TRD Status

Christoph Blume

Offline Week, March, 2010

Savannah

- #44264: Shift in the reconstructed P_t
  - Investigations by Alexandru Bercuci

- #63765: No useful momentum calculation for standalone tracks in TRD
  - Apparant bug in the momentum calculation

SHUTTLE Operations Policy

- First order solution:
  - Skip STANDALONE (and STANDALONE_variants), DAQ_UNIFORMITY_SCAN and PHYSICS runs not written to MSS.

- OK for TRD, **IF** this includes **PEDESTAL** runs!

Calibration: Chamber Status

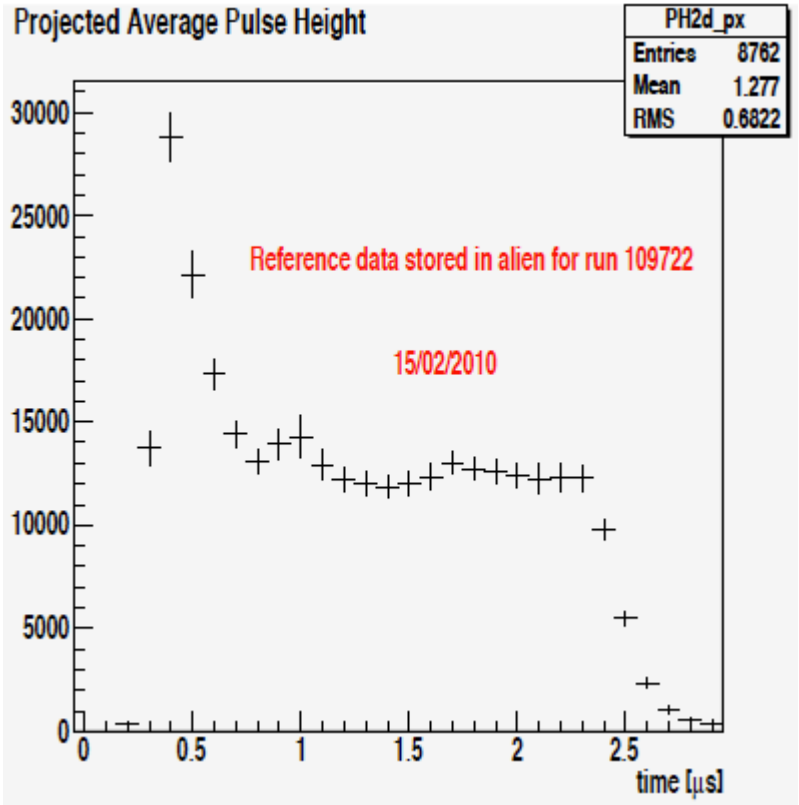
J. Book, R. Bailhache

- On a DAQ monitoring server for PHYSICS runs.
  - Fill a THnSparse with the number of entries per Half Chamber (HC)
  - Produce a calibration objects with the status of the HC
    (if enough events with entries)
  - Put the results on the DAQ FXS
  - rmp build locally with trunk,
    to be checked with Sylvain and installed at P2
- SHUTTLE
  - Take the file on the DAQ FXS
  - Compare with DCS info
  - Put into OCDB
  - Still testing offline, will put the code soon into aliroot

Calibration: HLT Component

T. Rascanu, J.Ulery, R. Bailhache

- Gain, drift velocity, time offset
- Select only pp triggered events
  - Trigger string defined in the configuration
  - Changes ported to v4-18 rel.
- 15/02/10: test of full chain HLT → SHUTTLE → ref. OCDB
  - TRD in with cosmics trigger
  - HLT in Mode B / Test 2
- Ready to run with next pp colls.
- Outlook: export the HLT histos to AMORE



