ADC Spectra from BCM1F

Analysis of Data from 12th October

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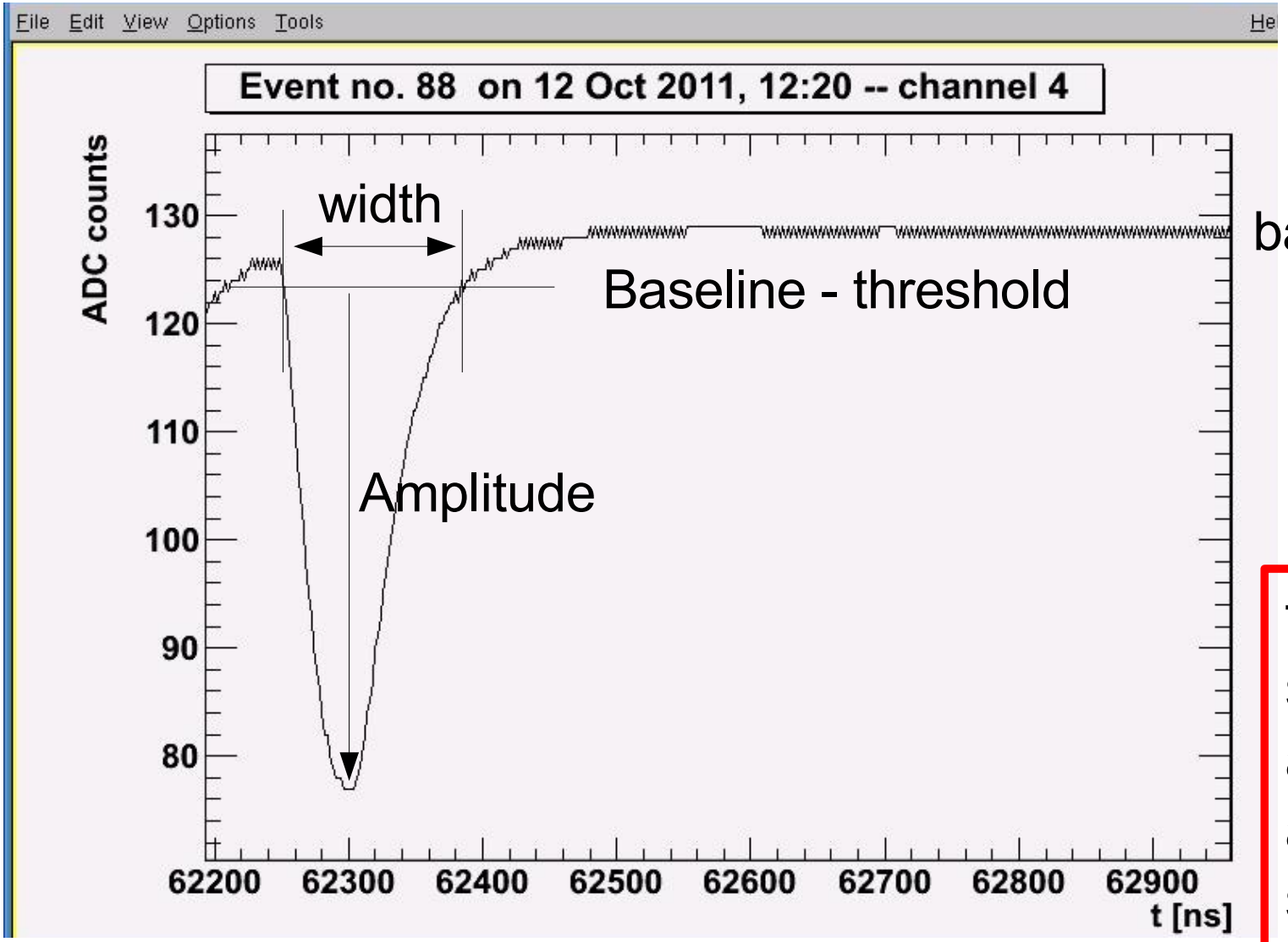
CMS-FCAL weekly meeting

