

Data taken with no shaper, decay = 0.9V in order to see the long tail of pulse and to study if there is a problem with higher bits.

Plot1:

Chip with channel with “bit problem”.

Not identical bit problem event by event.

Note that the interval between samples with bit error is a multiple of 4.

Plot2:

Event with nominal settings. Note that the interval between samples with bit error is a multiple of 4.

Not all events (ca 1/3) have such problem.

Plot3:

Chip with channel with “high-low” problem.

Some values are changed by roughly 128, here called a dip.

In the tail of the positive pulse it is decreased by 128.

Plot4:

Not all events have this feature. A small “kink” can be seen at the corresponding ADC value.

Note also the spike at the negative pulse.

Here also is the difference roughly 128, though now the value is increased instead.

Plot5:

ADC value of the dip, $ADC(\text{sample})$, when there

is roughly 128 difference from the previous sample ($ADC(\text{sample}-1) - ADC(\text{sample})$).

One see three bumps corresponding to the three dips.

The interval between the bumps is roughly 128. $128 = 1000000$ in binary.

Plot6:

Select events with peak value above 600 in ADC value and well inside the sampling window.

Plot all ADC values from the peak and 100 samples from the peak, to cover first

dip but not second dip. There is a bump of ADC values at 580, ca 128 from the valley at 700.

Plot7:

There is slight indication that the “high-low” problem change size after a dip.

The indication is that there is a problem with bits, especially bit 7 (starting from 0).

The “high-low” might be a combination of ≥ 2 bits (bits 0,1,2?), in addition to bit 7.

Plot8:

Another chip with “high-low” problem. Do not show any other problem.

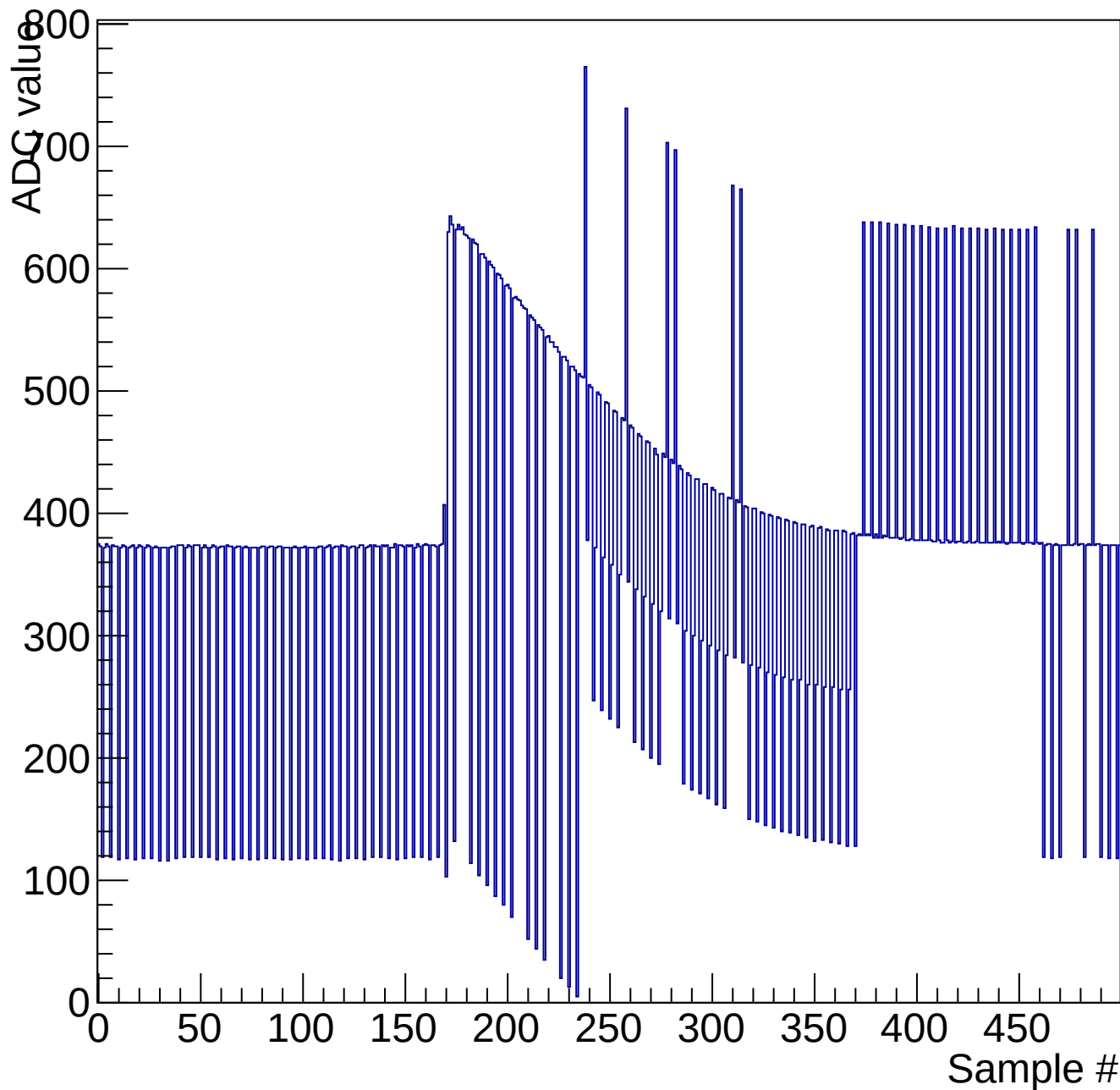
Note:

this run was taken with digital grounds connected together.

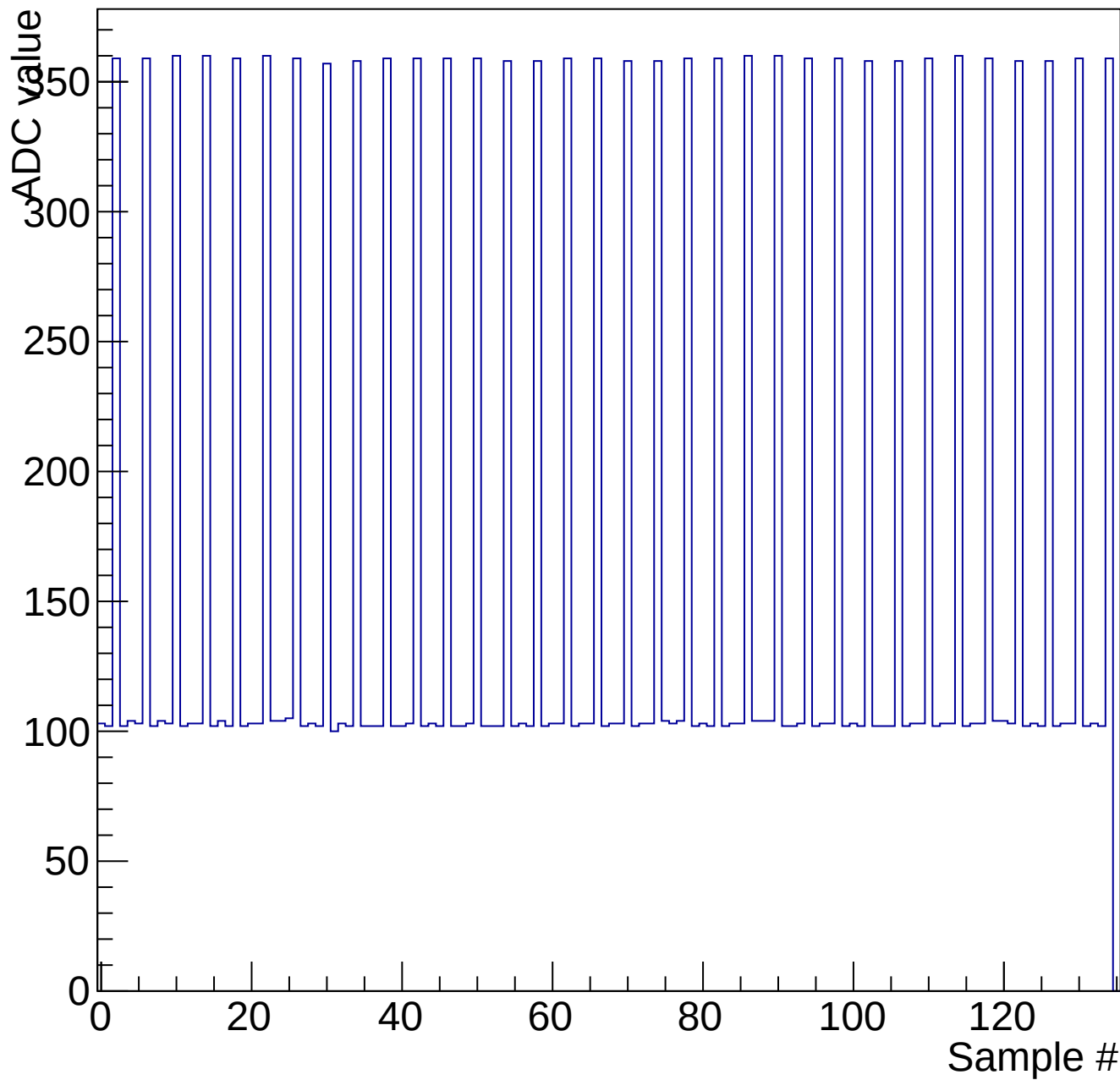
The noise on pedestals increased then from 0.7 to 1 or slightly above.