Calibration: Offline

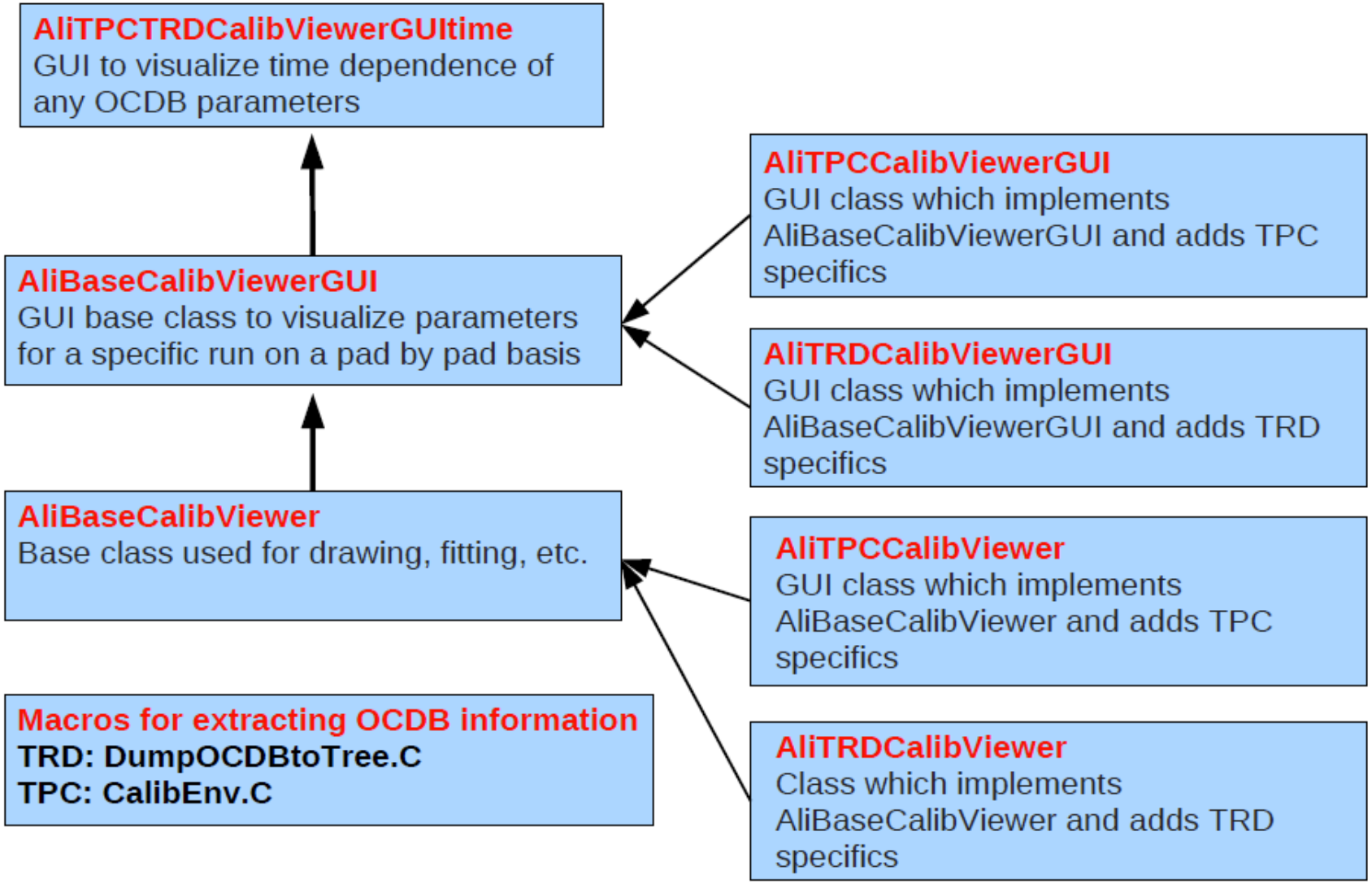
R. Bailhache

- libTRDCalib with AliTRDCalibTask (Offline AliAnalysisTask)
- Macros/AddTaskTRDCalib.C
- Locally tested with the skin of the calibration train

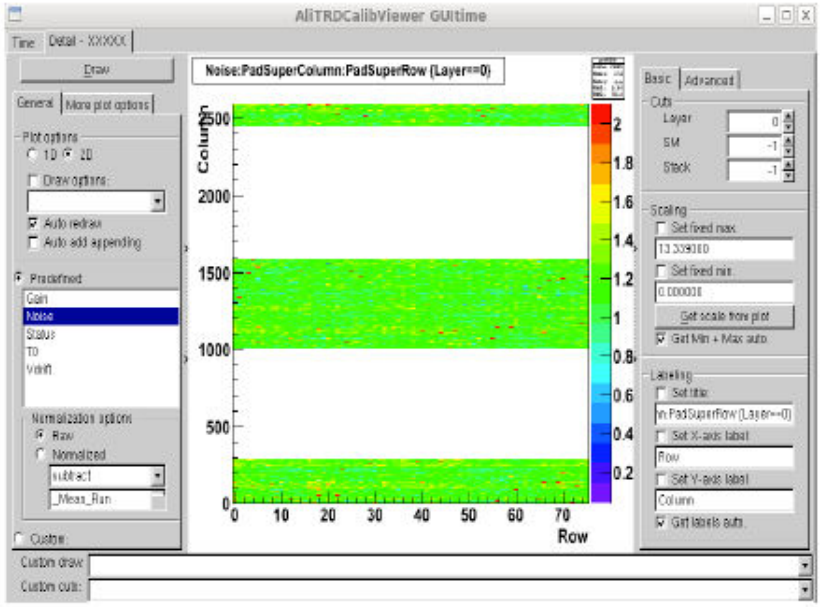
- Would need AliESDfriend before any filtering is possible
- Store the TList output in AliESDfriends_v1.root

