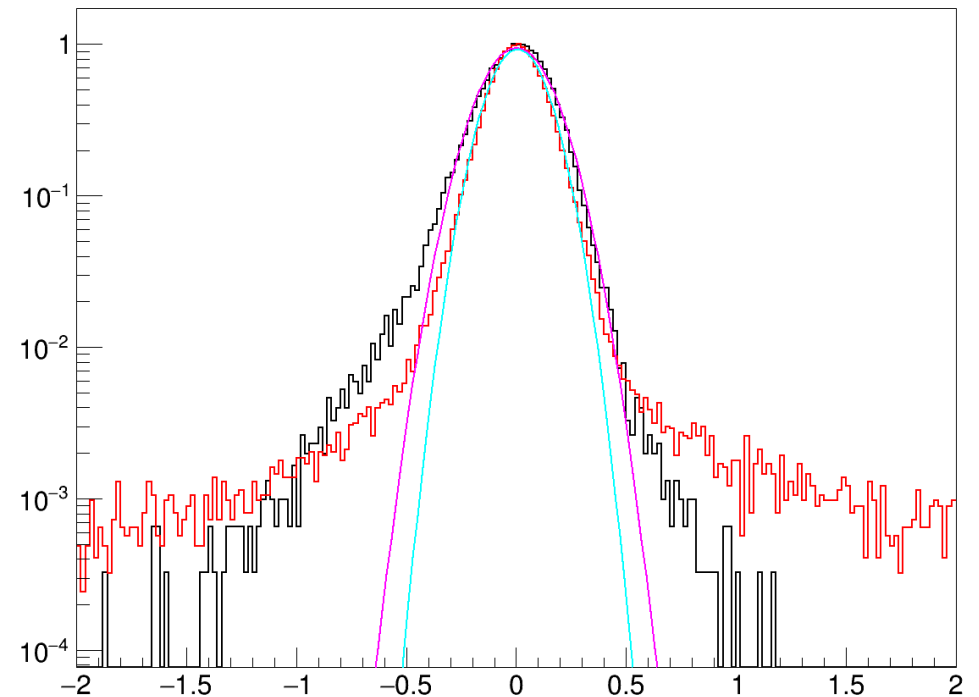
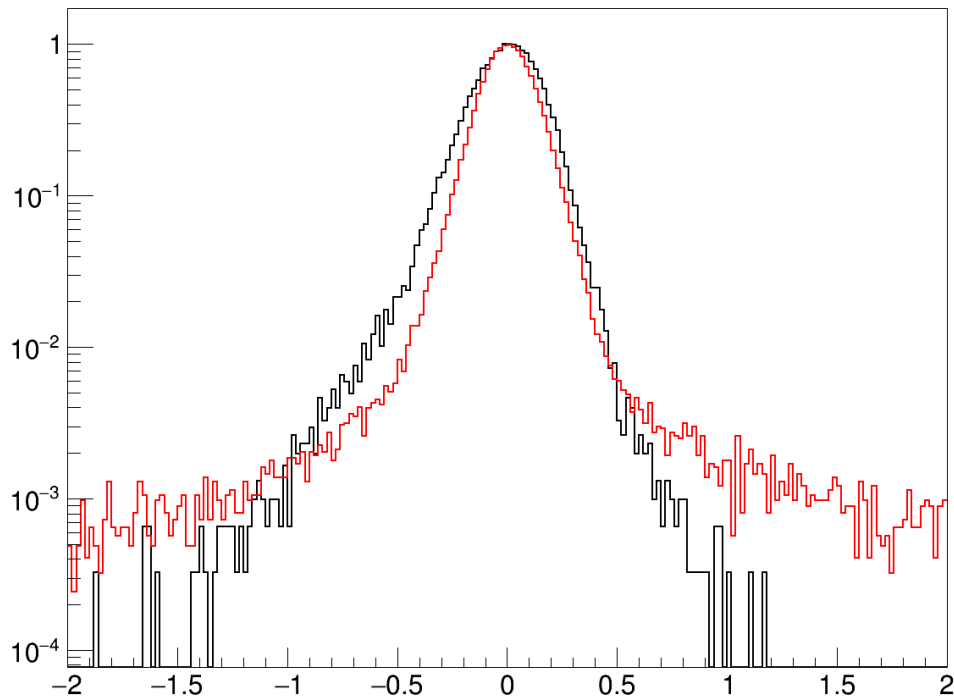


