



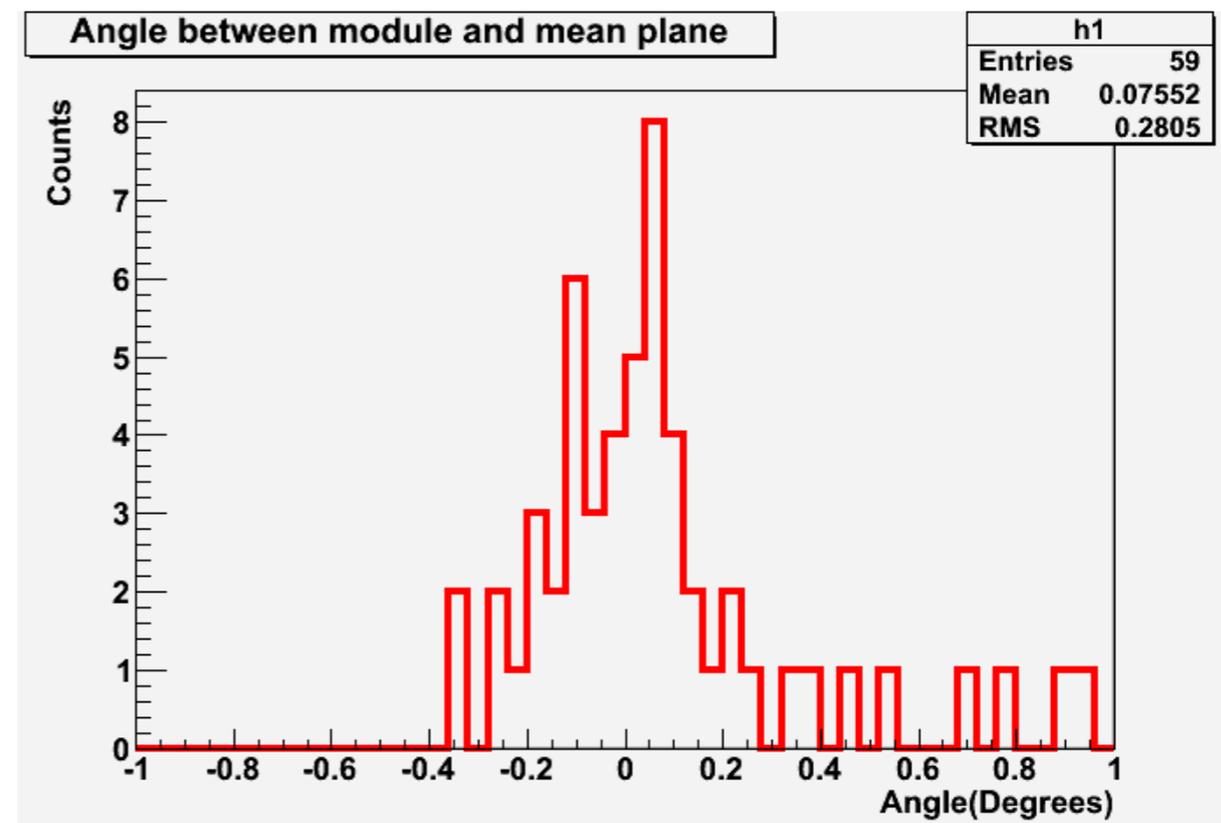
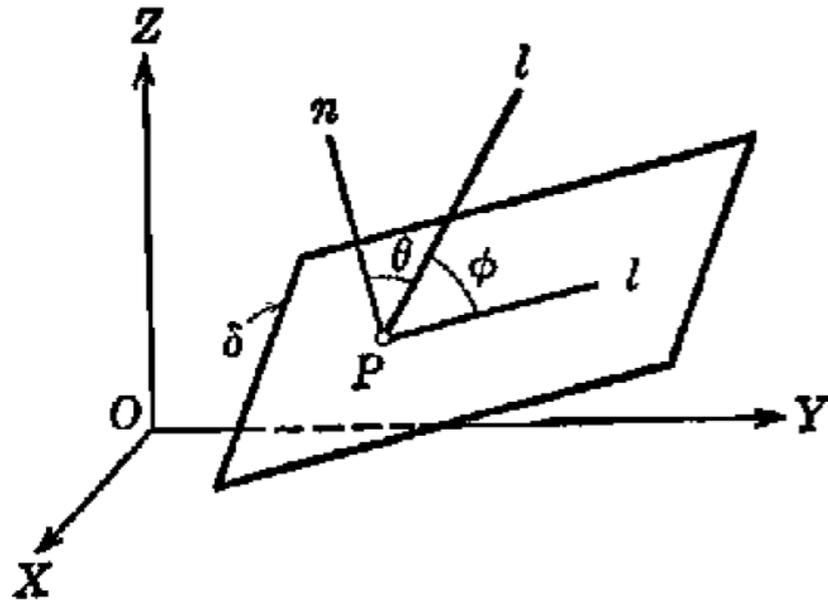
ACORDE Status Report

