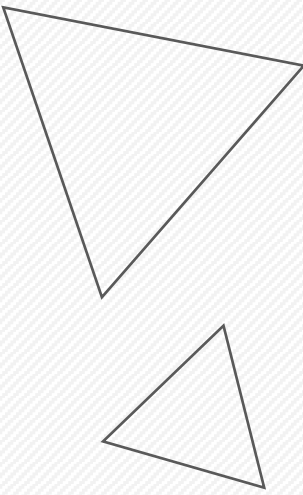


Questions about TIGER and LUT

Liangliang Wang (IHEP) and Hang Zhou (USTC)

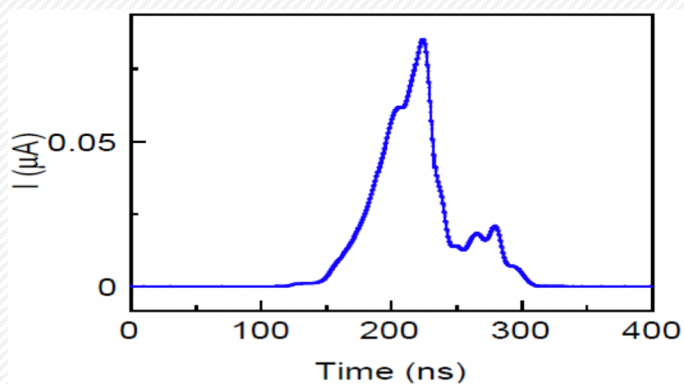


Transfer function (from Fabio) + inverse Laplace transform => Response function (fixed)



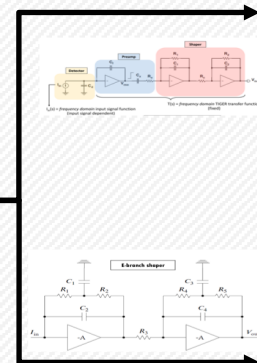
- ✓ Both T-branch and E-branch models are implemented within CgemBoss
- ✓ Many tests show that results from the fast numerical convolution can reproduce very well the circuit simulation:

One example:

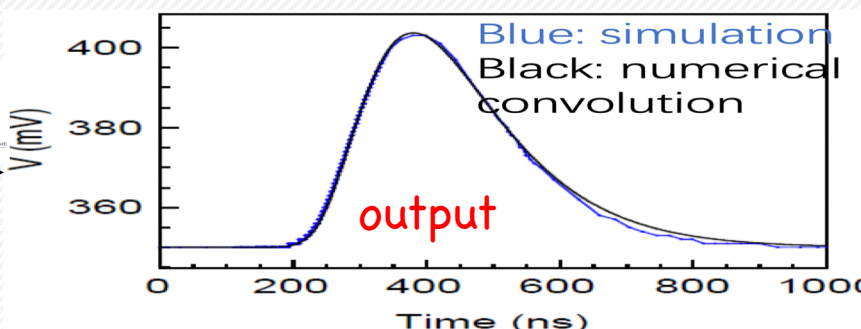
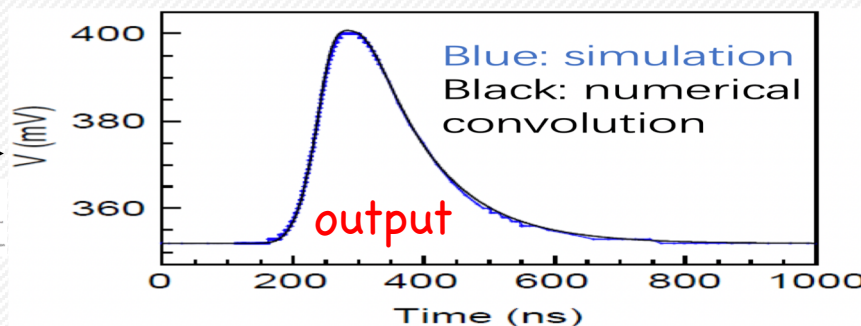


One input (from full digitization)

