

Prague group activity, preamps for APD

- Status of a new preamps, mask for APD
- Influence of ATTenuator on signal, pedestal
- LED rate dependance
- Resume LED tests
- thermobox for \mathcal{O} APD test

New Preamp status production

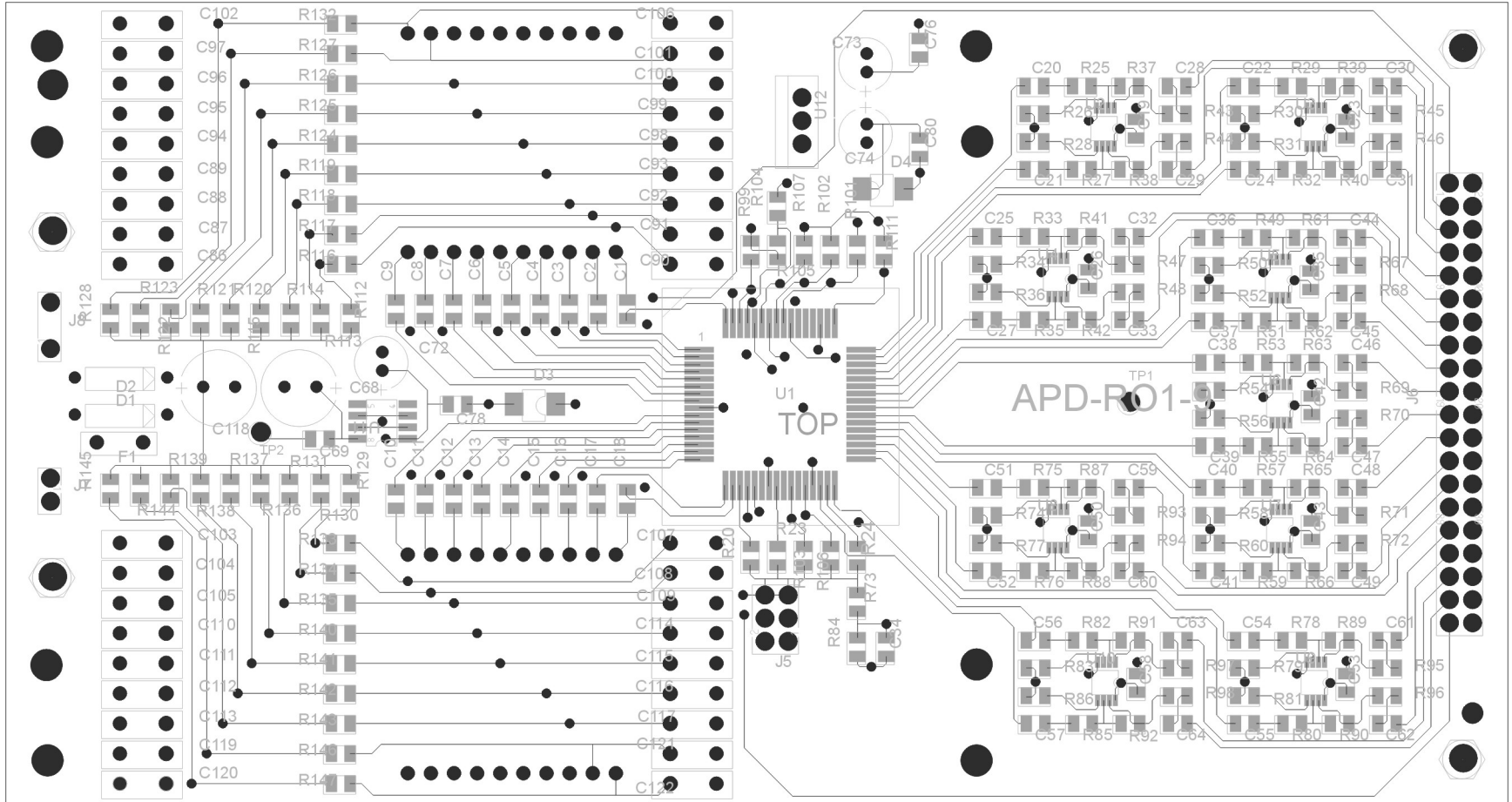
PCB Milan's (LAL chip), new version

- Assembled board from factory 1st week in FEB
- One window $2 \times 18 = 36$ CH, ready to use 3rd week in FEB

