Pulse issues with Altro Electronics

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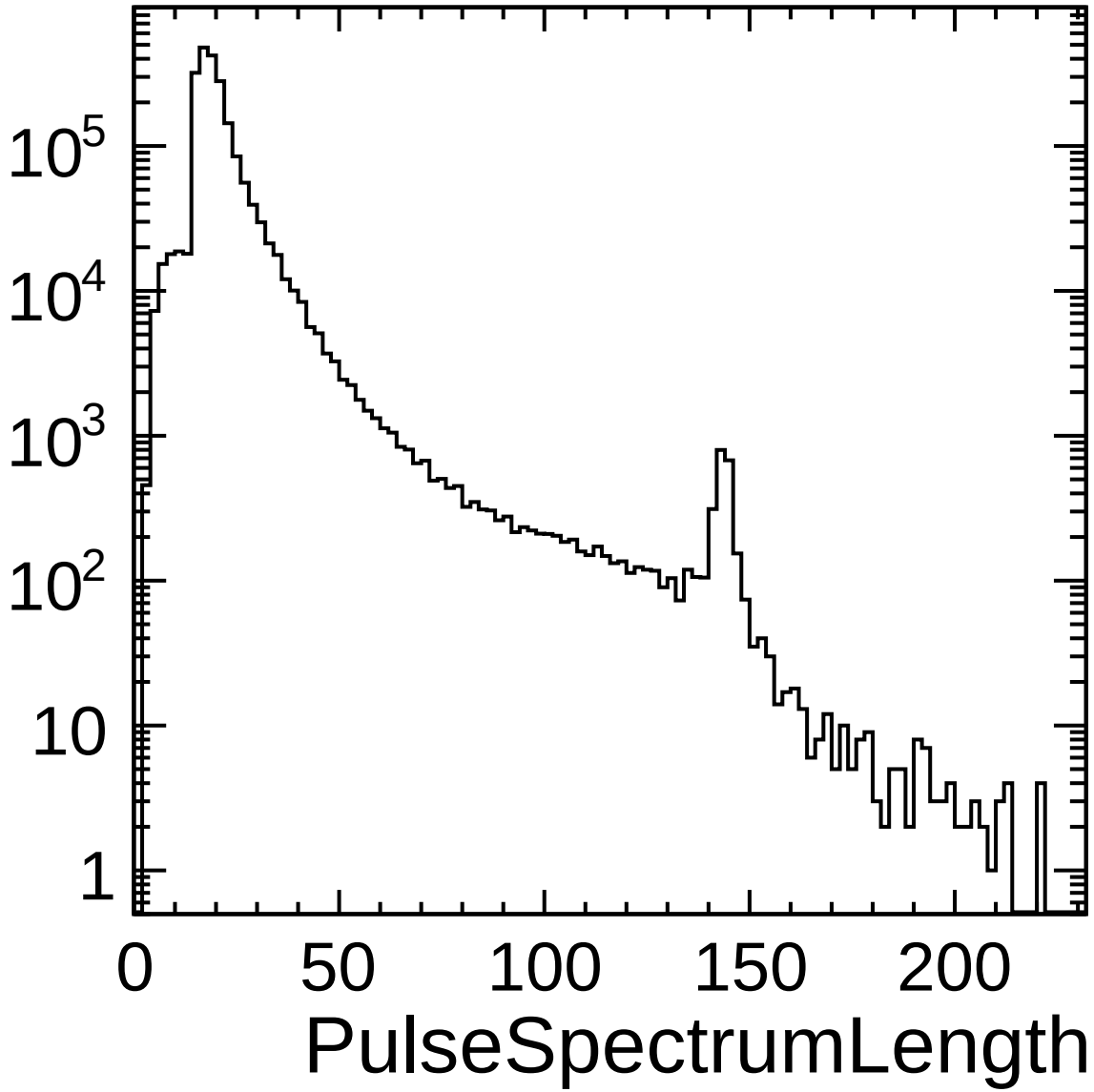
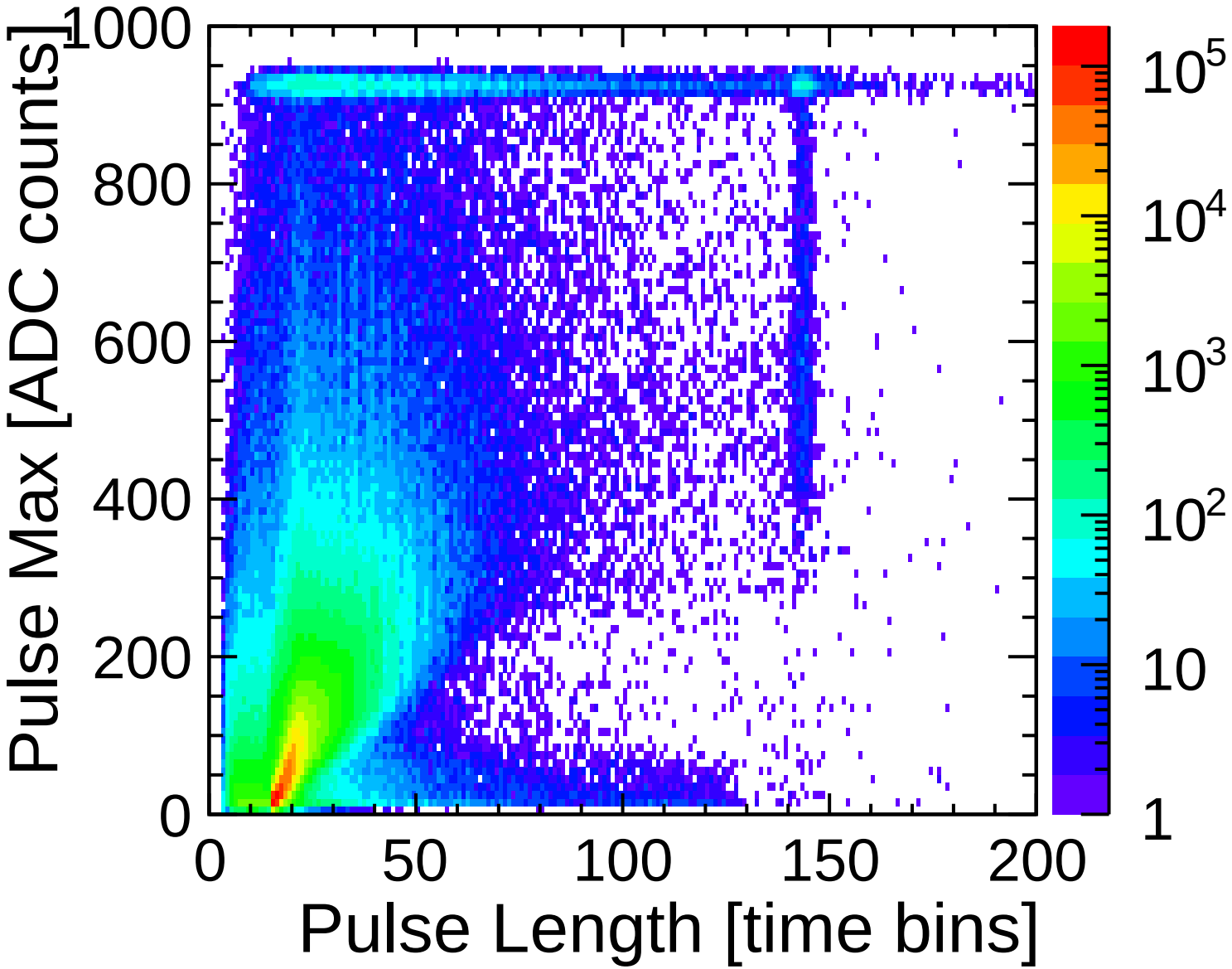
DESY

