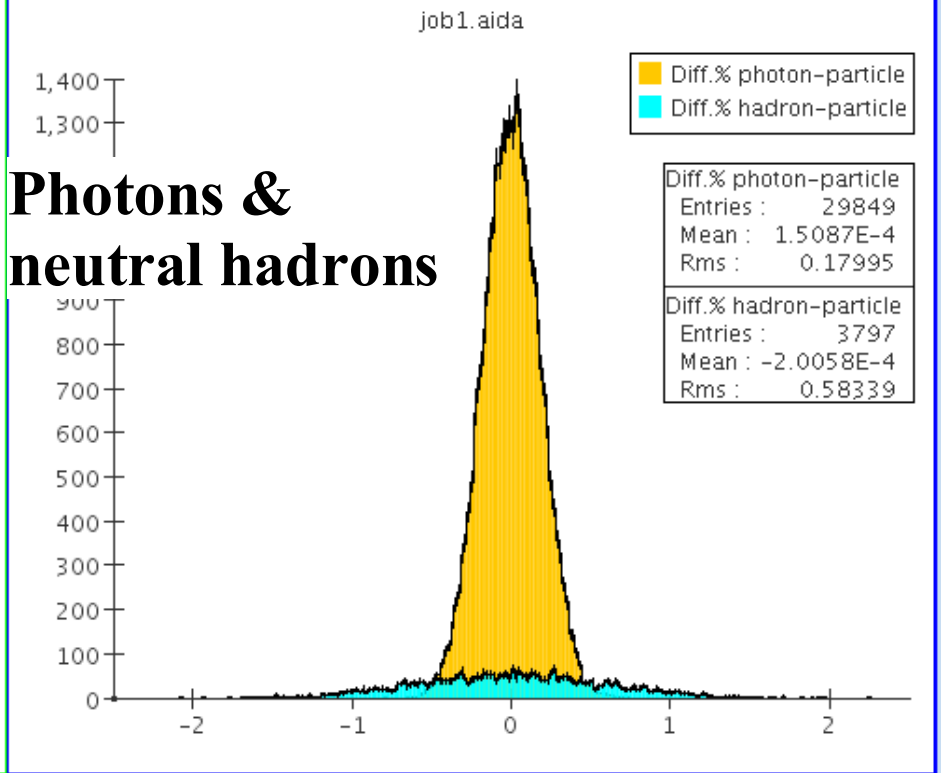


Charged particles



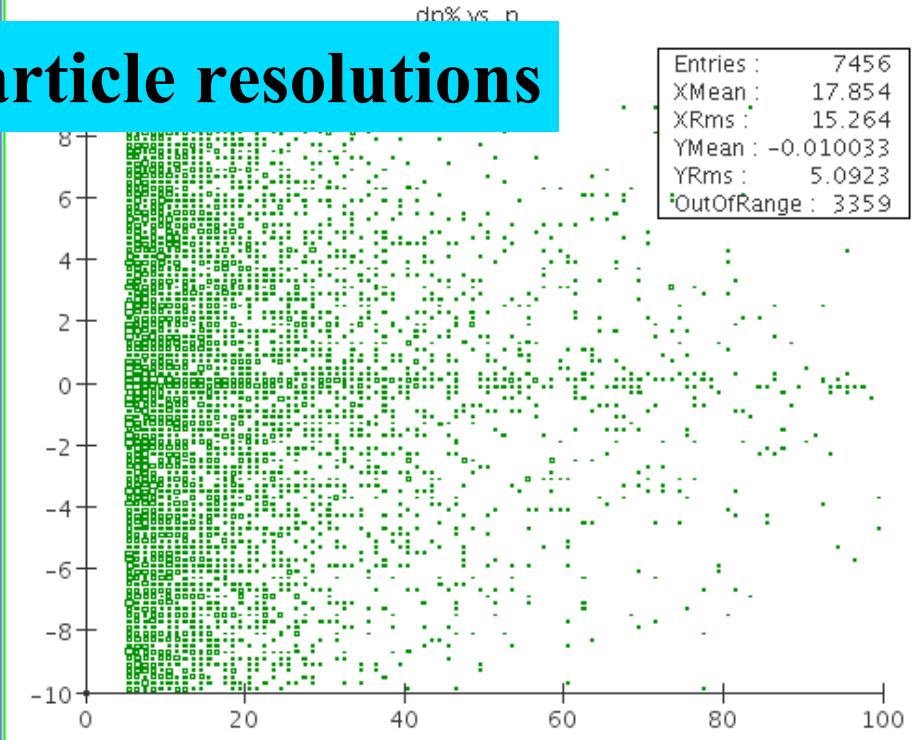


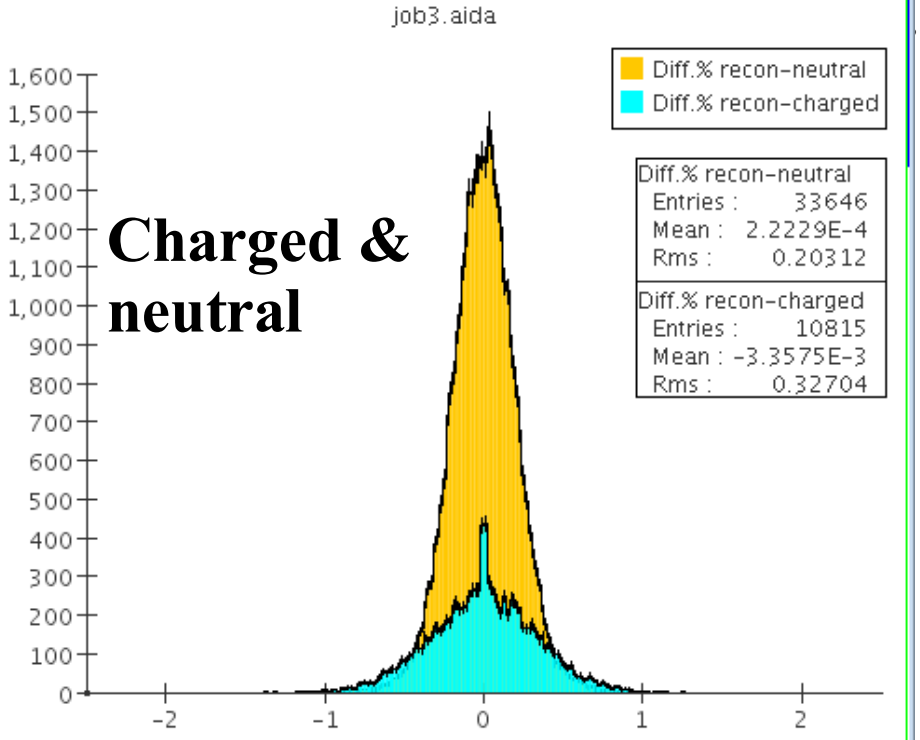