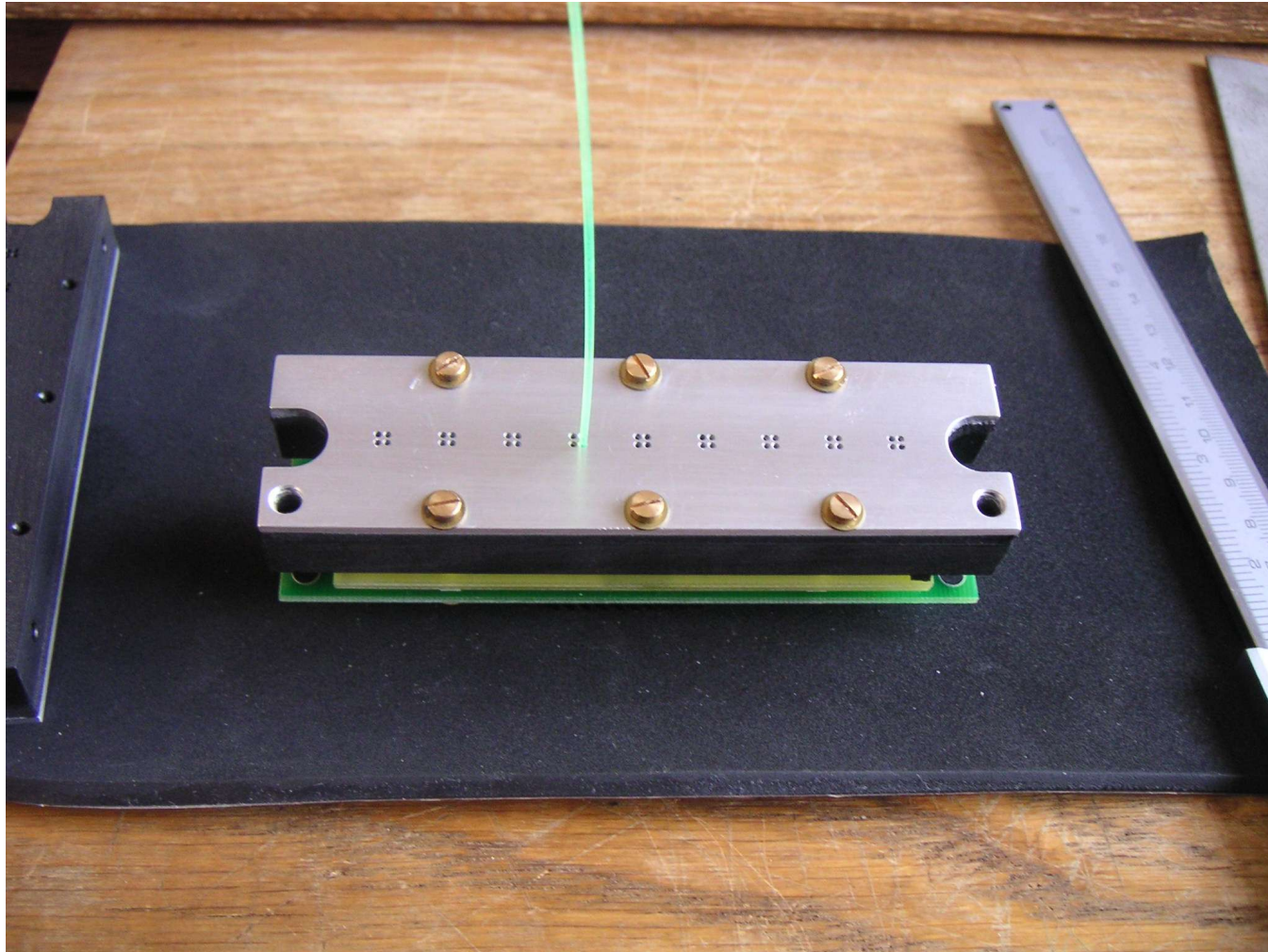
PCB Ivo's

- Assembled board from factory 1st week in MAR
- One window $9 \times 4 = 36$ CH, ready to use end of MAR