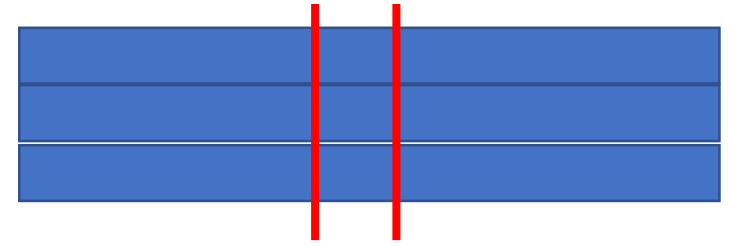
Digitized simulation

- There was a time resolution issue.
- No cut is given.
- Black : MC , red : data

No cut	MC	data
Resolution	0.1472 ± 0.0005	0.1209 ± 0.0003

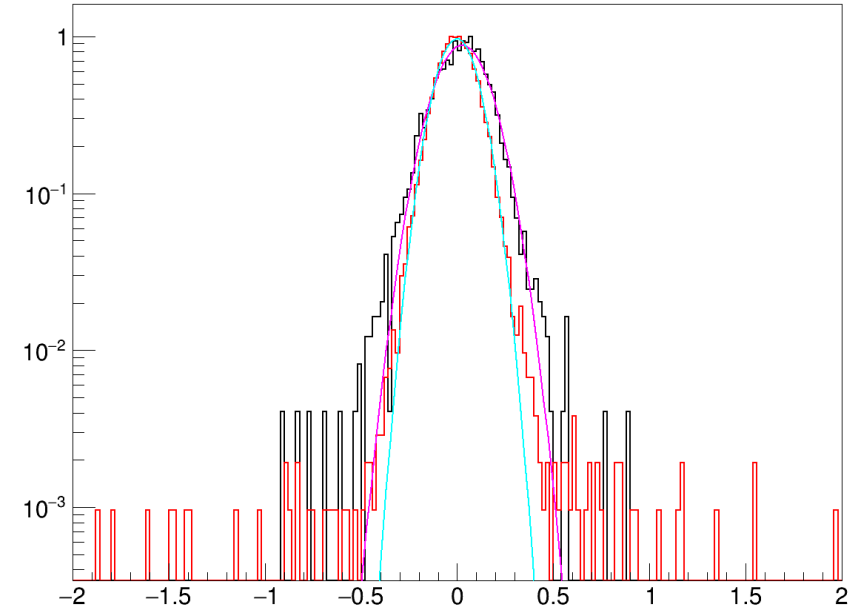
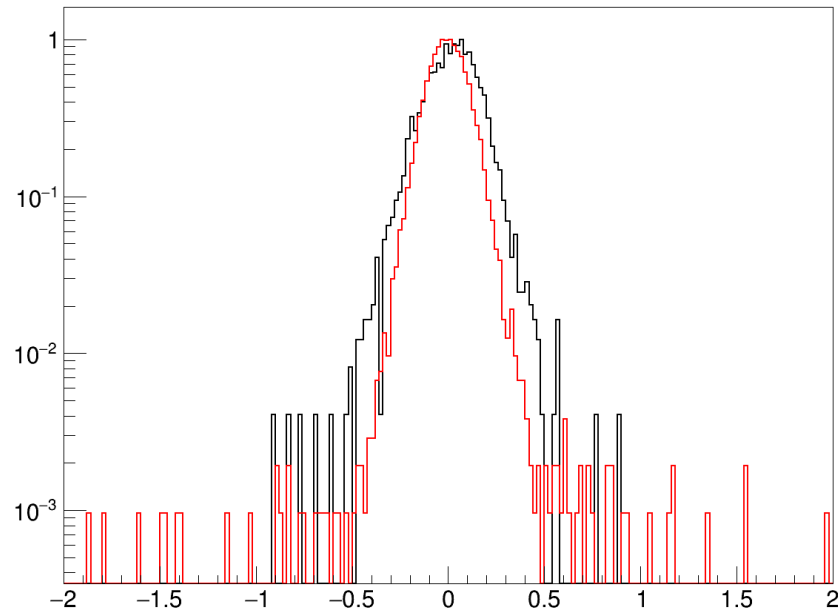