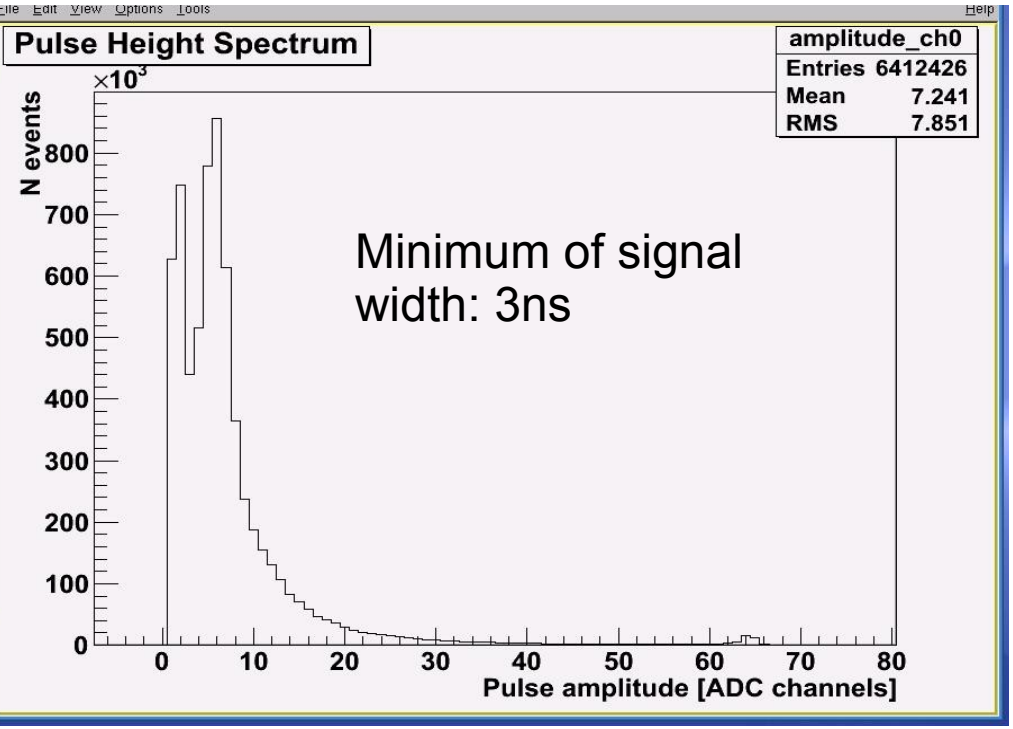
ADC Spectra and Definition of Parameters