PCB Milan's (LAL chip) layout

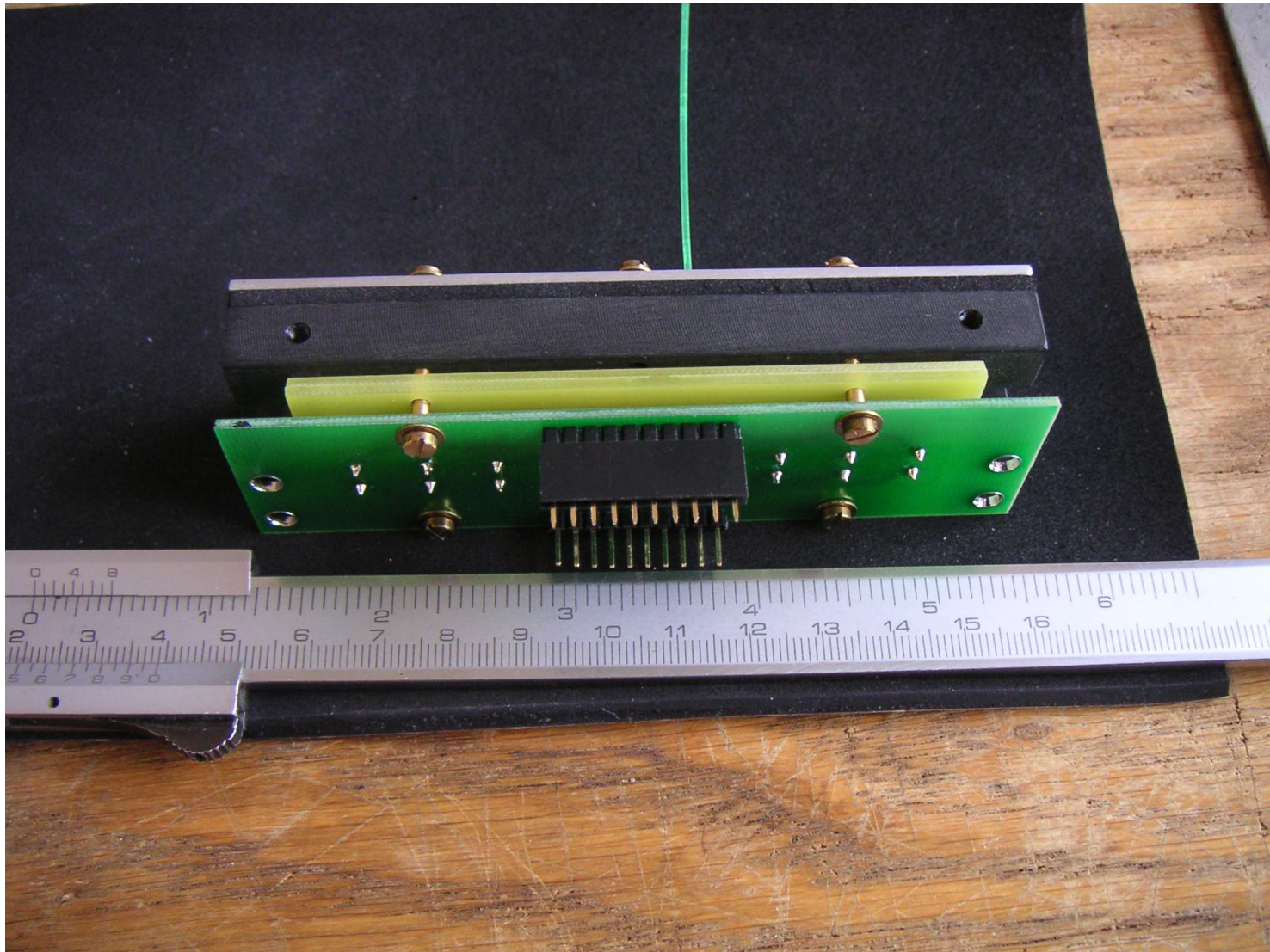


9CH APD mask 110 x 30 mm



9CH APD mask

110 x 30 mm



Test in December PED, LED

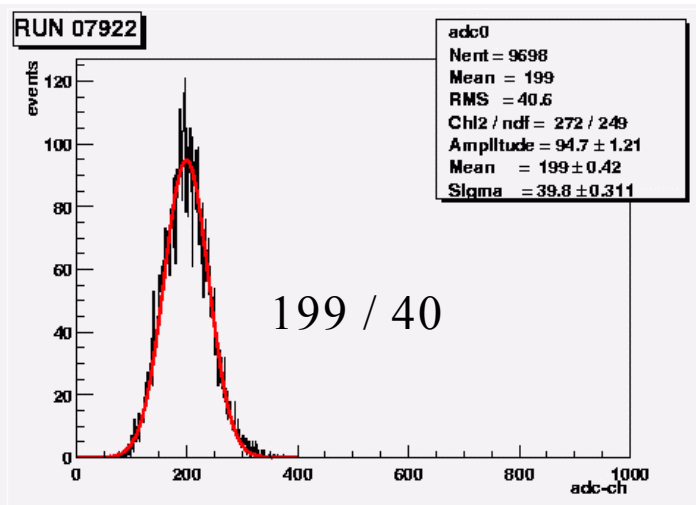
- Study of PED with different preamps on Camac DAQ
- About 50 fits were made
- Several tables with summary numbers
- These will be on the web soon available