Digitized simulation



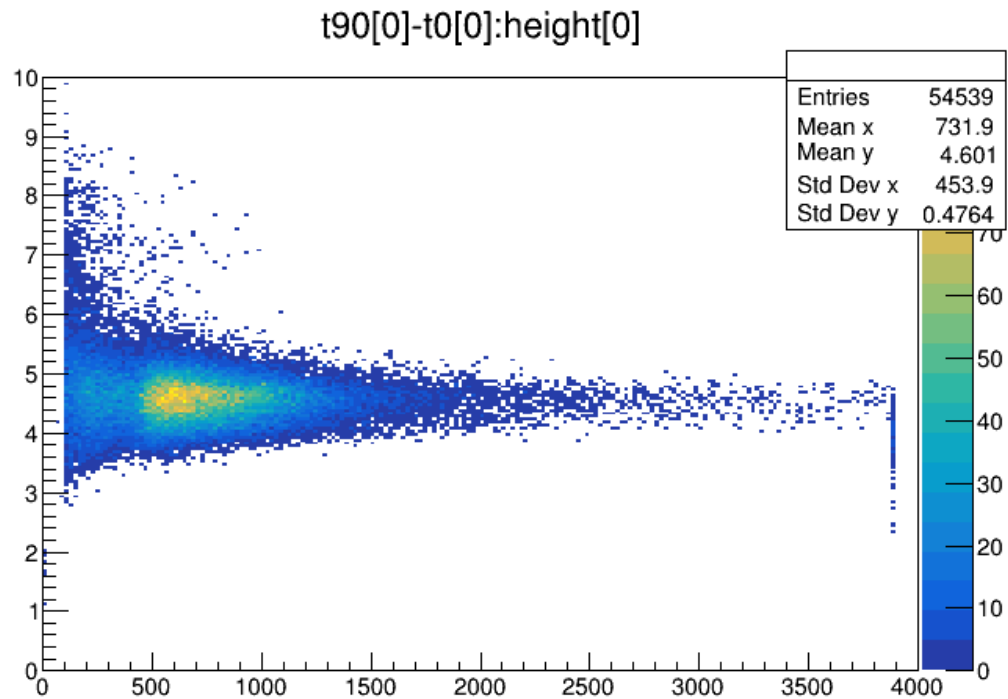
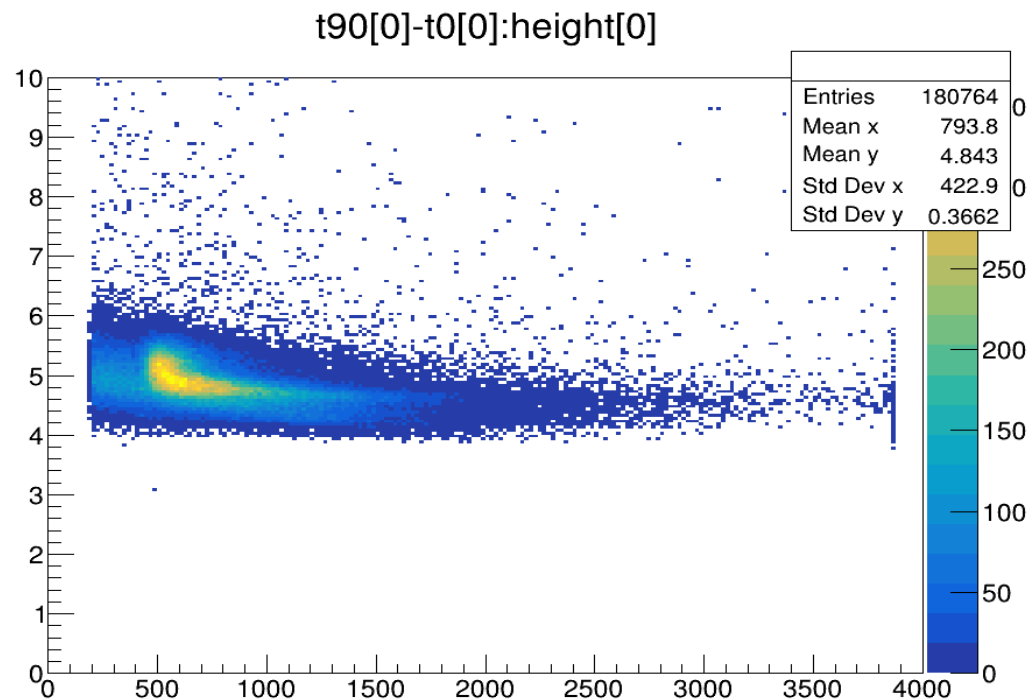
- Even the center cut is given, MC still has large resolution.
- Black : MC , red : data

