

TESTBEAM 2009



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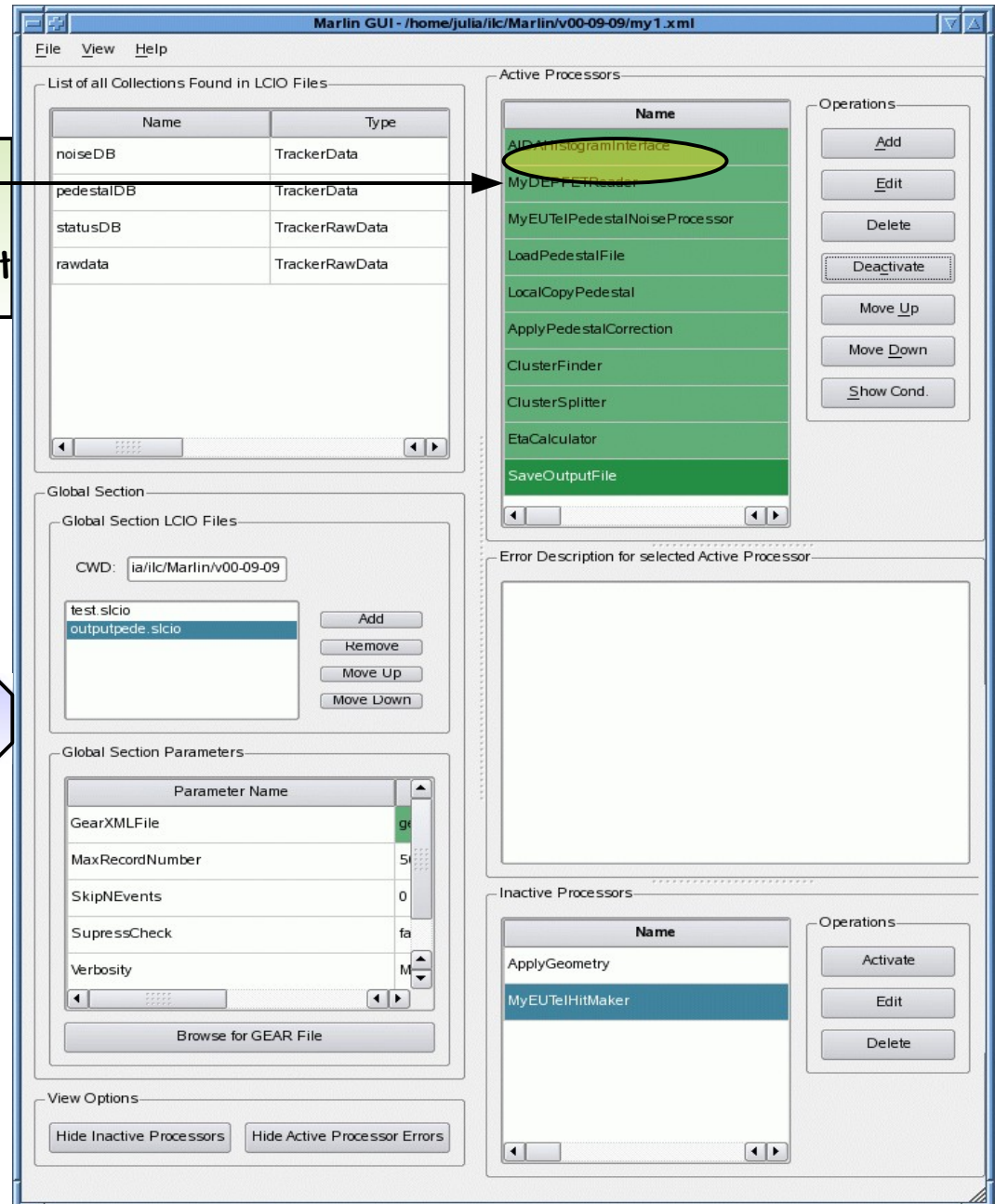
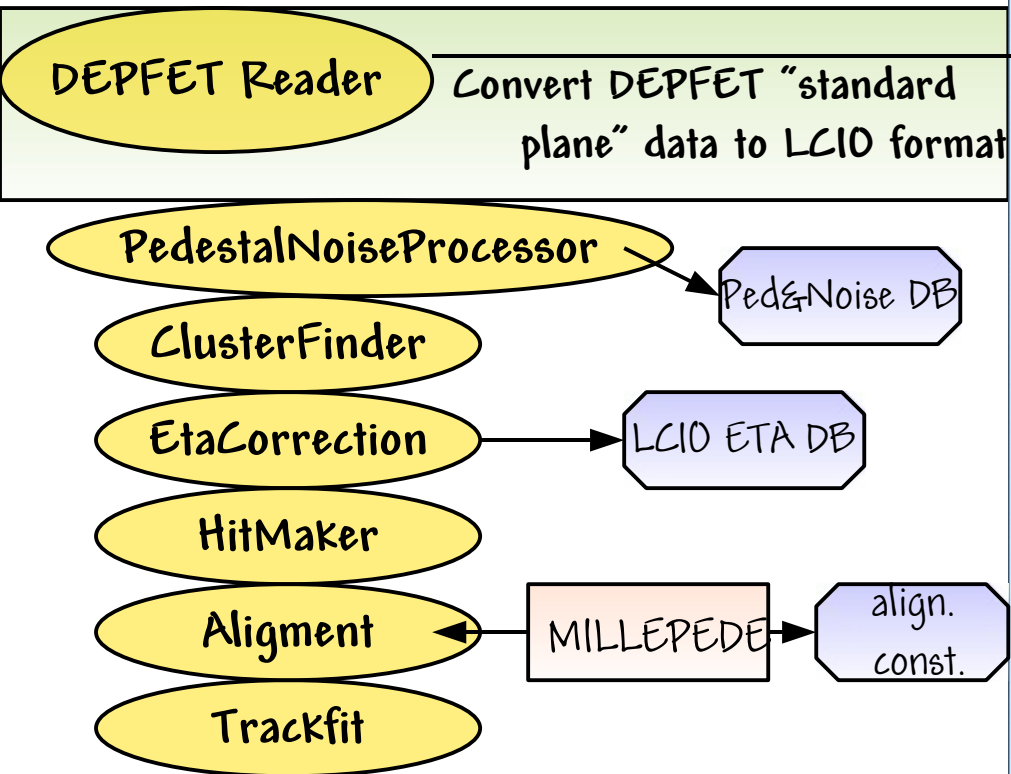
Outline