ALICE Offline Week
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Nov. 15th 2010

- ACORDE Survey & Alignment
 - Method
 - Residuals
 - Removing Overlaps
 - Alignment Aware
- ACORDE - DQM

We find the angles between the ideal mid planes and the straight line by module. We also check the ideal midplane.

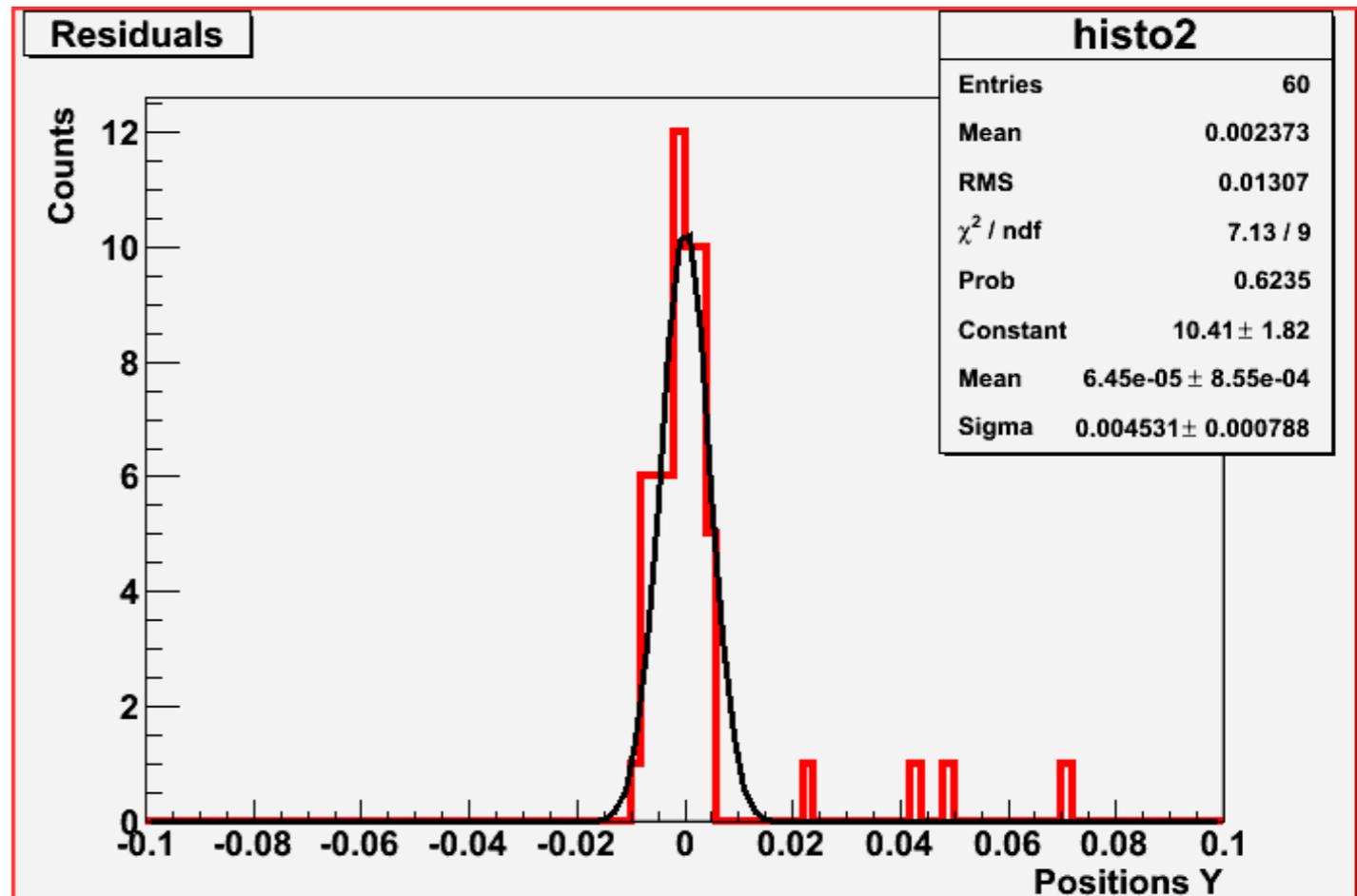
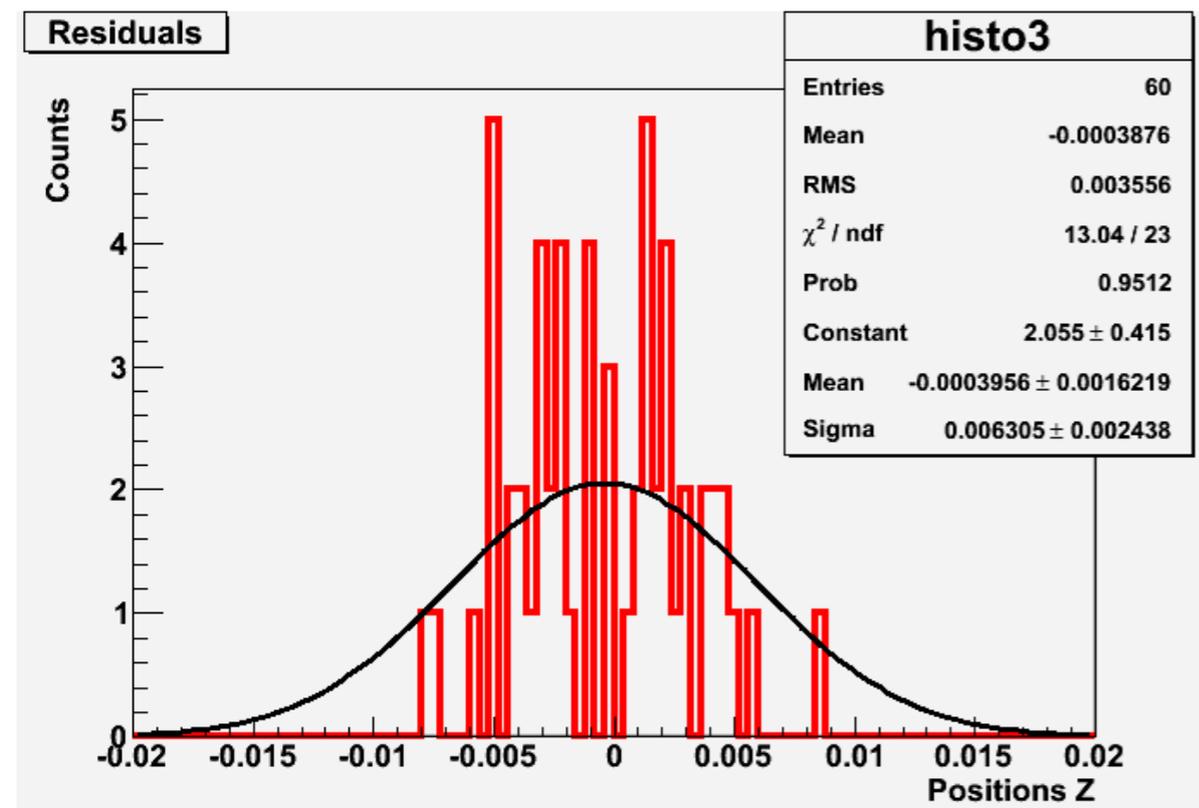