The SRU go busy irregularly and data is corrupt (as with previous attempt of connecting grounds).

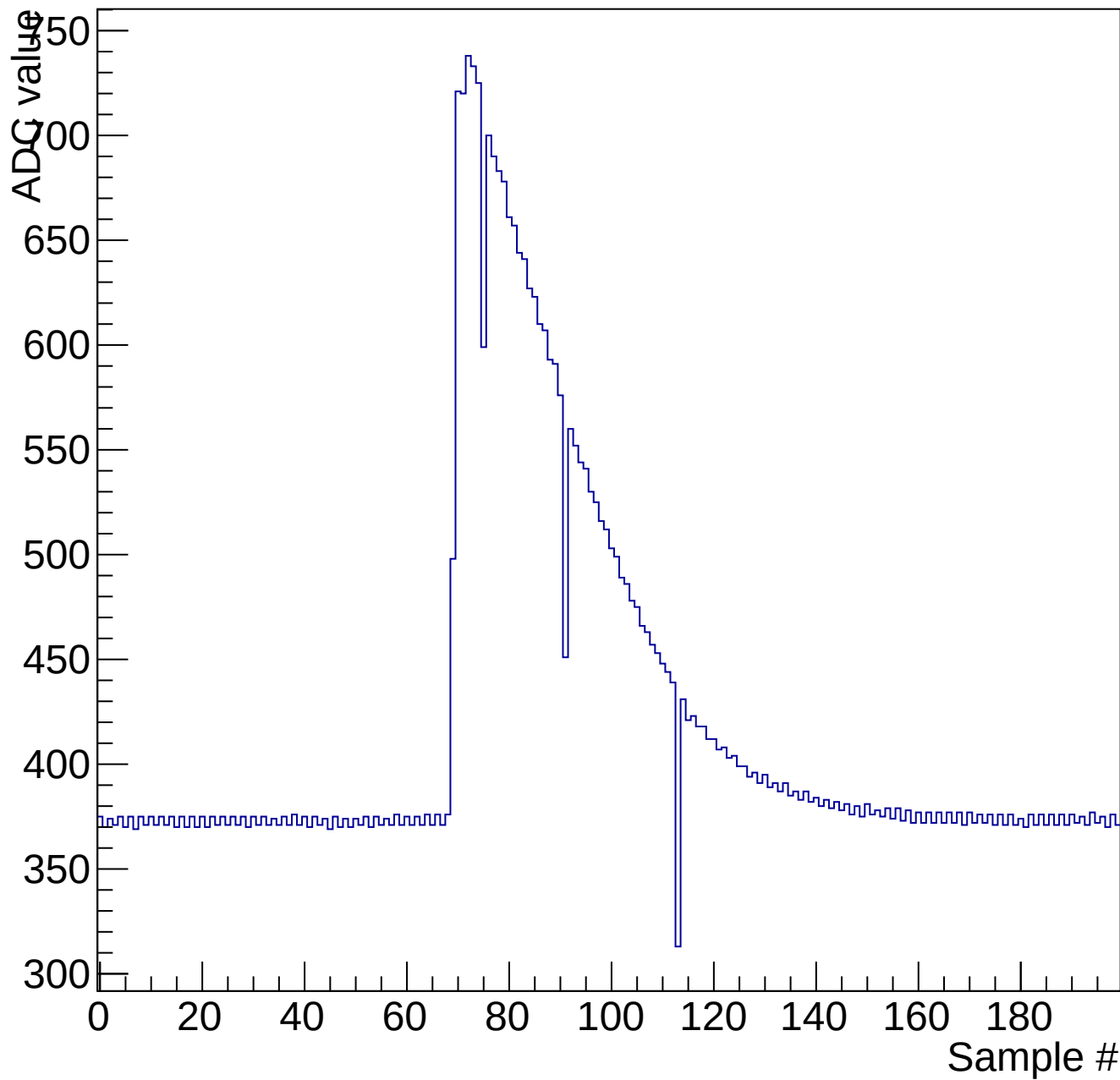
