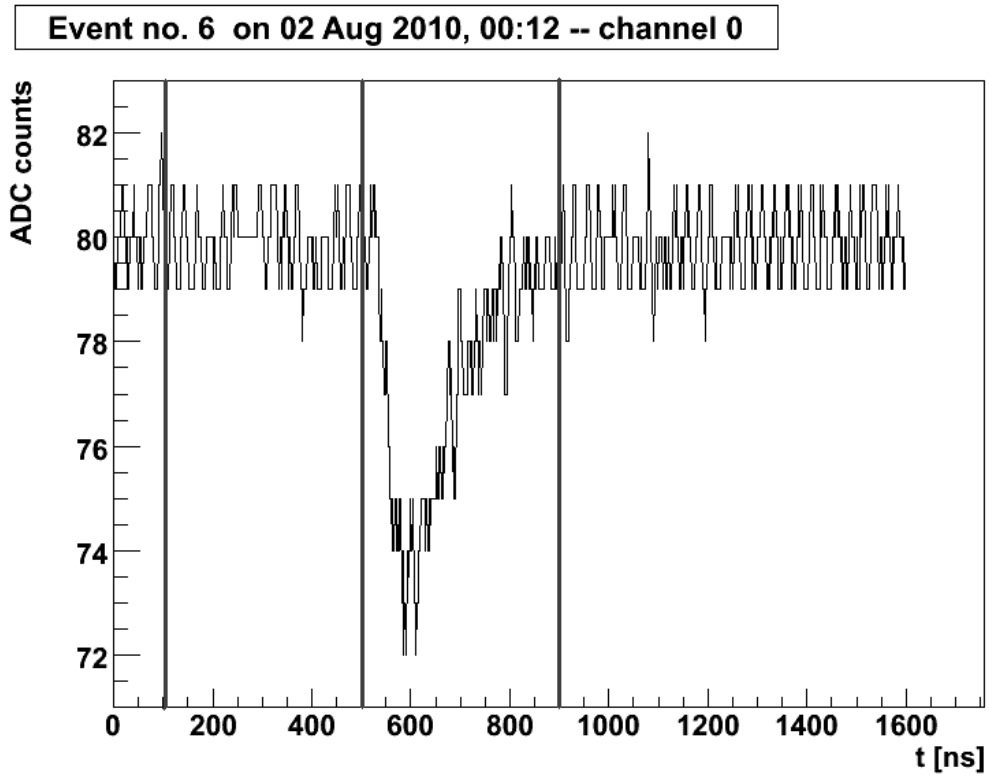
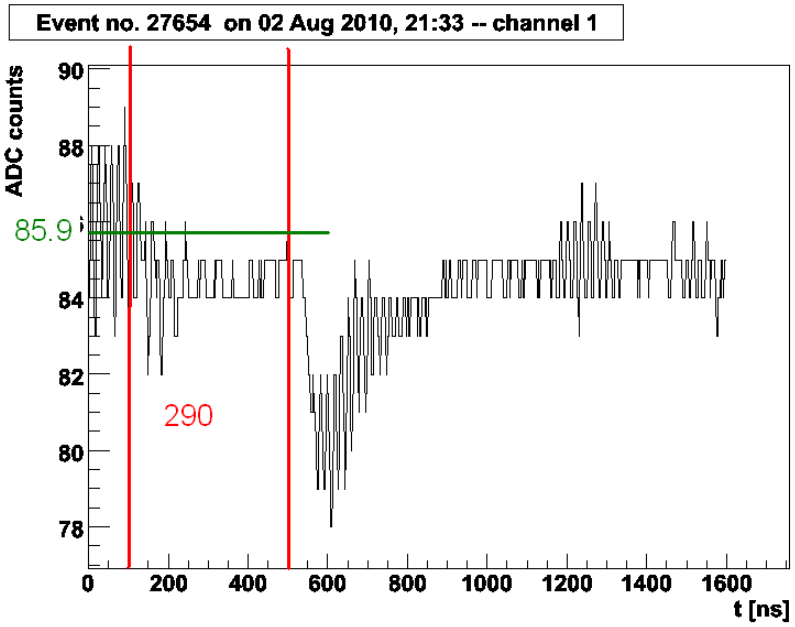
Integration with averaged baseline