T-branch



E-branch



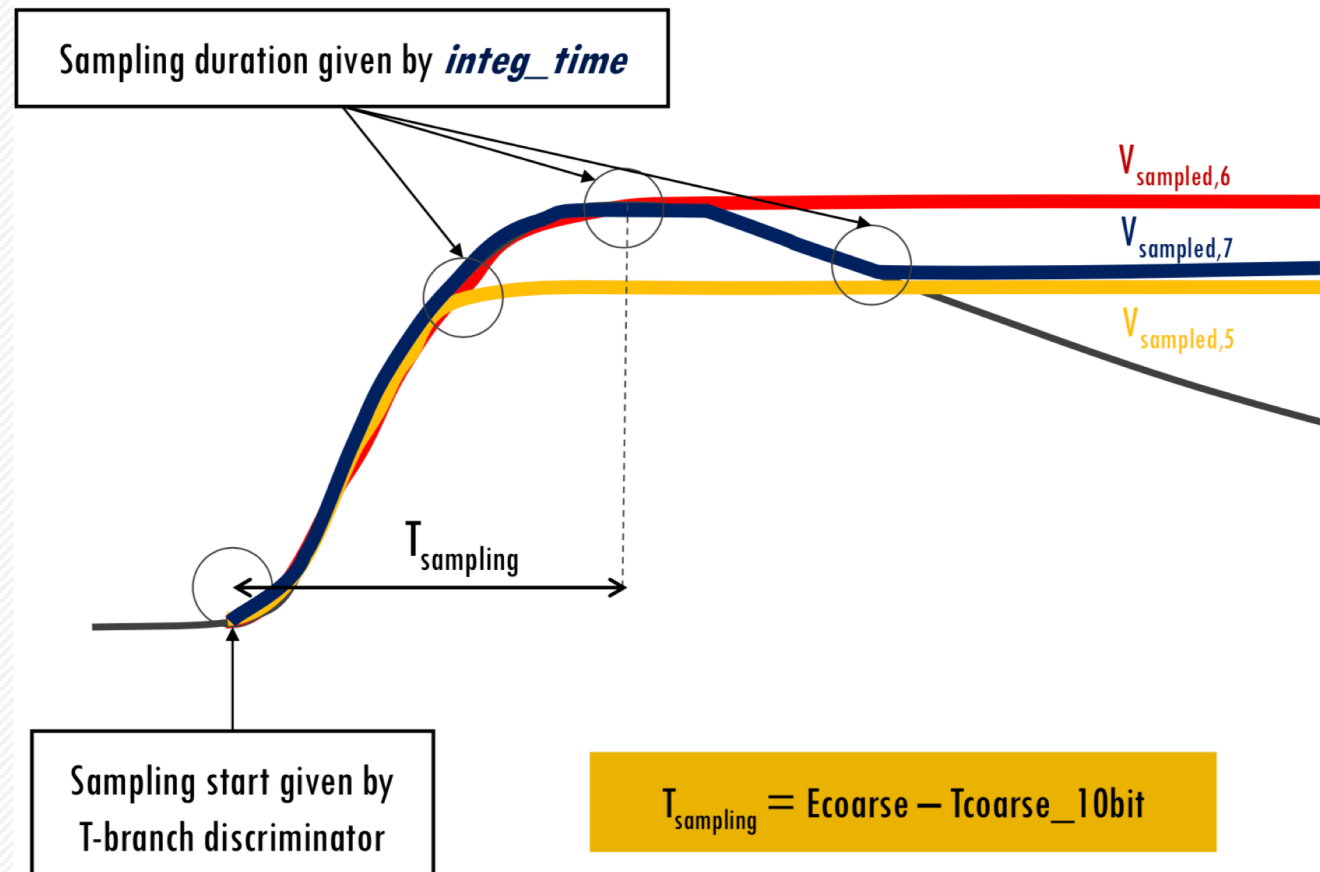
Any relative delay needs to be added in E-branch?

Simulation of the sampling time in E-branch

=150 ns for integ_time=5
or 170 ns?

