



HR2 Calibration for a m2 μM

M. Chefdeville

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Calendar

- Beam requests 2010
 - 2 weeks between June/mid July @ SPS H2 or H4 (CALICE)
 - 1 week in July @ SPS H4 (RD51)
 - 1 week in November @ PS T9 (CLIC)
- Before June
 - Calibration & X-ray & cosmic tests done
 - 1 m2 closed and tested

Jan	Feb	Mar	Apr	May	Jun	Jul
Calibration 4 ASU 24HR				Assembly of m2	Beam test of m2 HR2	
Xray and cosmic tests in gas box				Cosmic tests		

ASU tests

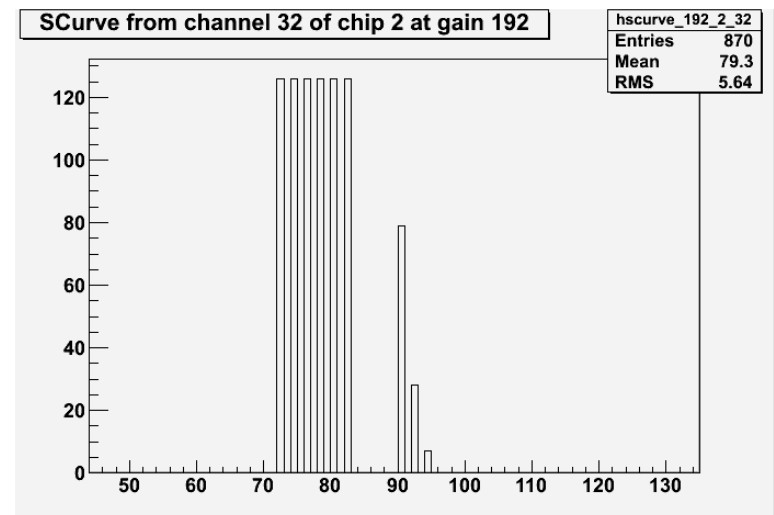
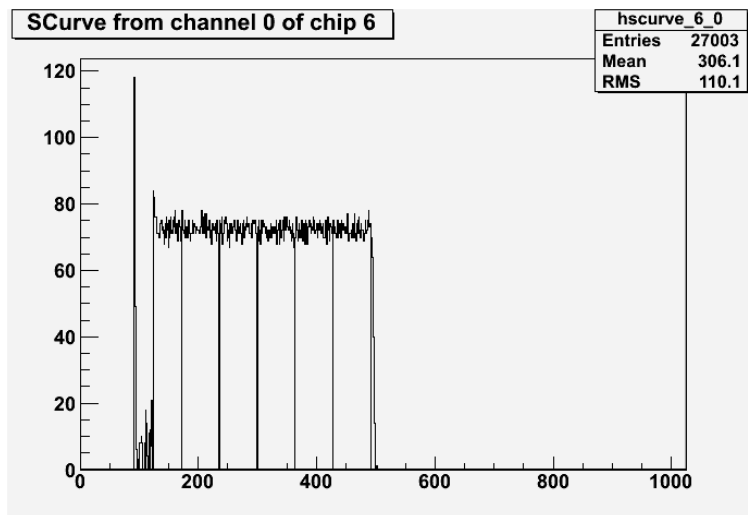
- Calibration: pedestals & 1 charge
- Cooking
- Calibration: pedestals & 1 charge
- X-rays in gas box
- Inter-Calibration: pedestals & 3 charges
- Cosmics in gas box
- Calibration: pedestals & 1 charge

Available ASU

- ASU8
 - Cooking done in 2009
 - TB in 2009
 - 7 responding HR2, damaged during TB?
- ASU9
 - Cooking done in 2009
 - Calibration on-going
- ASU10
 - This week: calibration + cooking
- ASU11 @ CERN

Calibration status

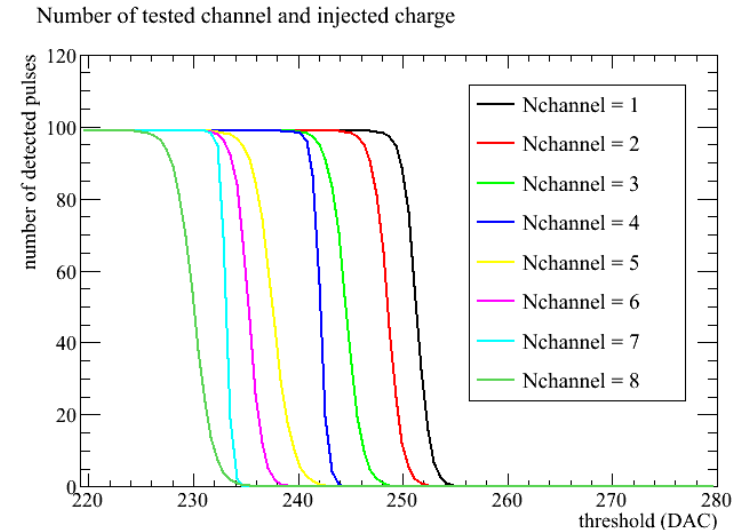
- Acquisition & reconstruction software OK
 - LabView & C++ framework
- Some data taken by Cyril on ASU 9 & 10
- But: problems with chip configurations e.g. gains and thresholds
 - Incomplete Scurves -> error on parameters
 - Inter-calibration will not work



Calibration procedure

- Questions:

- How many chip / run?
 - Depends on configuration ease
 - If easy: 1 column (4 chips) at a time
 - If not: 1 chip at a time
- How many channels / run?
 - Pedestal runs: all channels
 - Charge runs: 1 channel at a time
- How many charges?
 - Inter-calibration requires gain \rightarrow at least 2 charges
- How many gains?
 - Gain and noise: much to gain?
 - Use 1 gain ($G=2$)
- How many pulses / run?
 - 1000 entry / threshold \rightarrow Smooth S-Curve
- How many thresholds, step size Δ ?
 - DAC variations: 0-1024
 - Identify useful range for each charge and use $\Delta=1$



Next steps

- ASU9
 - Pedestal measured
 - Placed in gas box today
 - X-ray test in Ar/CO₂ soon
- ASU10
 - Pedestals measured by Cyril
 - Analysis on-going
 - Cooking soon