- Software development
- DEPFET with EUDET
- First Results



DEPFET Meeting, Barcelona, 7-8 Oct. 2009

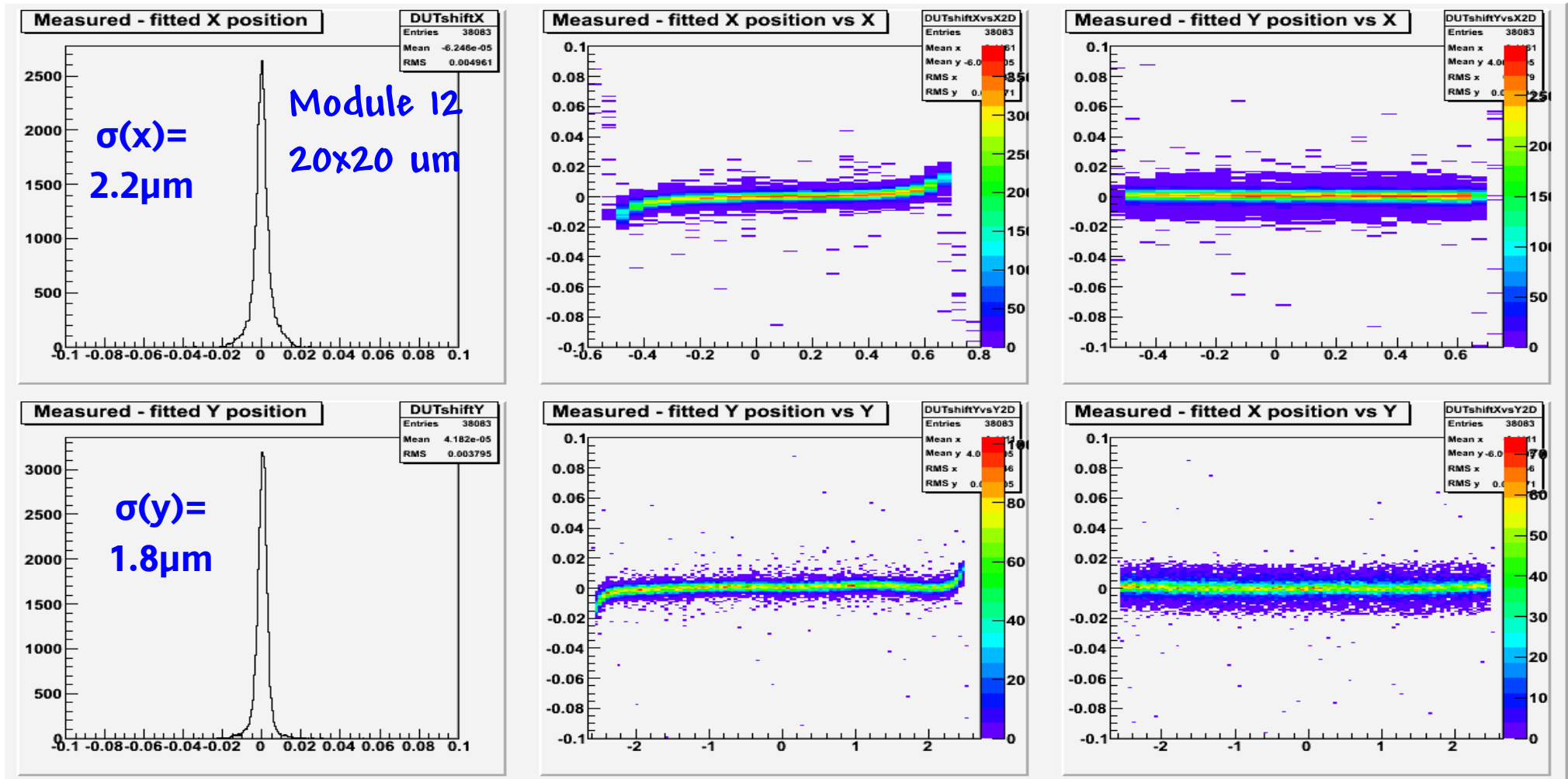
ILC software for DEPFET analysis



Software development (Eutelescope)

1) For DEPFET Telescope:

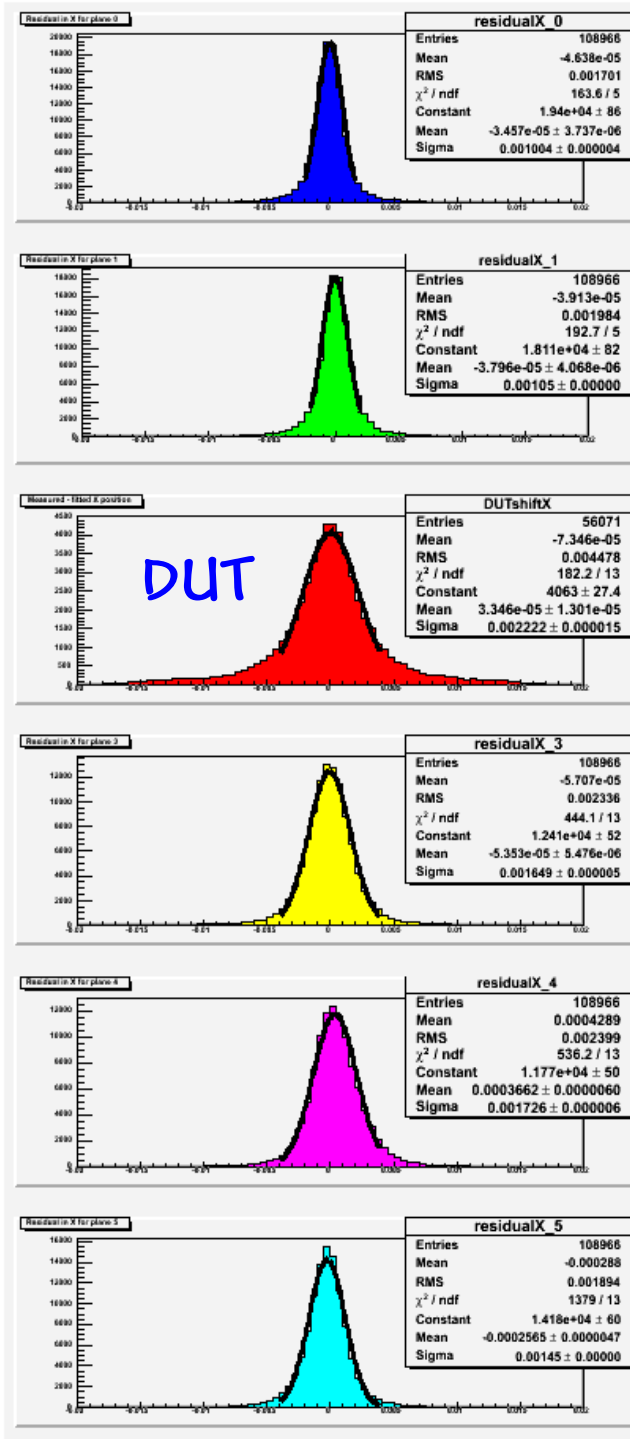
- **DEPFETReader** processor has been upgraded for the use of S3B system with larger sensor.



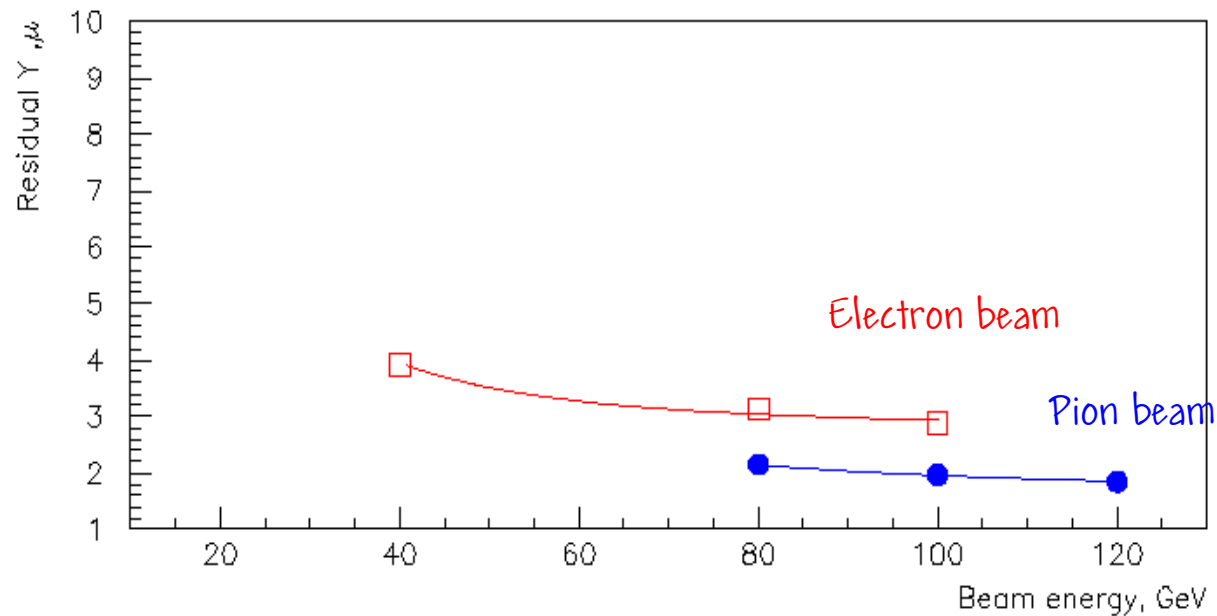
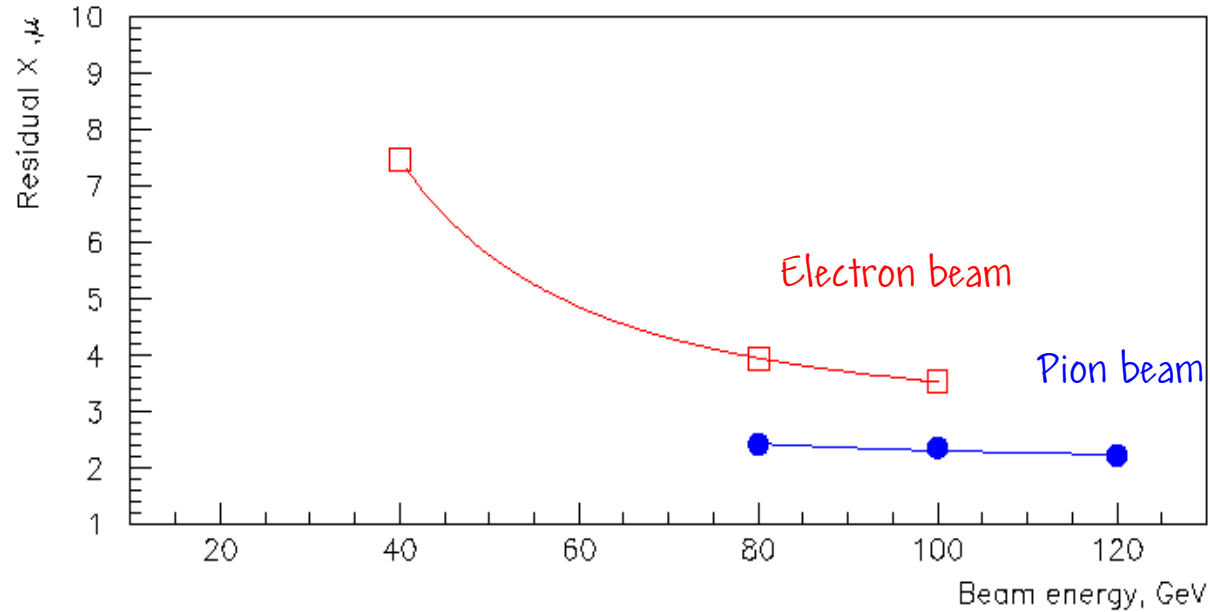
DEPFET Telescope Run 2308 120 GeV pions

