CsI(Tl) Waveform Analysis
Calibration using the new model

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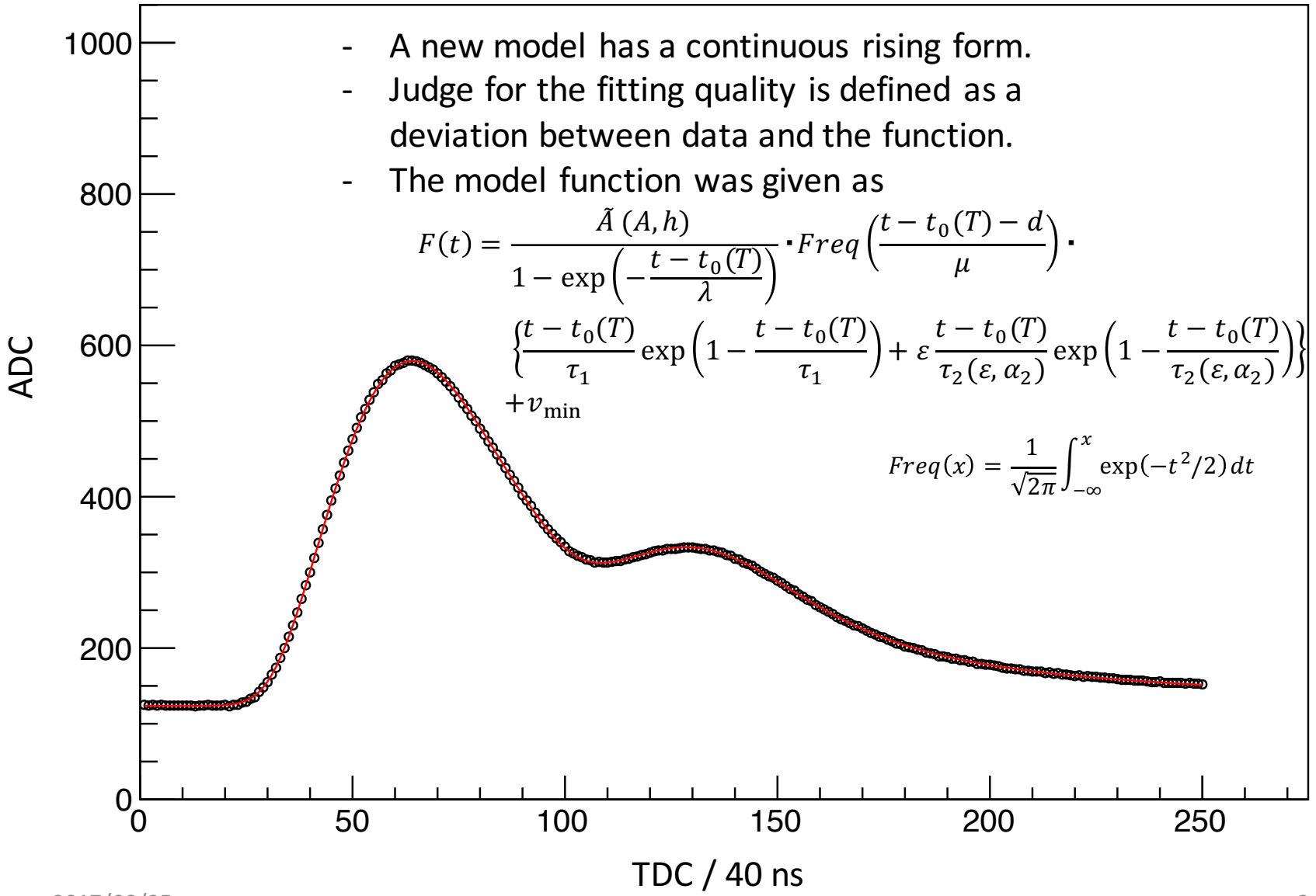
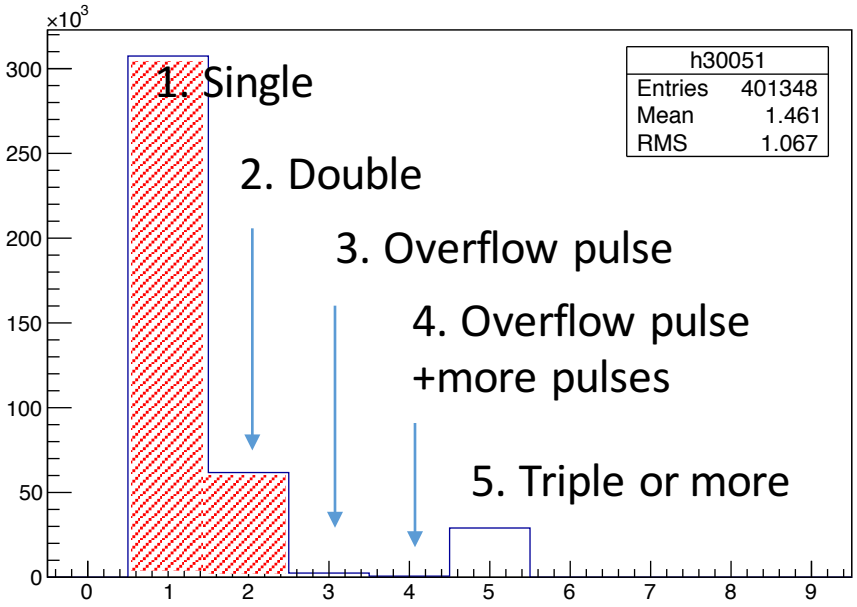
Double pulse Fitting