LALchip preamp **PED** variation with ATT 6dB gate

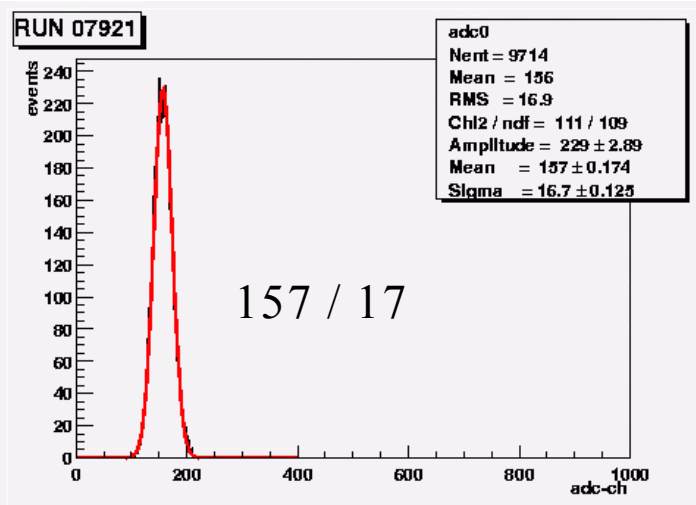
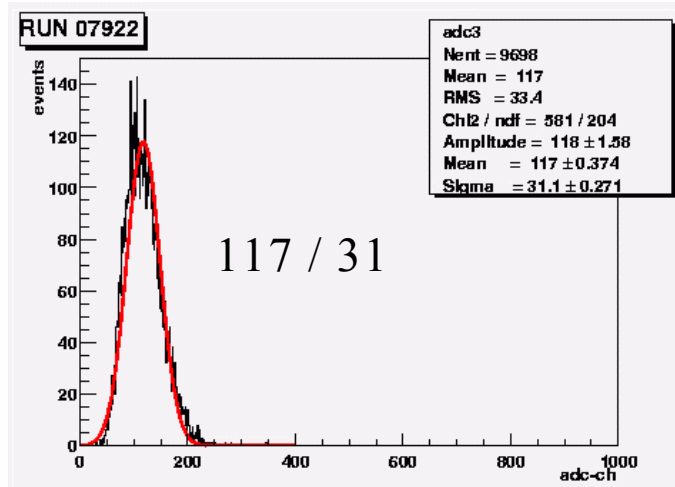
1 μ s CH0

NO APD

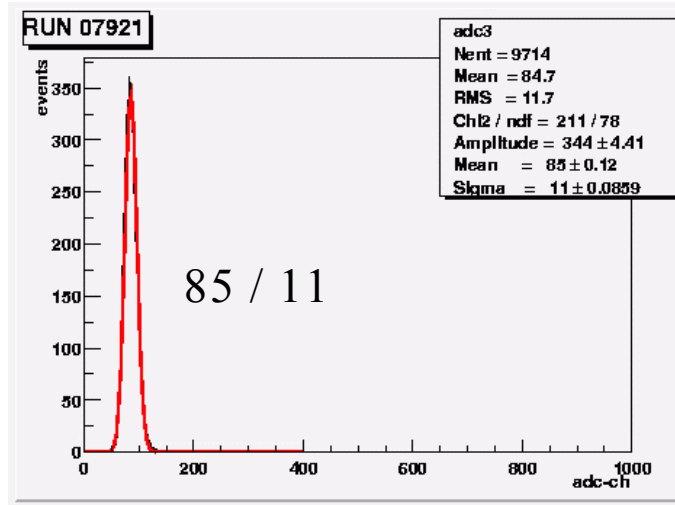
CH3



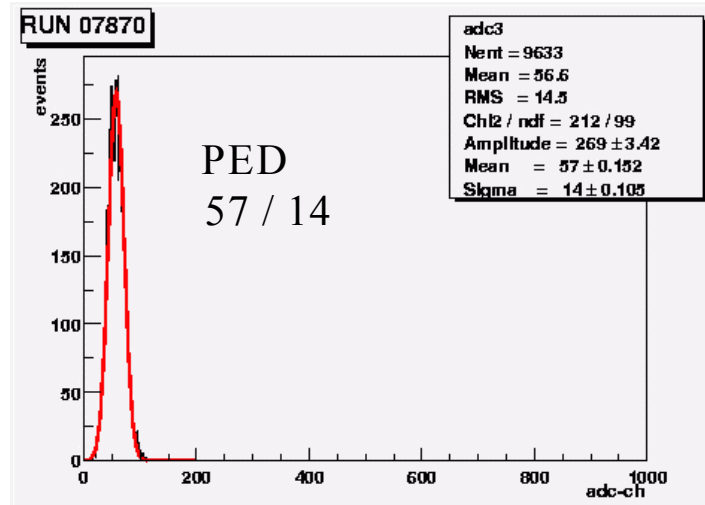
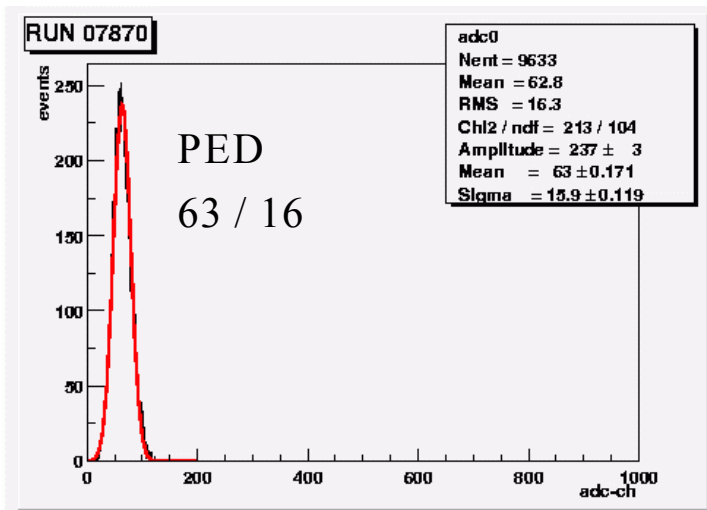
NO
ATT