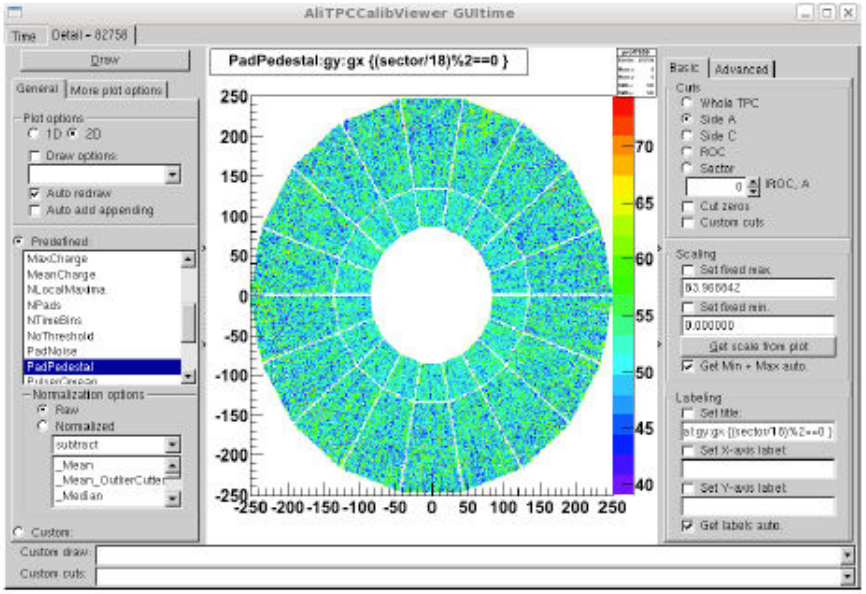
- Should be port the macros to the release?
- Should we try it on alien?
- OCDB access?

GUI for TPC+TRD OCDB Visualization (I. Arsene)



GUI for TPC+TRD OCDB Visualization (I. Arsene)



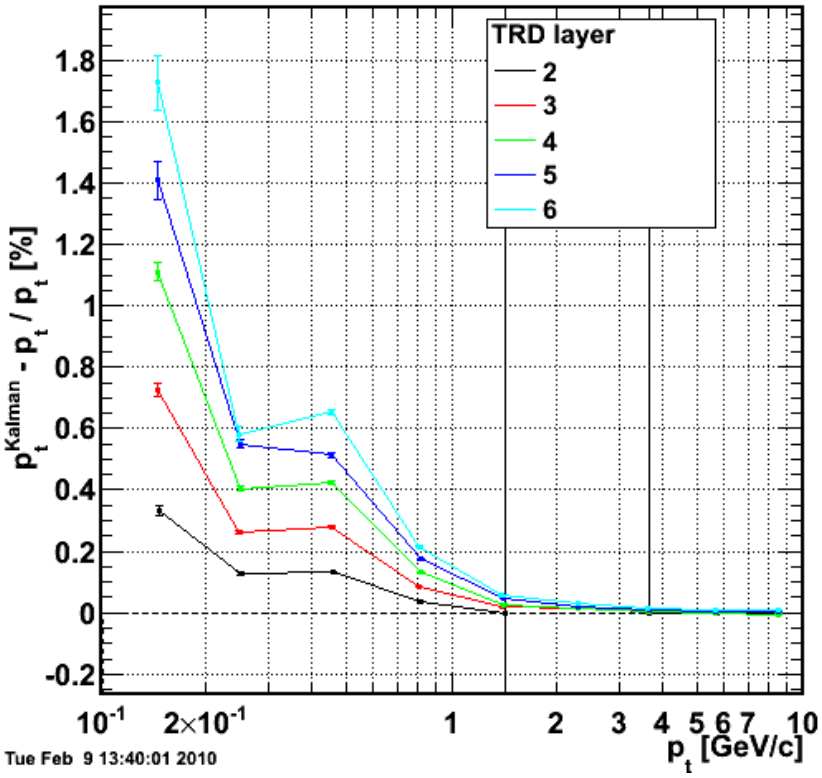


- Interactive loading and visualization of the OCDB information
  - Calibration
  - Alignment
  - GRP, HV, Goofie, DCS
- Time trending
- Pad-by-pad visualization
- Visualize differences between different OCDB versions

