

Test of PARISROC2 chip with PMTS + test of 8-in PMTs

Videoconference – Orsay – May 28, 2010

IPNO detector dept.

<http://ipnweb.in2p3.fr/~detect>

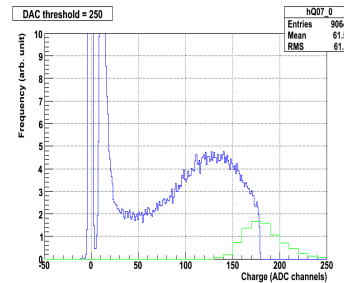
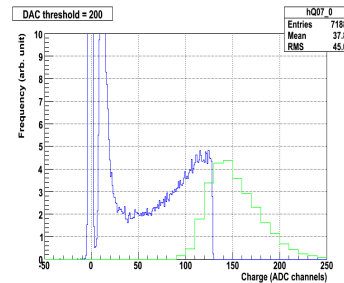
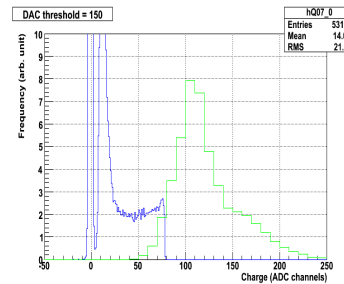
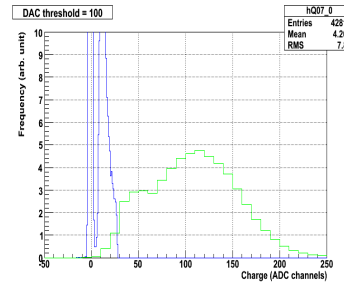
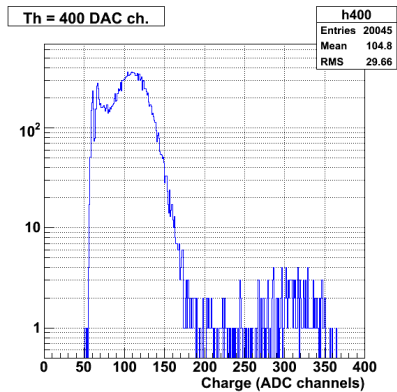
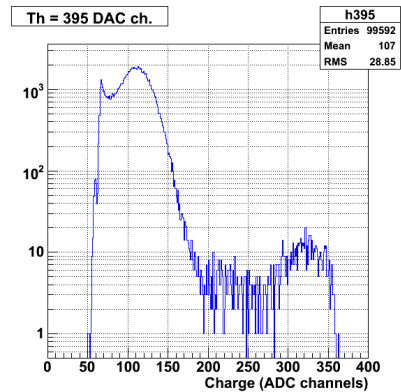
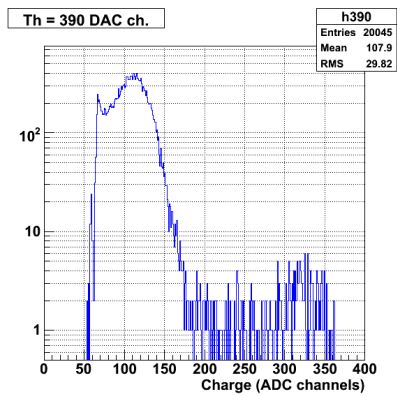
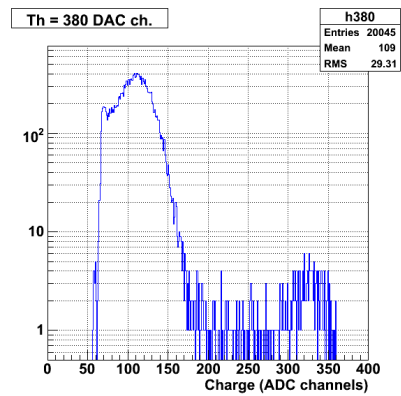
Outline

- Test of the PARISROC2 chip with 1-in PMTs
- Test of 8-in PMTs with the PMm2 base before and after potting