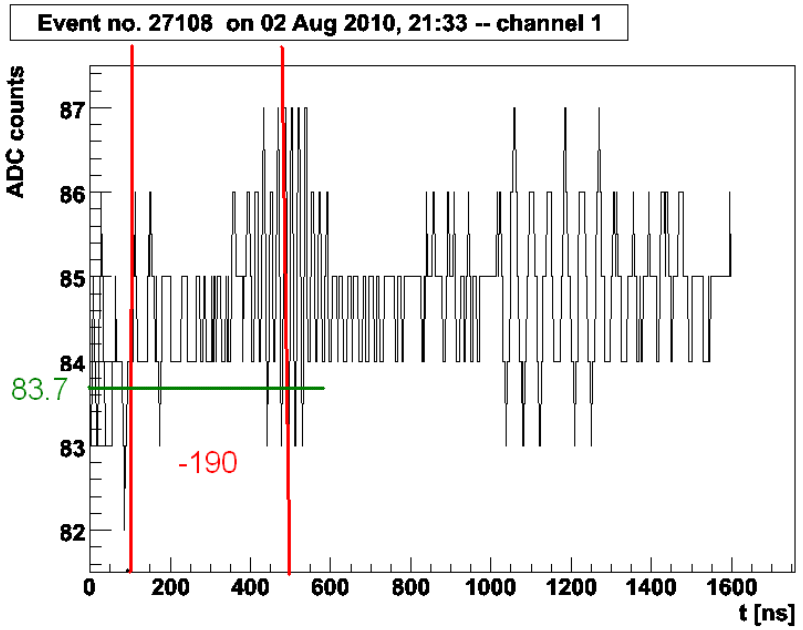
Old method



- First 50 samples for baseline
- Samples 50 to 249 for pedestal
- Samples 250 to 449 for signal

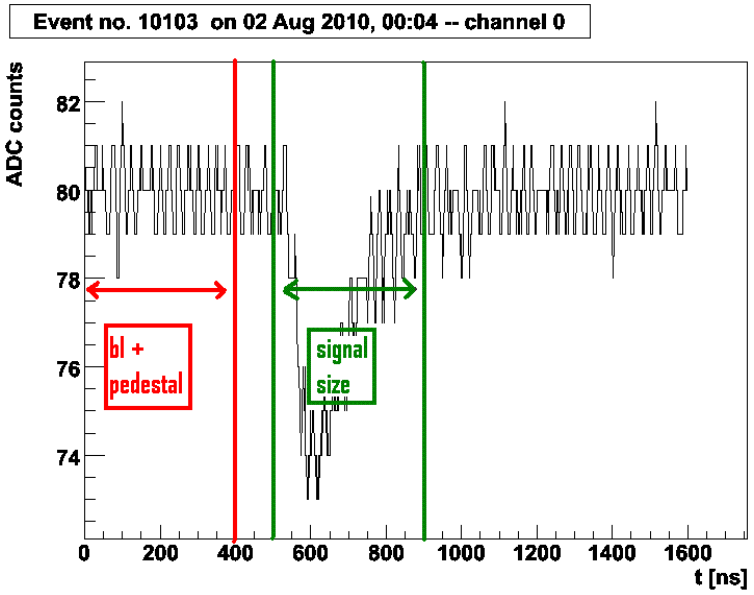
Old method





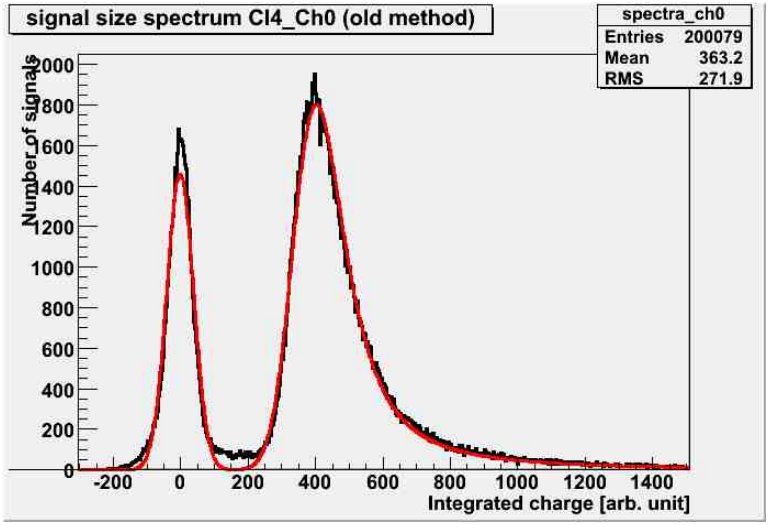
- Noise in the window for baseline calculation leads miscalculation for integrals
- Baseline window 50 samples, integrations over 200 samples => width of pedestal mainly given by error of baseline (Sergej)