Charged & neutral



Photons & neutral hadrons

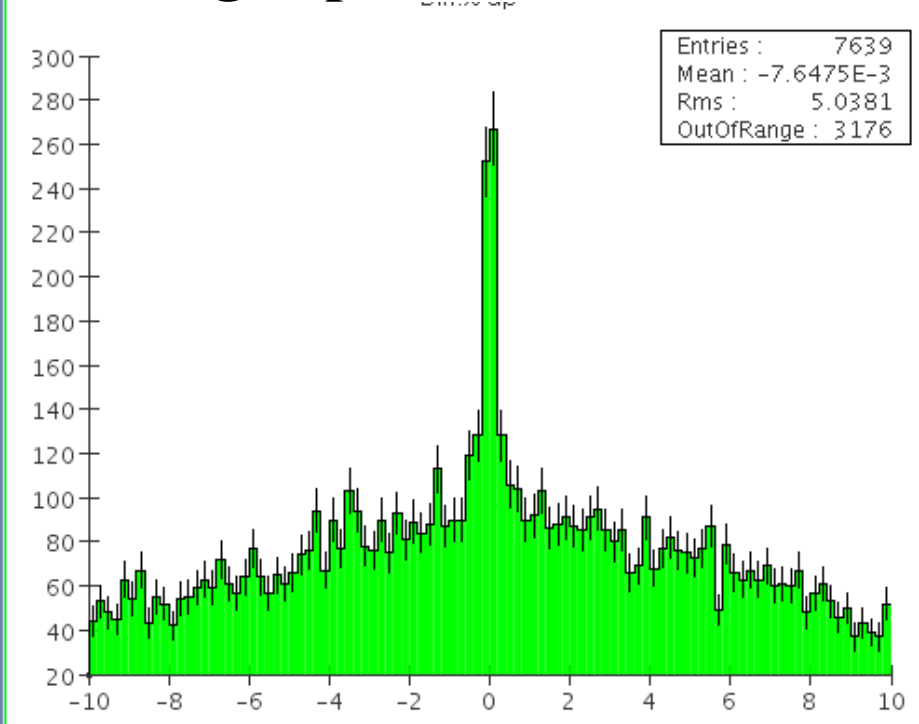
Particle resolutions

