
ACORDE Offline status

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Outline of the talk

- Geometry
- Alignment
- QA
- Macros

Geometry

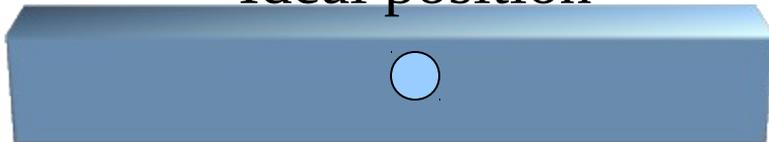
- Geometry

Ideal position based in survey 2009

- Two or three points measured per module.
- Use middle point of the surface of the case to position Module.
- Assume 45° for the sides
- The correct position will be done in Alignment
- The molasses and cavern is in testing.

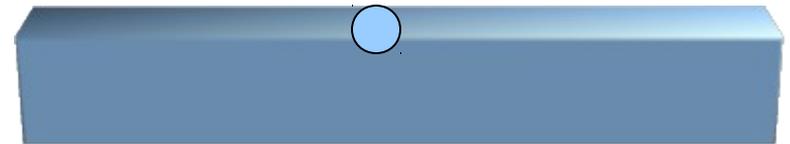
We are using the center of the surface of the case as the ideal
(It should be the center of the plastic)

Ideal position

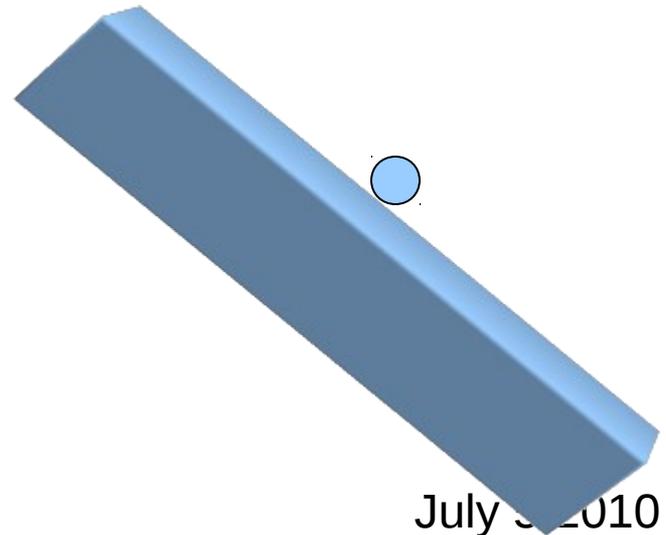
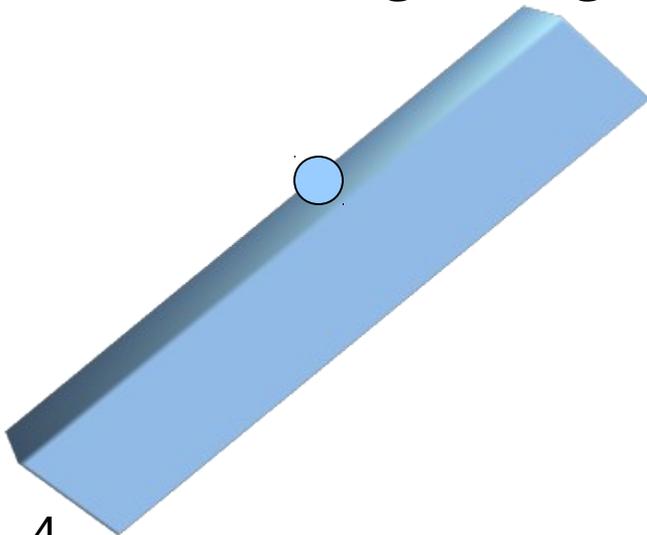


Dy

Real position
Surveyed point



We are rotating 45 degrees



Alignment status

Survey Misalignment is missing (70%).

We wanted to align each module using three points.

It was not possible survey most of the cases only have two.

Survey Mean plane vs Ideal plane have less than 0.01 degrees for all faces.