RUN 4519
$K_{\mu 2}$ event
$\mu \rightarrow e\nu\bar{\nu}$

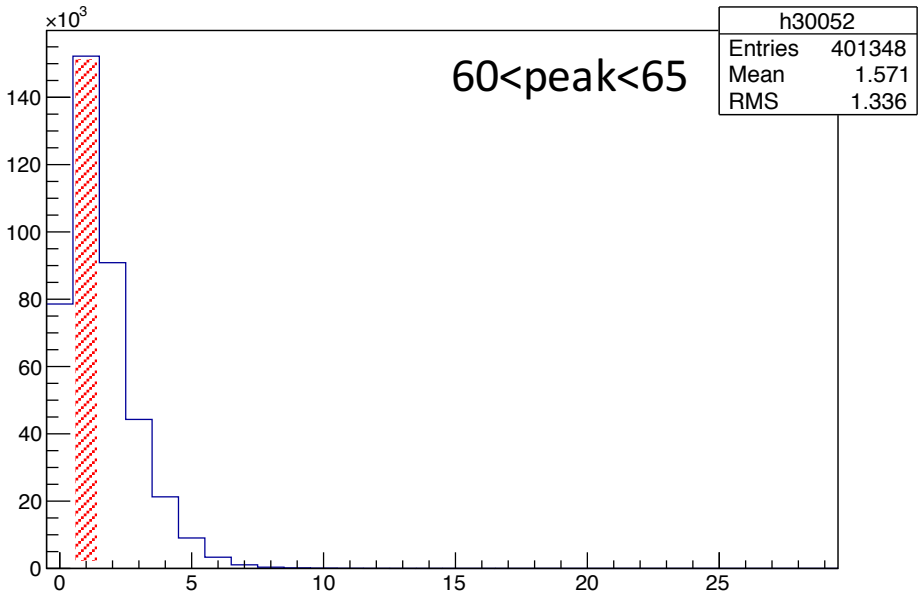


RUN4519: CsI Calib run

RUN 4519



Wave Id



Num. Hit Crystal

Wave id = 0 : this waveform has no pulse at 60-65 tdc/ 40 ns.

Id=1: Single pulse.

The good fit is defined as max. of dh = y – f(x) less than 5.