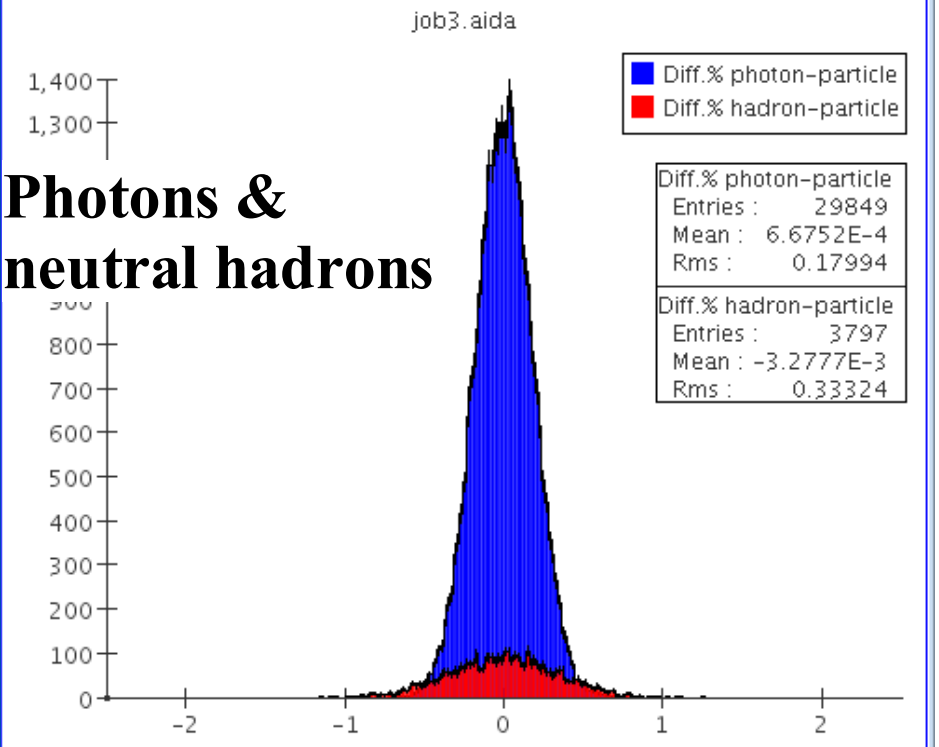




Charged & neutral

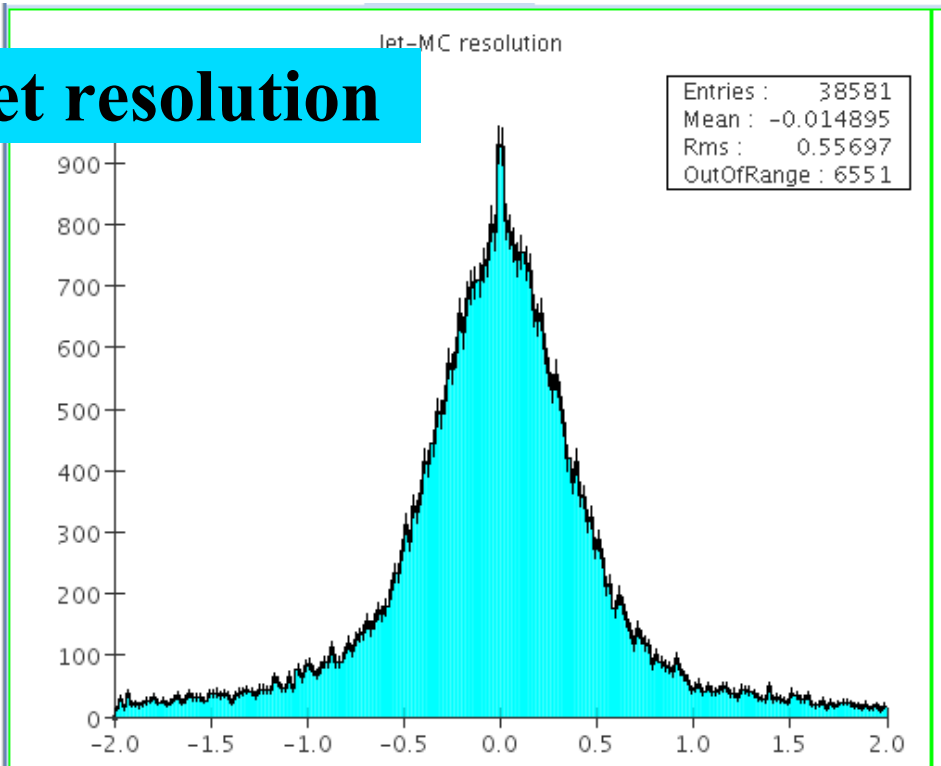
Charged particles