LCTPC Analysis Meeting, 26.2.2013

Many long pulses

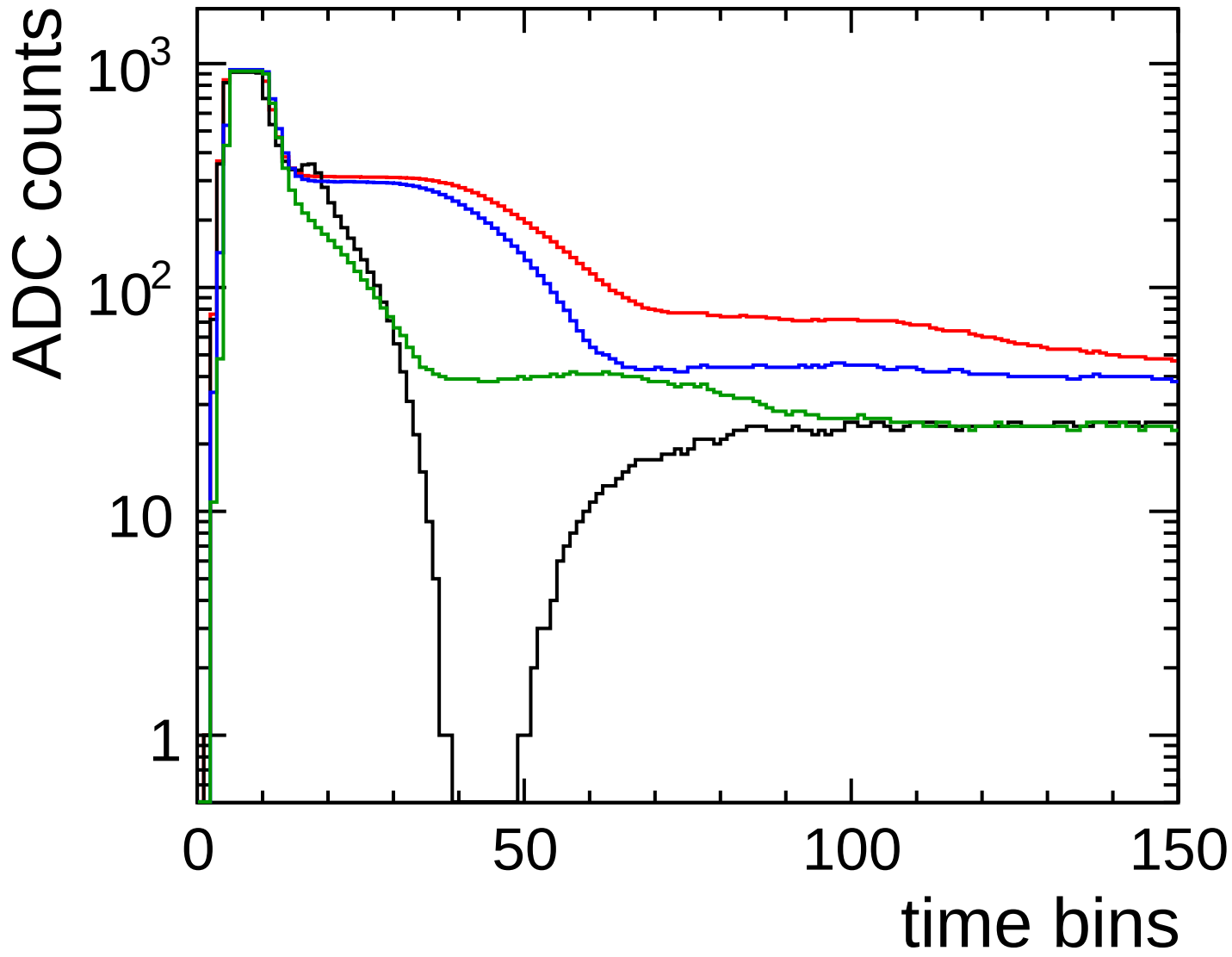