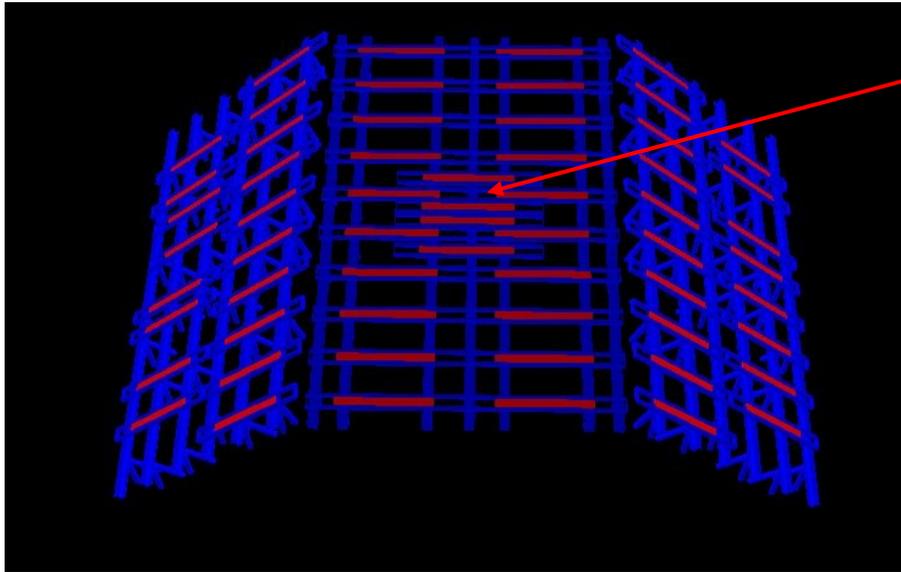
The active detector (is the plastic scintillator), is the one that should have the correct position.

We assume that the plastic position in the case is exact for all cases.

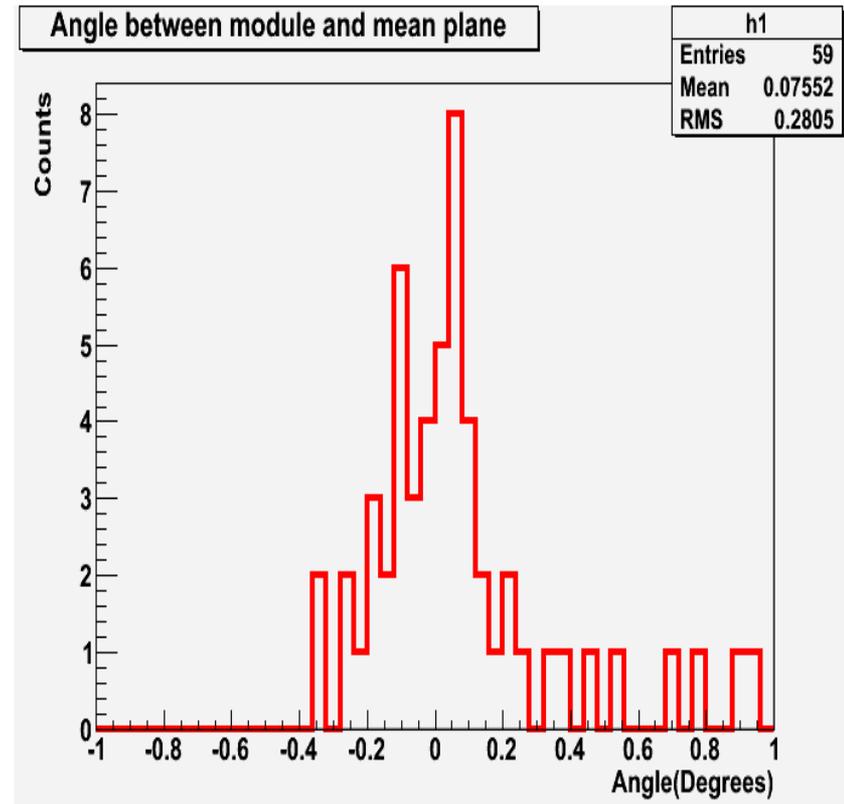
The bars support will be shortened since when considering all equal causes us overlaps, this can be due to magnet not perfect, or support, or cases, not equal. This is to remove overlaps.

We are doing the alignment considering the the correction in x,y and psi only.

Alignment status



The ITS modules are the ones with biggest residuals, for all in average less than 0.5 degrees.