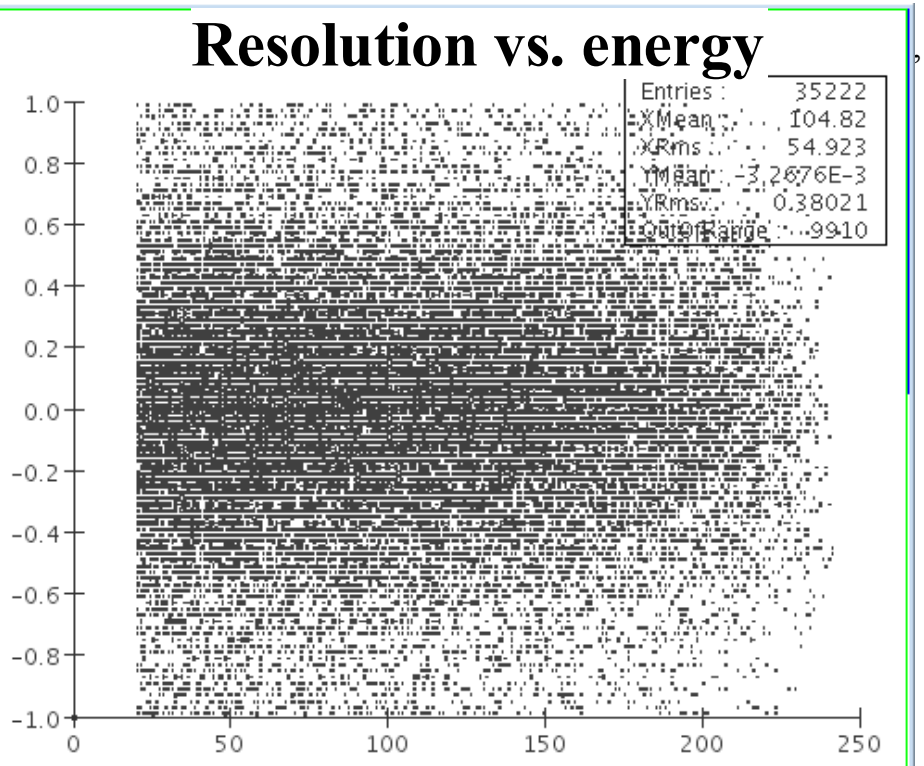


Photons & neutral hadrons

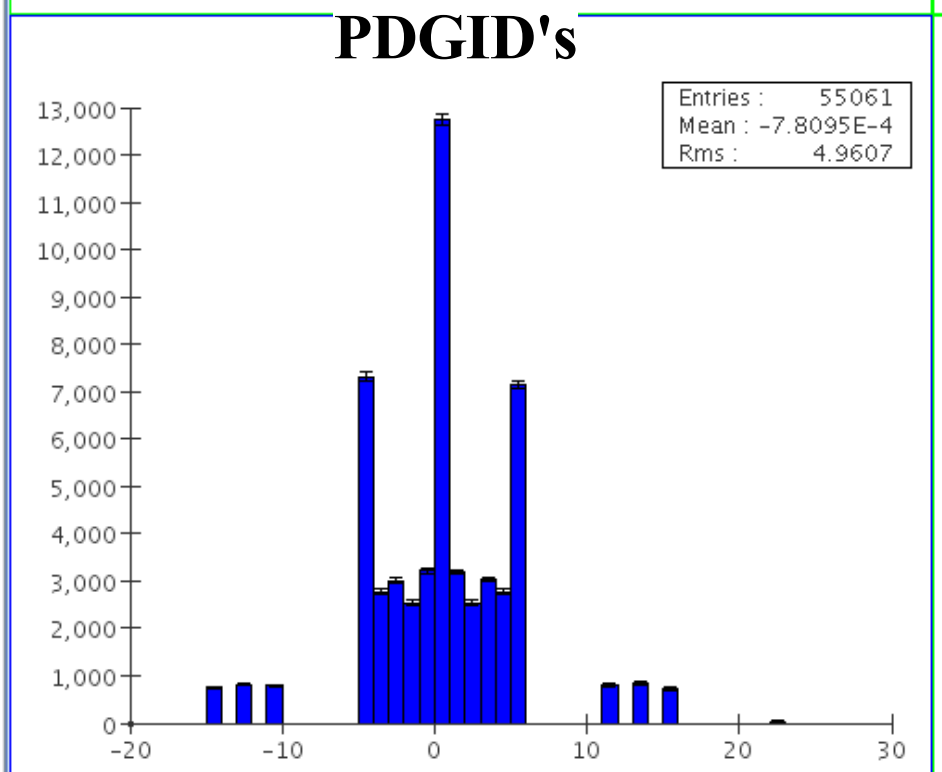
Jet resolution

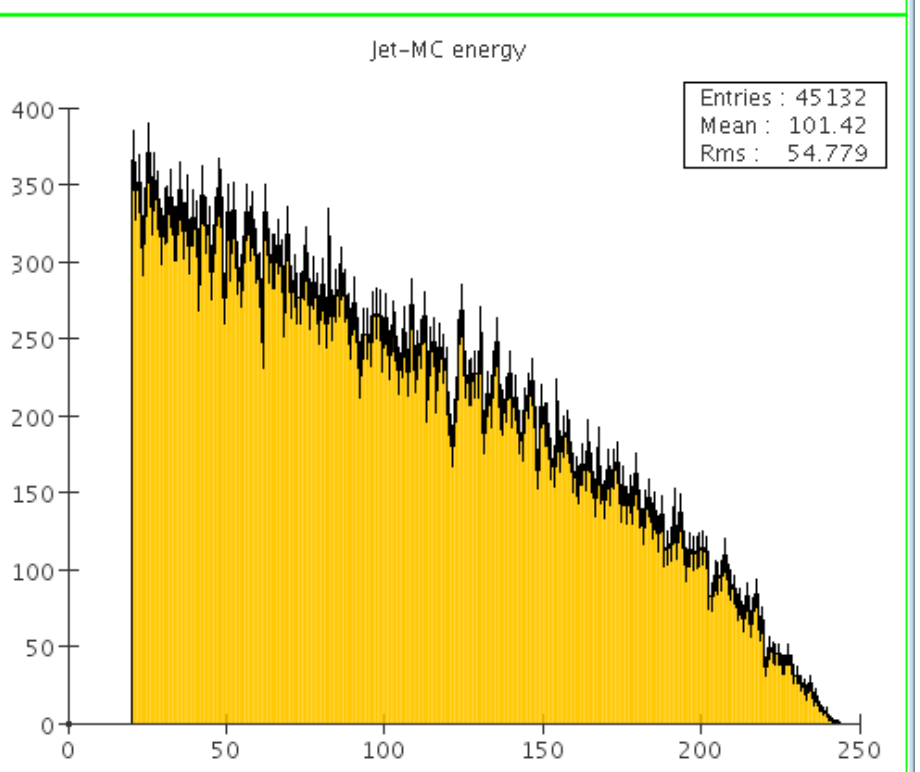