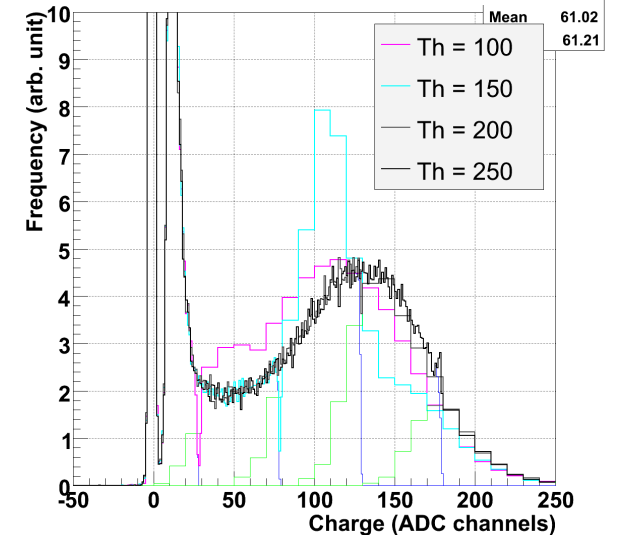
PARISROC2 - charge

High-gain ADC only

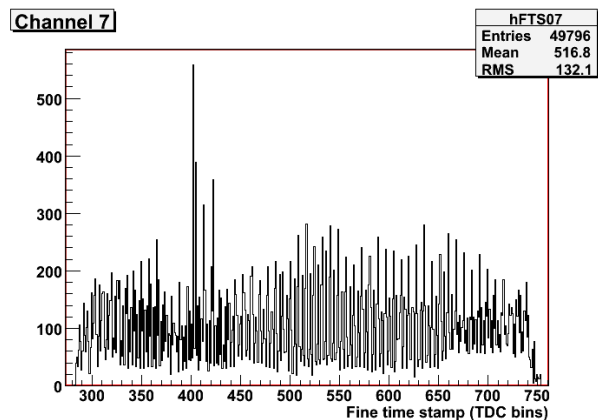
- Reduction of the number of events below the threshold (dependent on the electronics noise)
- Still to work on how to use the two ADC ranges (threshold + overlap)



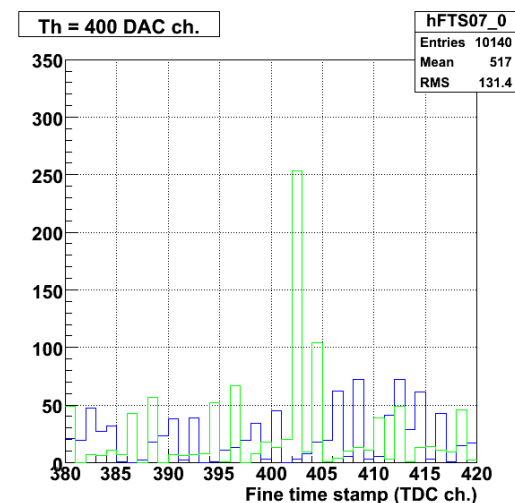
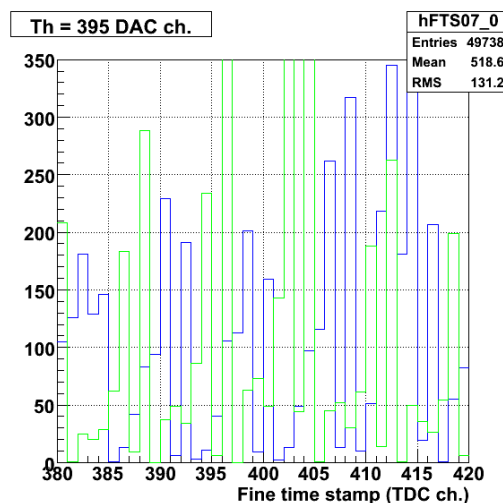
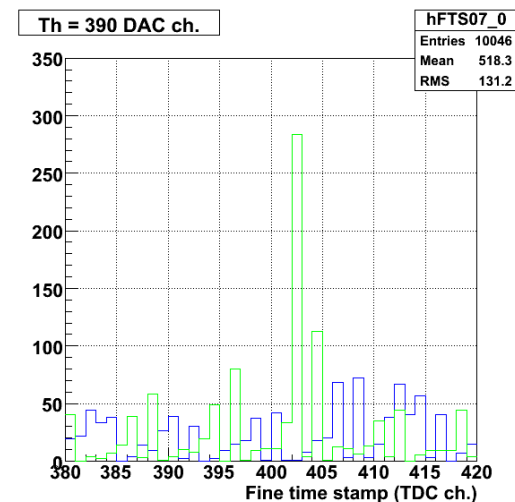
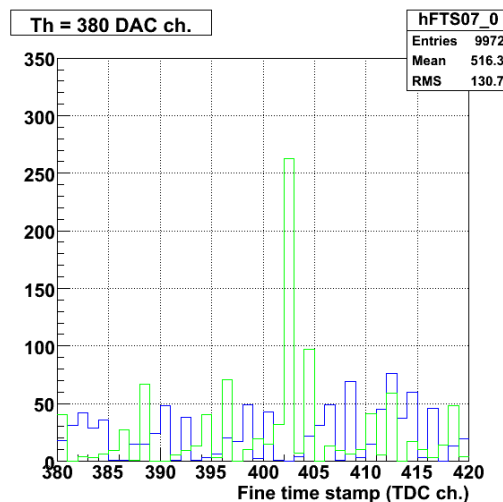
SER reconstruction