Run 20438 Event 3 Chip 55 Channel_15



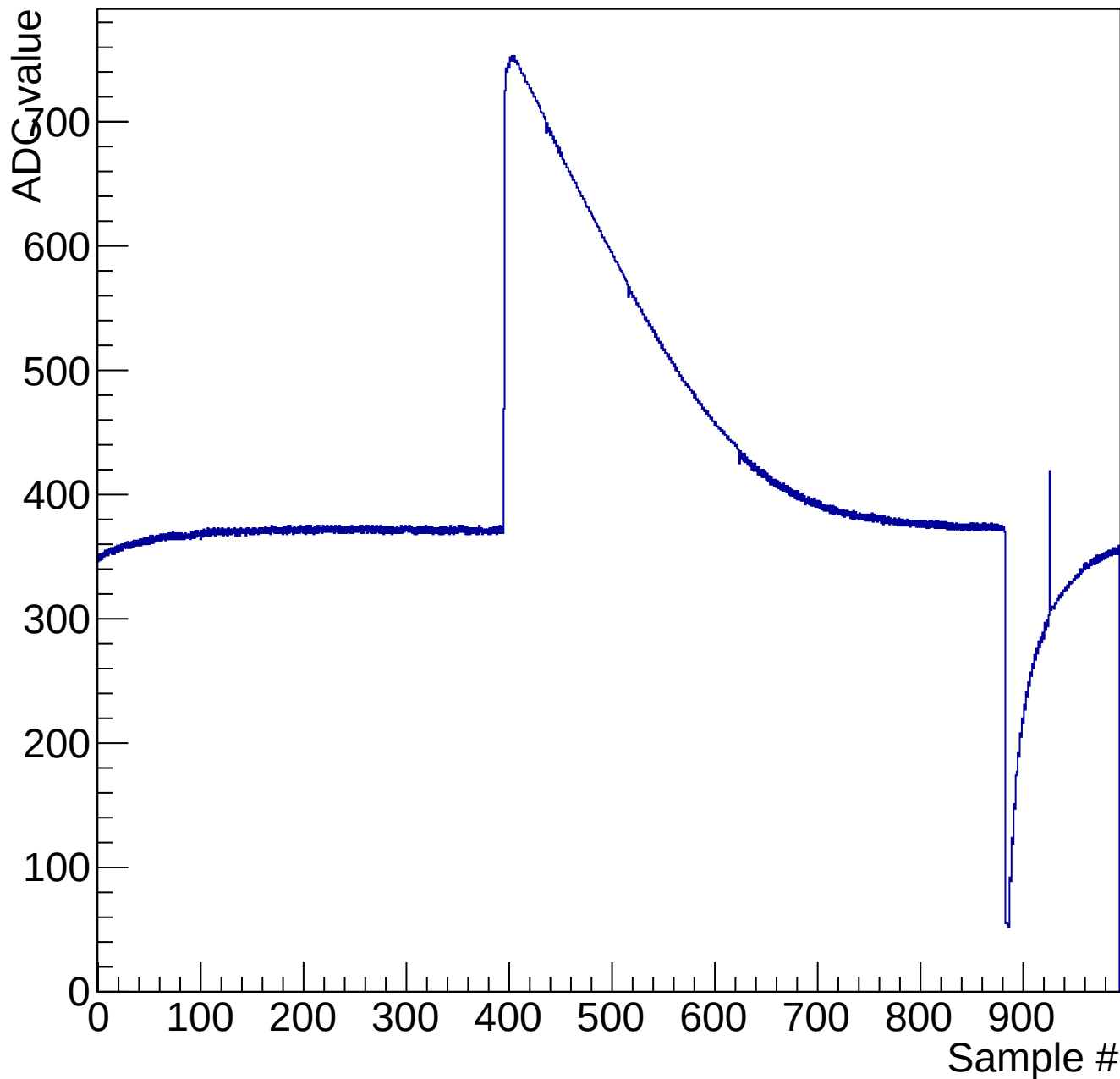
Run 20424 Event 4 