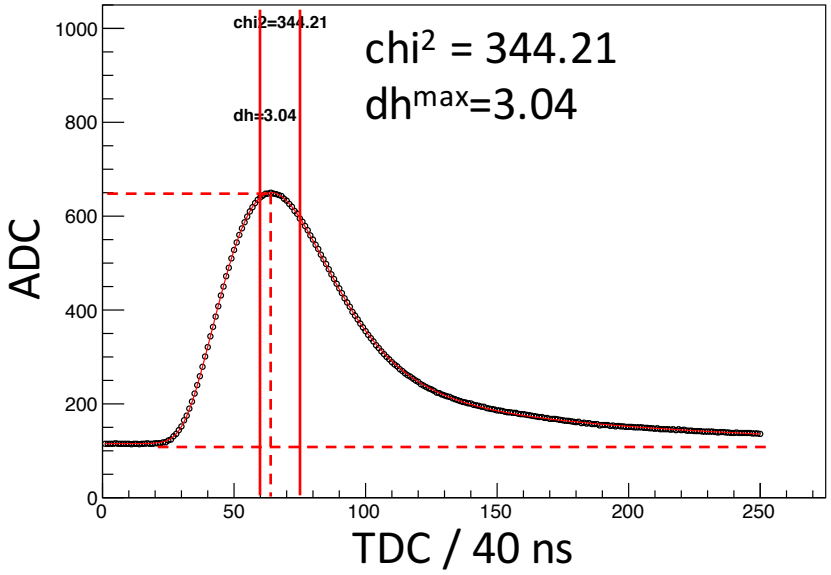
Id = 2: Double pulse

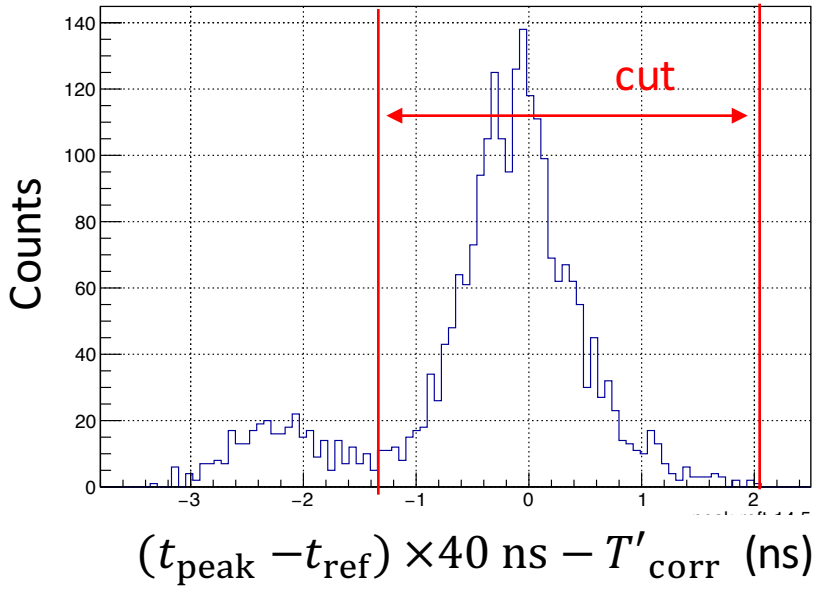
h2 > 1 adc and |t1 – t2| < 5 tdc in double pulse.

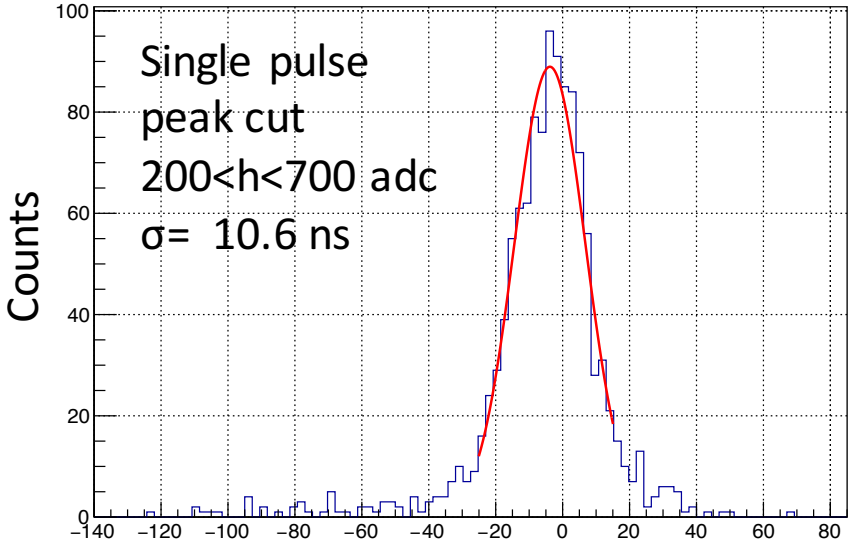
The good fit is defined as max dh less than 10.