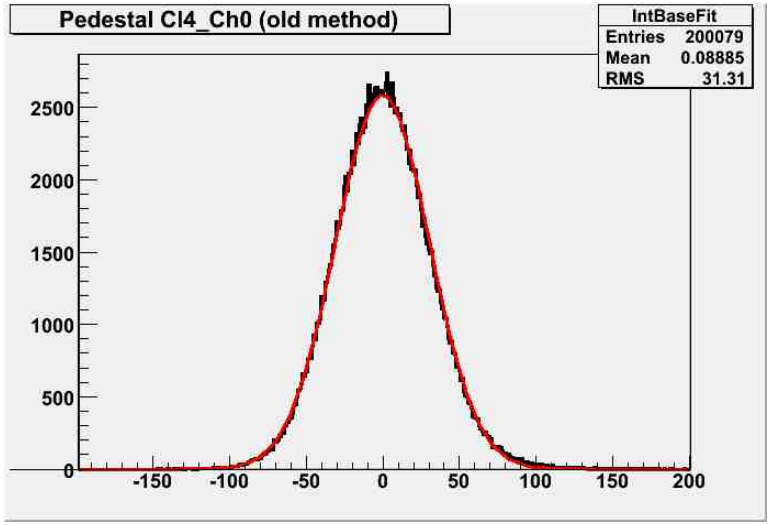
New method



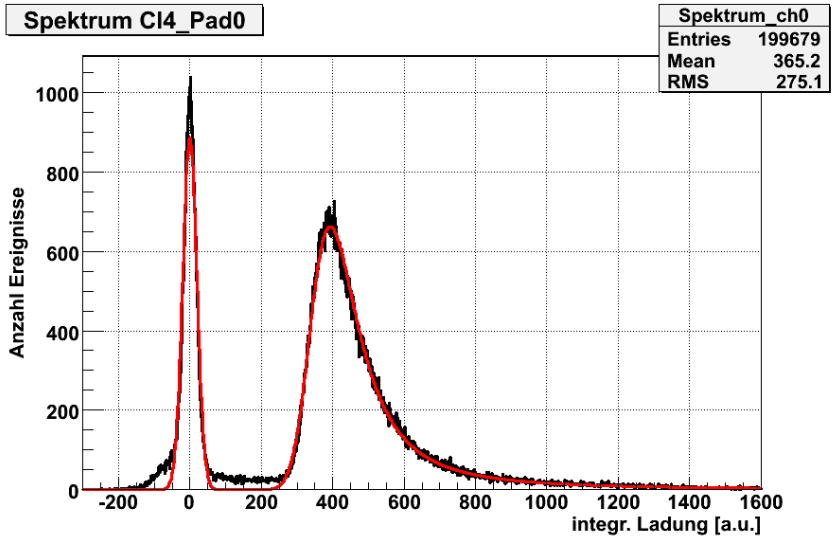
- Two windows for calcultaions
- First {0…199} samples for baselines and pedestal
- Samples {200…449} for signal size
- Calculating baselines for events (N-1)…(N-101)
- Take mean value as baseline for event N
- Integrate with respect to the baseline over first window (pedestal) and second one (signal size) for event N
- First 100 events in each root file were taken to calculate initial baseline mean value (~0.2% of data)