Residuals X

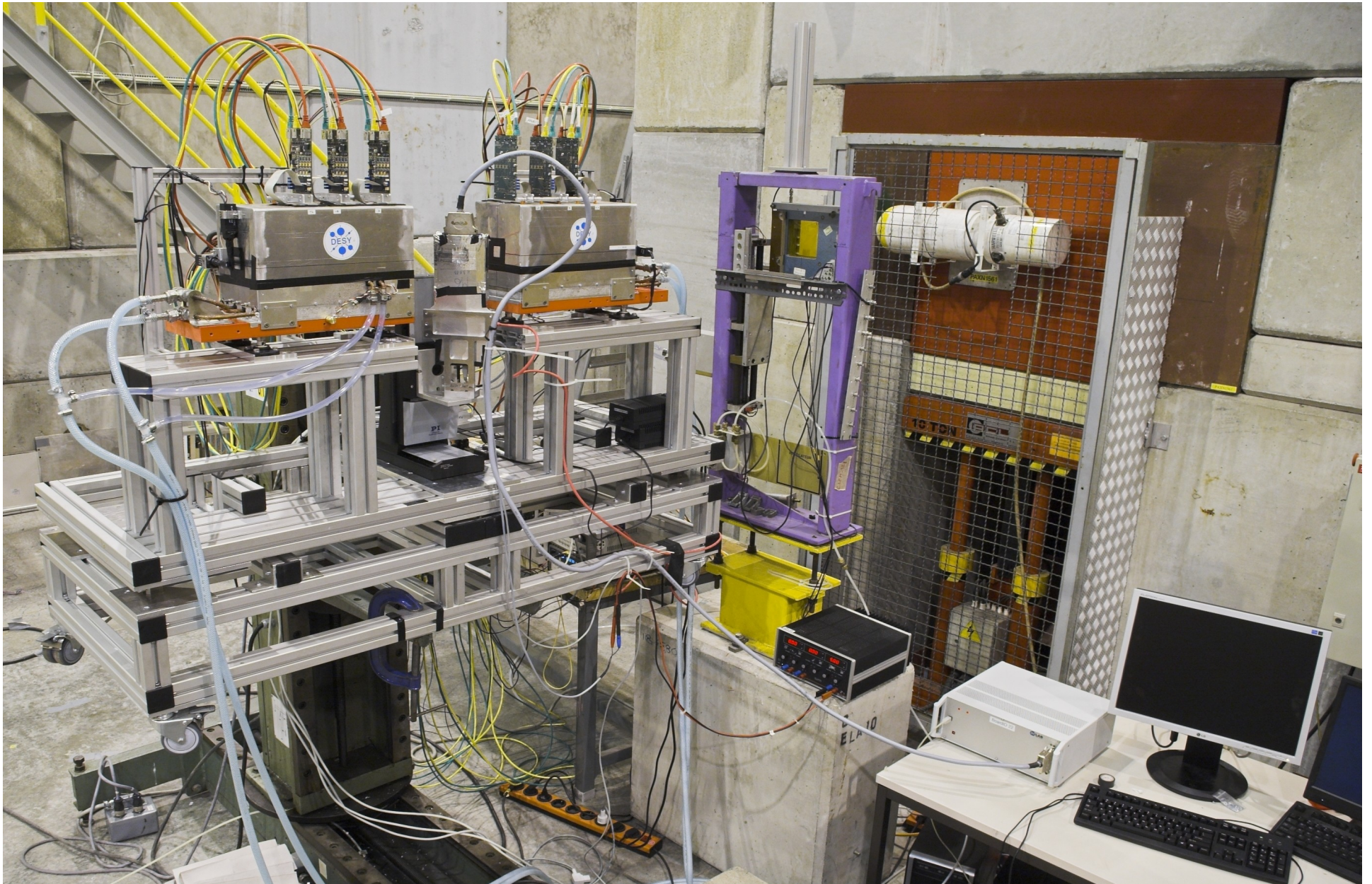
Residuals Y



DEPFET Telescope: Energy Scan



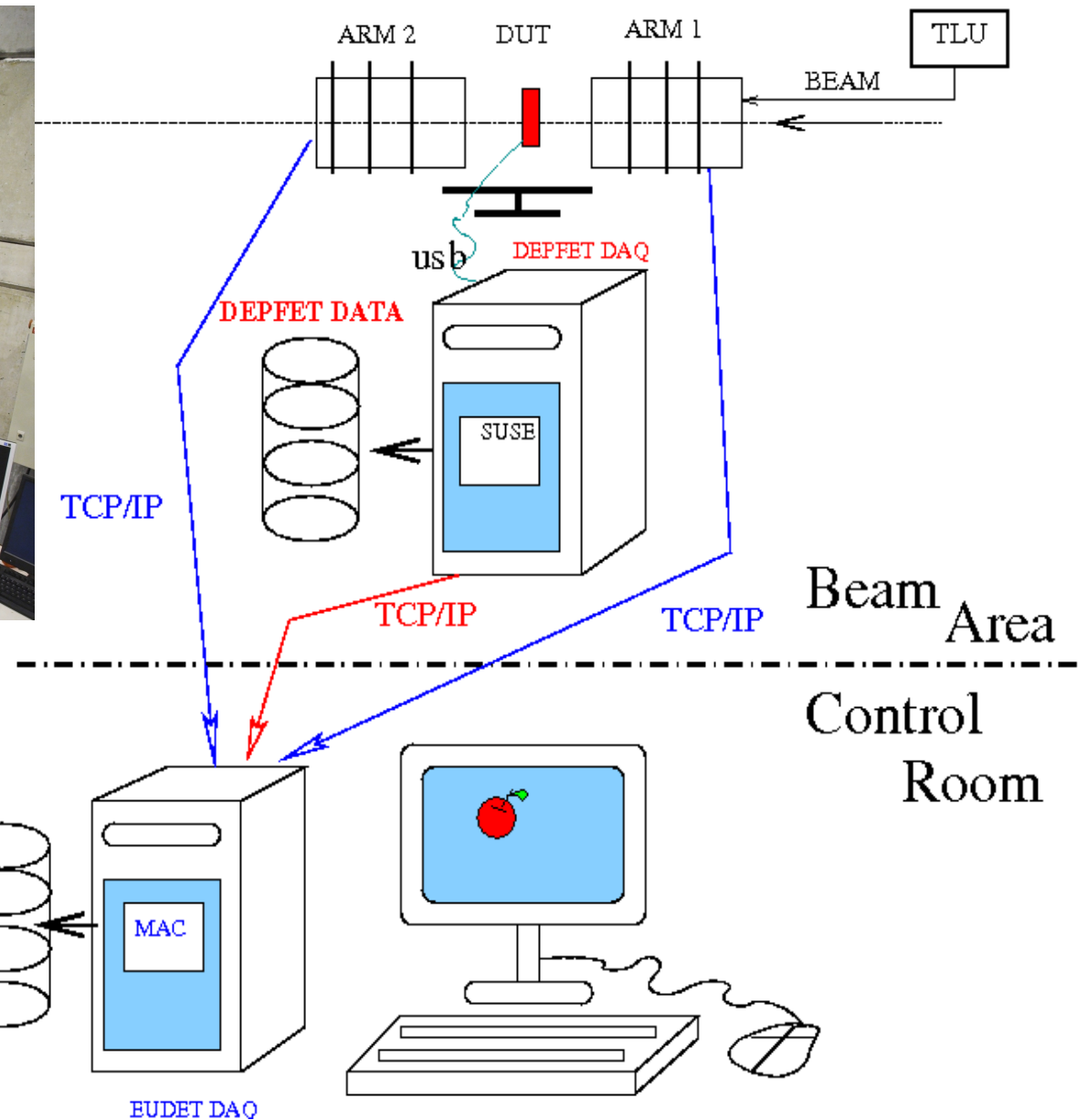
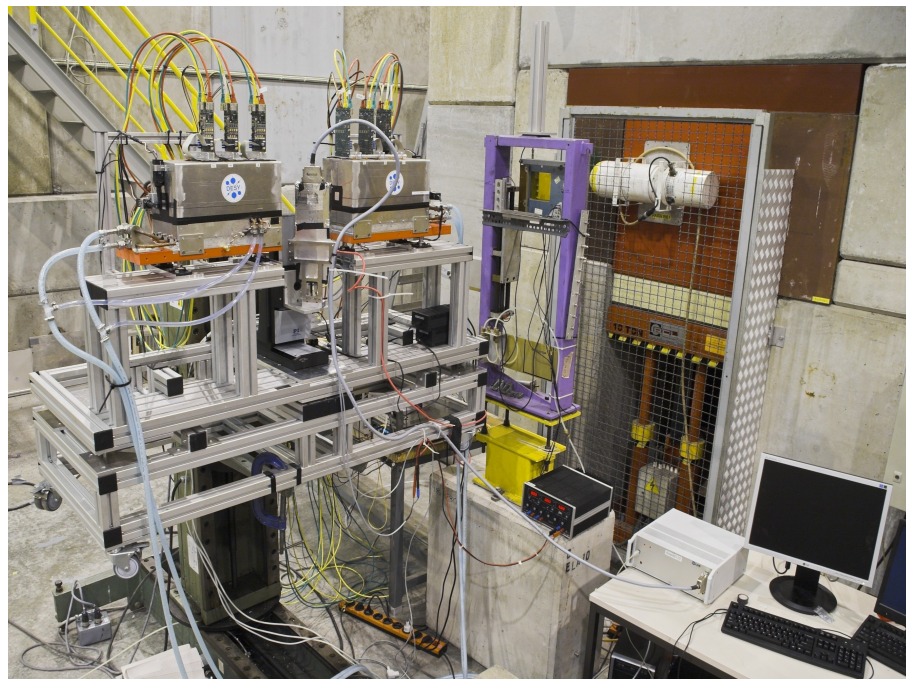
DEPFET & EUDET: Test beam Setup



07 Oct 2009, Julia Furltova

DEPFET Meeting, Barcelona

DEPFET & EUDET: Test beam Setup



EUDET Telescope:

MAPS 256x256 (30x30 μm^2):
7.7x7.7 mm^2

Readout: EUDRB in VME using
MVME6100 PowerPC

DAQ: MAC PC

DEPFET & EUDET: Run Control

EUDET Run Control

DEPFET Run Control

Many Thanks to Emlyn for help!

type	name	state	connection
DataCollector		OK	127.0.0.1:53884
LogCollector		OK	127.0.0.1:53881
Monitor	Root	OK	127.0.0.1:53891
Producer	EUDRB	OK	129.194.55.111:32803
Producer	TLU	OK	129.194.55.245:33211
Producer	DEPFET	OK	127.0.0.1:53888

```

46920 I      X
44880 I      X
42840 I      X
40800 I     XXX
38760 I     XXXX
36720 I     XXXX
34680 I     XXXX
32640 I     XXXXX
30600 I     XXXXX
28560 I     XXXXXX
26520 I     XXXXXX
24480 I     XXXXXX
22440 I     XXXXXX
20400 I     XXXXXX
18360 I     XXXXXX
16320 I     XXXXXX
14280 I     XXXXXX
12240 I     XXXXXX
10200 I     XXXXXX
8160  I     XXXXXX
6080  I     XXXXXX
4000  I     XXXXXX
2040  I     XXXXXX
0123456789012345678901234567890123456789012345678901234567890123
cmd stop
0      80    160    240    320    400    480
*** Run is Stopped for 2 sec. !!!
*** Run is Stopped for 2 sec. !!!
    
```

cmd init
cmd start
cmd stop

Problems:

*Due to luck of the mechanics we had a possibility to move only in X direction on the X-Y table

*No rotation stage.