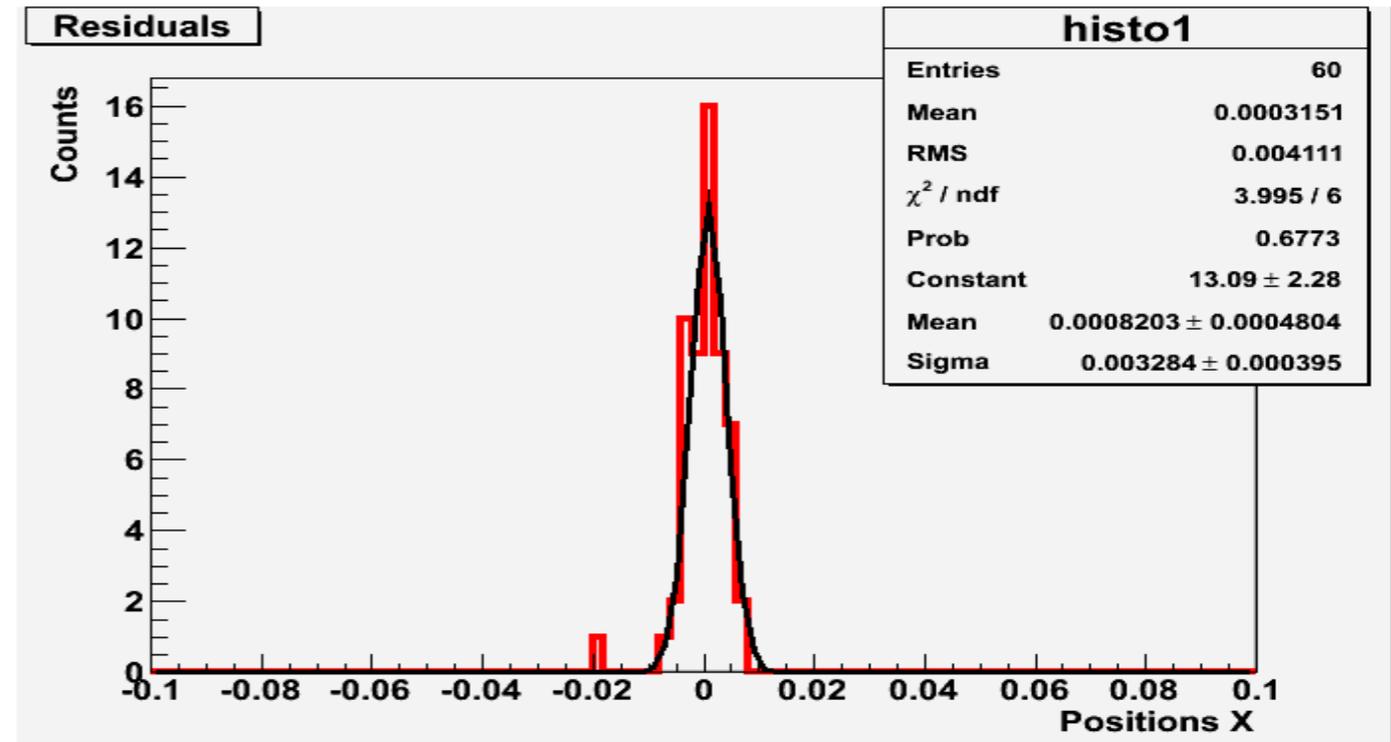
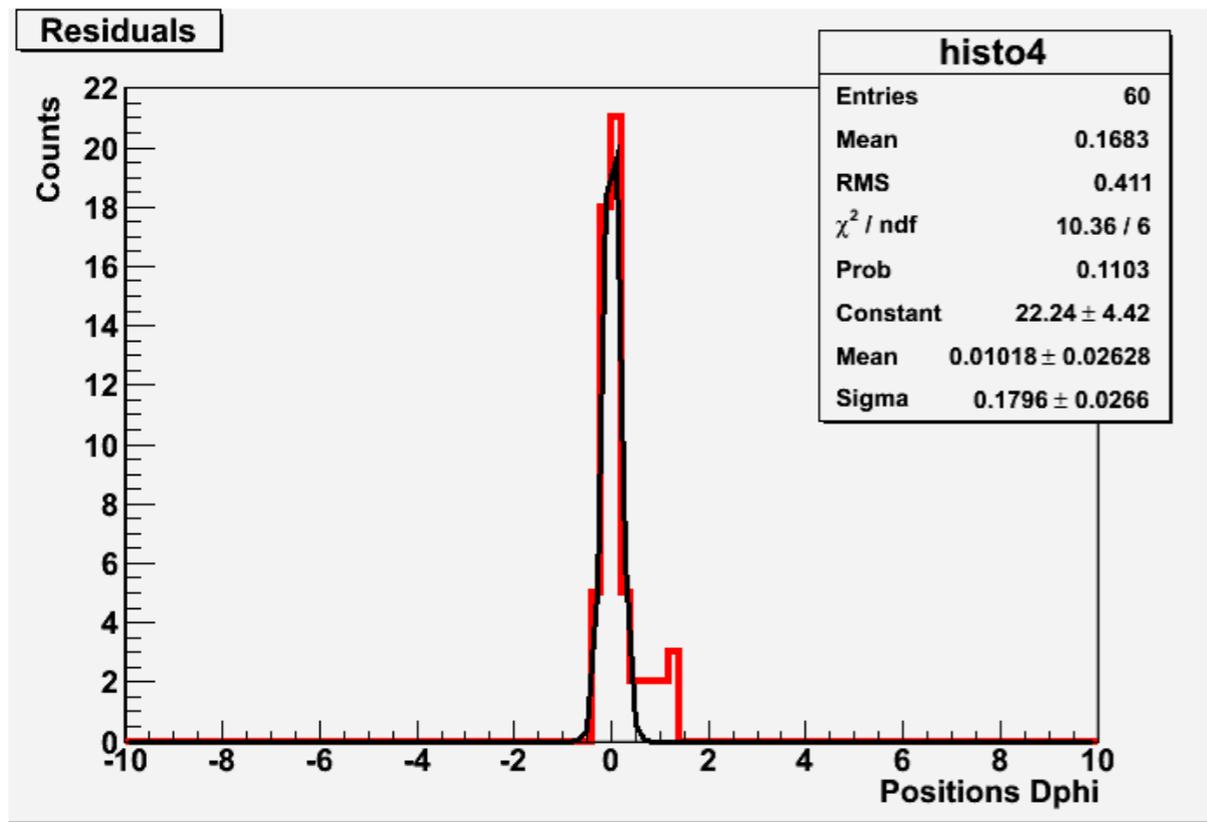
And the survey average mid planes and the residuals are ~ 0.001 degrees (almost negligible).