Partly correlated with charge



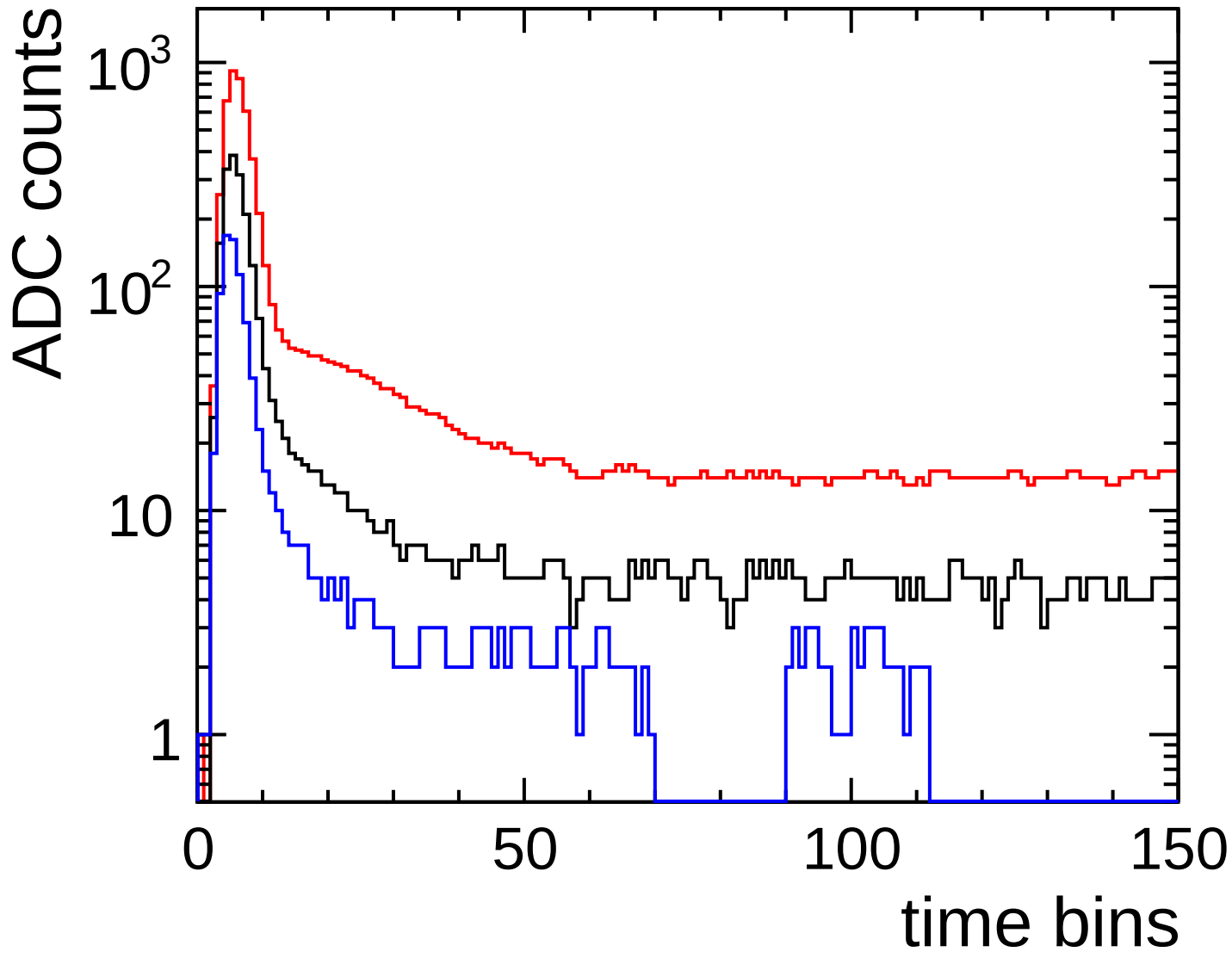
Problematic shape: long tail and shoulders