Cut	MC	data
Resolution	0.1316 ± 0.0017	0.1007 ± 0.0007



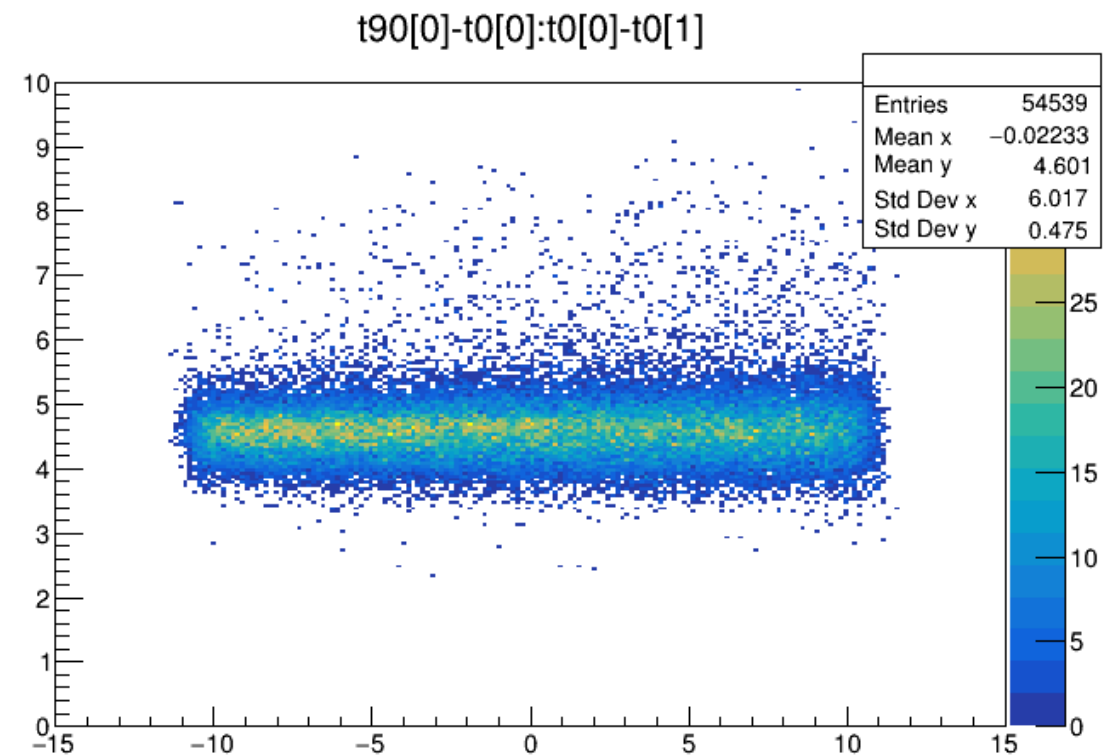
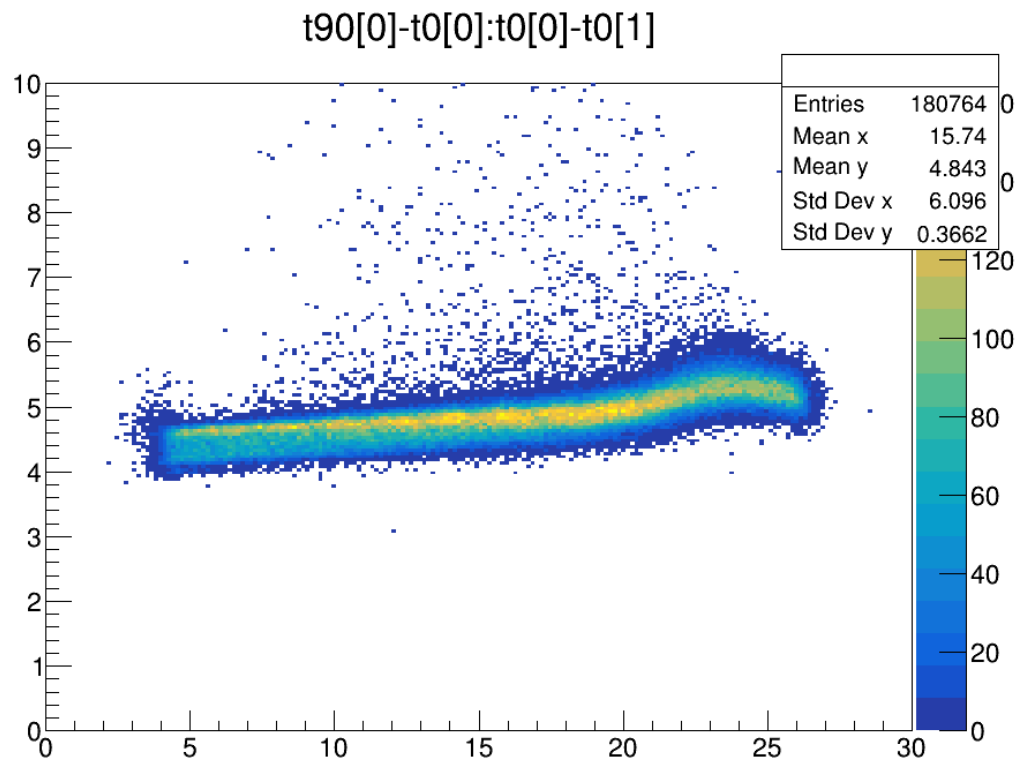
Risetime spread