$$\sin \phi = \frac{|Aa + Bb + Cc|}{\sqrt{A^2 + B^2 + C^2} \sqrt{a^2 + b^2 + c^2}}$$

As we can see, the mean angle ~ 0.075 , thus we have to correct in at least one degree.

ACORDE Survey Alignment: Looking at the residuals



We had over 60 overlaps after the alignment correction, mainly from the support and the modules in the end we found a small bug in the height of the support and we corrected the error was around 1 cm, we checked again all the geometry no overlaps found.

We also modified the values of the means for the following macros and find no overlaps. We put some realistic values.

ACORDEFullMissalignment.cxx

ACORDEResidualMissalignmnet.cxx

In our case, for the simulation there was nothing to do since ACORDE is a hit's detector (the module is fired or not).

For reconstruction we generated a particle just above the edge of the scintillator and reconstructed with the missaligned/aligned geometry, we can see how the hits per module appears in one and not in the other aligned geometry.

Hits without alignment

X	Y
360.03	872.898
360.03	870.07

Hits with alignment

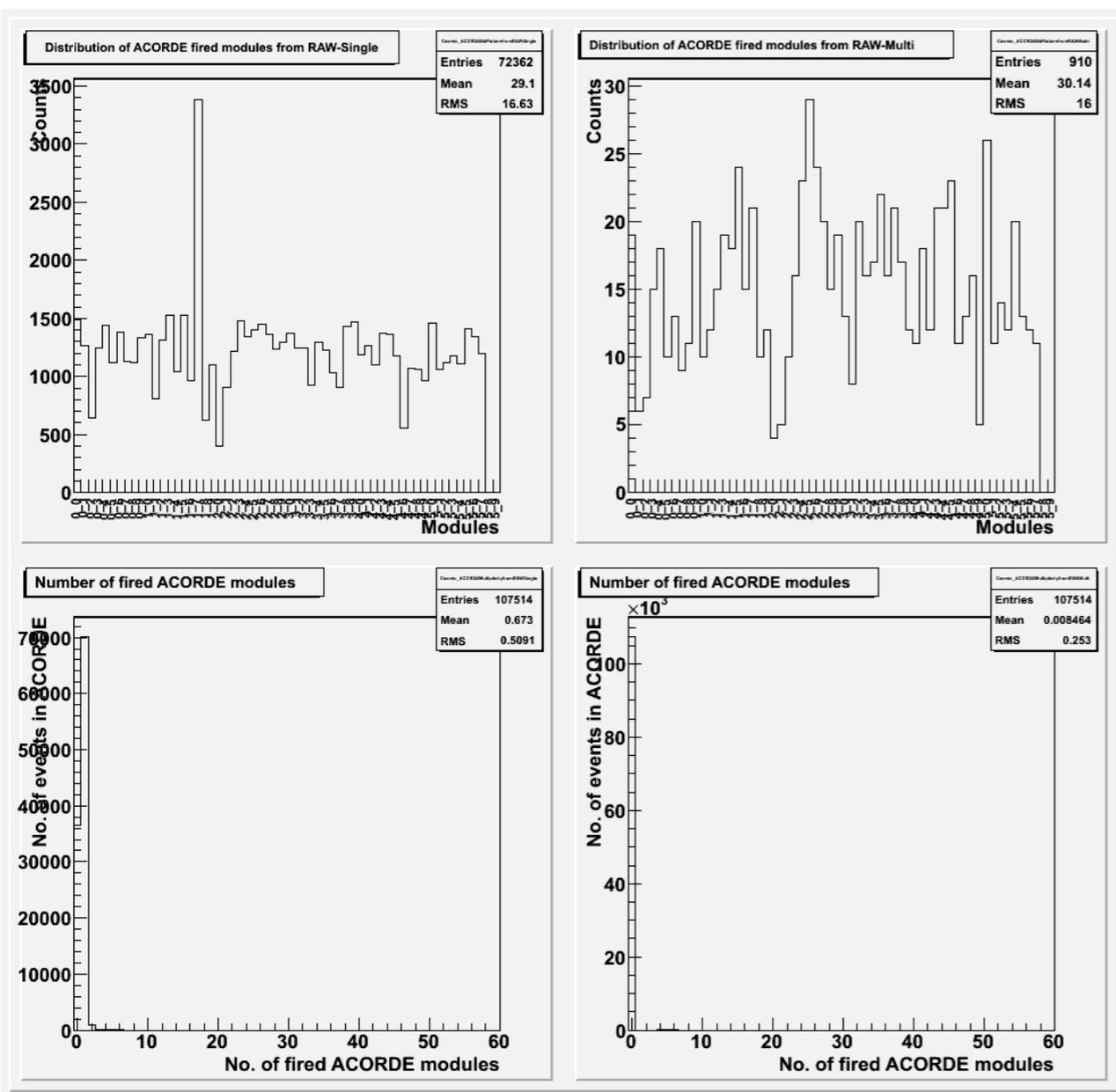
X	Y
360.03	876.106
360.03	873.206

The ACORDE - DQM is set according to the QAAMORE agent.

The DQM-plots depend of the types of trigger:

- Single: when at least one module is fired.
- Multi: when at least two modules (or more) are fired.

The plots are divided into 2 groups corresponding each one to the trigger class programmed by the electronic.



Plot 1 (top, left side): ACORDE scintillator module activity (SINGLE muon mode). Each bin corresponds to one ACORDE module. We have 60 scintillator modules.

Warnings:

- Any bin appears empty (PMT broken) Error: ≥ 5 bins empty
- Any bin appears "very high" respect to the others (PMT broken or FEE card open)