Resolution vs. energy



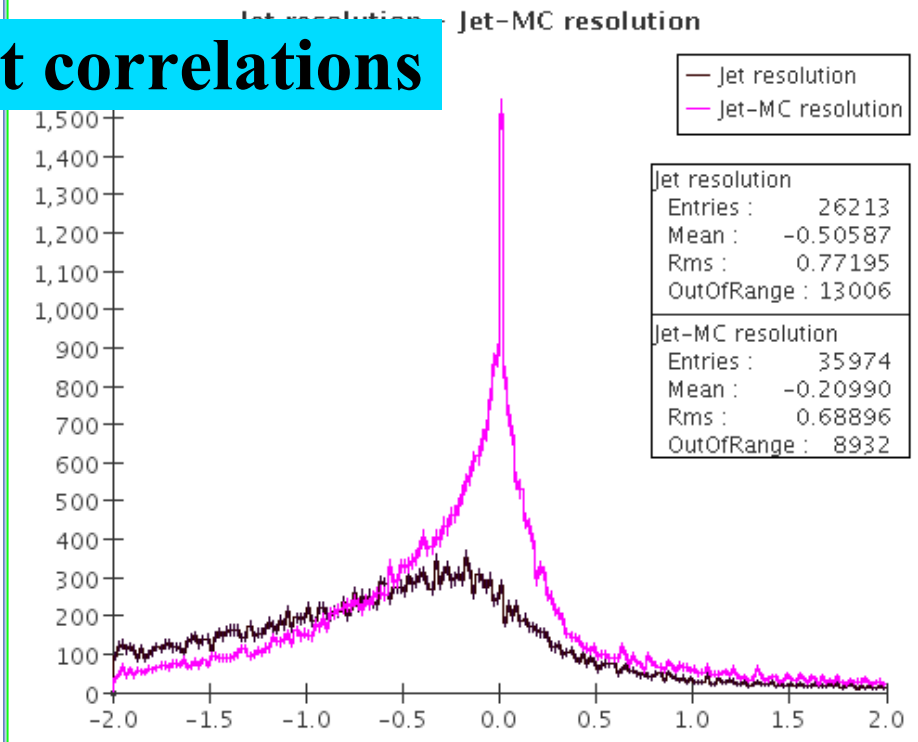
PDGID's

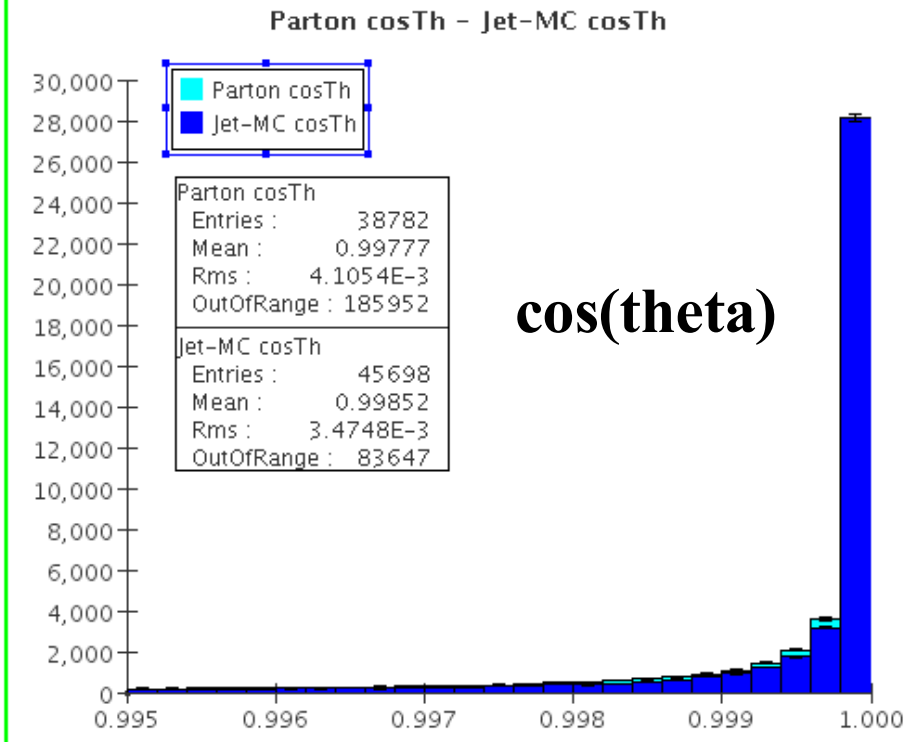