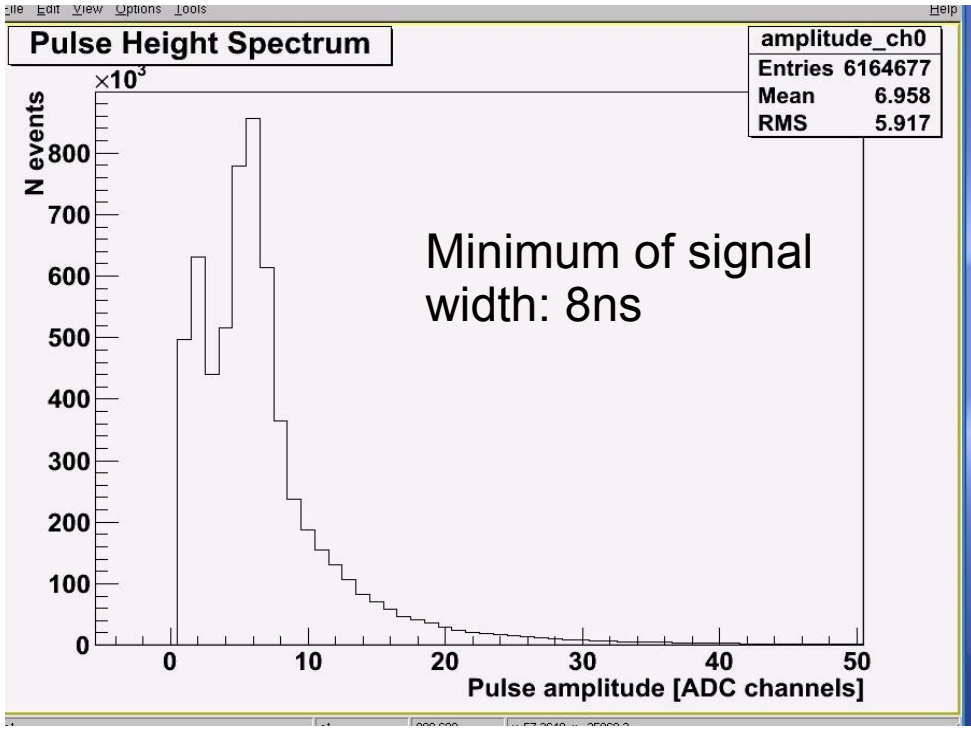
Signal in channel 4



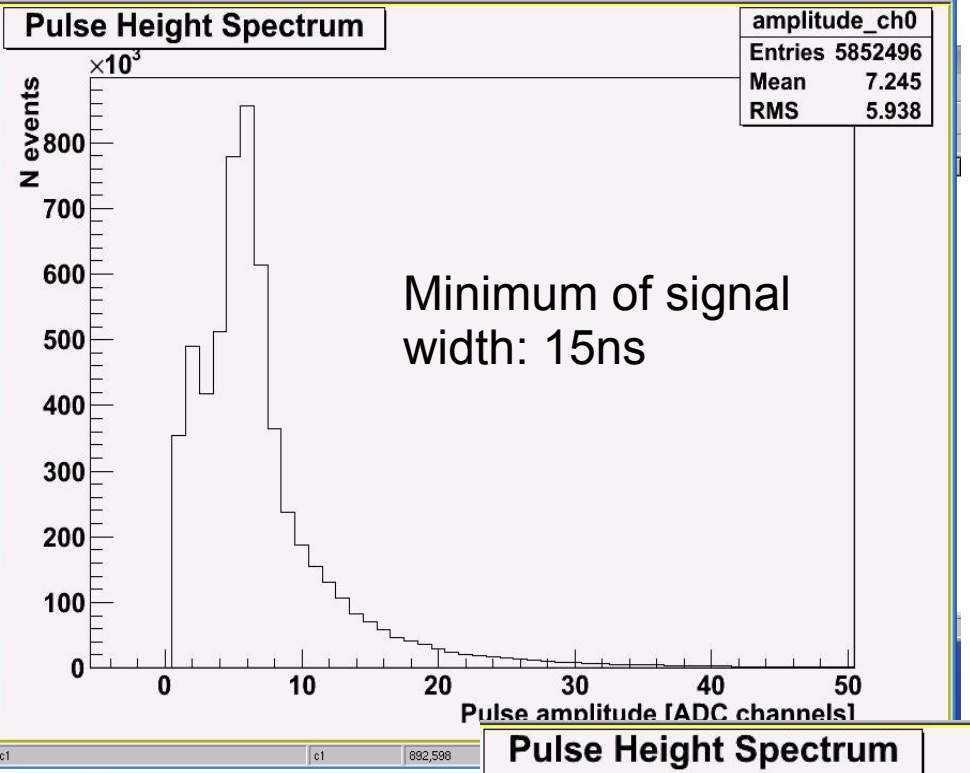
take only signals which are larger than a minimal signal width (minsigwidth)

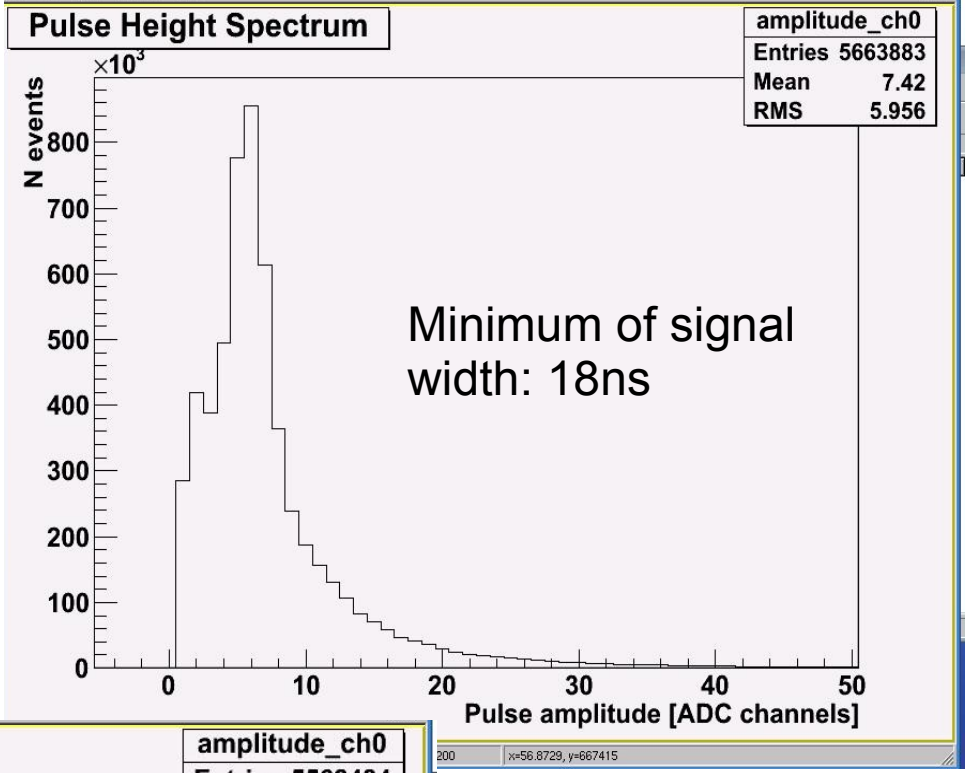
Pulse Height Spectrum for ch0 and different minsigwidth