*Problem with running TLU-2:

Trigger number always 0. Back to "our" TLU-1 fpga version.

*TOO MANY changes in the EUDET online DAQ software at the beginning of testbeam (standard planes and plugins): we haven't been informed about changes in EUDET DAQ before the test beam!!!

*We didn't had a offline software adapted for the new system with standard planes and plugins.

fortunately we had a 2 weeks before DEPFET/EUDET beam time!

Preparation:

- * change of the **data format** (TCP/IP) due to larger DEPFET sensor
- * **DEPFETConverterPlugin.cc** :
 - > decode RAW DEPFET data
 - > convert DEPFET into the "standard plane"
 - > convert RAW DEPFET data to LCIO format
- * **EUDET online Monitor** has been adapted for the use of larger DEPFET sensor
- * problem of the alignment of an external DUT is solved.

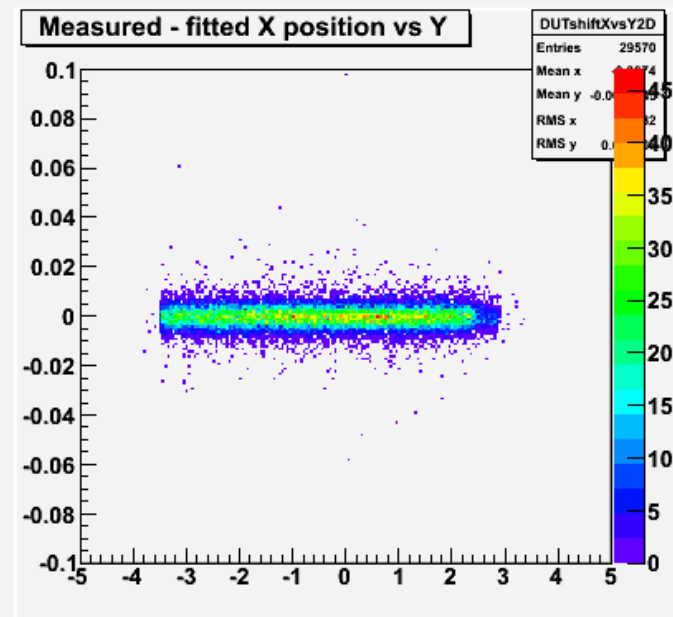
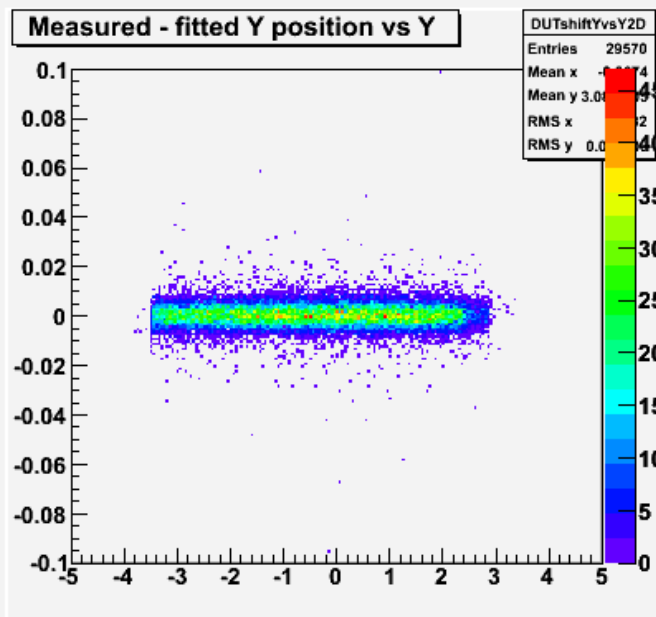
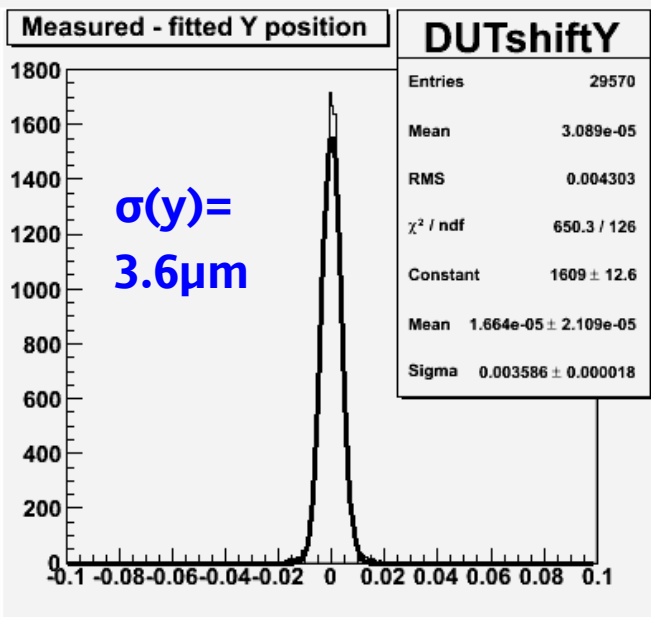
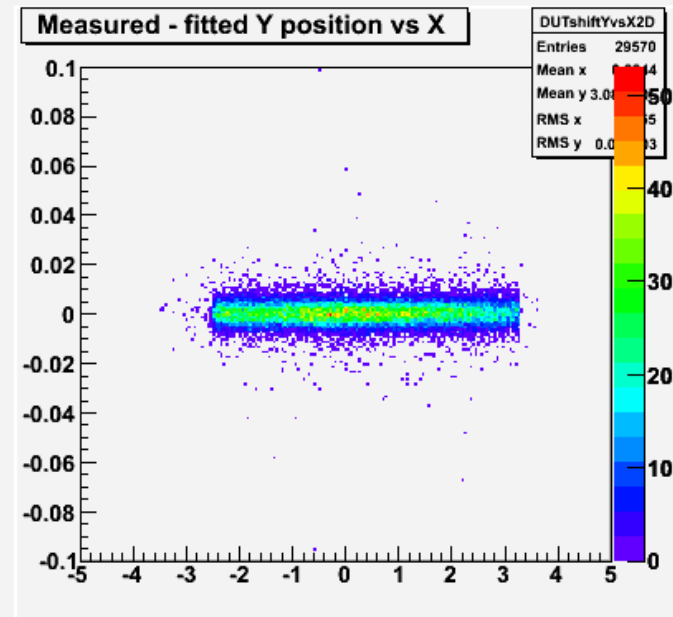
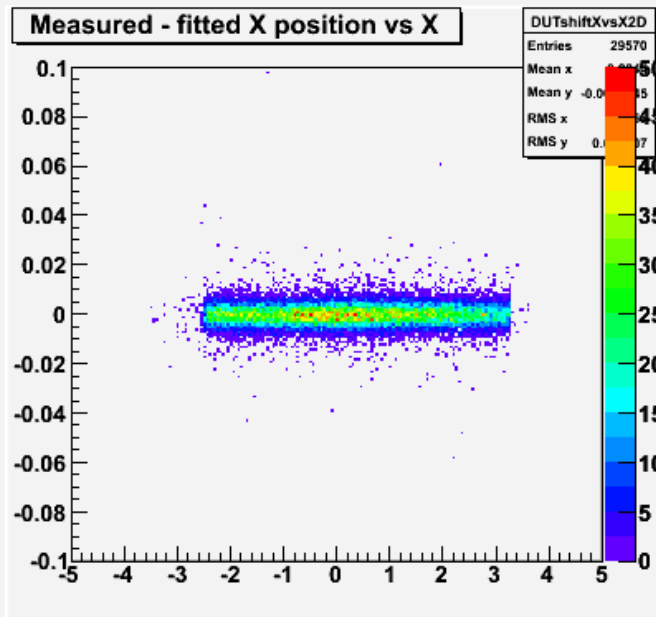
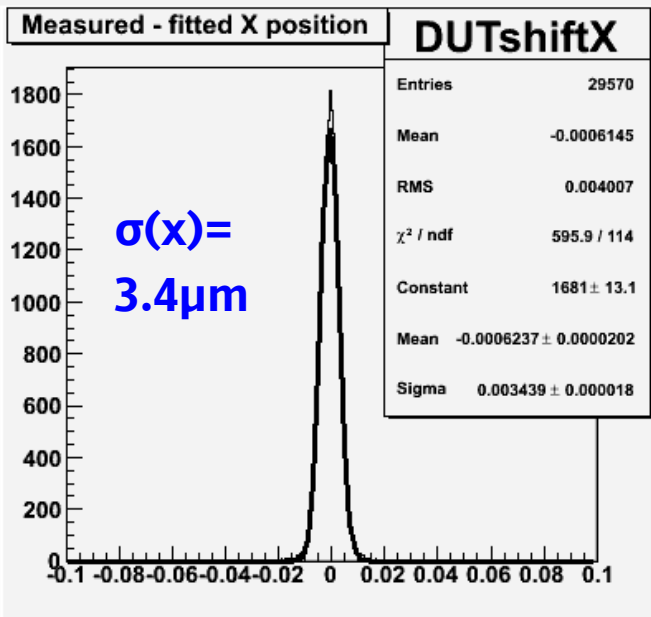
Test beam 2009