ReconCheater

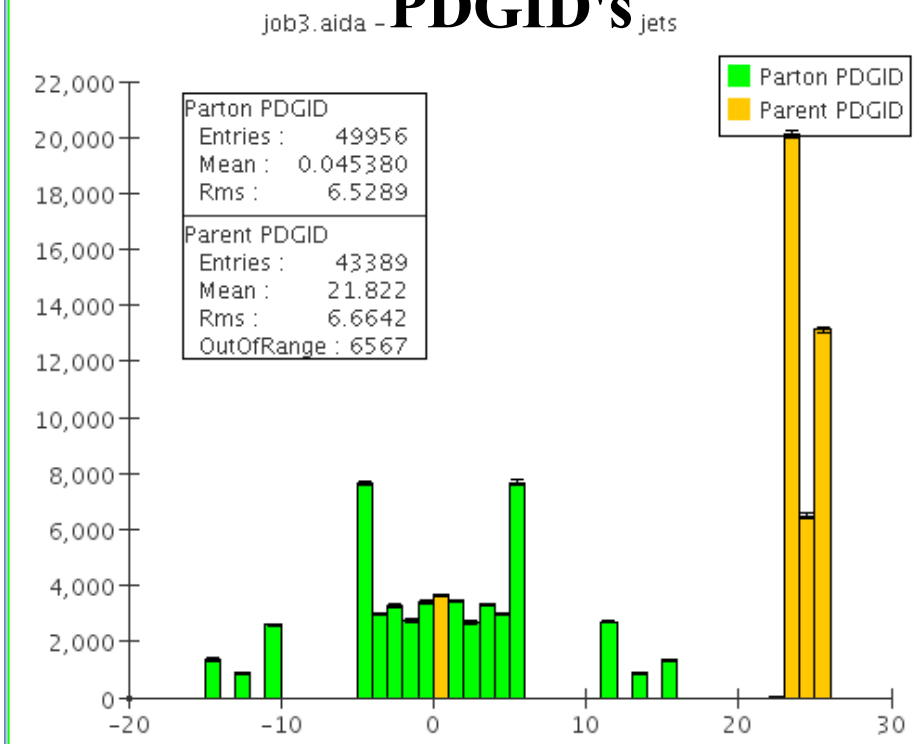
Jet correlations



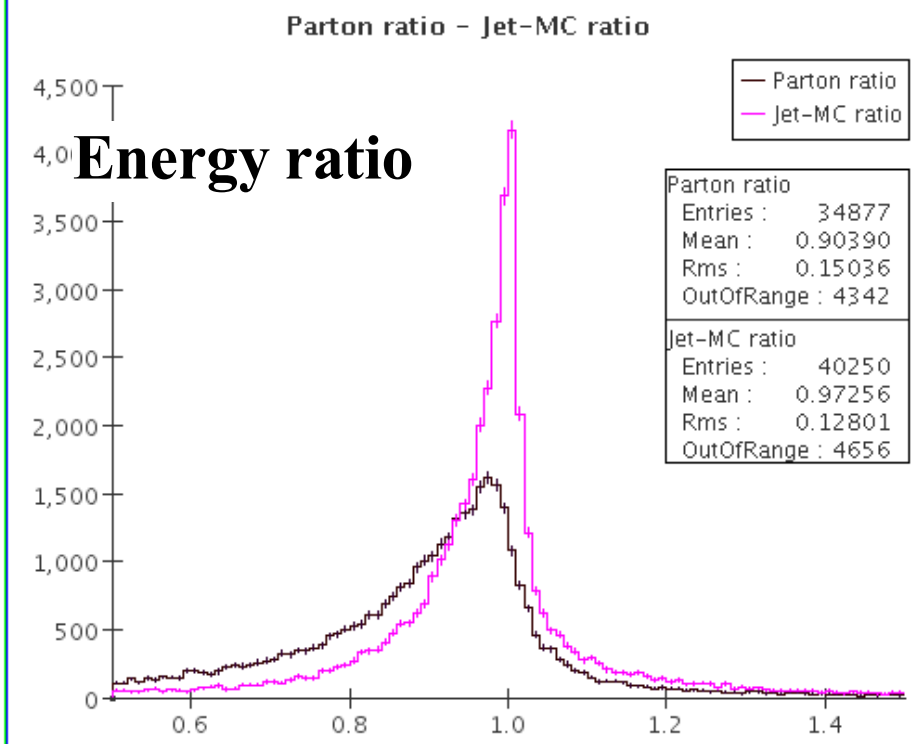


cos(theta)