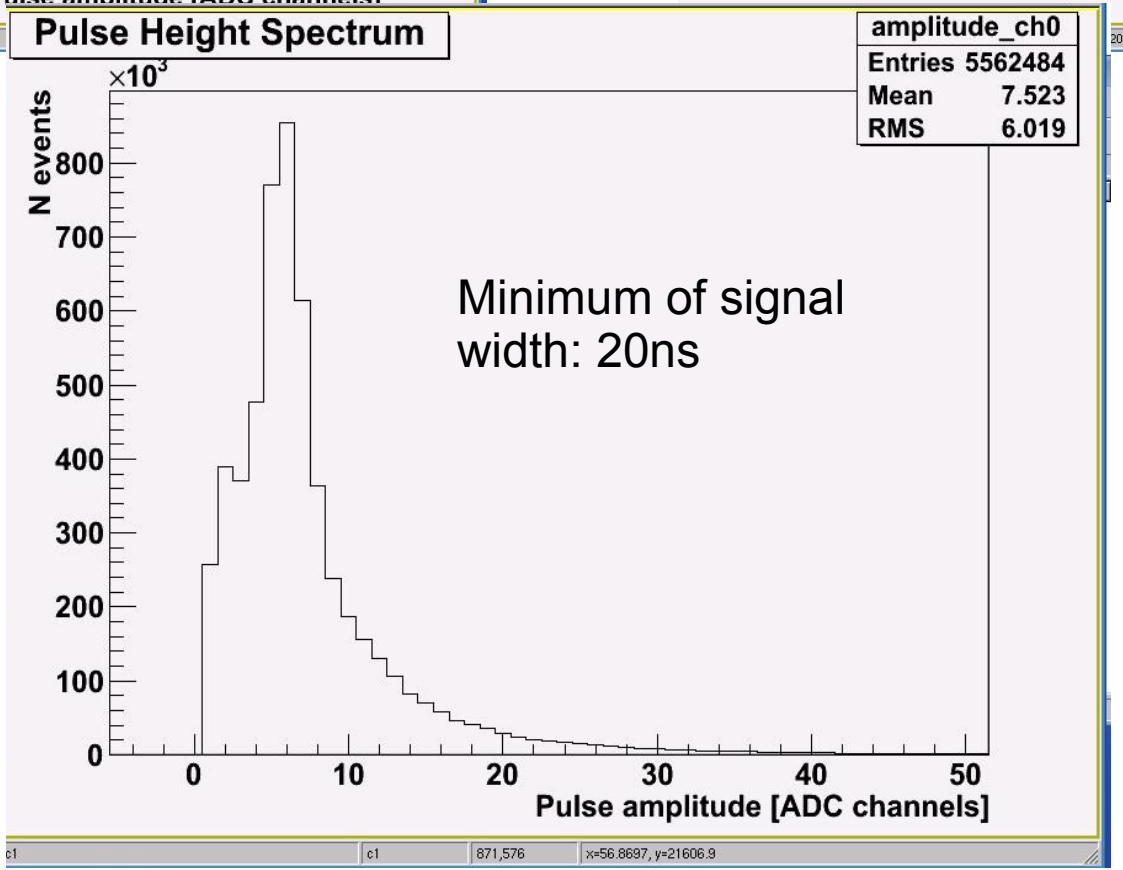




- Two peaks
- First peak becomes smaller for higher minimum of signal width
- Second peak is around 6 ADC ch
- Second peak doesn't change the position



