

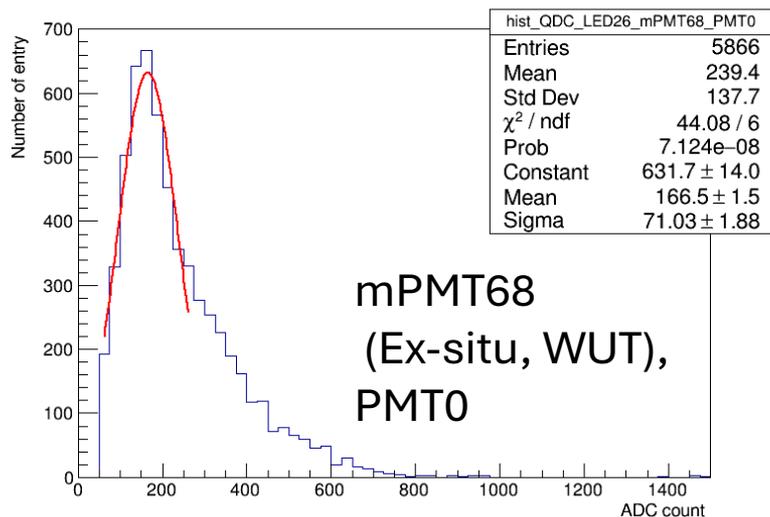
Status Report

Ryotaro Tsuchii

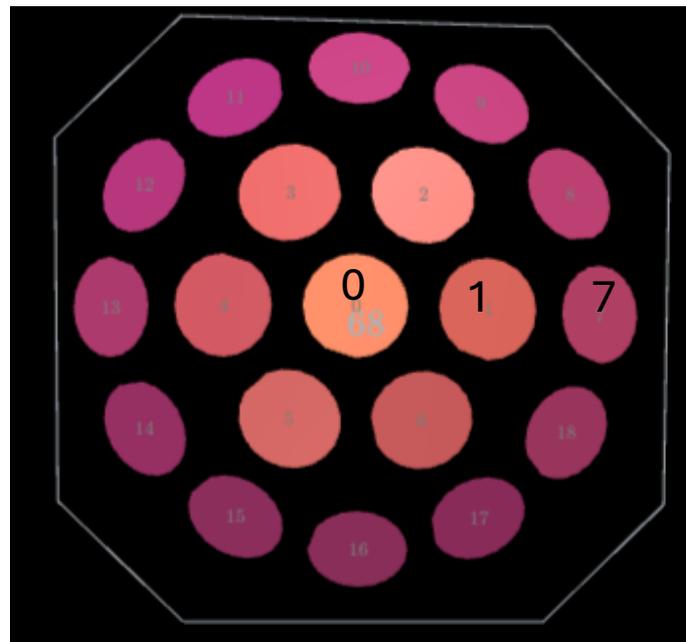
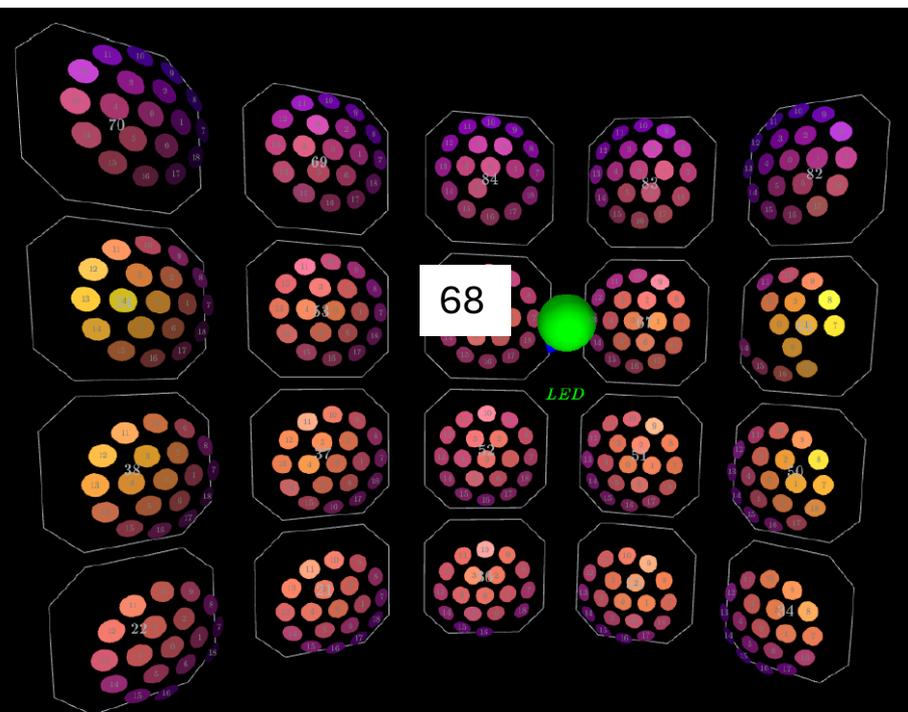
CIDeR-ML collaboration meeting