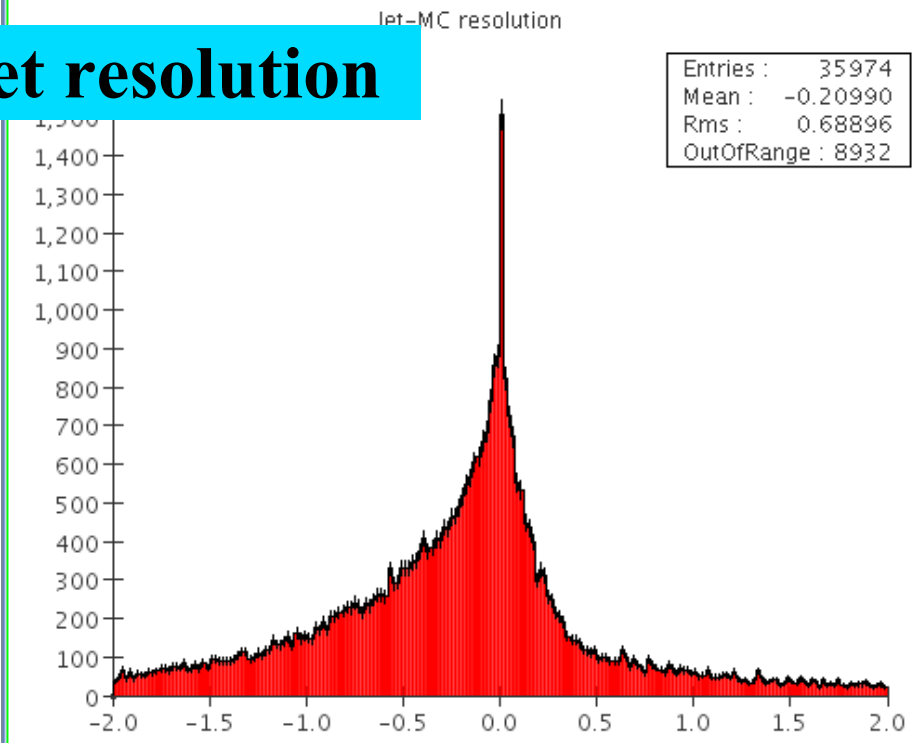
PDGID's



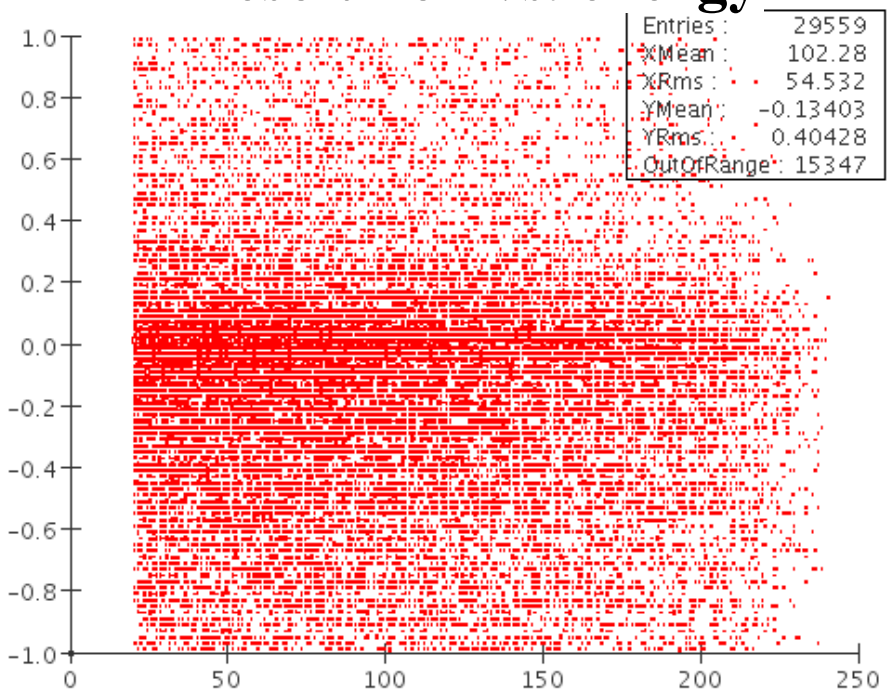
Energy ratio



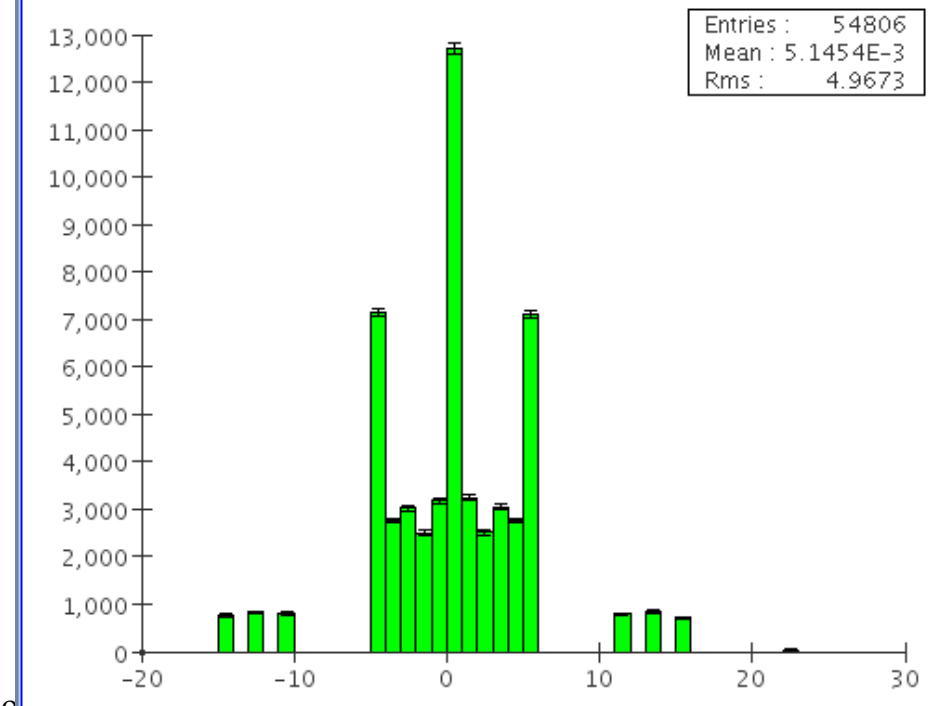