For dz is negligible
For dx and dy the correction is 5 cm.
We are removing overlaps mainly of supports

Macros

(from Puebla group)

AliGenACORDE update

New macros of analysis:

- TestAcordeHits
- Read info of ACORDE: rawdata & esd
- Fast generation for ACORDE (+TPC)
- AliEve now available for ACORDE from ESD.
- AliAnalysisTask Local

Rev. 42051

Small change

AliGenACORDE::SetNumberOfParticles(Int_t nParticles)
allow to choose from Config.C macro the number of particles (muons for this case) to be generated per event.

```
cout << "<<< *** Using the cosmic generator AliGenACORDE *** >>>" << endl;

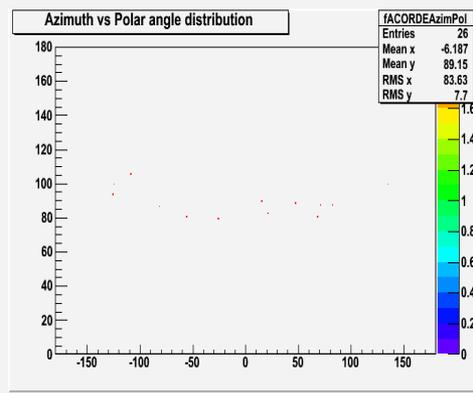
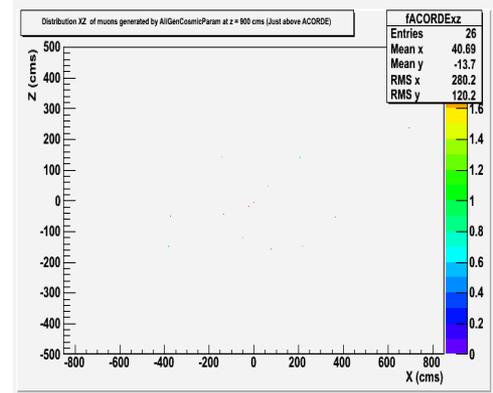
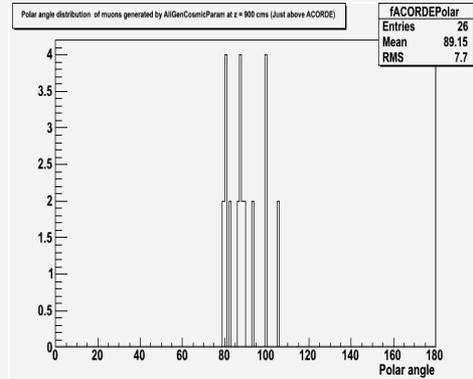
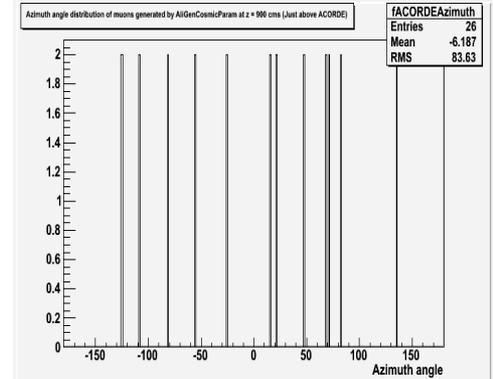
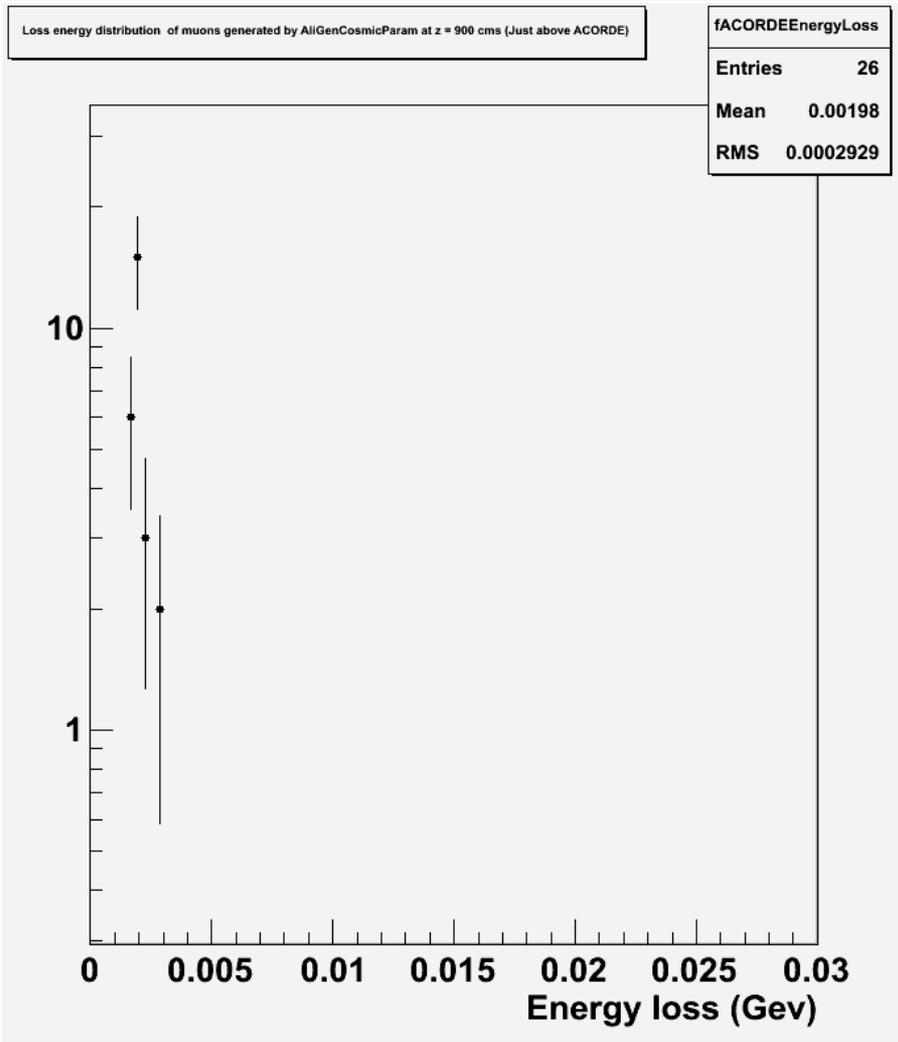
AliGenACORDE *gener = new AliGenACORDE();
gener->SetZenithalAngleRange(0.,65.);
gener->SetAzimuthalAngleRange(0.,359.);
gener->SetMomentumResolution(1.);
gener->SetSigma(0,0,0);
gener->SetMomentumRange(10.,1000.);
gener->SetNumberOfParticles(100);
// two options
// kMuonMinus
// kMuinPlus
gener->SetPart(kMuonMinus);

// three options
// kSingleMuons
// kMuonBundle
// kMuonFlux --> not yet

gener->SetMode(kSingleMuons);
```