Event with several pads going in overrange:



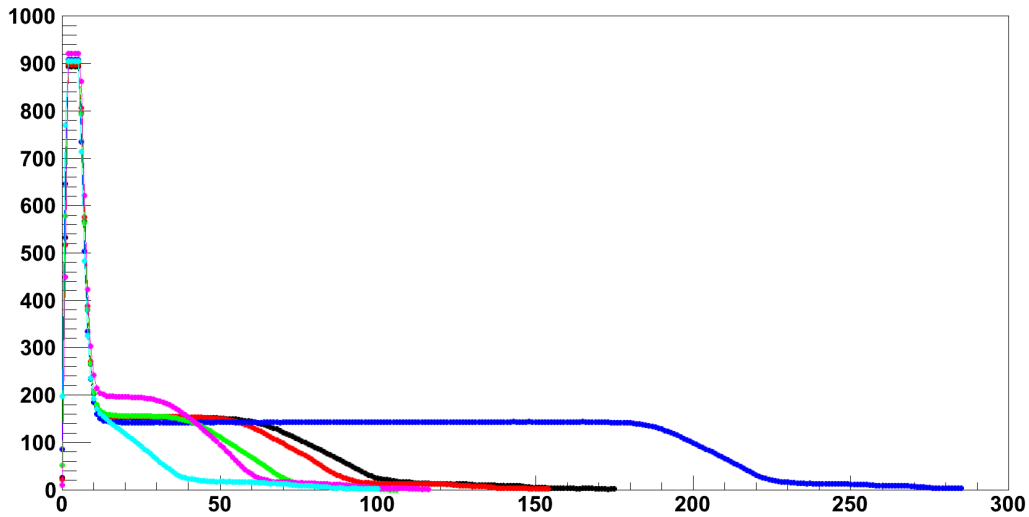
Problematic shape: long tail and shoulders

Regular event without overrrange:

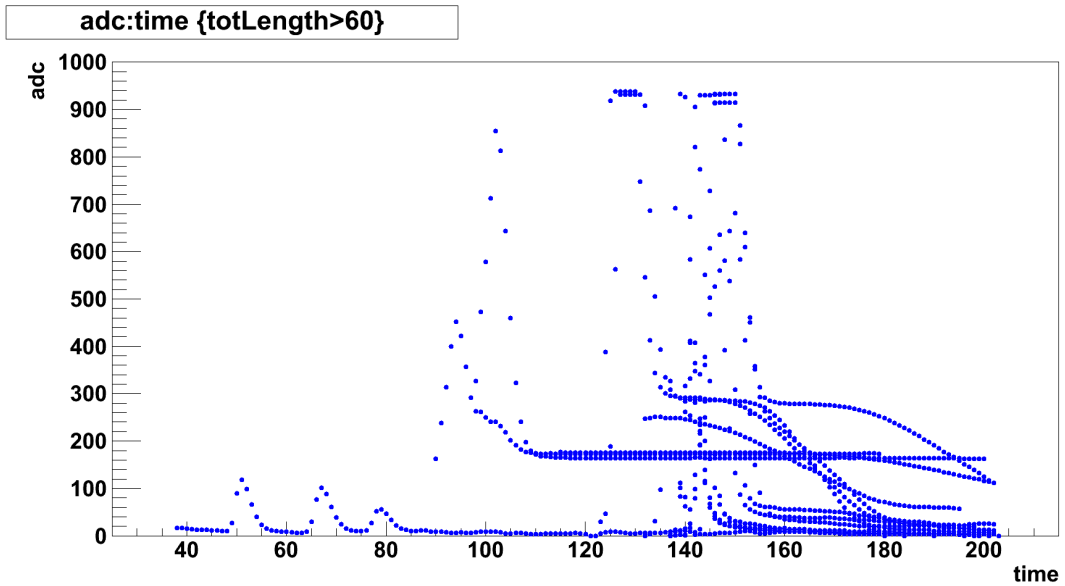


Same observation by Japanese group

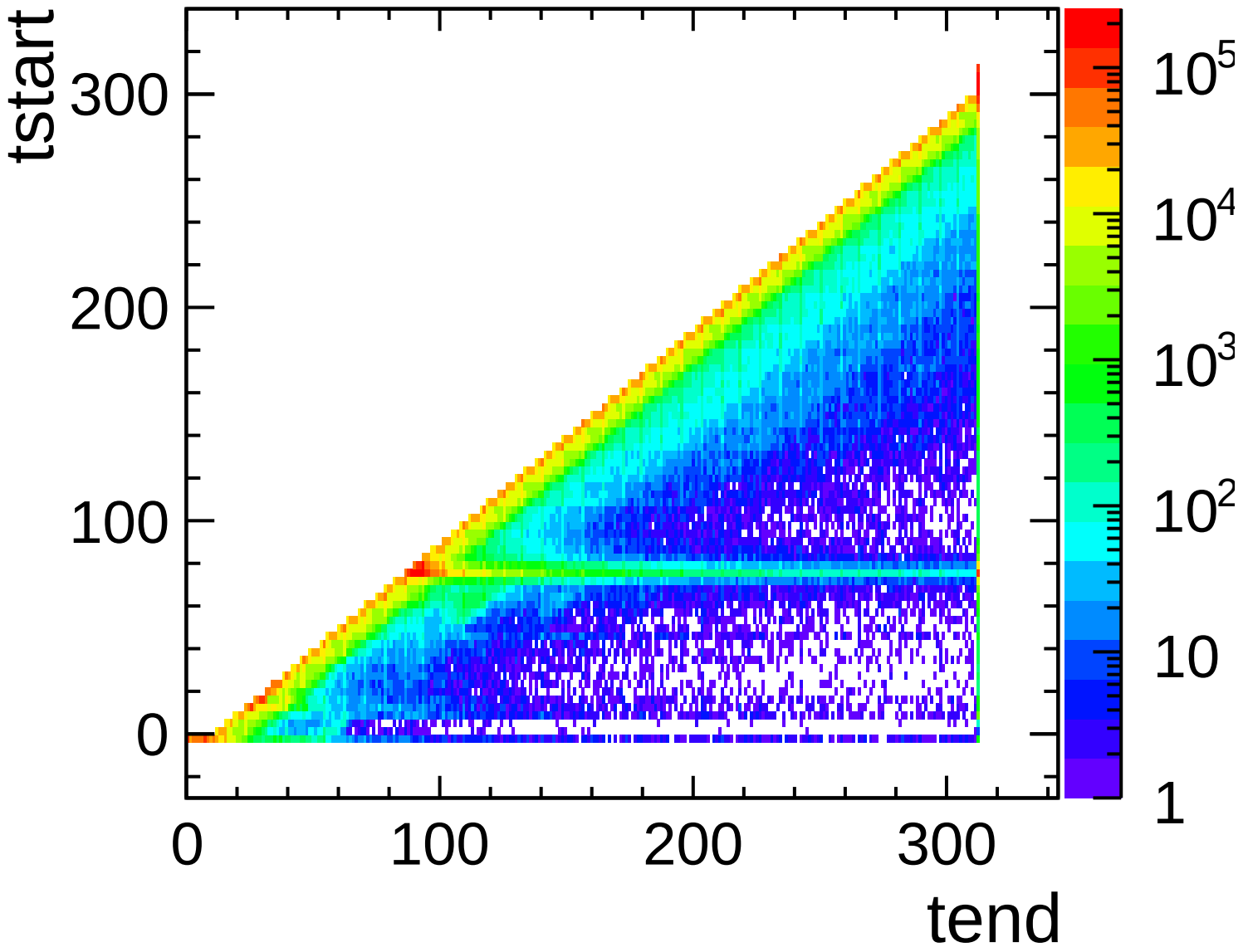
2009



2012

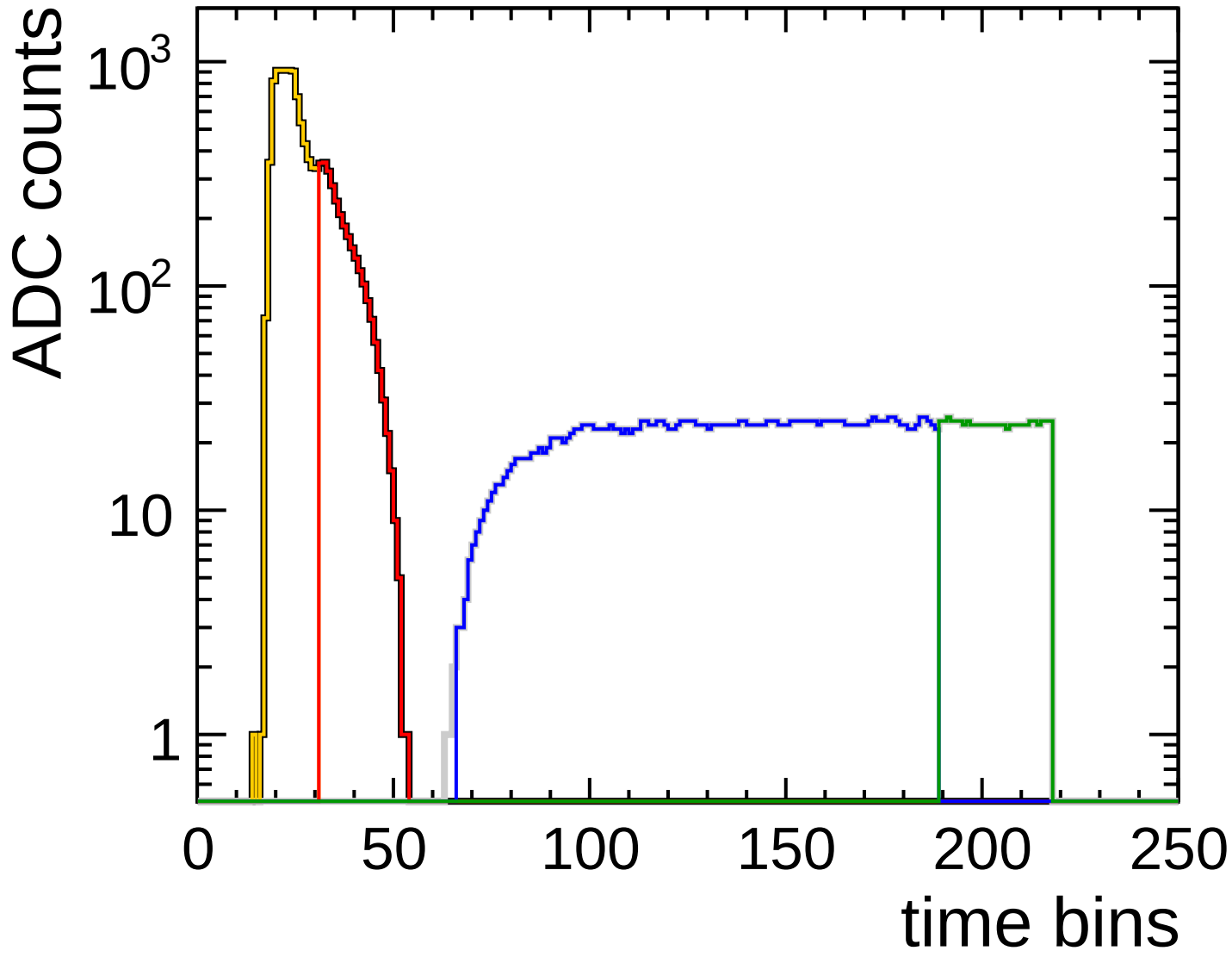


Start end end in time through full chamber



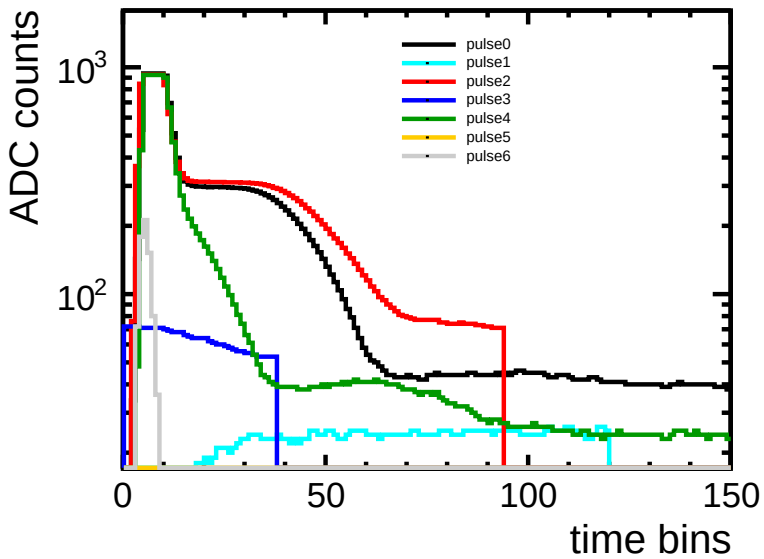
