Calibration of the first 15 PMTs

The Method:

- The differential signal is read by two probe at the extremities of a 100 Ohm resistor
- The signal is integrated (by the oscilloscope)
- Mean and sigma of the integral of at least 2500 pulses is evaluated (again by the oscilloscope)
- The number of P.E. is estimated according to the Poisson statistics (more next page...)
- A linearity plot (Signal % #of P.E. ) is made changing the LED voltage at a fixed PMT voltage of 1700V
- A gain plot is made changing the PMT voltage at a fixed LED voltage
On Poisson

\[ S = aN \]

\[ \sigma = a \sqrt{N} \]

\[ N = \left(\frac{S}{\sigma}\right)^2 \]

\[ a = \frac{S}{N} \]

Pedestal must be subtracted!!
Gain coefficient at 1700V (nV s/P.E.)

CA3791->0.040  CA3919->0.132  
CA3726->0.038  CA3920->0.099  
CA3752->0.028  CA3930->0.134  
CA3753->0.024  CA4022->0.071  
CA3767->0.040  CA4035->0.088  
CA3873->0.110  CA4211->0.067  
CA3890->0.118  CA4212->0.105  
CA3891->0.117

About 30 min. per PMT needed
About 32 PMT remaining
The PMTs have been tested always with the same voltage divider