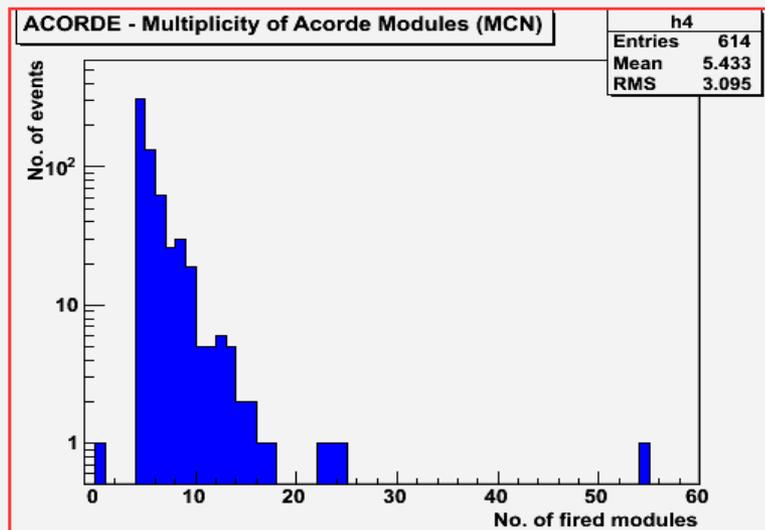
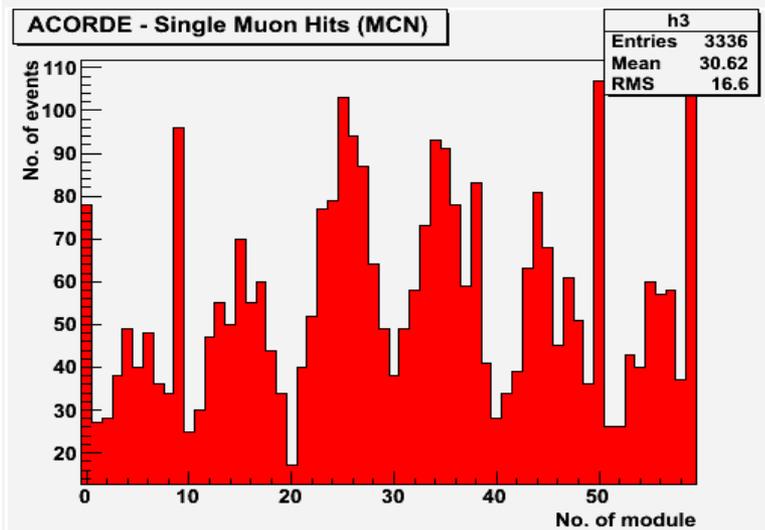
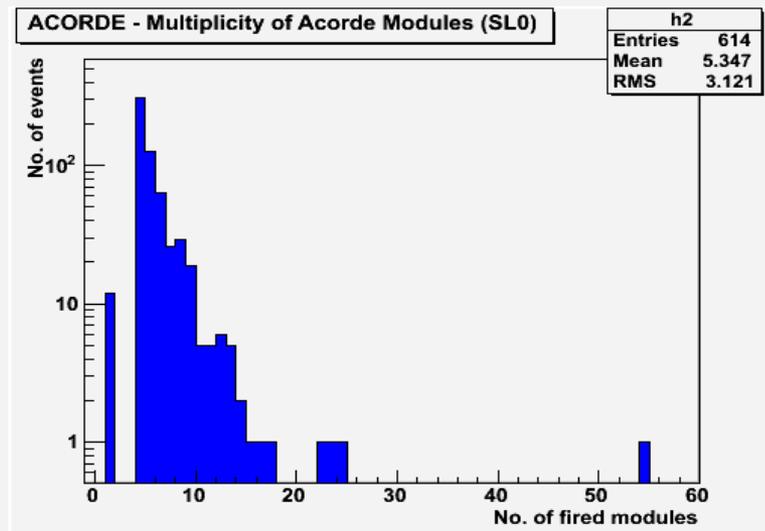
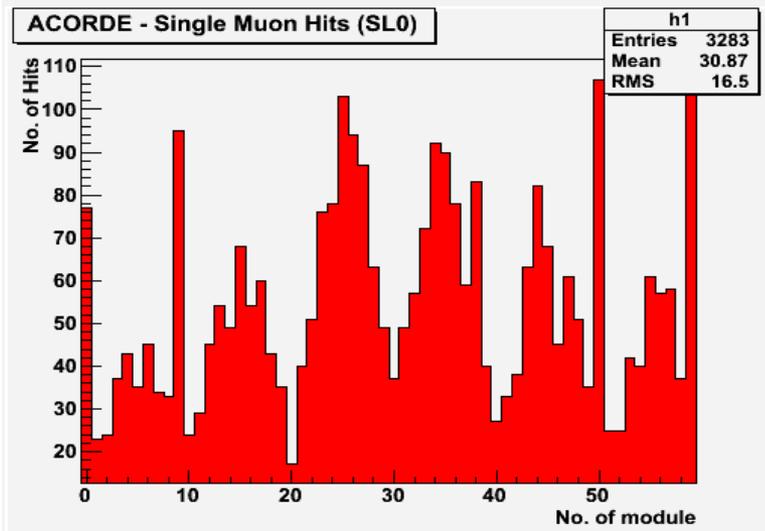
Up to now all the particles are directed to (0,0,0) for efficiency purpose □ for the next update the muons will be directed properly.