Current situation

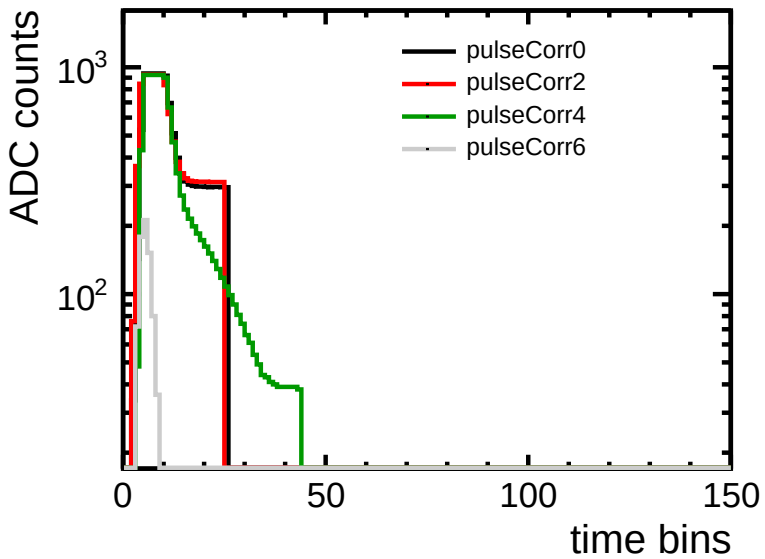
2 raw pulses, 4 reconstructed pulses



Possible Fix

Filter for flat and slow rising/falling pulses
Find plateau and cut

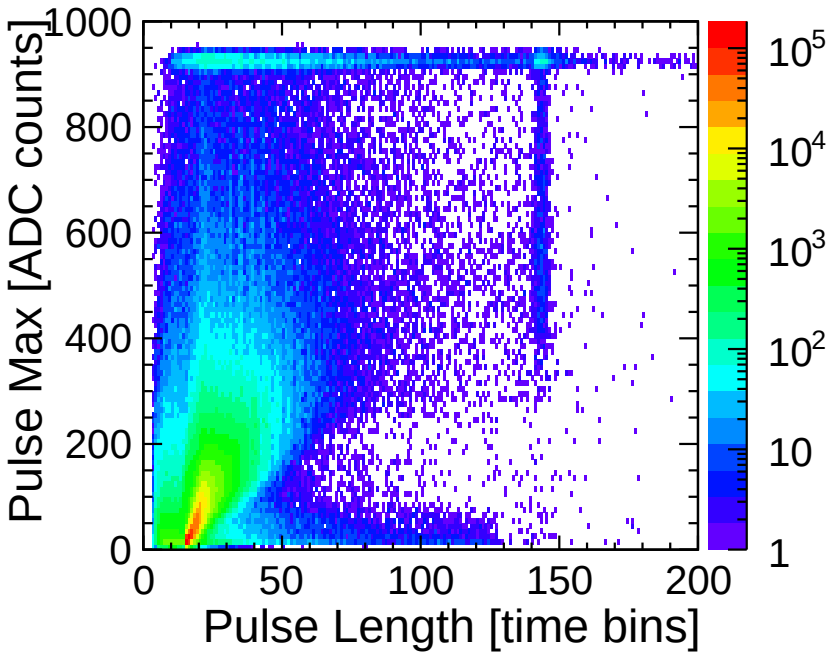