Sampling time

$$T_{\text{sampling}} = 4 \cdot 6.25\text{ns} \cdot (\text{integ_time} + 1)$$

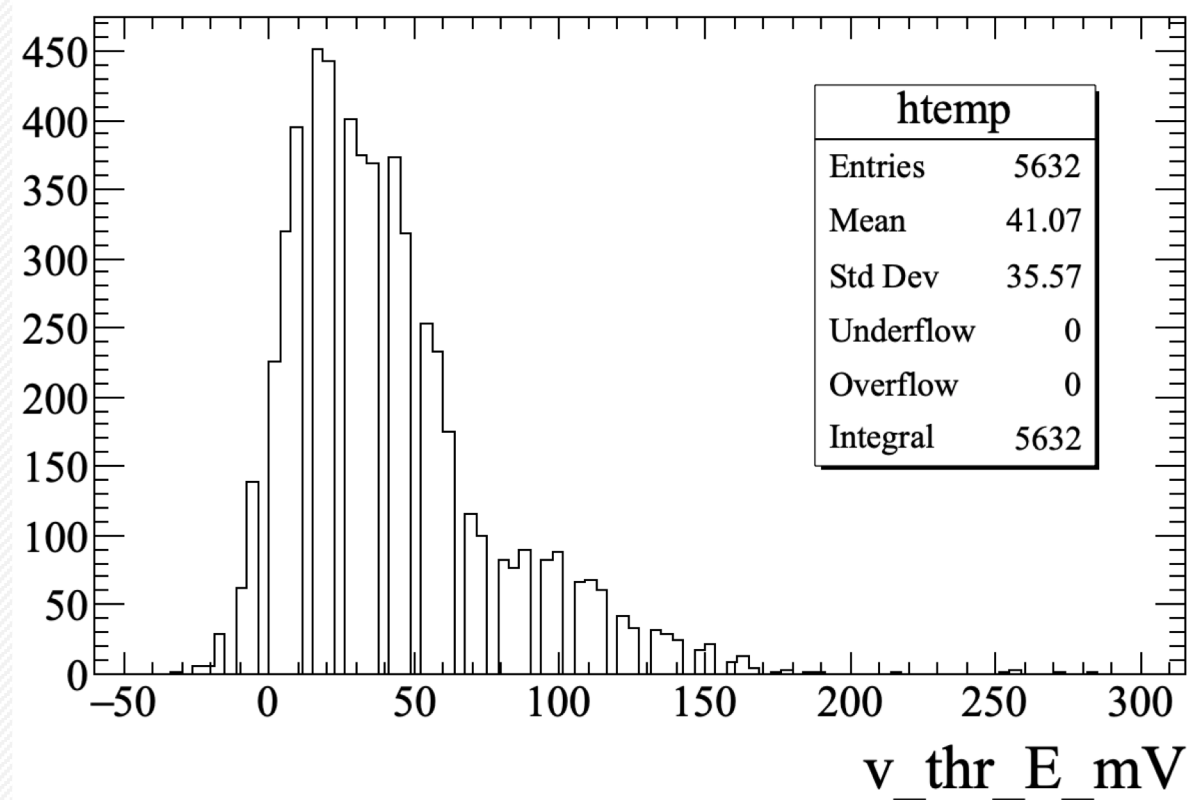
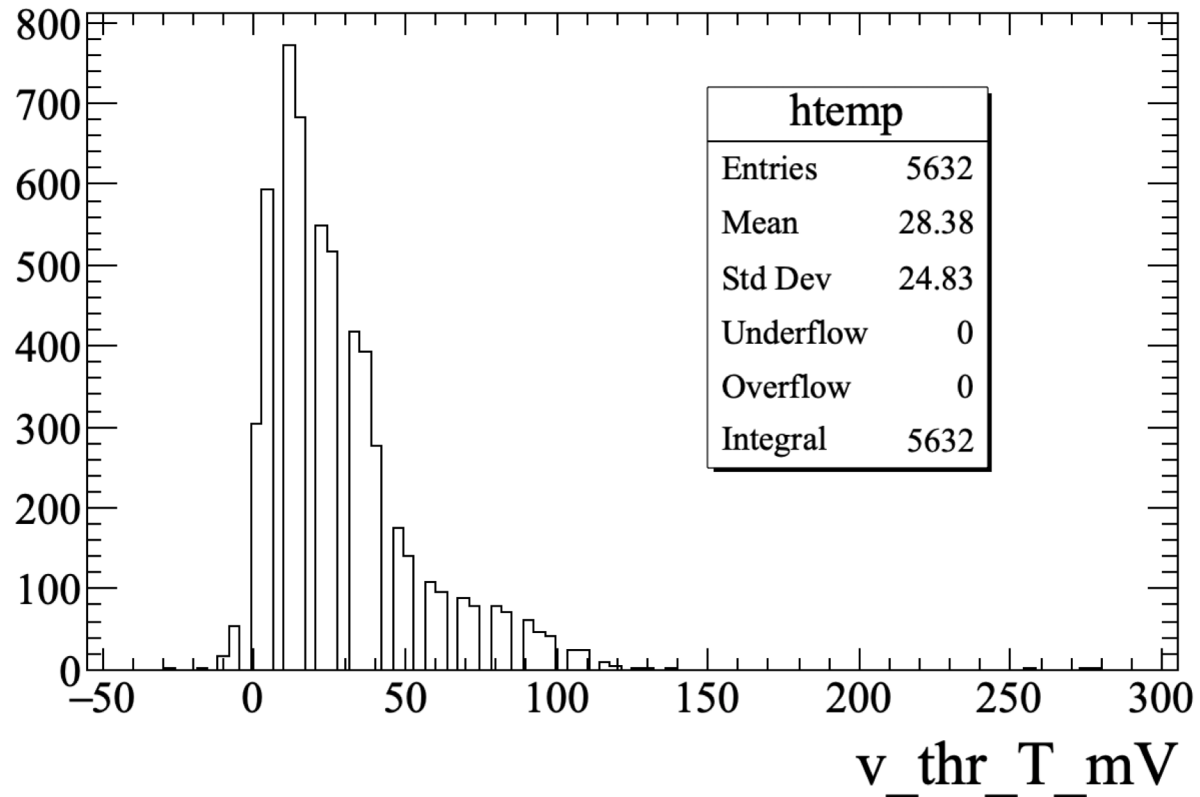