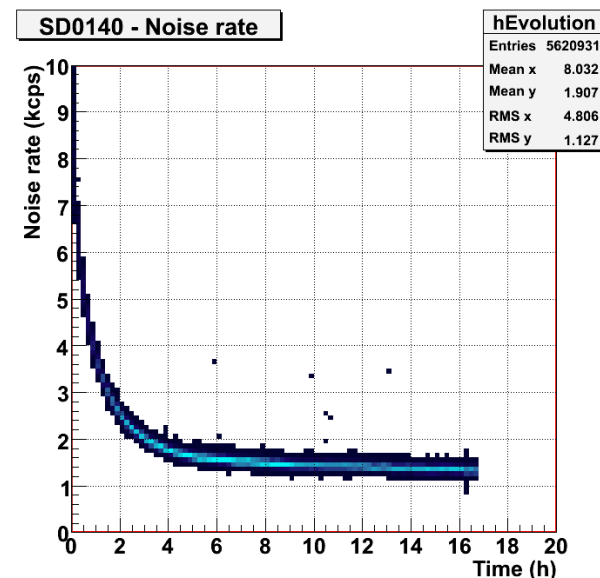
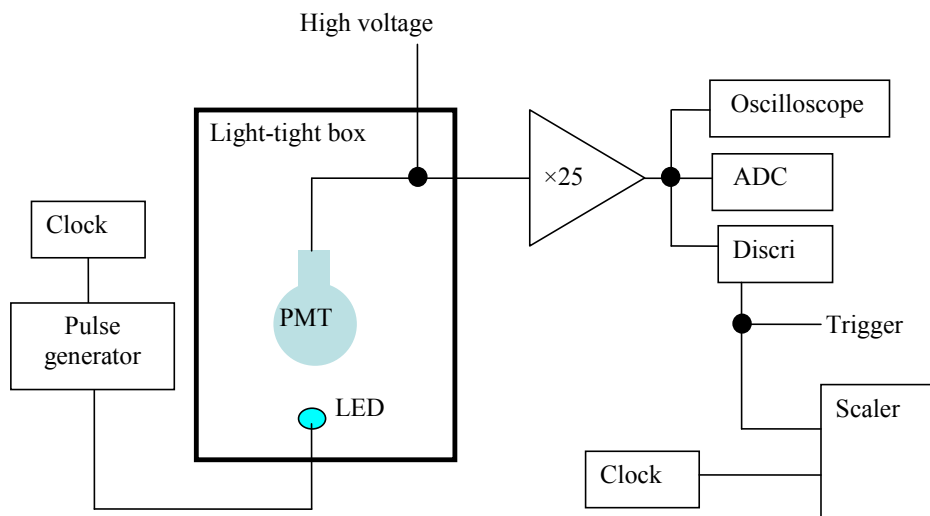
PARISROC2 - Fine time stamp



- Expected non-linearity around 400 TDC ch
- "pattern" on both ramps BUT C1/C2 to disentangle