- Risetime spreading is directly influenced by time resolution.
- Left : data , right : MC
- Height growing -> spreading reducing (poisson)



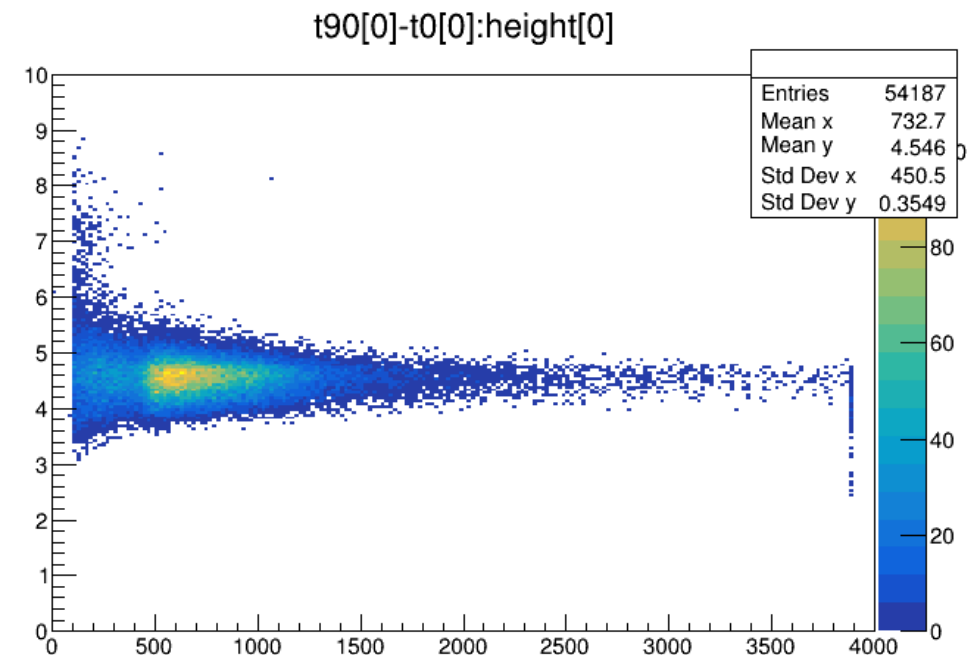
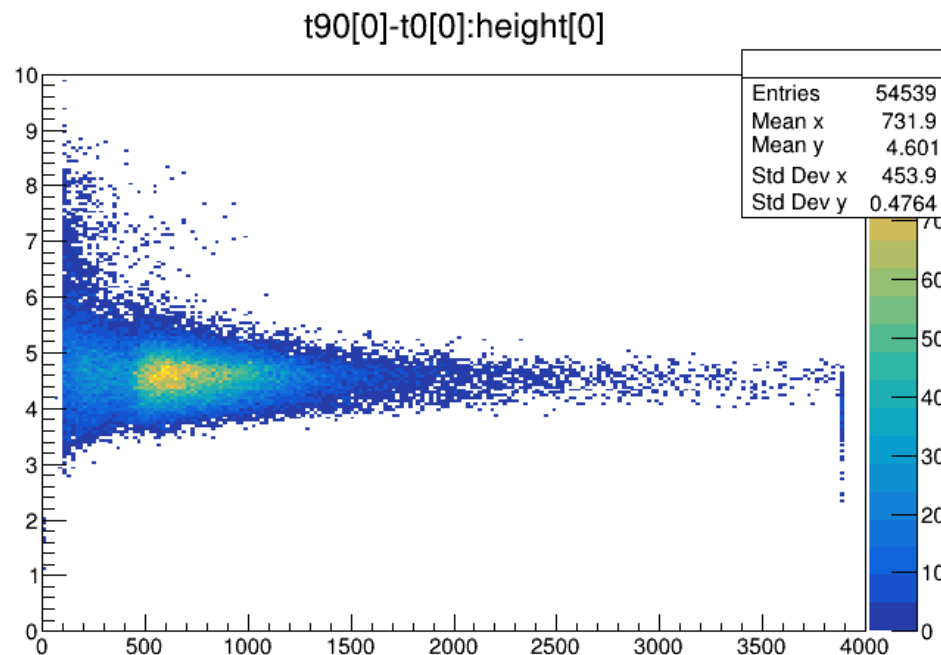
Risetime spread

- Risetime spreading is directly influenced by time resolution.
- Left : data , right : MC
- Spreading is almost same regardless of the position