6 Aug. - 10 Aug. SPS - H6 B EUDET/DEPFET (extended: 3-10 Aug)

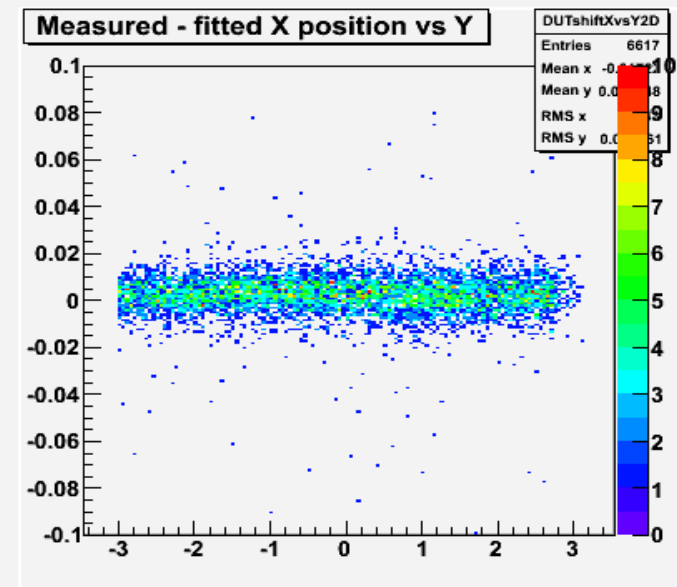
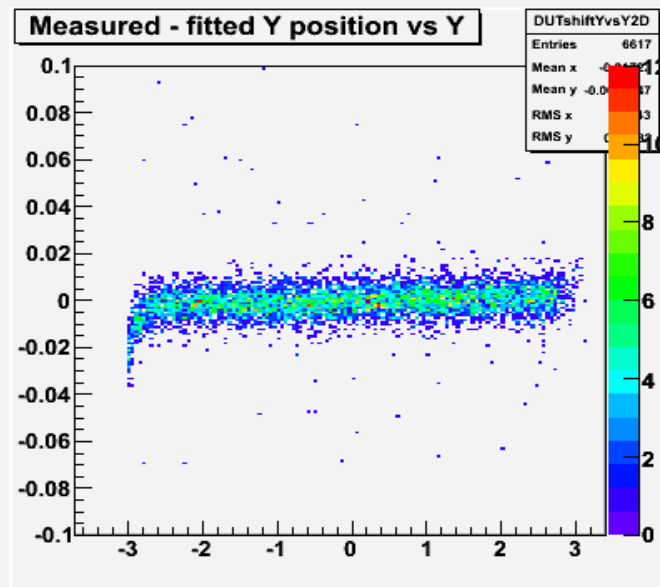
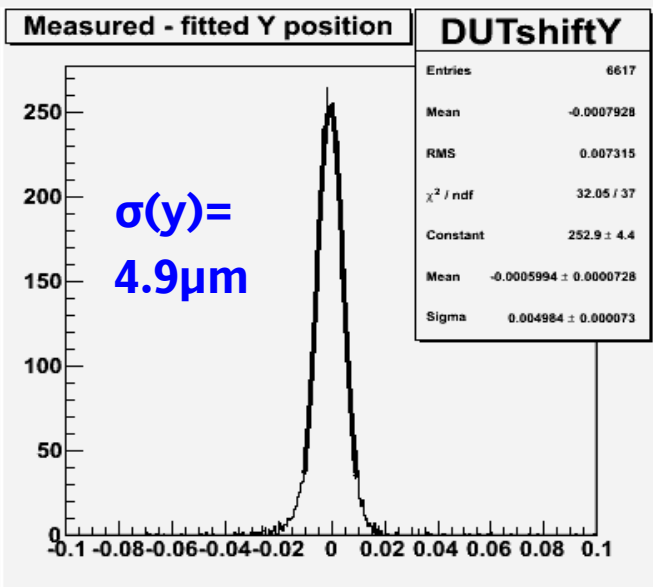
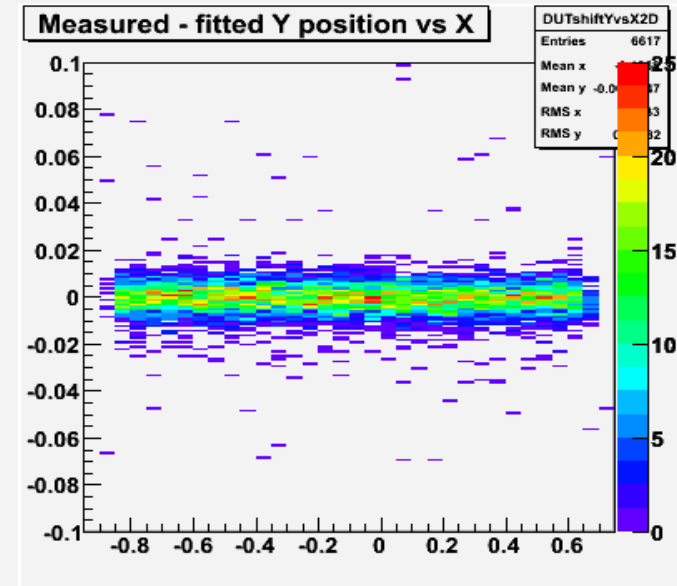
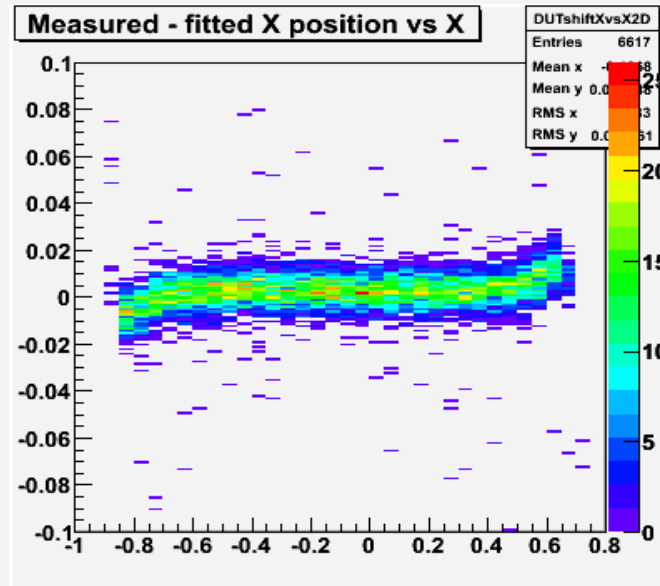
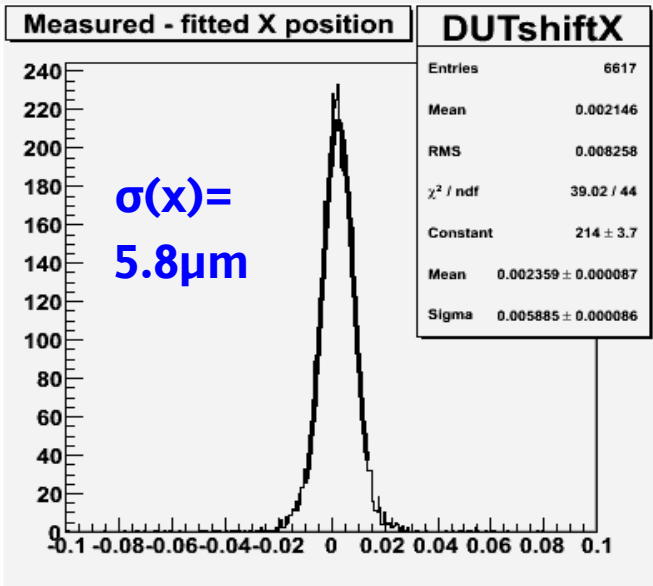
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- * Test of the complete new system
- * Angular scan (0, 26, 36, 41)
- * Energy scan (100,80,60,40 GeV electron and 120,100,80 GeV pion beams)

EUDET plane #3 as a DUT (Residual) in EUDET Telescope



DEPFET DUT Residual(24x24 um) using EUDET telescope (problem with η - correction)



Conclusions

- Eutelescope software has been upgraded for the use of S3B system
- DAQ integration to EUDET Telescope system (via RunControl, DQM, DATA merging on a DAQ and offline level) for the S3B system are **done**.