- S&H peak detector configured and calibrated for a 170 ns peaking time (*integ_time* = 5)
- If signals last longer than the design specification (50 ns) the sampling time (*integ_time*) must be increased → 4 clock cycles steps (= 25 ns)
- **Sampling start** is given by the T-branch, due to its better timing performance

One slide from Fabio

Thresholds from Look-Up-Table (LUT)

/bes3fs/cgemCosmic/data/CGEM_cosmic_look_up_table_from_10_to_17.root

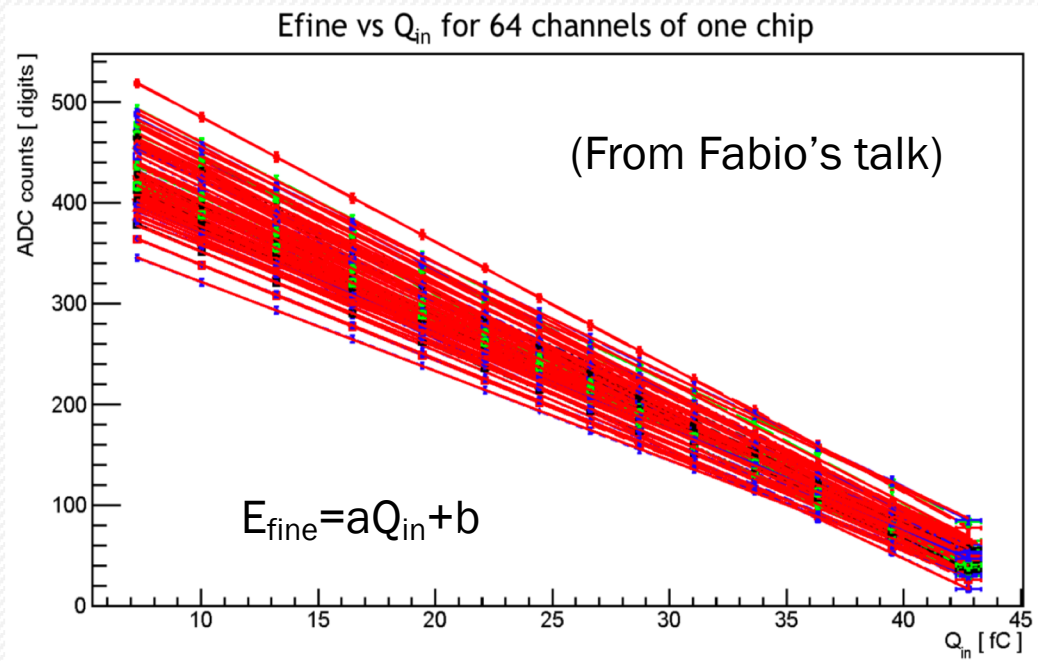


Definition?

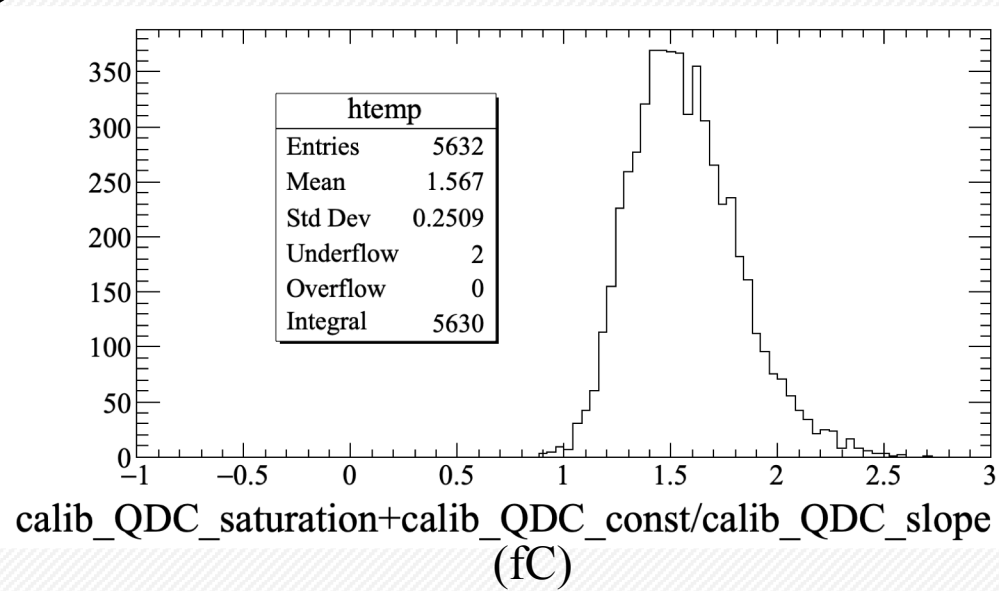
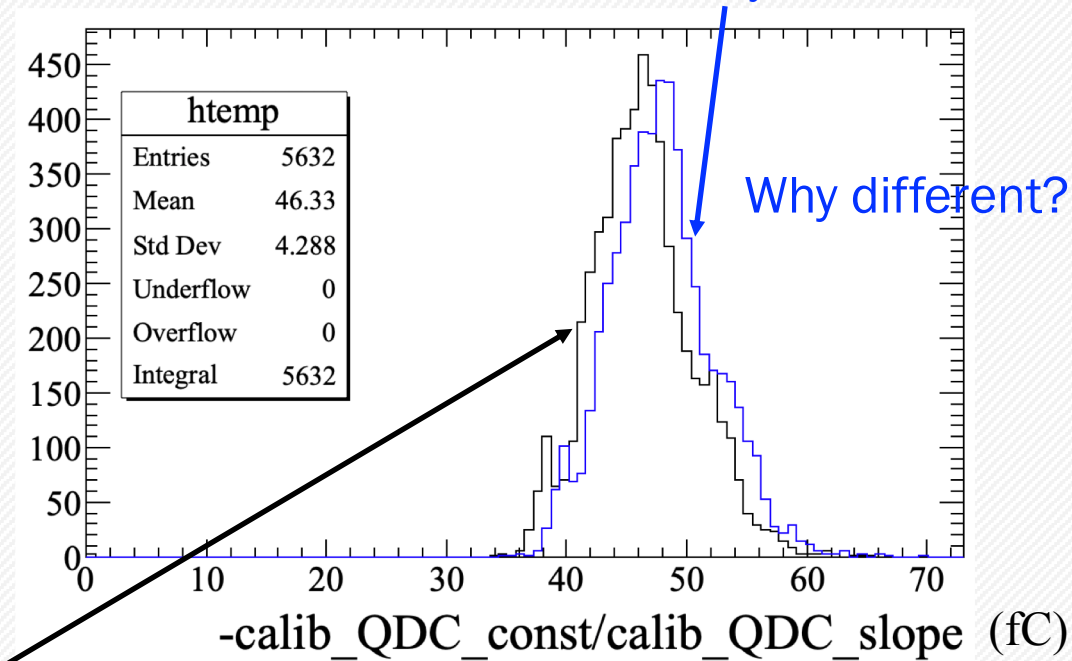
Obtained by fitting charge distribution and then converted in mV?