Reconstruction: p_t Shift

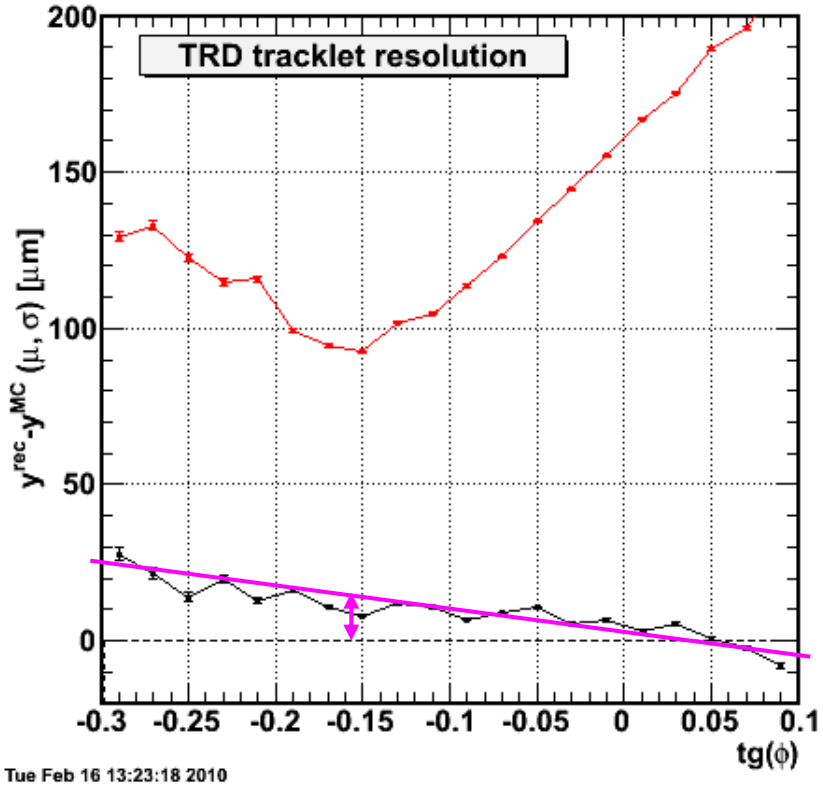
A. Becuci

- Kalman propagation in TRD
- Init track with tracklet in layer 1, no e.
- P_t resolution with respect to
  - tracklet in upper TRD layers
  - start below 2 GeV/c
  - up to 1.8 % for low p_t



Reconstruction: TRD Tracklet Resolution

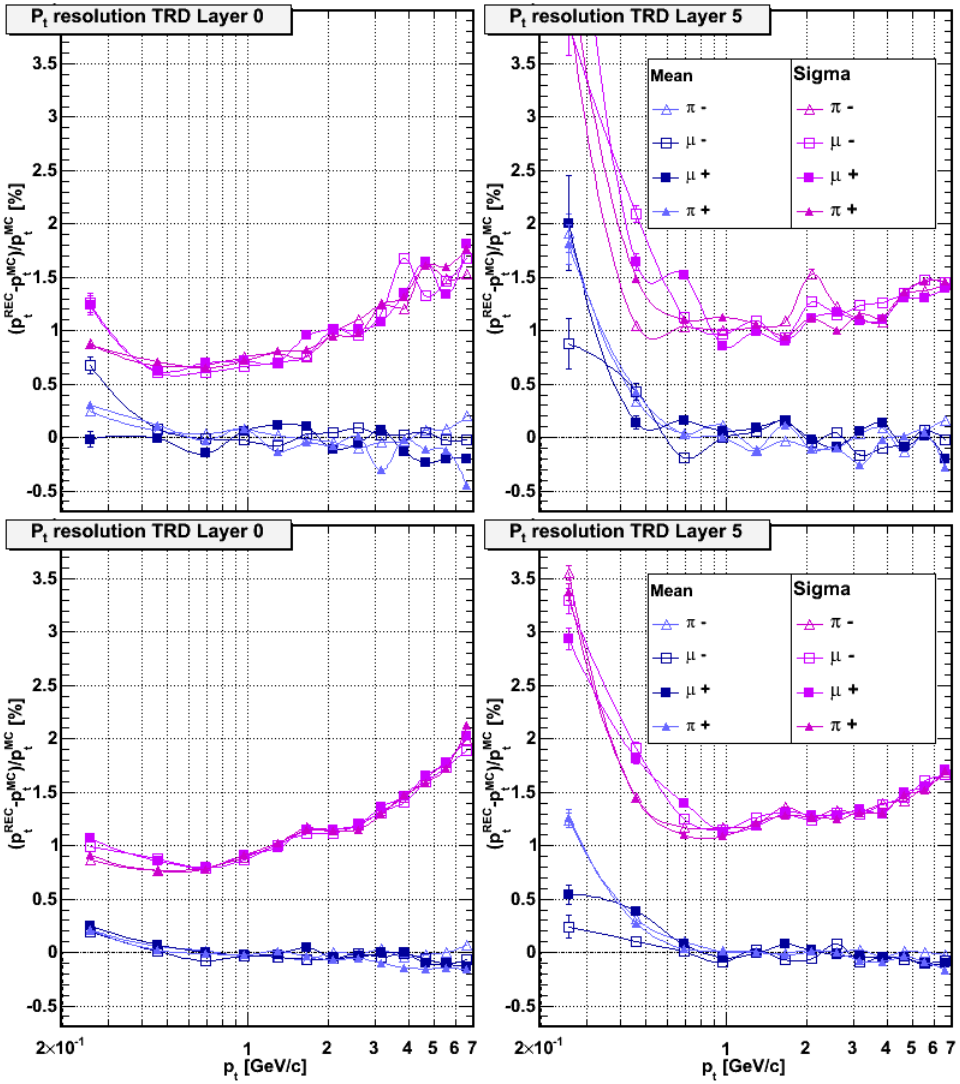
- A. Bercuci
- Resolution computed with MC tilt correction
  - No e, $p_t > 0.8$ GeV/c
  - 10-15 microns shift
  - radial shift (slope)