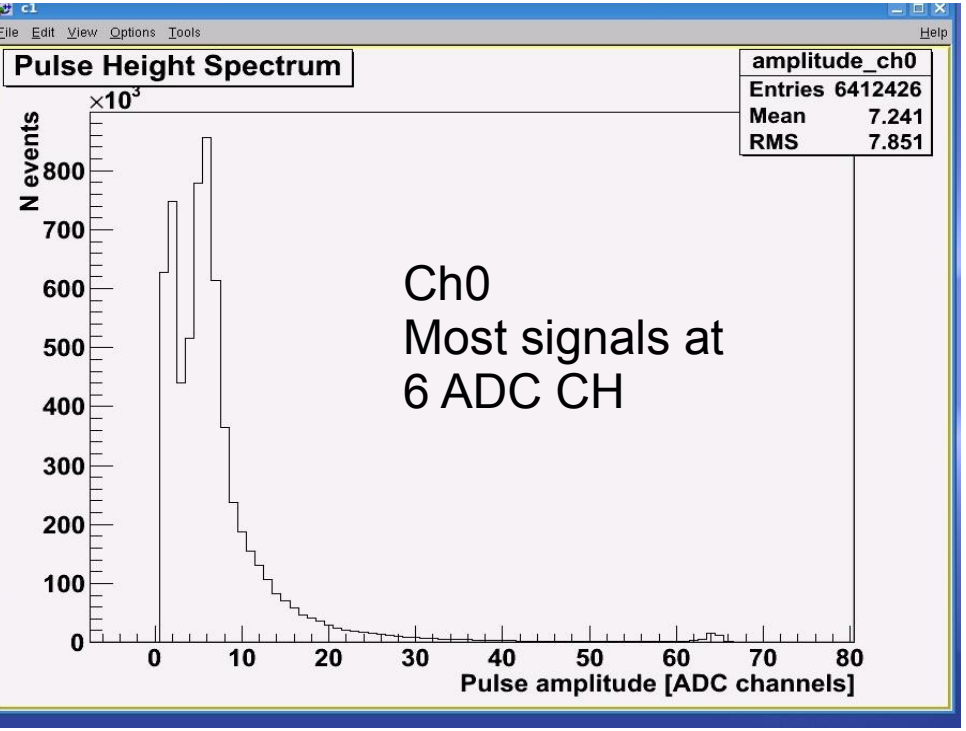




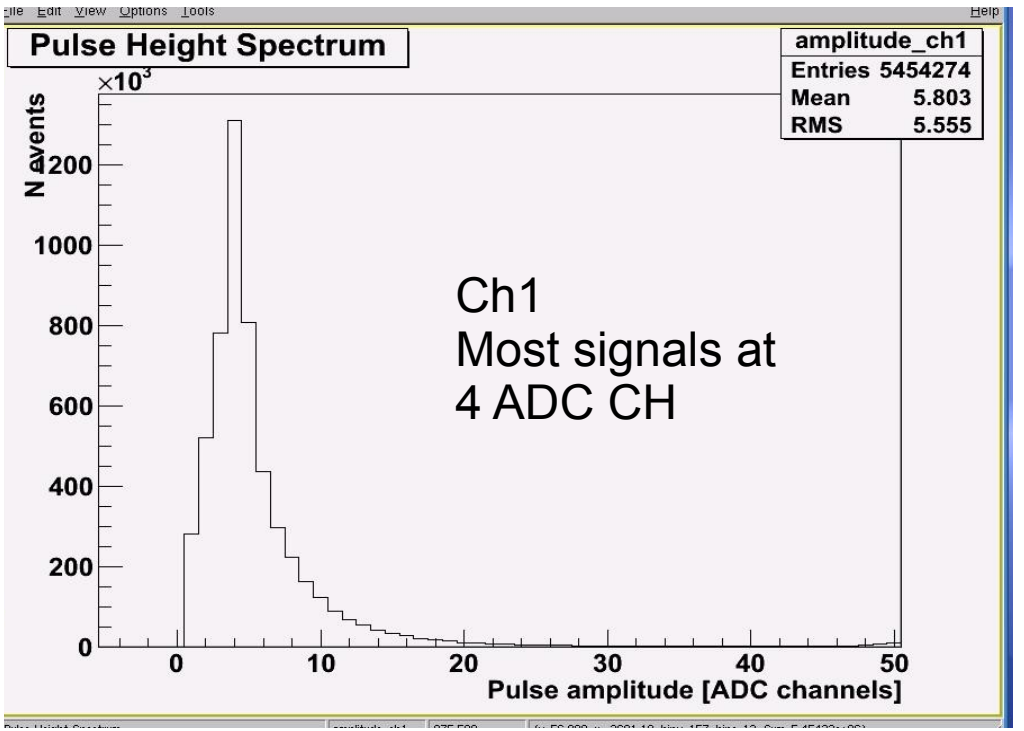
Most signals at 6 ADC CH for ch0

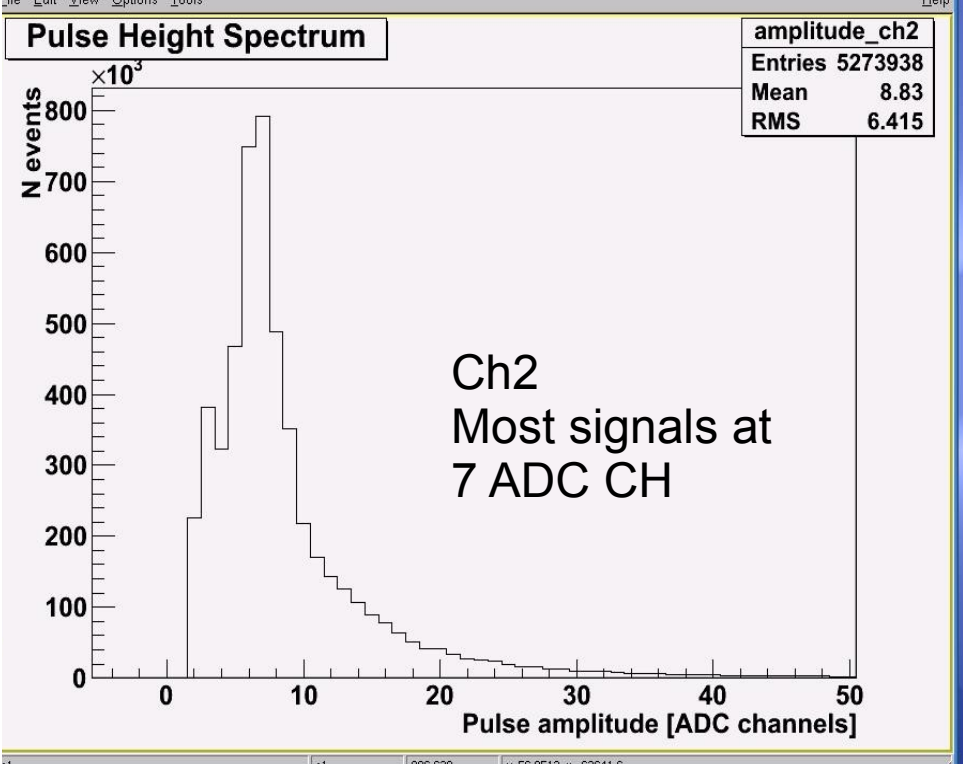
Pulse Height for different channels with a minimum signal width of 3ns