Why there are negative ones?

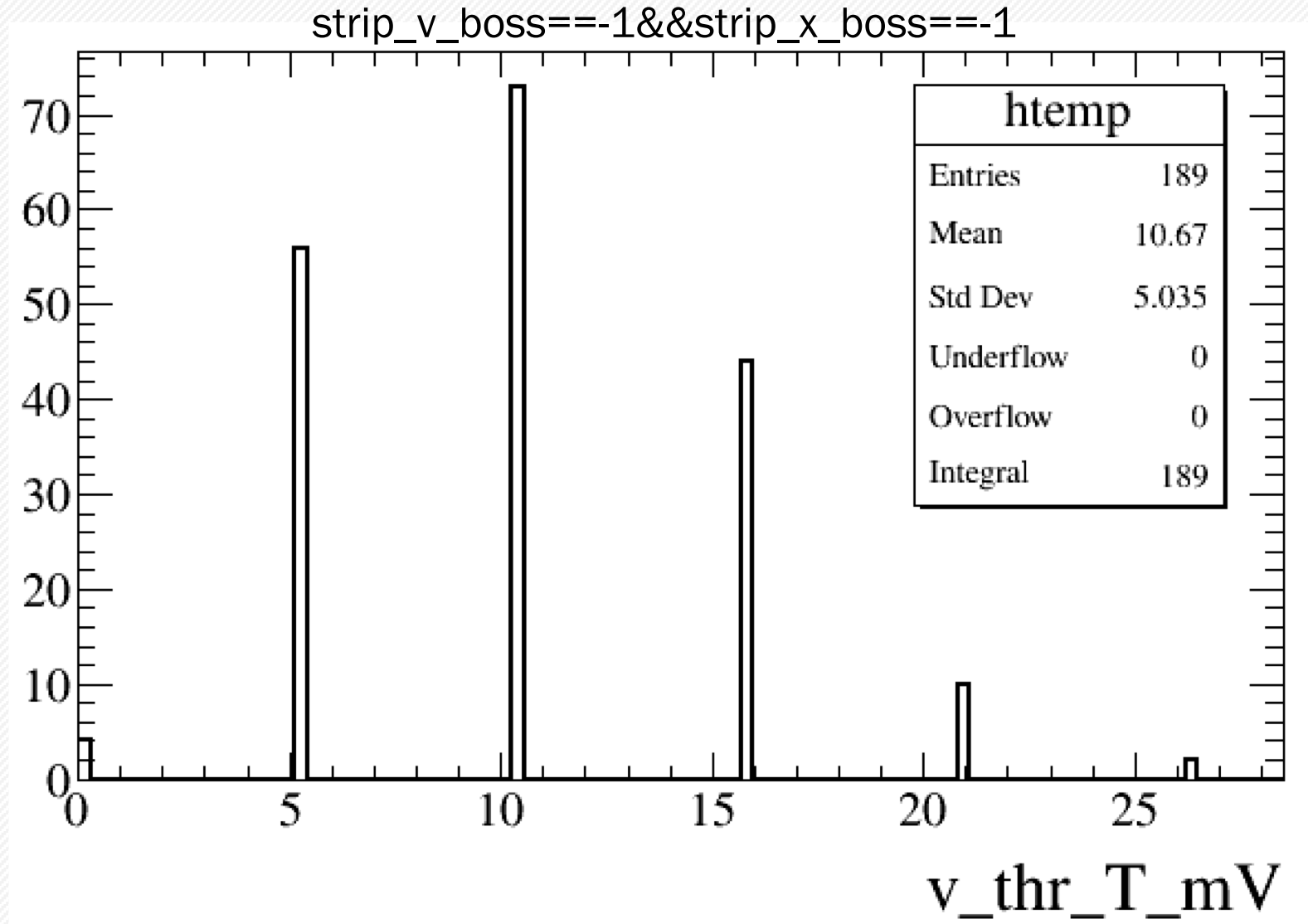
E_{fine} -Q (charge) Calibration curves and saturations