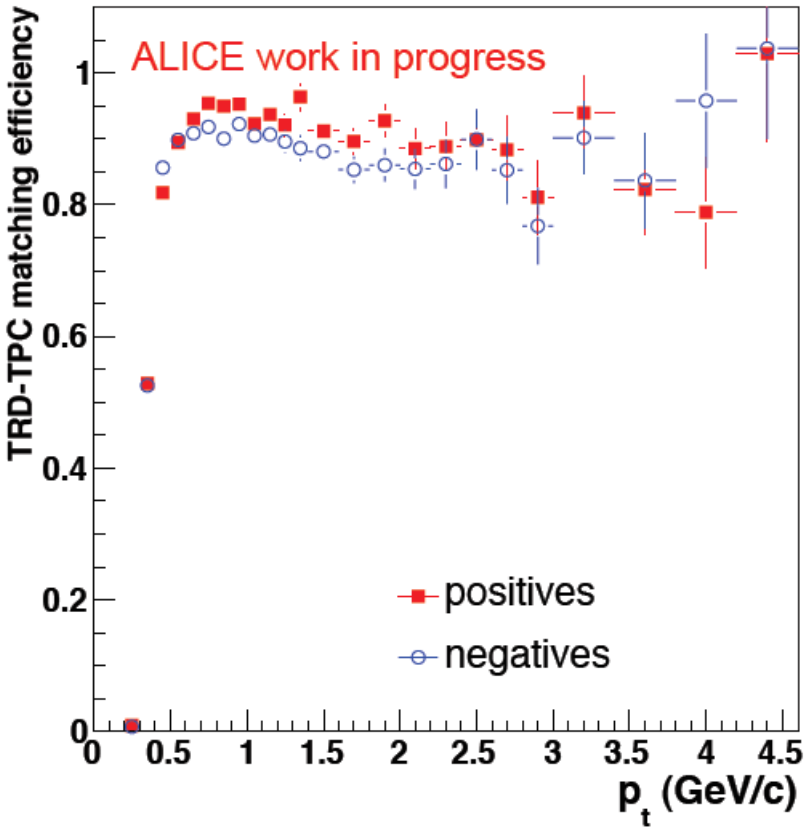
Reconstruction: TRD p_t resolution w/o threshold cut

NO CUT

CUT 2 GeV/c



Reconstruction: TPC-TRD Matching Efficiency



M. Fasel

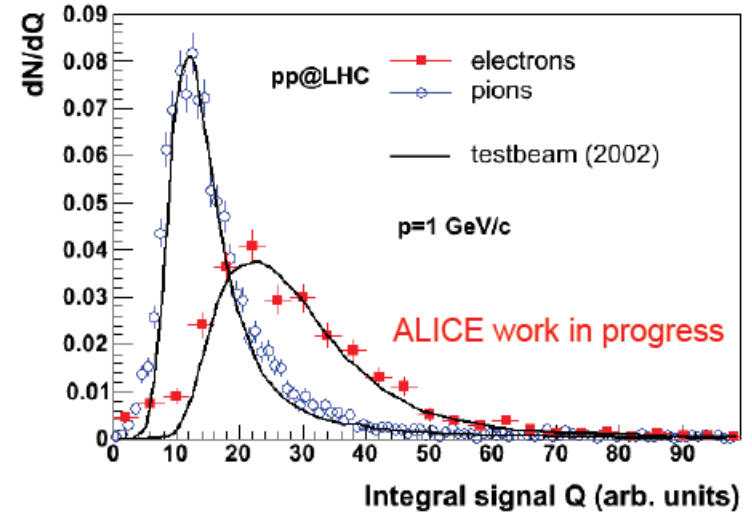
Reconstruction: Particle Identification

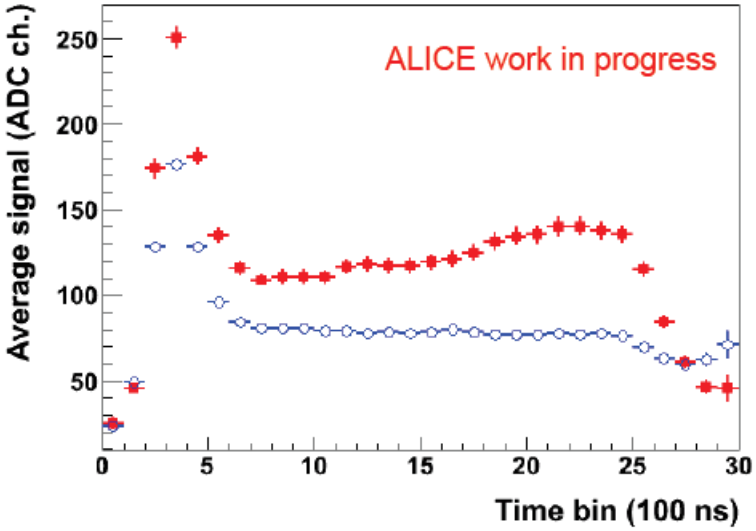
Selection of electrons and pion in p+p data