New macros: TestACORDEHits

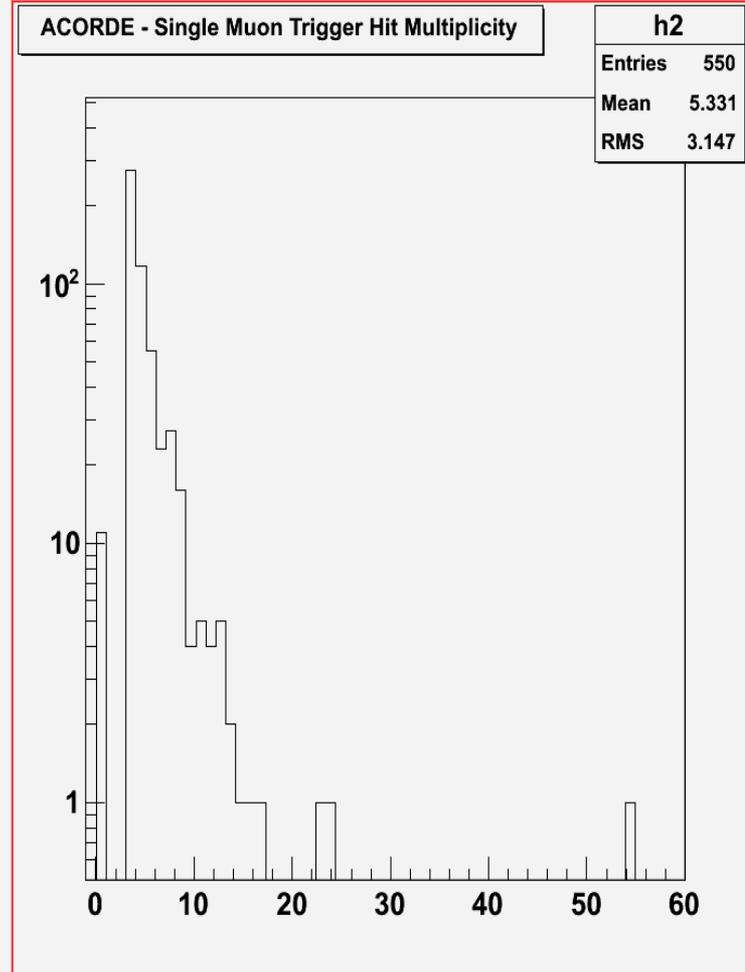
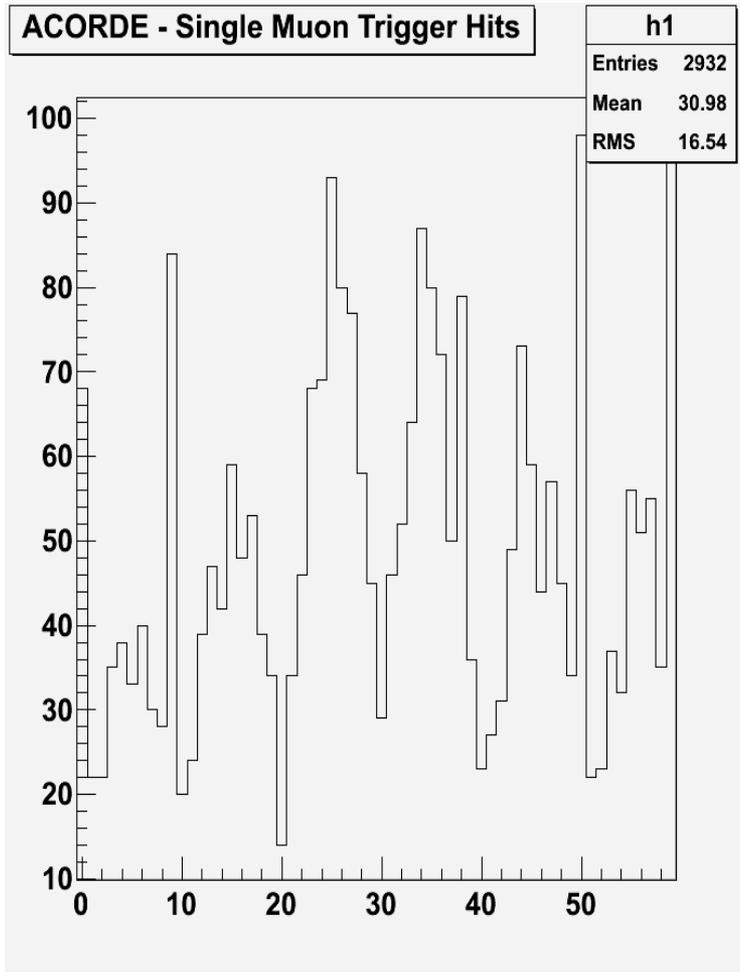


Test:
 Energy loss
 Hits p,x,y,theta,phi & z

New macros: readACORDERawData.C (old AcoReco)



New macros: readACORDEESD.C



Quite different from RAW data (trigger
11 condition in reconstruction)