Time resolution tuning

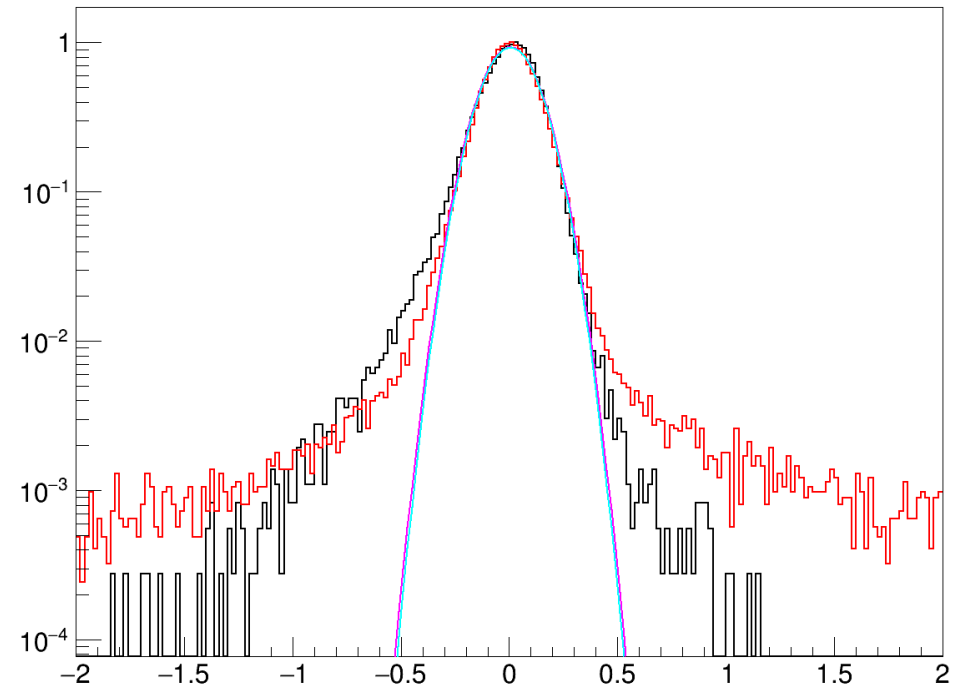
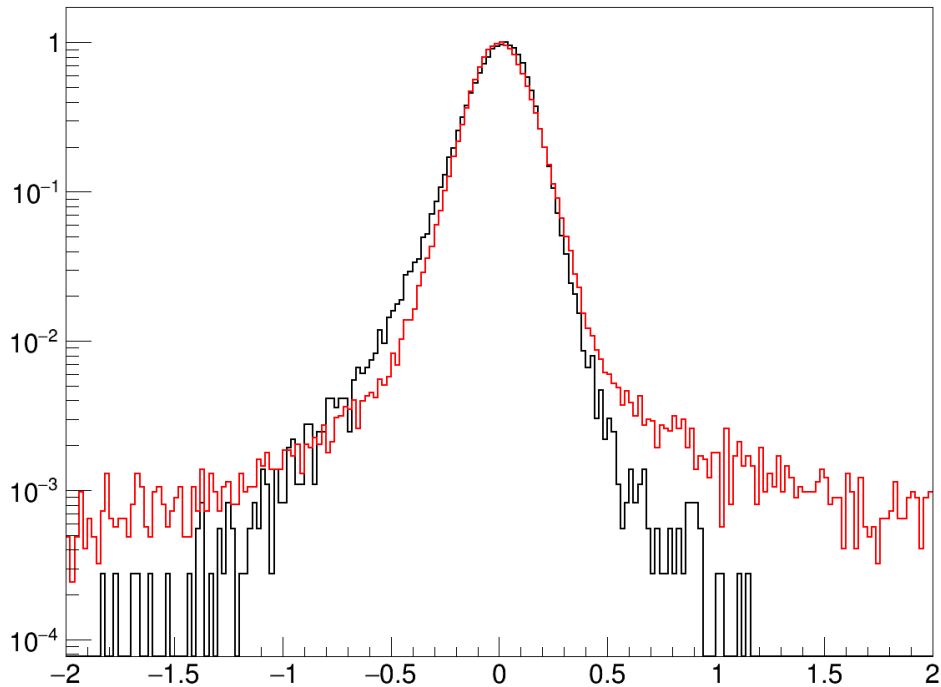
- $\sigma_{time} = \frac{\sigma_{noise}}{dV/dt}$
- σ_{noise} is given by poisson distribution but it is overestimated.
- Reduce poisson error to the level of $0.6 * (\text{templet height})$
- The value is calculated by the ratio of rise time spread of MC and data