$\gamma \rightarrow e^+ e^-$

$K^0_s \rightarrow \pi^+ \pi^-$

M. Fasel

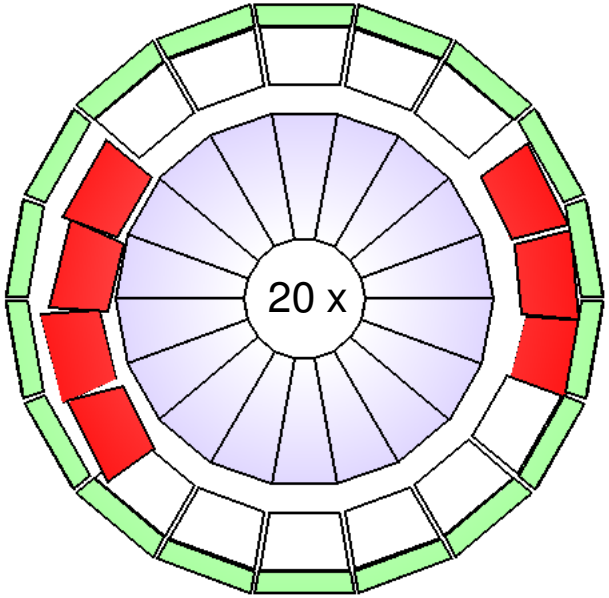


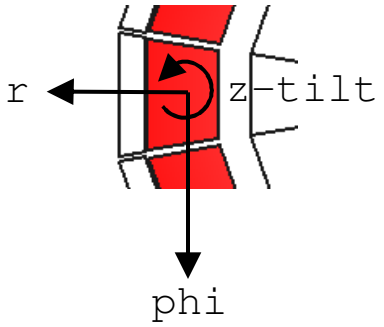


Alignment: Survey Data Aug. 09

SM	phi-shift	z-shift	r-shift	z-tilt
00	-1.42(9)	-1.22(8)	-0.03(8)	-0.25(11)
01	-1.34(9)	-1.34(8)	-0.17(8)	-0.22(11)
02				
03				
04				
05				
06				
07	0.35(9)	-0.52(8)	-1.37(8)	-0.00(11)
08	0.66(9)	-1.53(8)	-1.63(8)	-0.18(11)
09	0.88(9)	0.13(8)	-0.83(8)	0.20(11)
10	1.21(9)	1.40(8)	-0.81(8)	-0.21(11)
11				
12				
13				
14				
15				
16				
17	-1.11(9)	-0.83(8)	0.34(8)	-0.22(11)

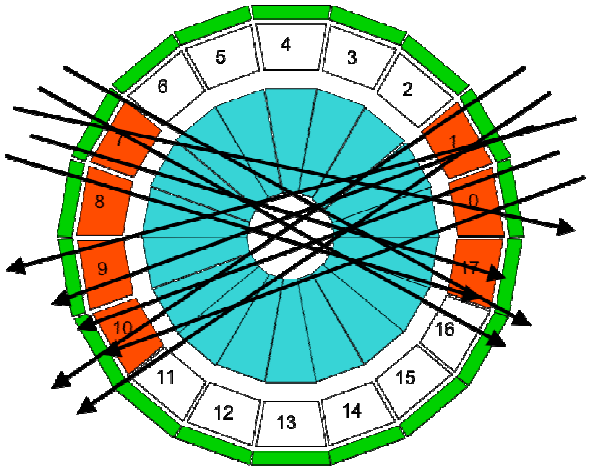
Only A-side measured
Results translated into shifts/tilts
Only shifts and z-tilt allowed
Shifts in cm, tilts in degrees