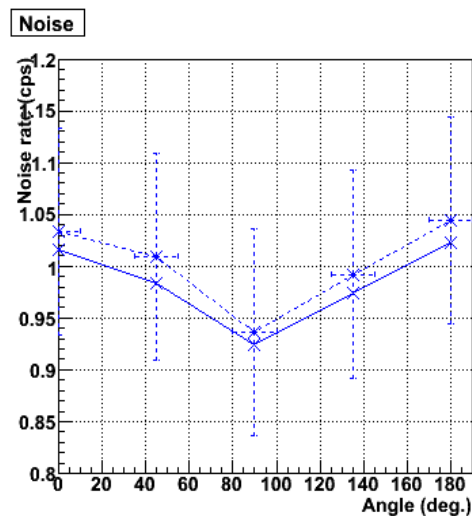
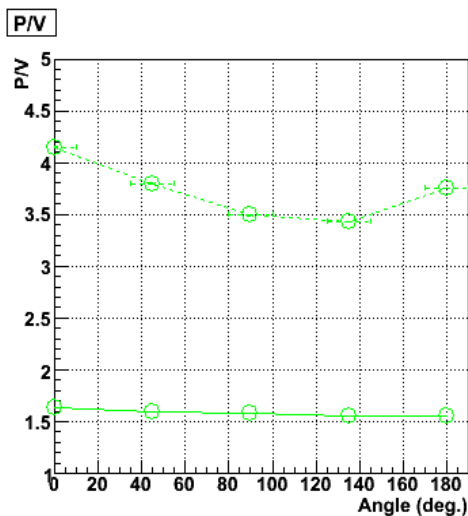
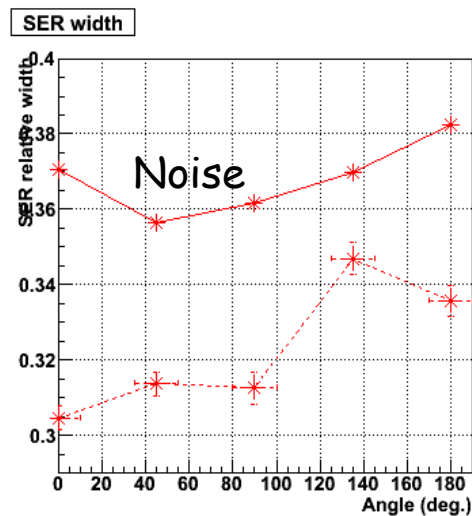
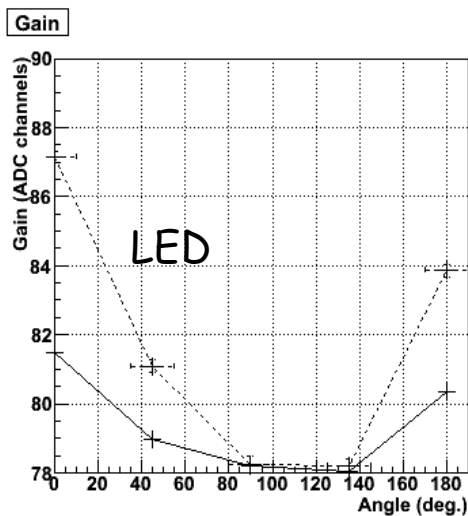


8-in PMT test bench



- LED and noise spectra with the same test bench (CAMAC ADC and scaler)
- Gain set to around 5×10^6 because of the electronics range
- Need to wait for > 15 hours for the rate stabilization
- Light-tight box rotated / PMT placed horizontally to measure the influence of the magnetic field

Influence of the magnetic field



- Difference with the test sheets:
 - Lower noise (about 1 kHz instead of 5)
 - P/V smaller (1.5 to 2 instead of 3)
- Performance in noise relatively stable with regards to the magnetic field
- Close results with the PMT placed horizontally (noise spectrum P/V and counting rate)

Conclusions / To do

- Analyze the data acquired with the oscilloscope (time resolution of NOR16 - signal ledge)
- Methods to analyze the fine time stamp with PARISROC2
- 14 8-in PMTs still to test (3 angles, LED & noise spectra, counting rate)