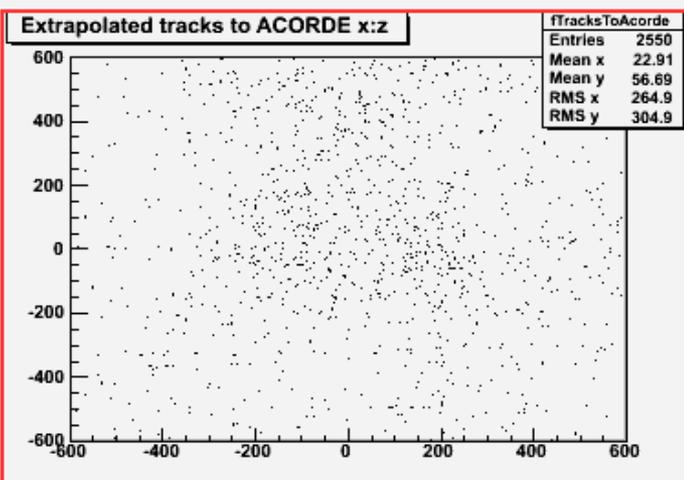
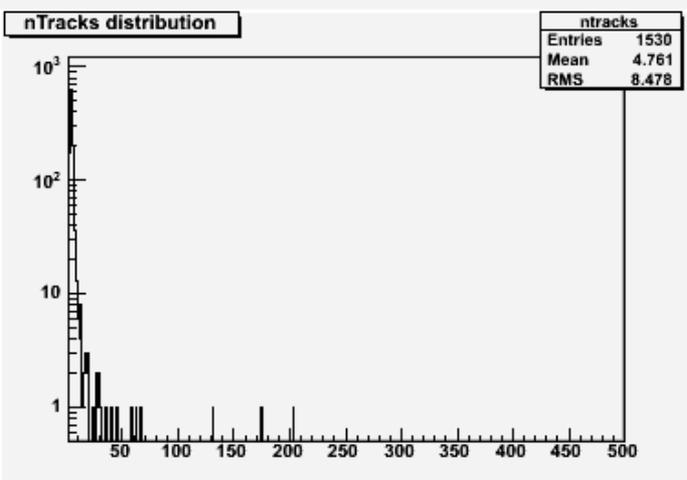
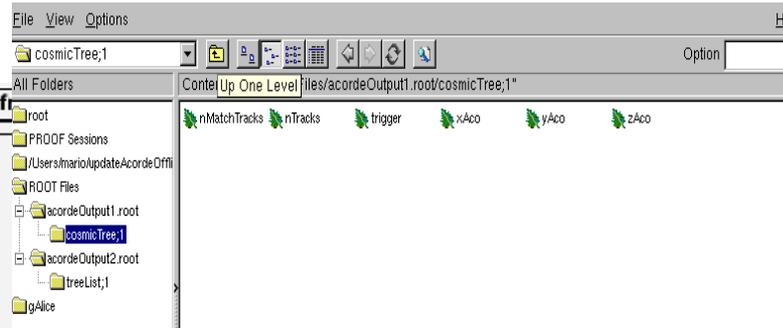
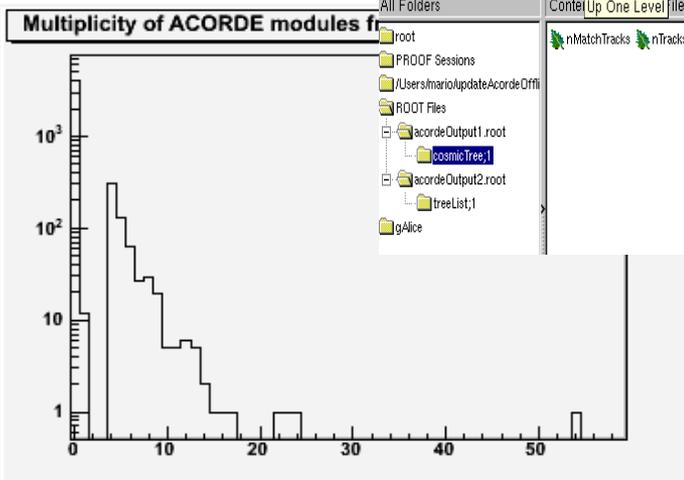
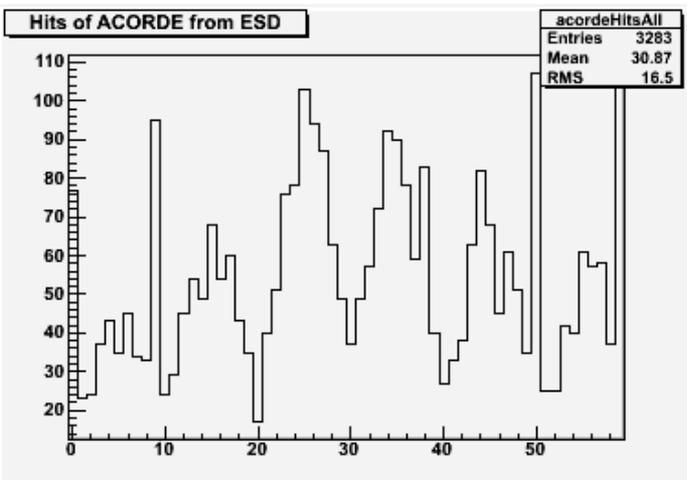
Macros are available in trunk