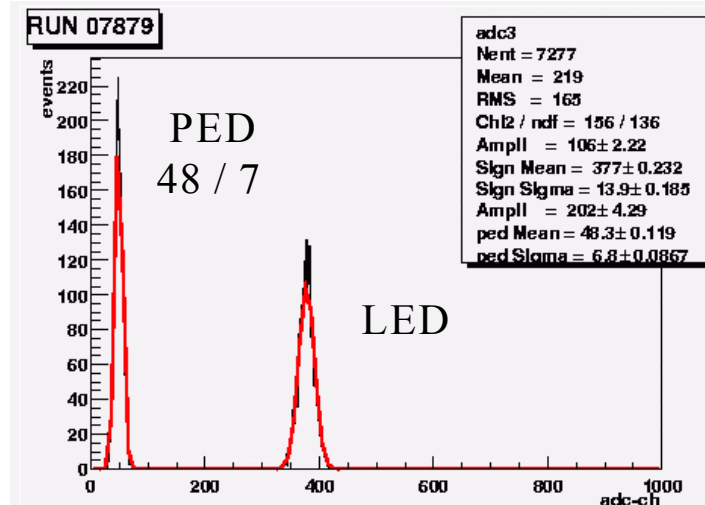
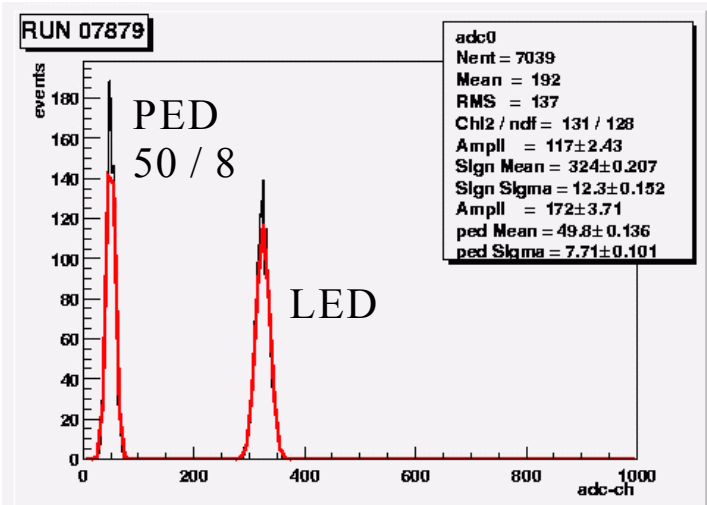
ATT
6dB
(2x less)



Ivo preamp **PED** variation with ATT 6dB gate 250ns
 CH0 APD#428 390V on APD CH3 APD#430