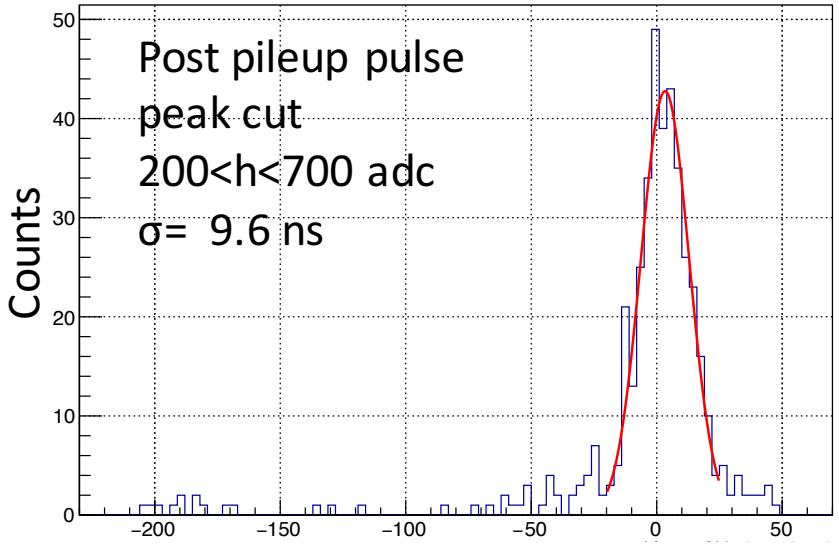
Timing resolution

RUN 4519



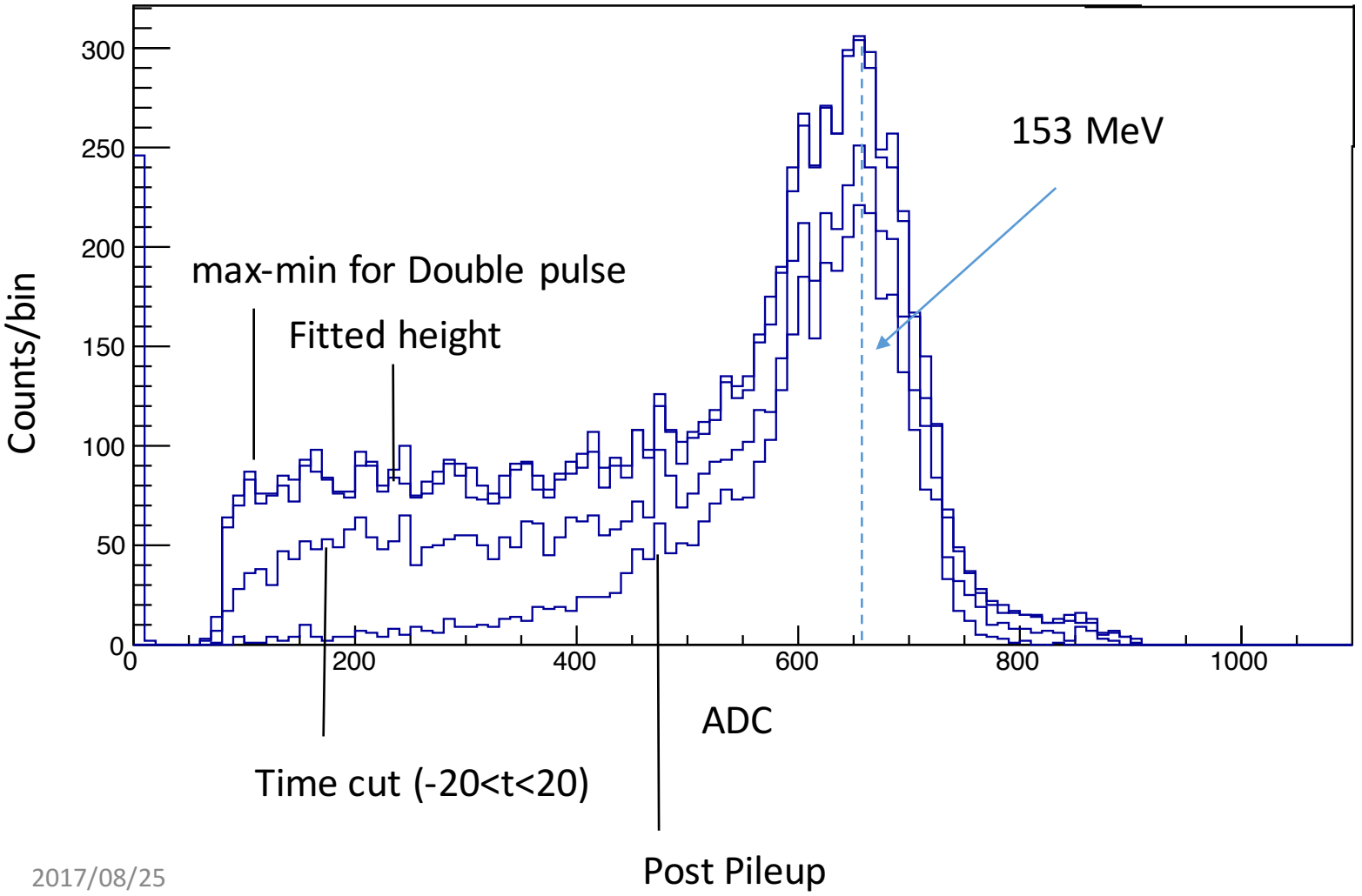




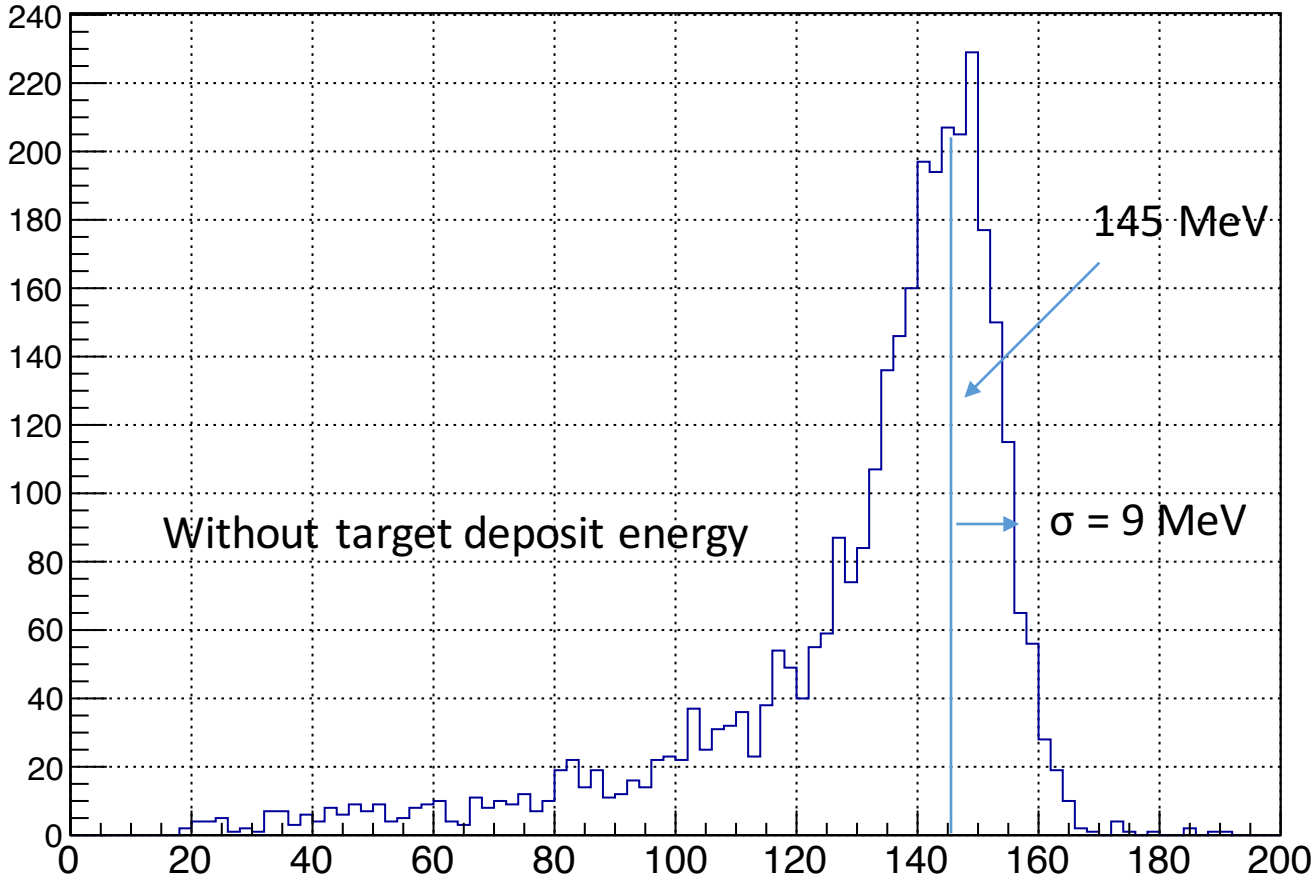


Kmu2 peak at Double pulse

$$t = (t_0 - t_{ref}) \times 40\ \text{ns} - T^{(1)}_{corr}(\text{ns})$$



CsI Energy Distribution



Summary

- New waveform model was imported to KEKCC.
- Time resolution was estimated to be
  σ = 10.6 ns (single)
  σ = 9.6 ns (Post pileup)
- Energy calibration is ready.

Next plan

- Correction of the reference time t_{ref} collision with height.
- The target deposit energy will be added to Kmu2 CsI Eγ.
- The CsI energy calibration will be finished at run 3059 – 3067, 4519-4557.
- Correction time t_{corr} in phys. run will be set.
- Ke2g study is started.