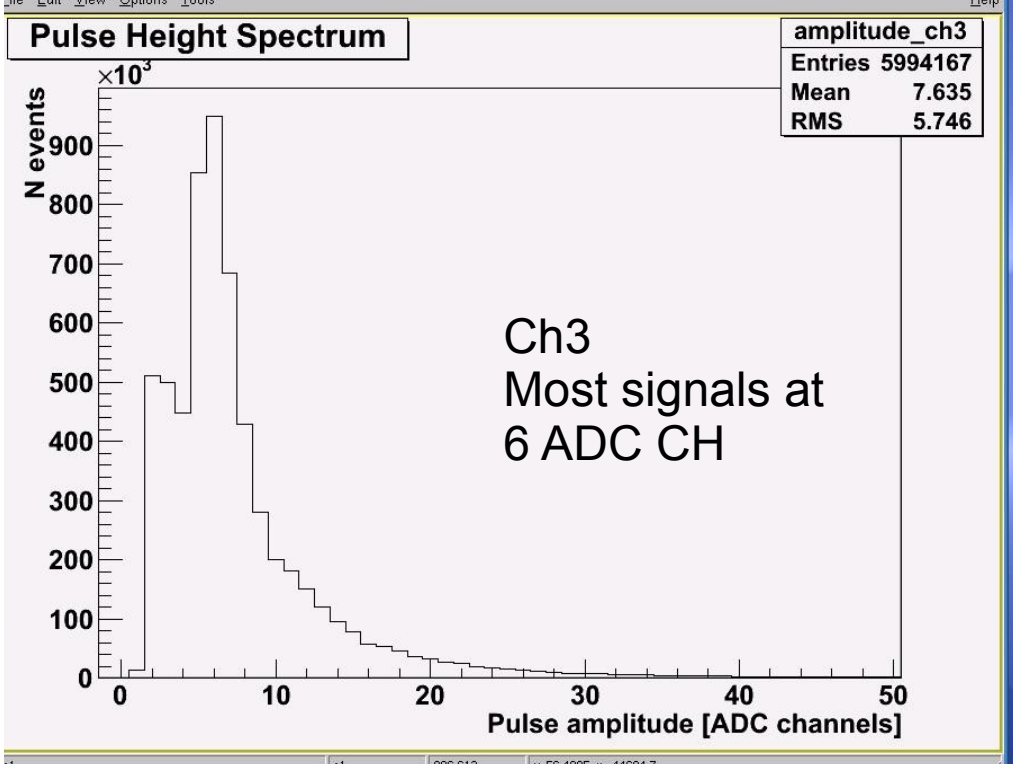
Two clear signals in ch0

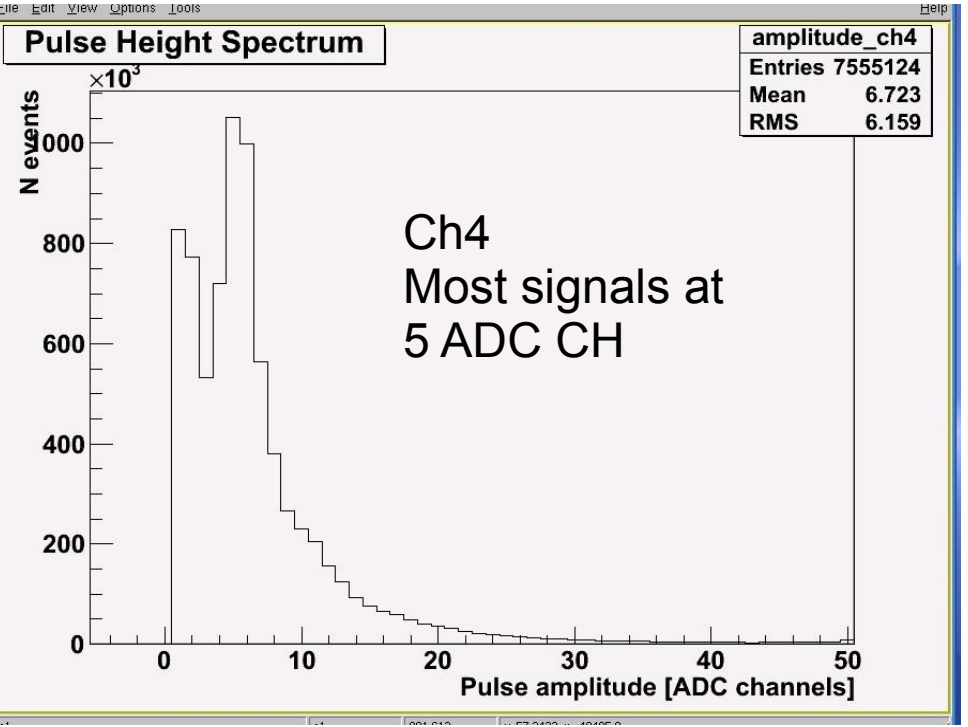


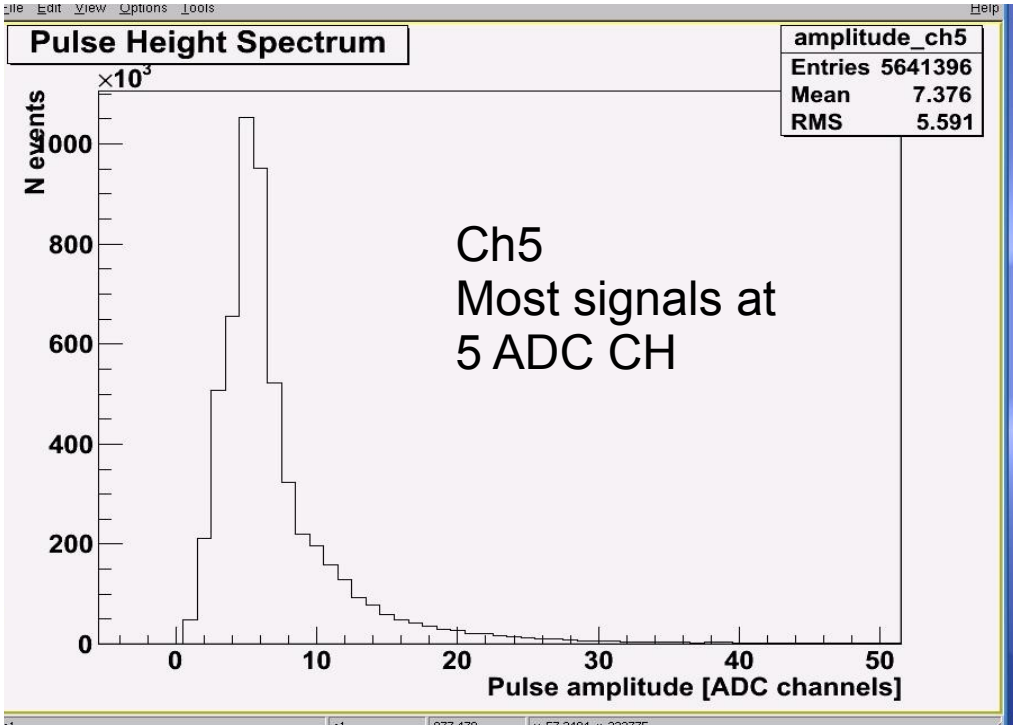
Only one signal in ch1

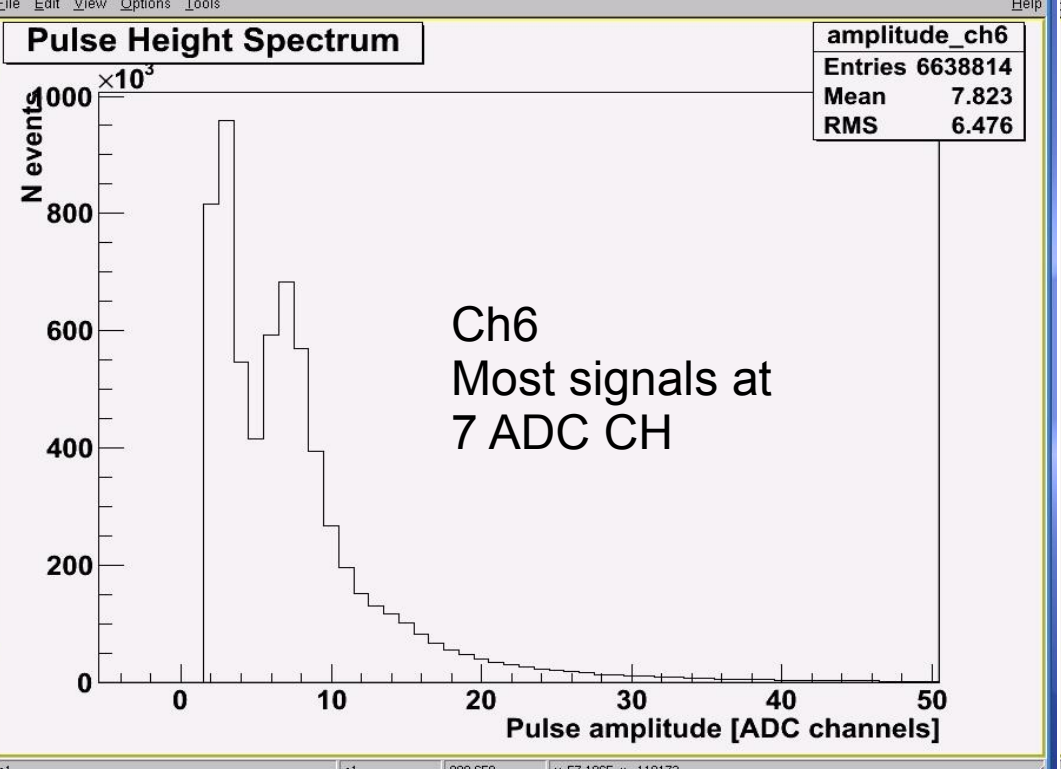


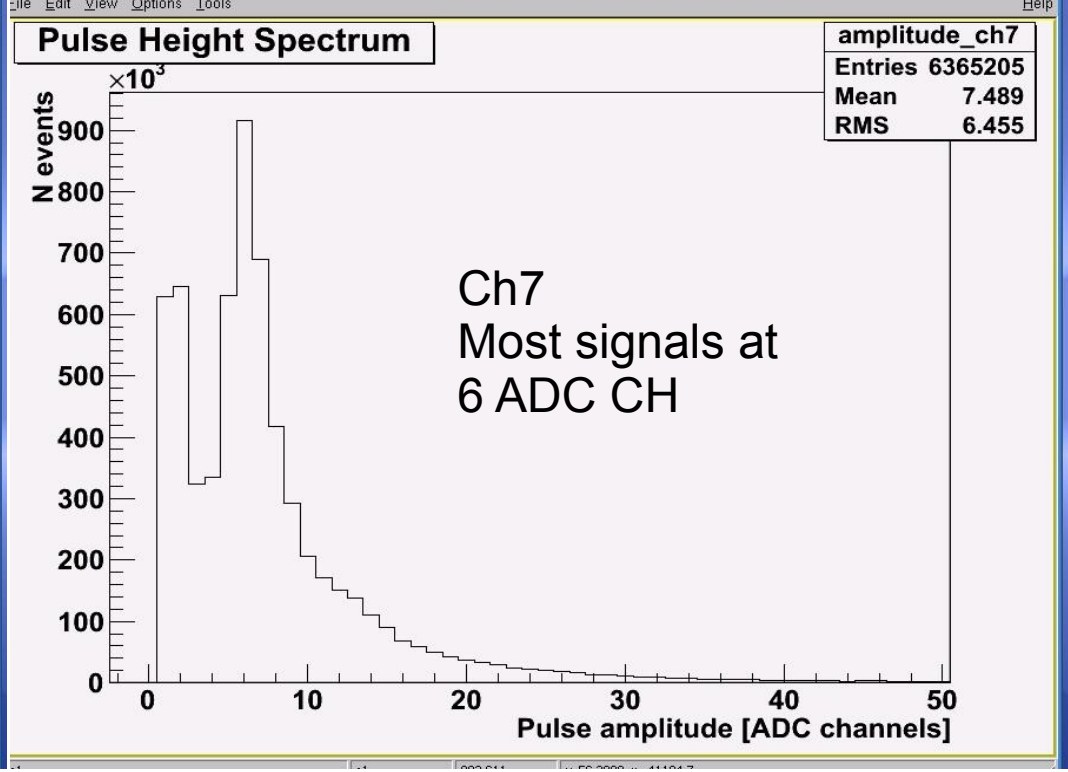

Pulse Height Spectrum
amplitude_ch2
Entries 5273938
Mean 8.83
RMS 6.415
×10³
N events
Pulse amplitude [ADC channels]
Ch2
Most signals at
7 ADC CH


Pulse Height Spectrum
amplitude_ch3
Entries 5994167
Mean 7.635
RMS 5.746
×10³
N events
Pulse amplitude [ADC channels]
Ch3
Most signals at
6 ADC CH


Pulse Height Spectrum
amplitude_ch4
Entries 7555124
Mean 6.723
RMS 6.159
×10³
N events
Pulse amplitude [ADC channels]
Ch4
Most signals at
5 ADC CH


Pulse Height Spectrum
amplitude_ch5
Entries 5641396
Mean 7.376
RMS 5.591
×10³
N events
Pulse amplitude [ADC channels]
Ch5
Most signals at
5 ADC CH





- In some channels only one peak visible
- The Position of the peaks doesn't change

Next Steps

- Compare the data with previous ADC spectra
- See if the peak position changes --> radiation damage
- The HV was changed from 100V to 250V at the end of May
- Compare 2 different ADC spectra before May and two different spectra after May
- Working together with Moritz if we see radiation damage