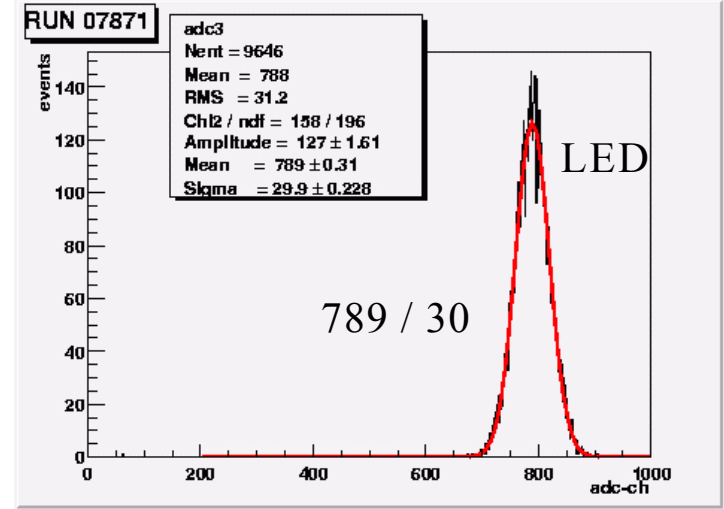
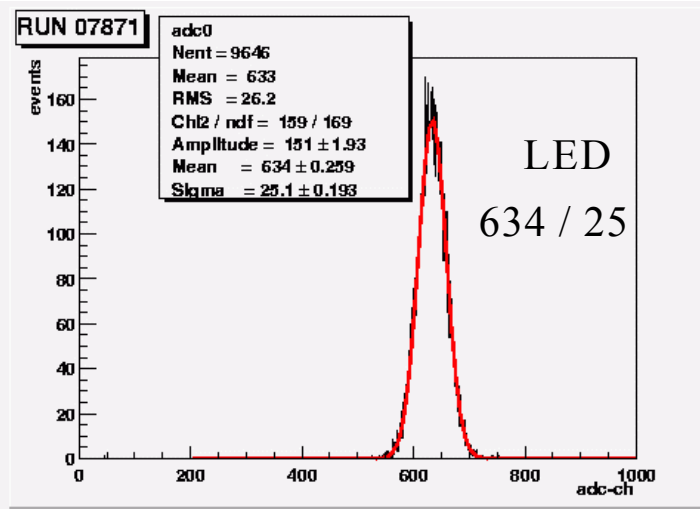


NO
ATT

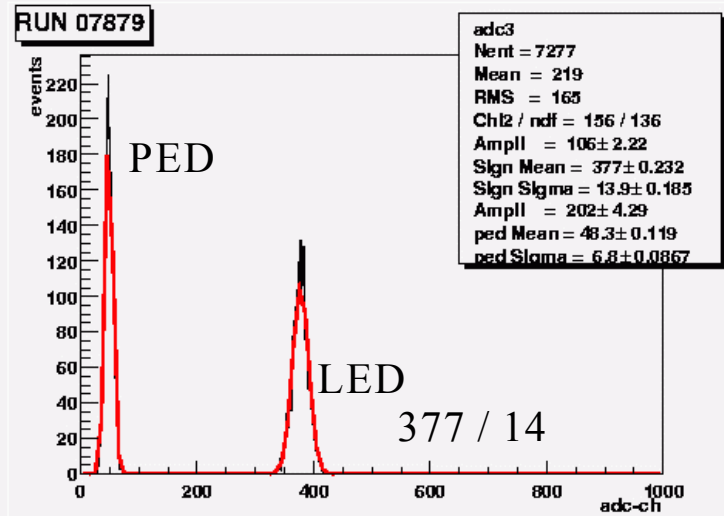
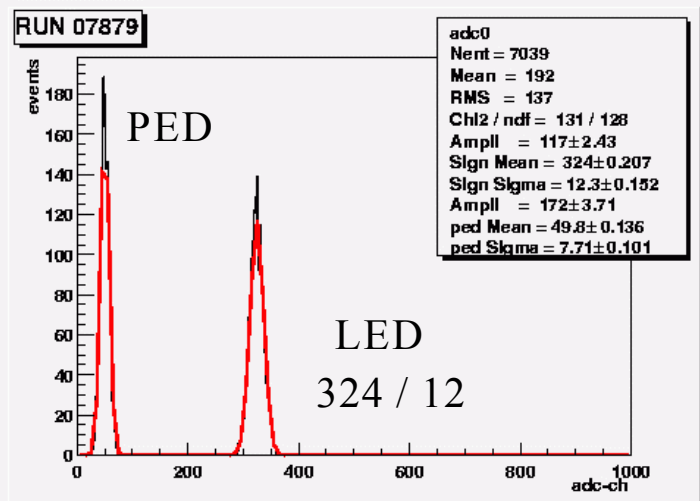


ATT 6dB
(2x less)

Ivo preamp **LED** variation with ATT 6dB gate 250ns
 CH0 APD#428 390V on APD CH3 APD#430