`$ALICE_ROOT/ACORDE/macros/testMCC`

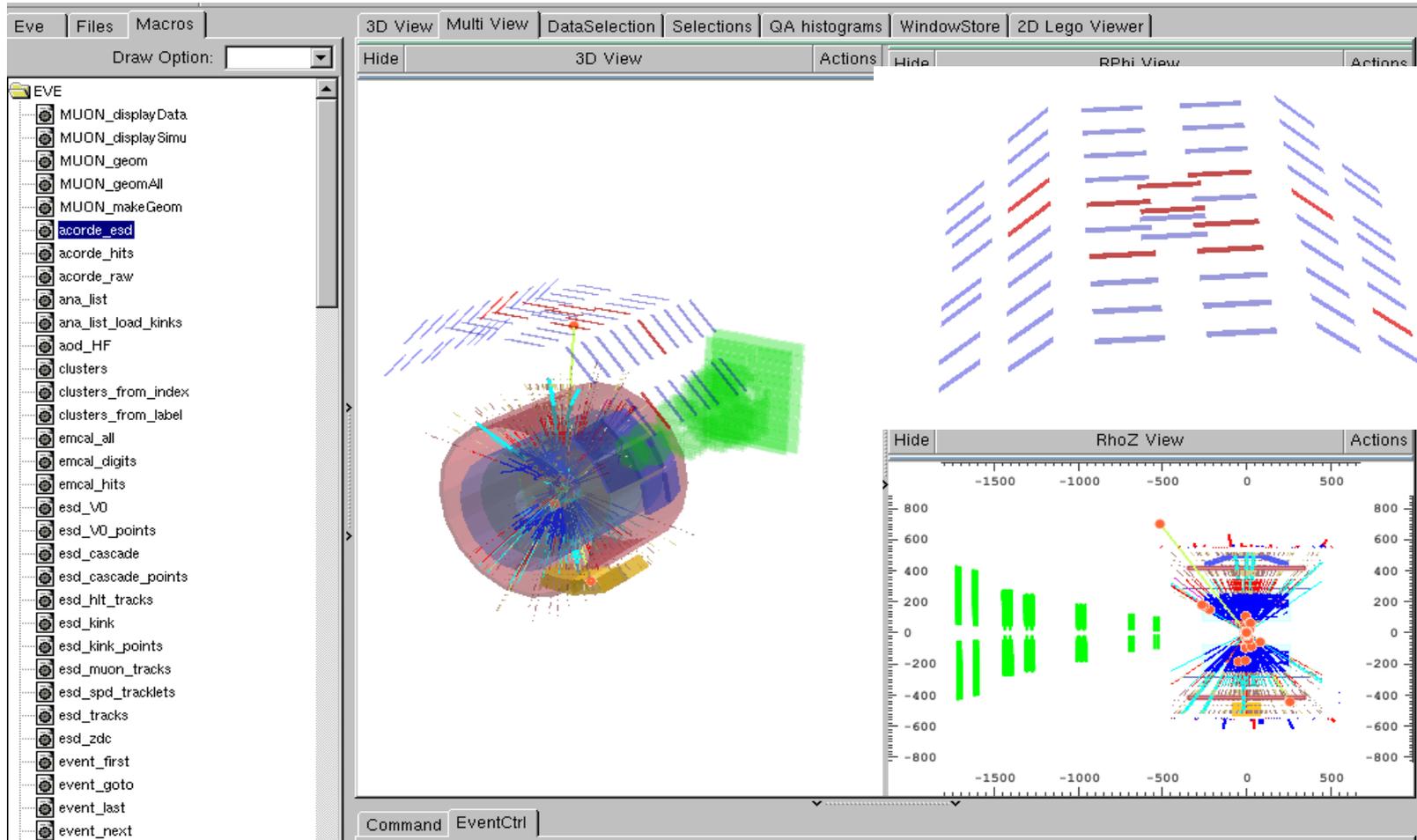
- `simCosmic.C`
- `rec.C`
- `Config_AliGenACORDE.C` (by default set to single muon generation)
- `run.sh` run the full simulation and reconstruction.

\$ALICE_ROOT/ACORDE/macros/AnalysisMacros/Local

- AliAnalysisTaskAcorde class: read the information of ACORDE and makes a simple matching of tracks to extrapolate them to the modules.
- runAcordeAna.C : output TTree and TList on two files (acordeOutput1/2.root)



\$ALICE_ROOT/EVE/alice-macros/acorde_esd.C



Ongoing

FLUKA generator is being tested to have a real cosmic generator.

Offline alignment using the propagation of the tracks.
Check propagation, estimate error

Rare muon trigger in pp data.

Analysis of cosmic data