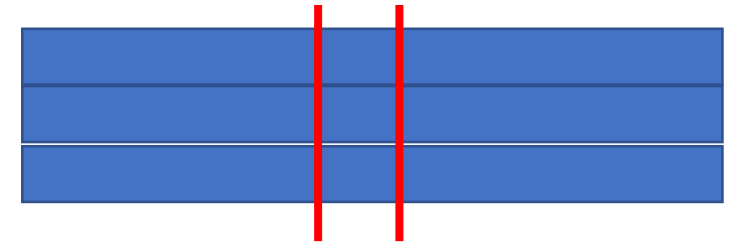
Reduced resolution

- No cut is given
- Black : MC, red : data

No cut	MC	data
Resolution	0.1232 ± 0.0005	0.1209 ± 0.0003

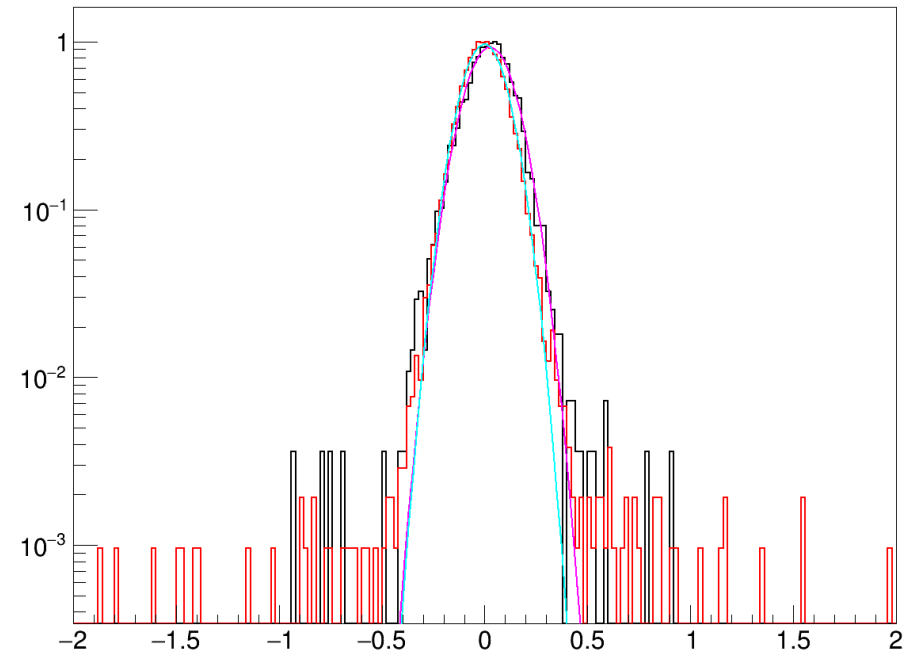
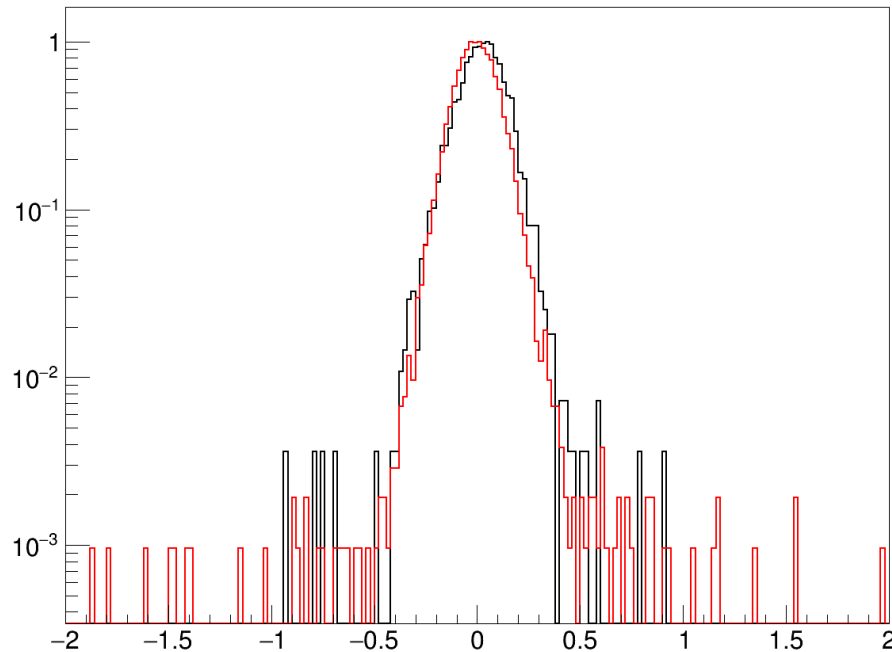


Reduced resolution



- the center cut is given.
- Black : MC , red : data

Cut	MC	data
Resolution	0.1105 ± 0.0015	0.1007 ± 0.0007



DL and the digitized simulation

- DL demands digitized simulation.
- For now, this version of digitized simulation will be offered.
- Trigger condition :
 - THR = 105 (~ 3 MeV)
 - Record length = 224 ns
 - Multiplicity = 2 (single track trigger)
 - FADC , TCB CW = 40 ns