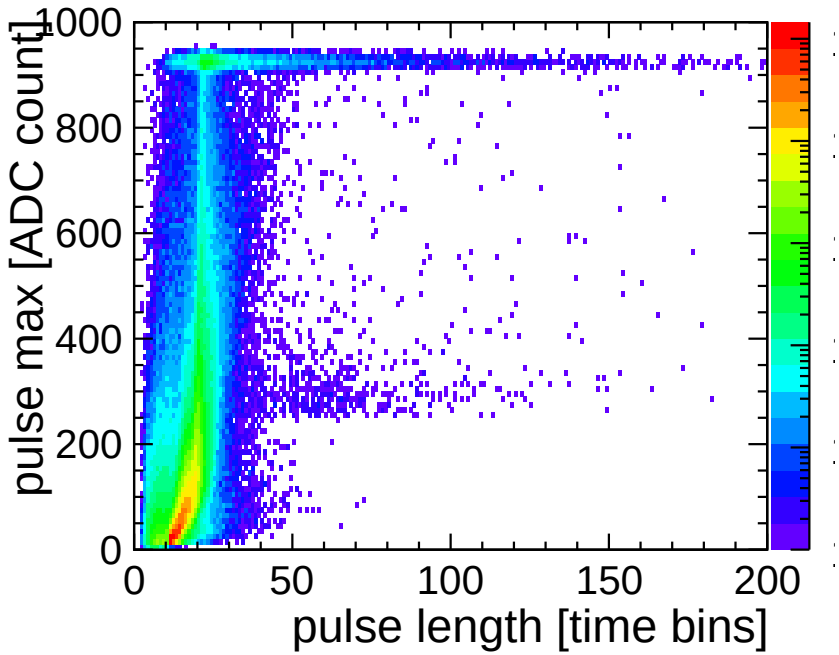
pulse 6 is a "good pulse" example

After implementing filters

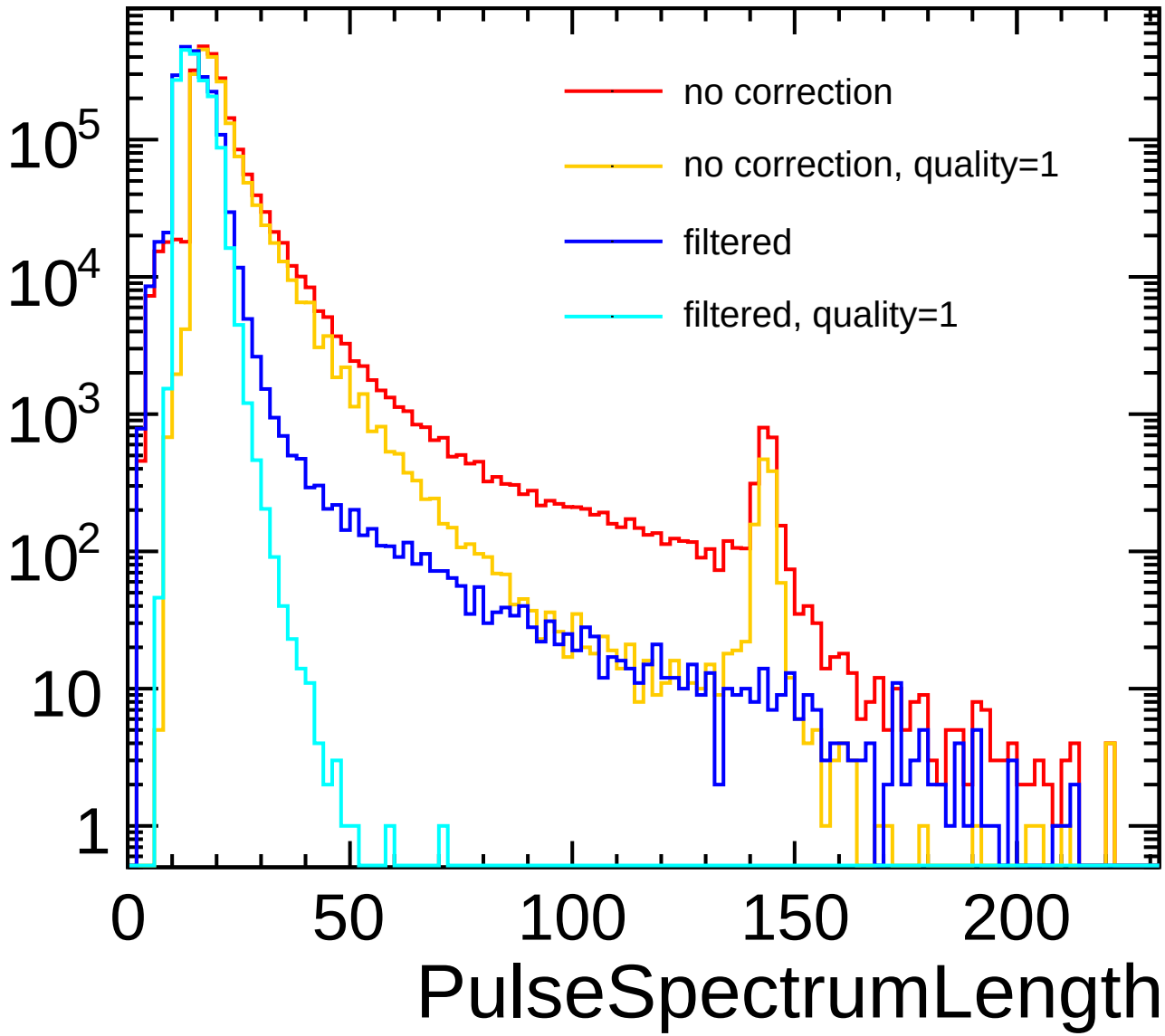
before



after



After implementing filters



Questions

Are those long pulses

- an artifact from the electronics ?
- a problem with too much charge somewhere ?
- a real physics effect (unlikely) ?

What to do about it

- minimum: remove tails from pulses in software (what to do with shoulders?)
- understand where they originate from
- fix it in the electronics if possible