NO
ATT

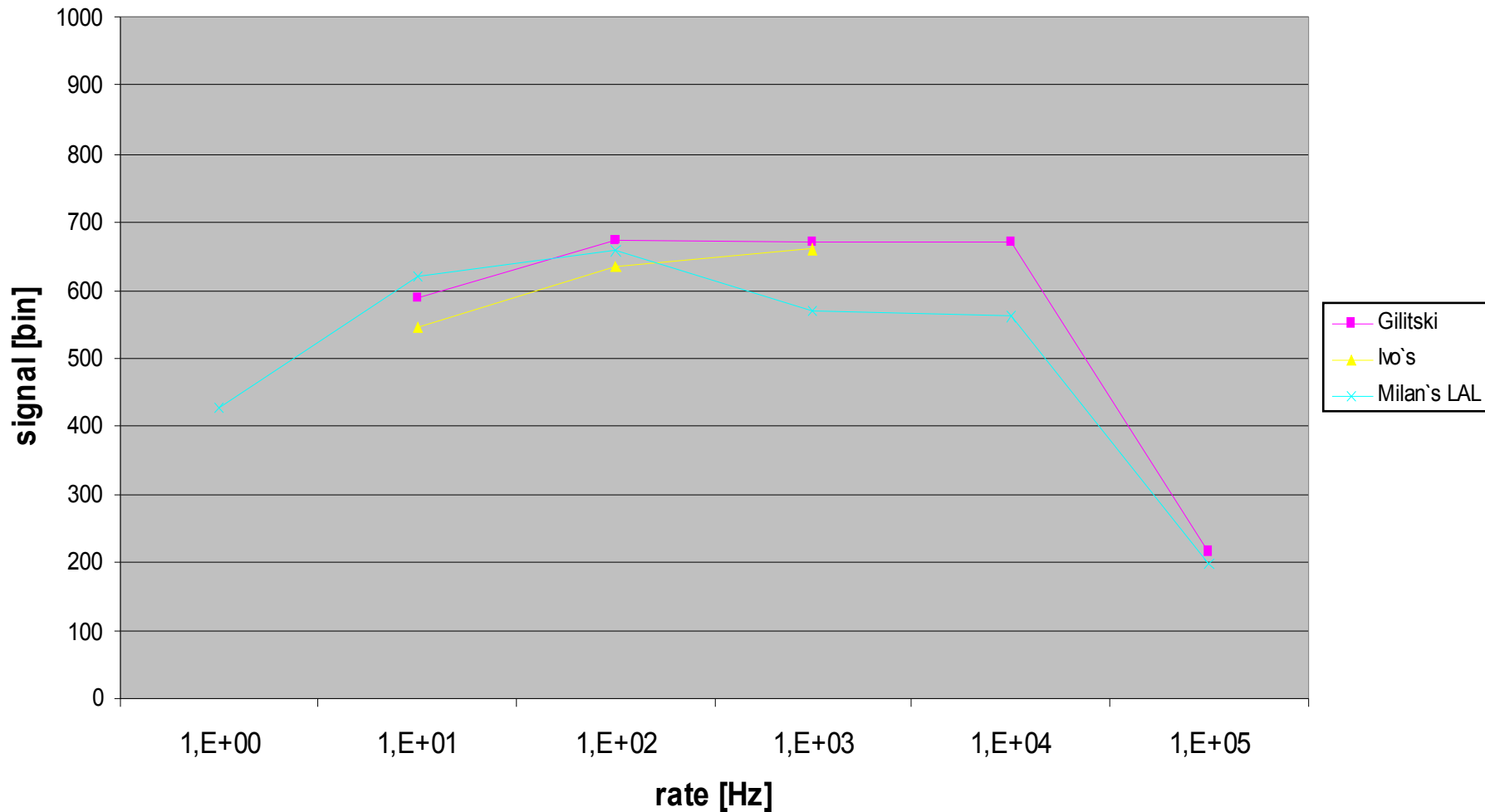


ATT 6dB
(2x less)