D. Miskowiec

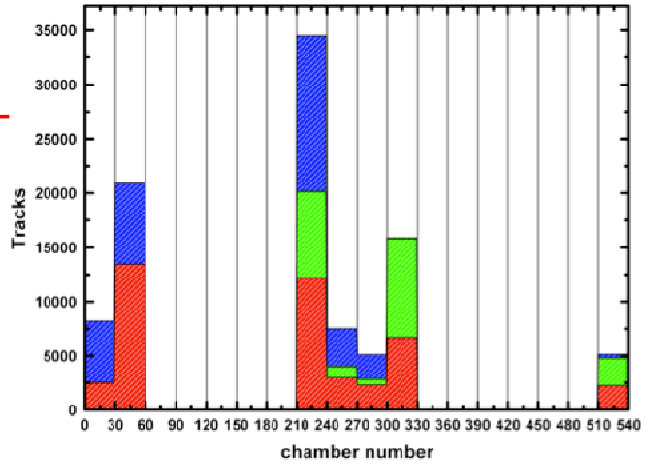
Alignment: Statistics



Cosmic muons

170k tracks, B = 0T

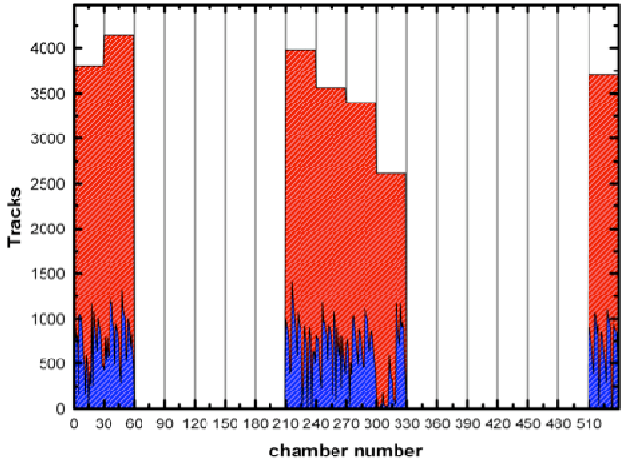
203k tracks, B = 0.5T



p+p data,
105k tracks

tracks/supermodule

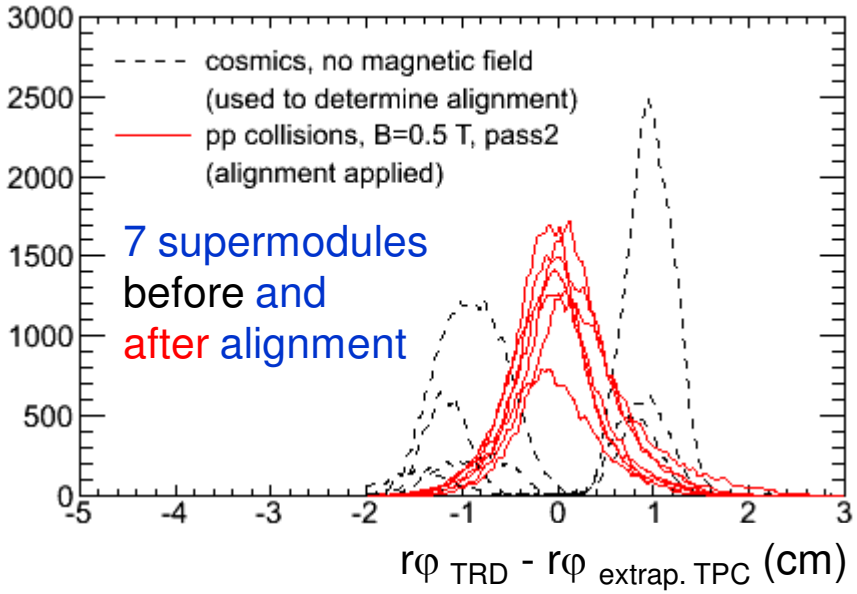
tracks/stack

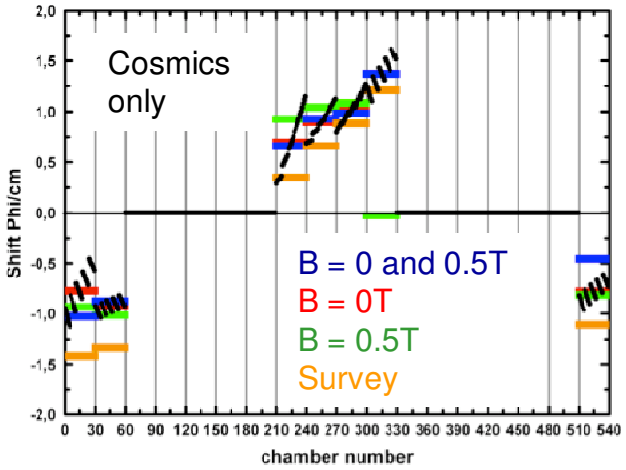


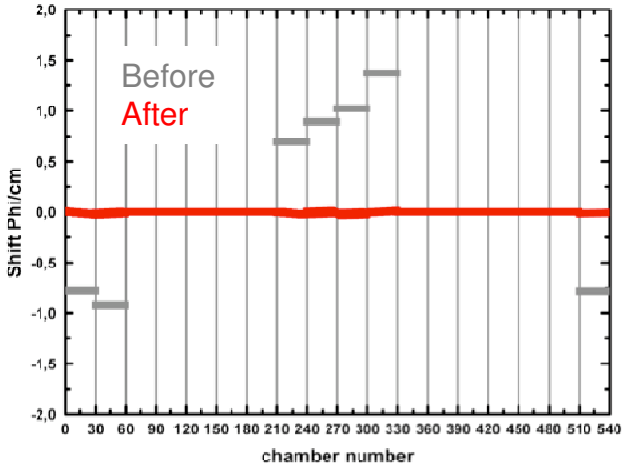
M. Heide

D. Miskowiec

Alignment: Results after Pass 5







M. Heide
D. Miskowiec

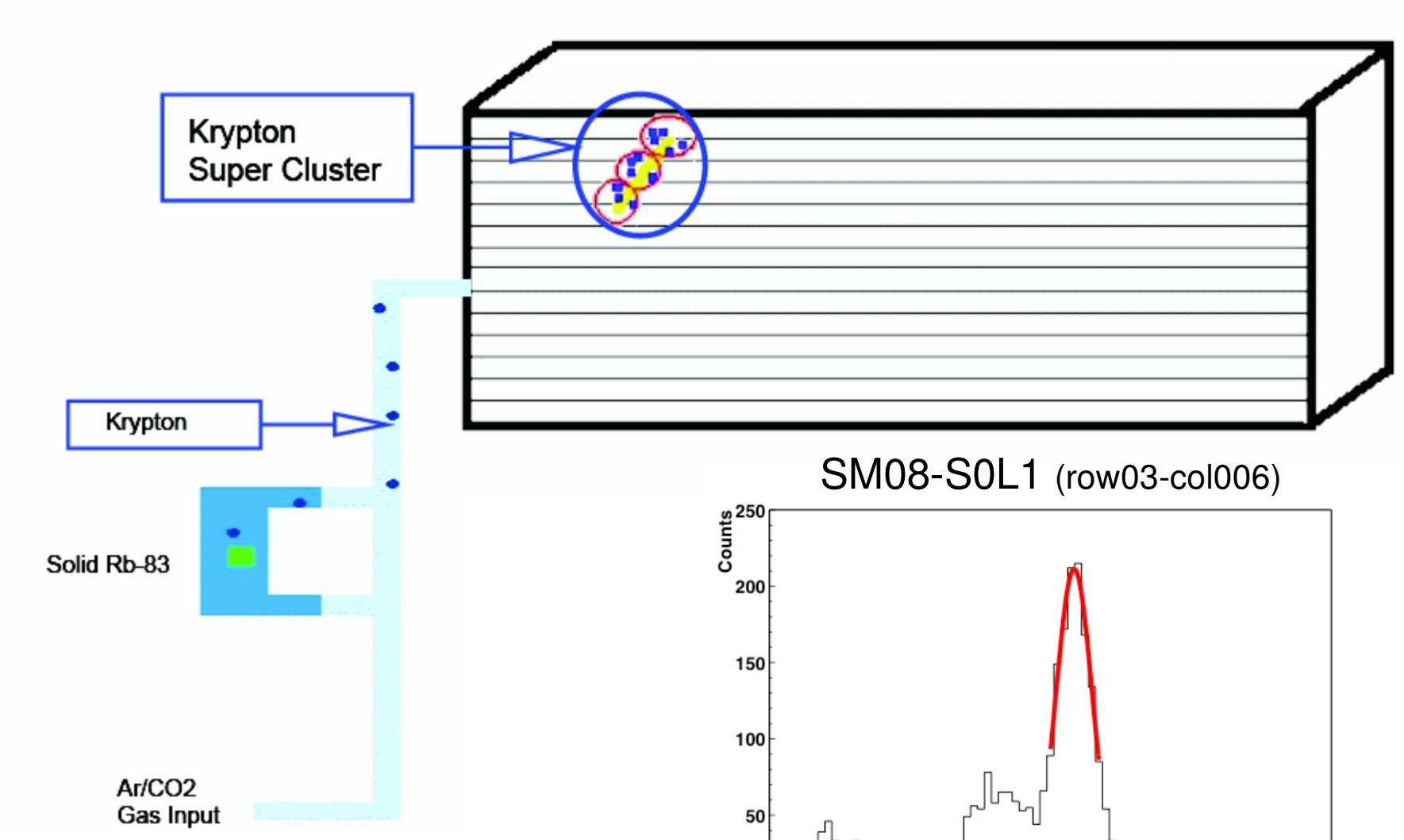
Raw Reader

- Clean up of raw reader situation
- Default and only version `AliTRDrawStream`
  - Based on online reader by J. Klein
  - Replaced of `AliTRDrawStream` and `AliTRDrawFastStream`
- Used in offline, calibration and HLT
  - Integration in AMORE ongoing
  - Remove base class `AliTRDrawStreamBase`

Other

- TRD online tracklets (trigger) into AliESDfriends
  - Optional, size estimation soon (J. Klein)
  - Allow for easy access in AliAnalysisTask
  - Tigger efficiency studies

Krypton Calibration



SM08-S0L1 (row03-col006)

M. Al Helvi