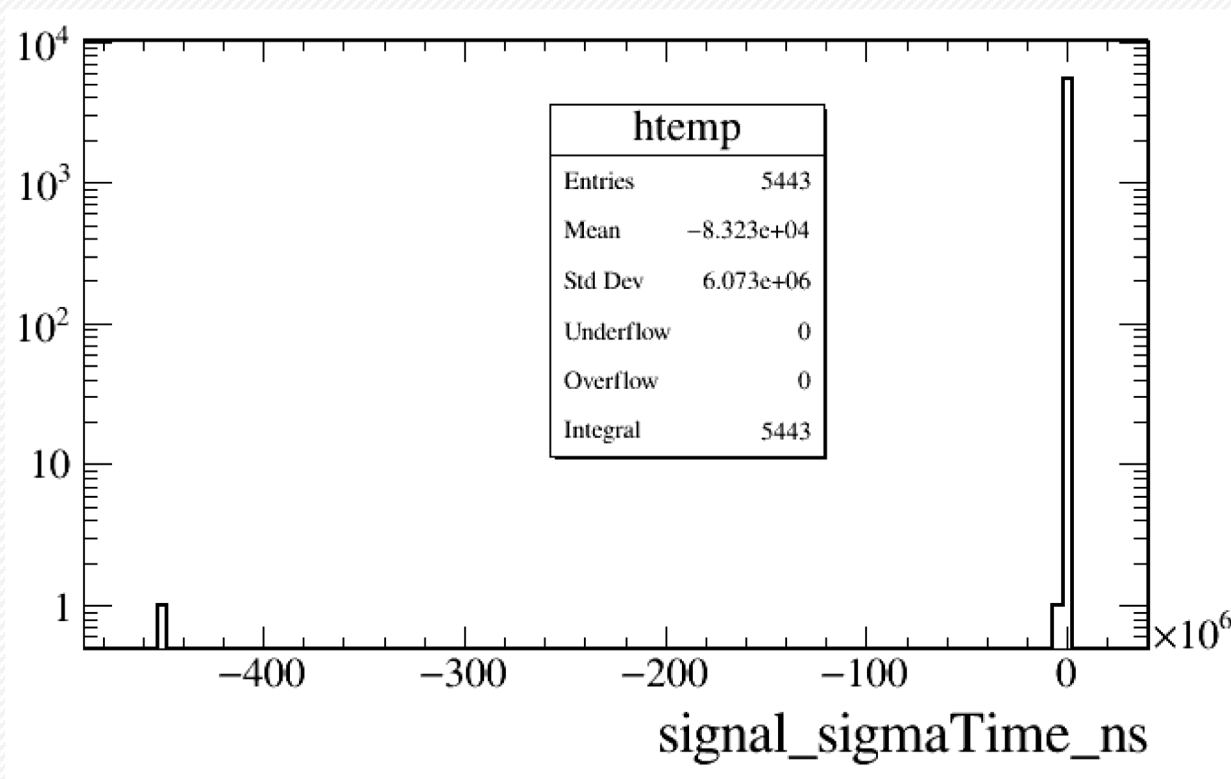
$$E_{\text{fine}} = 0 \Rightarrow Q_{\text{saturation}} = -b/a$$