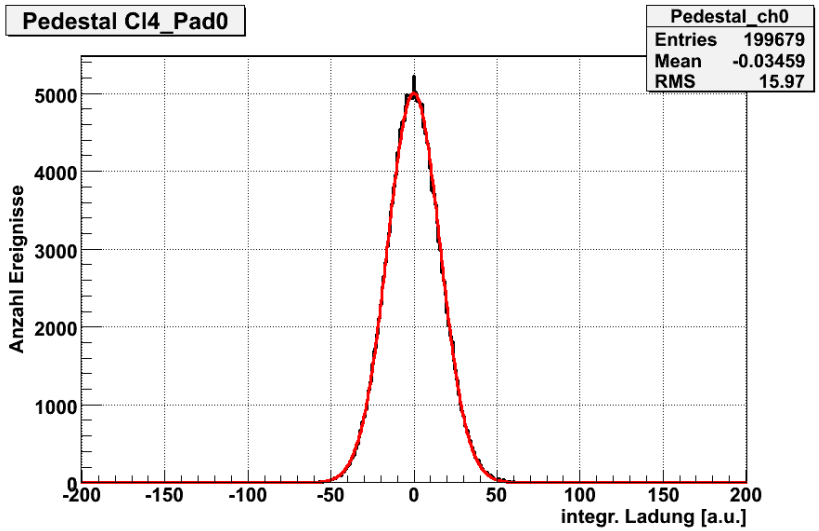
Comparison - spectra





old





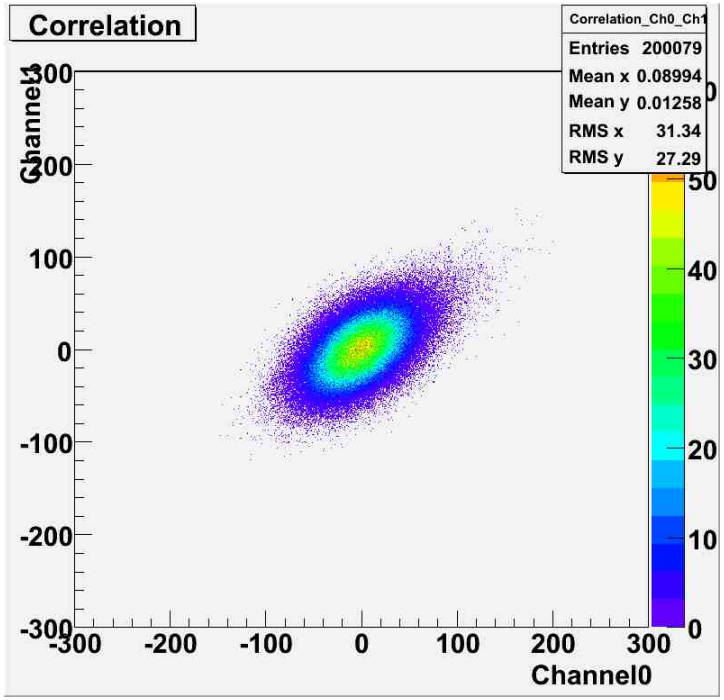
new

Cluster2						new		
Pad	Gegenkopp	gnal (M2) [a	gma (M2) [a	**S/N**		Signal [au]	Sigma[au]	**S/N**
0	MOSFET	373.7	35.7	**10.5**		372.6	15.2	**24.5**
1	MOSFET	361.7	32.4	**11.2**		358.7	17.0	**21.1**
2	MOSFET	382.9	33.6	**11.4**		382.0	14.4	**26.5**
3	MOSFET	386.4	34.6	**11.2**		384.6	16.1	**23.9**
4	RC	184.1	15.7	**11.7**		183.0	9.3	**19.7**
5	MOSFET	391.7	33.6	**11.7**		391.3	18.4	**21.3**
6	RC	173.4	23.2	**7.5**		172.5	14.1	**12.2**
7	MOSFET	375.7	31.7	**11.9**		375.0	14.0	**26.8**

Cluster 4								
Pad	Gegenkopp	gnal (M2) [a	gma (M2) [a	**S/N**		Signal [au]	Sigma [au]	**S/N**
0	MOSFET	382.7	30.7	**12.5**		381.6	15.9	**24.0**
1	MOSFET	372.1	27.9	**13.3**		370.8	14.3	**25.9**
2	MOSFET	372.7	27.0	**13.8**		372.0	13.5	**27.6**
3	MOSFET	386.6	25.5	**15.2**		385.7	12.3	**31.4**
4	RC	182.9	16.0	**11.4**		182.0	9.7	**18.8**
5	RC	174.3	16.6	**10.5**		173.2	10.1	**17.1**
6	RC	175.2	18.2	**9.6**		174.3	10.7	**16.3**
7	RC	177.5	17.8	**10.0**		176.5	10.6	**16.7**

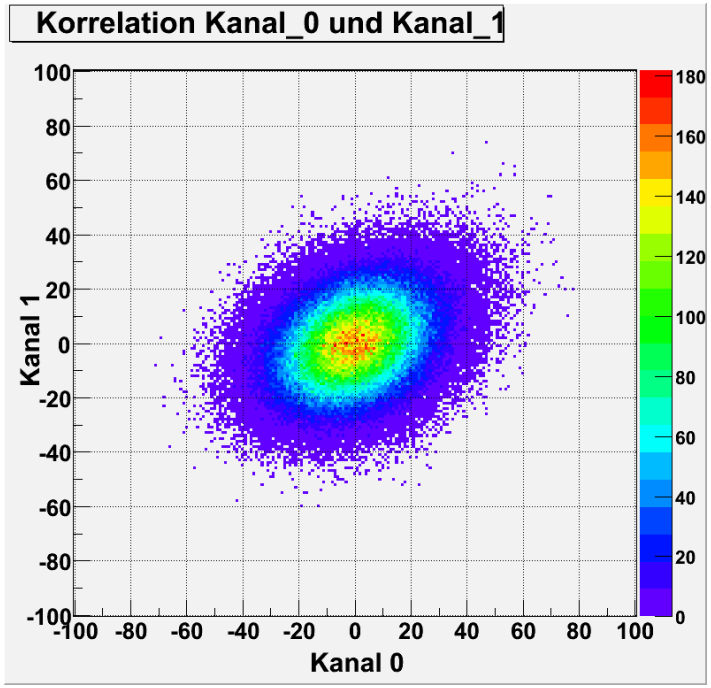
Comparison – correlation (for pedestals)

old



CorrCoeff ~ 0.54

new



CorrCoeff ~ 0.29