Jet resolution

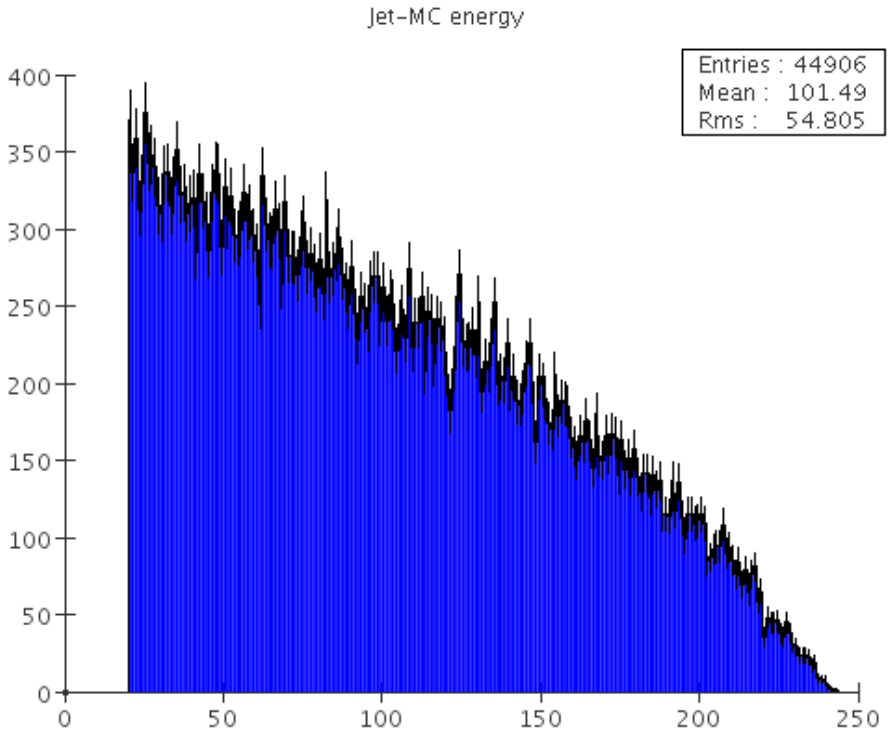


Resolution vs. energy



PDGID's





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