Plot 2 (top, right side): ACORDE scintillator module activity (MULTI muon mode). Each bin corresponds to one ACORDE module. We have 60 scintillator modules.

Warnings:

- Any bin appears empty (PMT broken) Error: ≥ 5 bins empty
- Any bin appears "very high" respect to the others (PMT broken or FEE card open)

Plot 3 (bottom, left side): ACORDE modules hit, per event (SINGLE muon mode). If we have an entry in bin=30, means that 30 ACORDE modules were fired, in one event.

NOTE: Better in log scale.

Plot 4 (bottom, right side): Same as plot 3, Multi muon mode. NOTE: Better in log scale

if both histograms (plots 3 & 4) show high multiplicity events for the ACORDE fired modules, the shifter has to make emphasis of this situation in DQM-ACO and report to the ACORDE expert.

Warnings:

- if all the bins are empty: Fatal error -> report immediately to the ACORDE expert.

	ACORDE
Number of plots	4
Aspect of plots (titles, axes labels and titles, bad overlap, ...)	
Tab layout (which plot is where, log scale, stat box, draw option)	
Visual help to shifter (bars, boxes, ...)	
Correct quality (color square in the tree is meaningful)	
Logbook summary image identical to the tab layout	
Objects' descriptions (new feature based on config files)	
Documentation	
Readable date, time and run number	

Work in progress under modifications on QA for ACORDE (almost done) -> Once finished it will be committed to the AliRoot trunk

Up to now, the current information available should be enough:

- For p-p and Pb-Pb runs, we have to put attention at the multiplicity in ACORDE modules.
- Per module, we only have hits.

- Survey & Alignment Task are done: not committed jet, code under debugging
- DQM update required is in progress: to be committed (for PbPb runs up to now, ACORDE-DQM is enough).
- For further comments mailto:

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