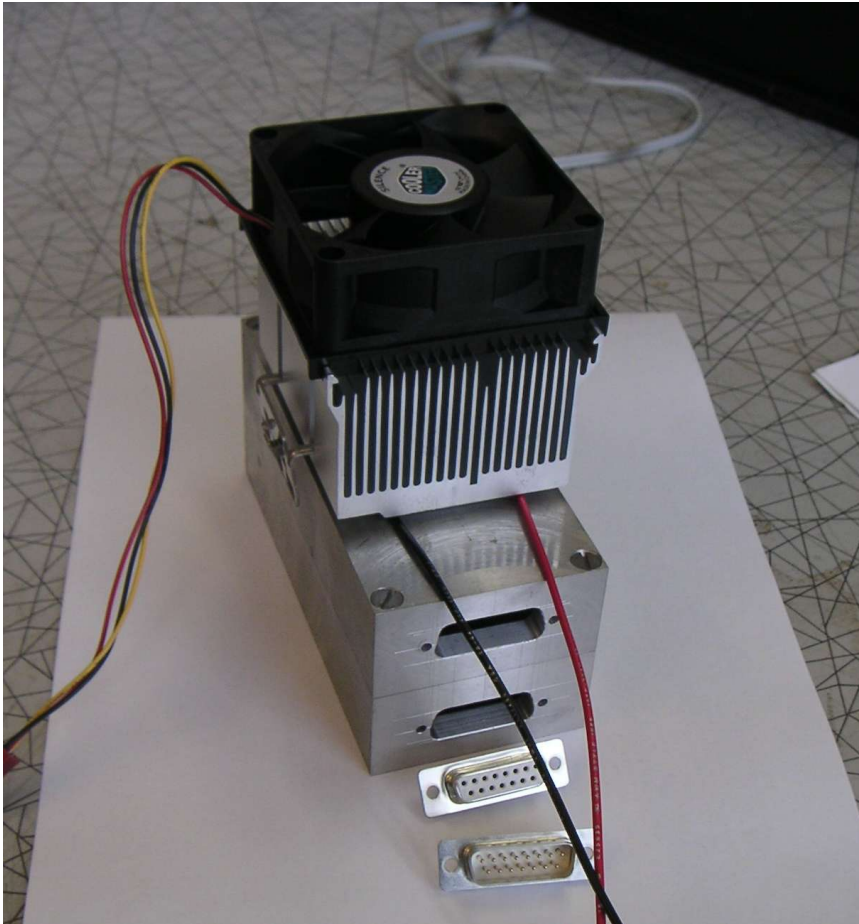
Summary with ATTenuator 6dB

- PED depends on preamp slightly
- Sigma of PED is precise proportional to ATT on voltage preamp
- Main influence is on SIGNAL
- S/N is not changed

LED rate dependance



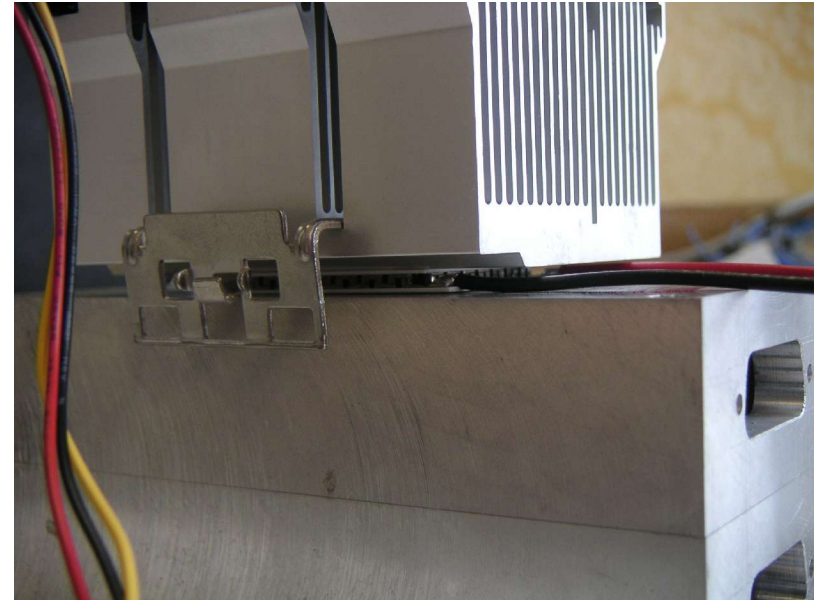
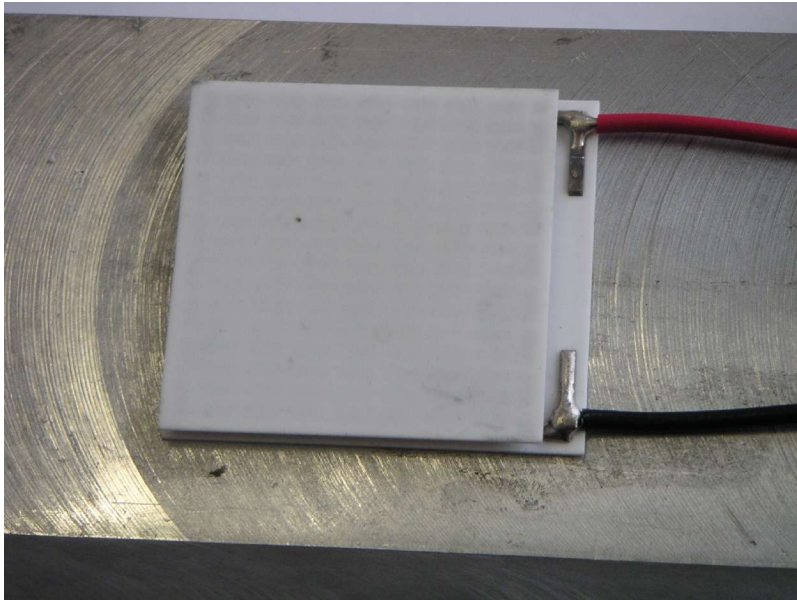
Thermobox for 9 APD test



- Consist two units:
 - chamber
 - control box

Chamber: Alu box with APD
Peltier cooling element 80W
PentiumIV fan cooler
Two temp sensors inside

Peltier cell 80W 3mm thick transfers heat from Alu chamber to cooler



Control box

Pics: Not finished control box for Peltier cell

Displayed: actual / set temp K or C, status by 4LED

Stability 0.2 deg, resolution 0.1C