Chip 55 Channel_15



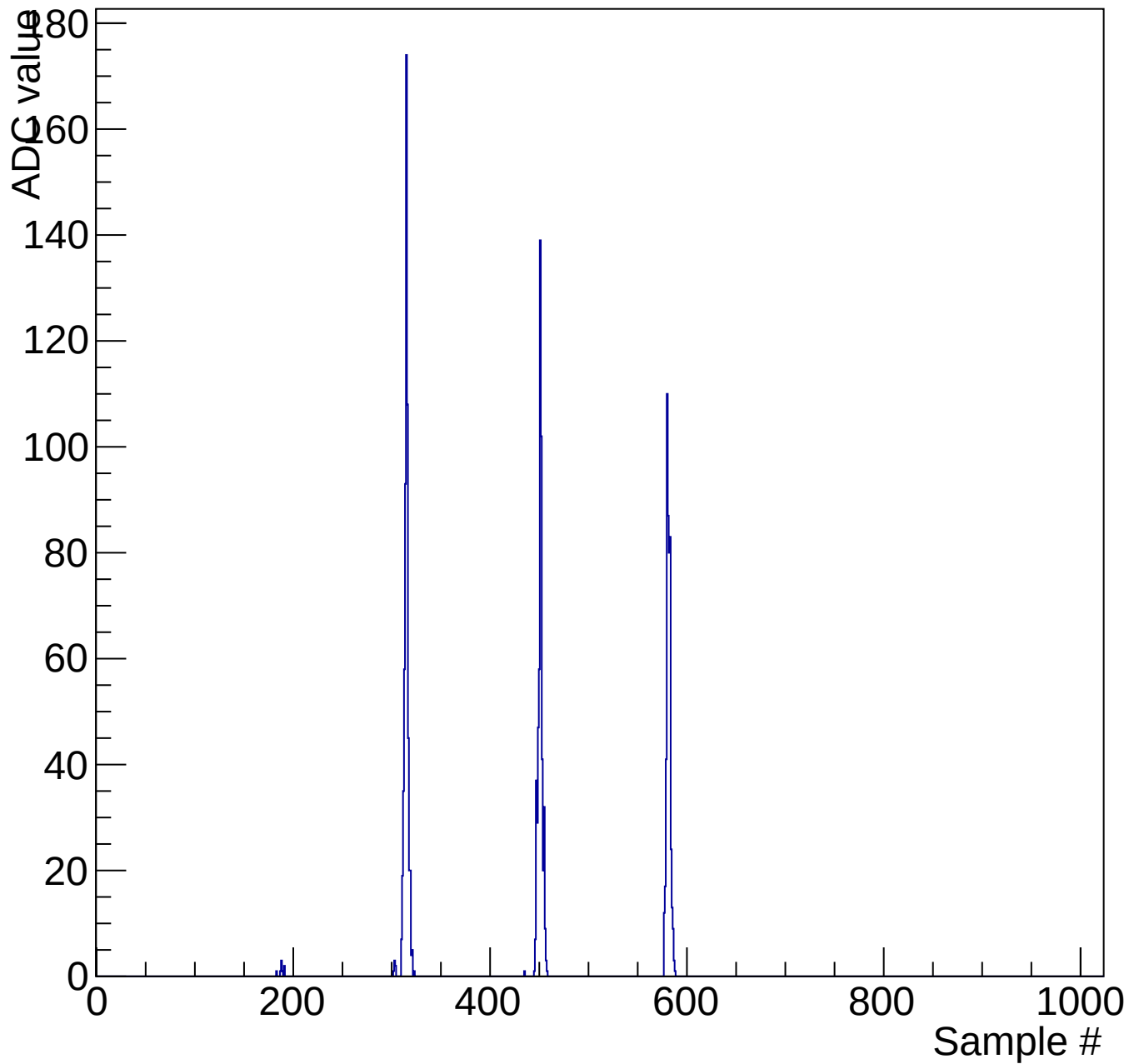
Run 20648 Event 10 Chip 52 Channel_9