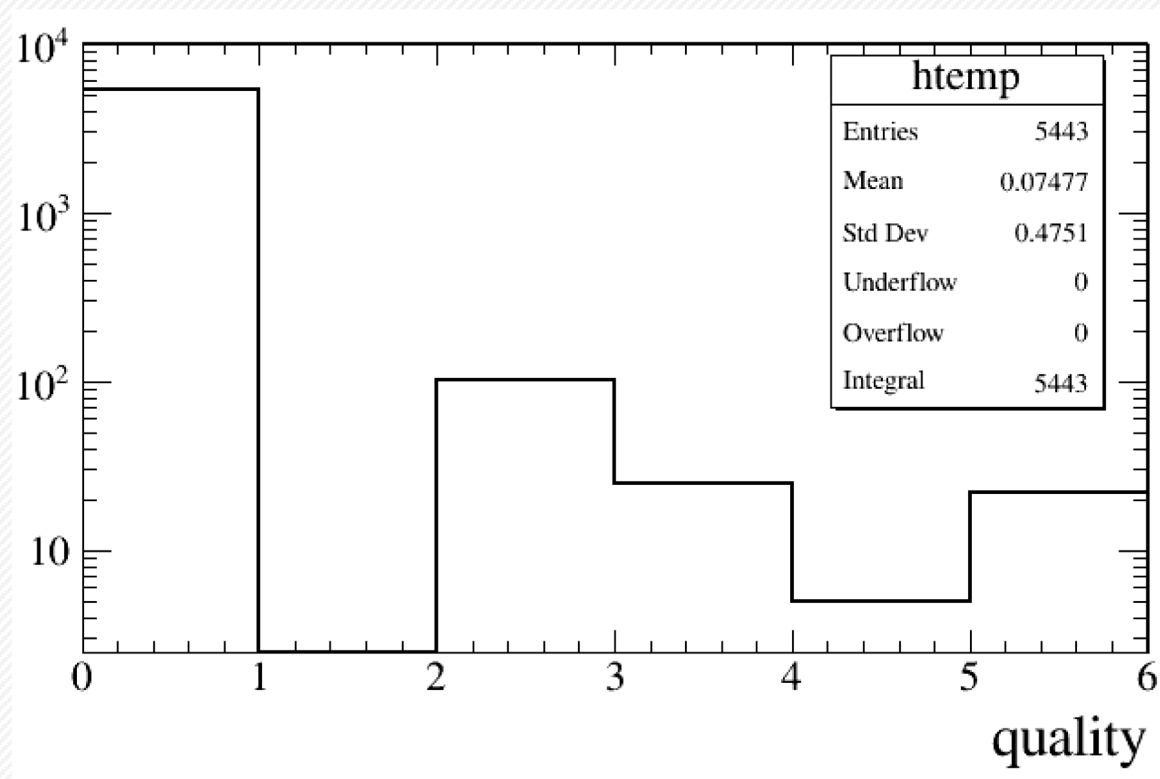
What are the entries with invalid stripID?



Other questions



Time resolution?
Why many negatives?



Where to find the meaning?

Add a little more information to README?