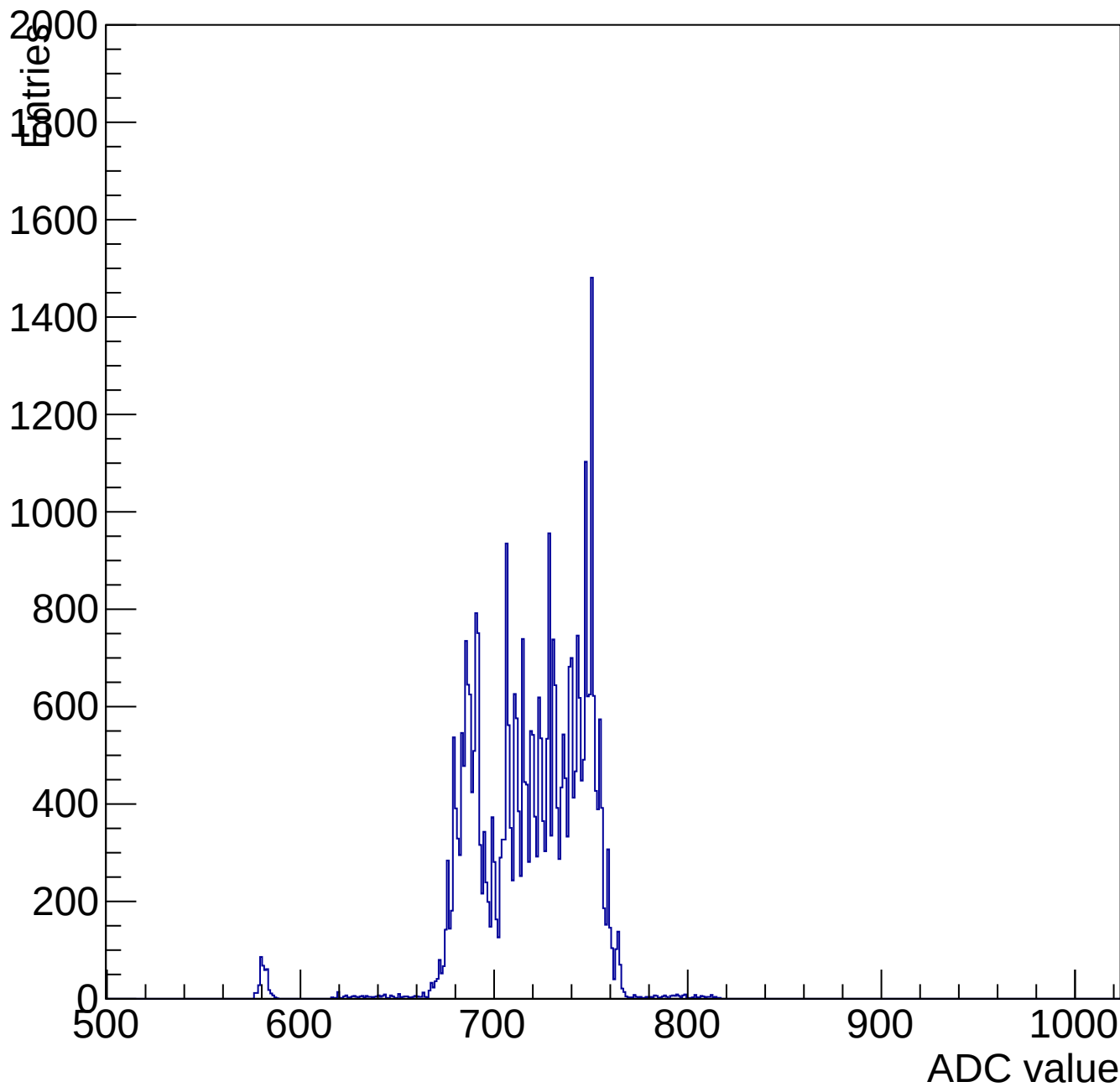
Run 20646 Event 13 Chip 52 Channel_9



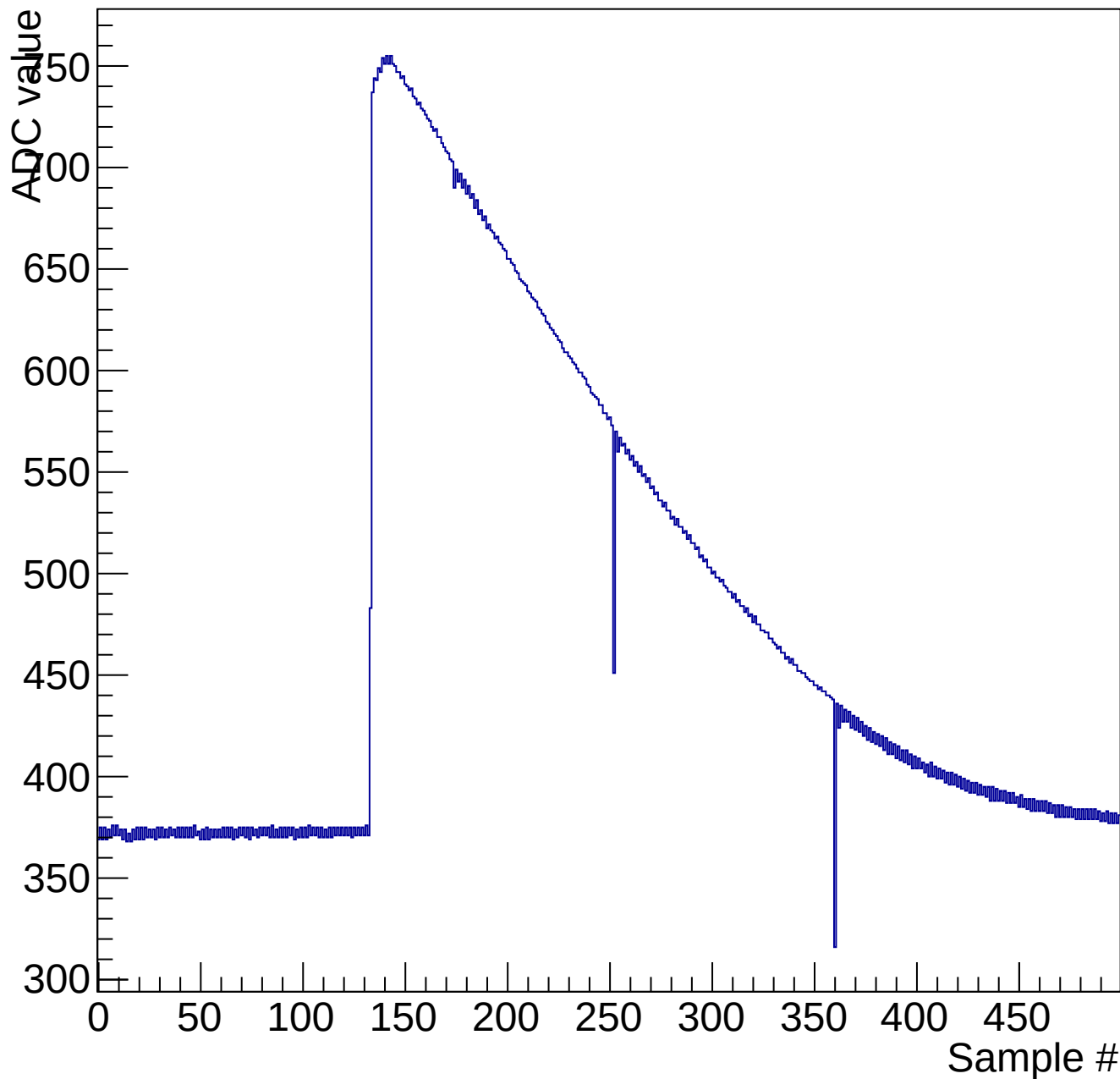
Run 20646 Channel_9



Pulse height ch 9 runnb 20646



Run 20646 Event 3 Chip 52 Channel_9



Run 21035 Event 539 Chip 65 Channel_2