December 12, 2025

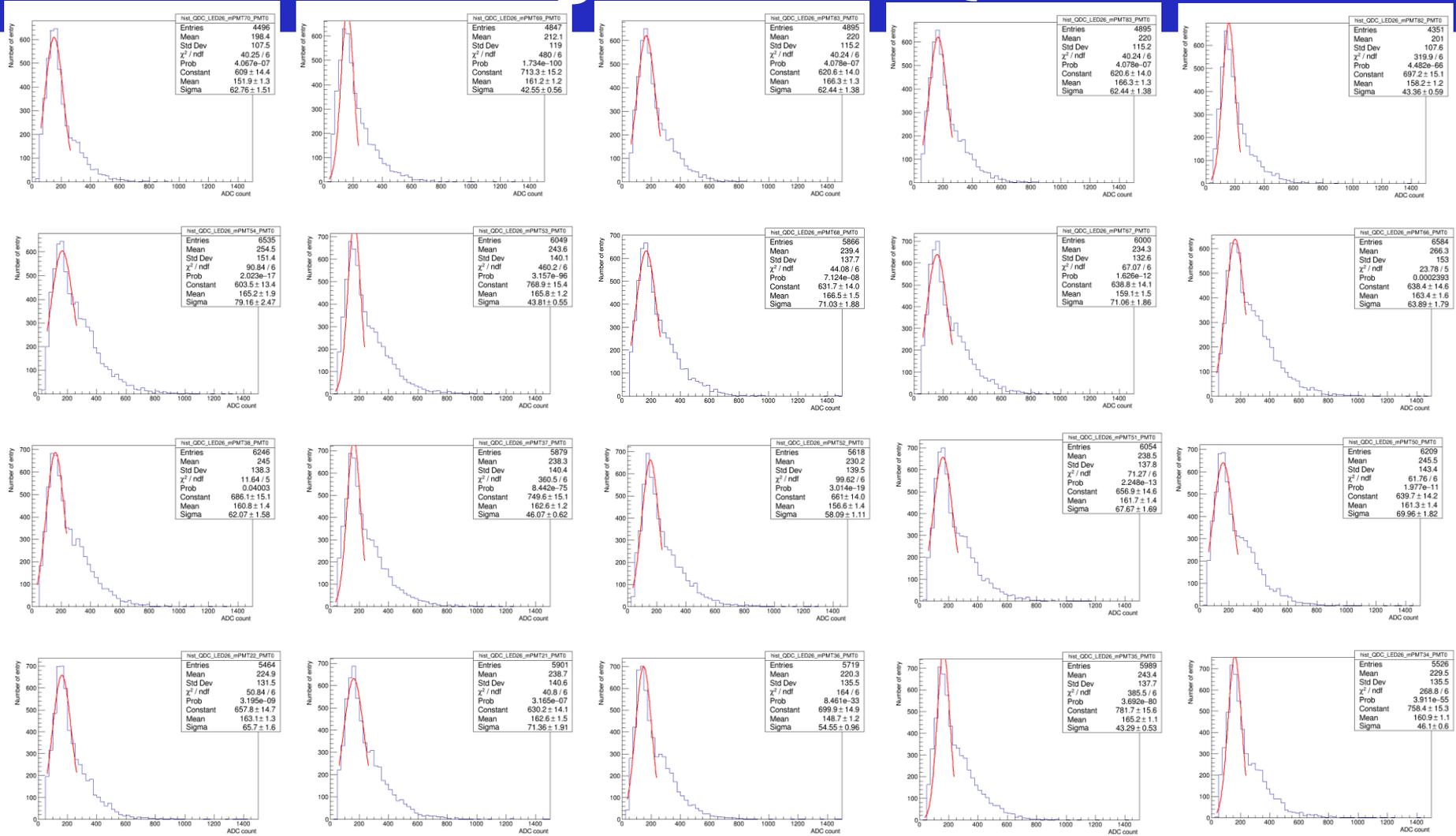
LED self-trigger data



- I checked LED run 2231 data:
 - LED card id: 26 (slot: 60)
 - Diffuser, 470 nm
- Plots charge distributions for each PMT.
 - The mPMTs have 4 types:
 - Ex-situ or In-situ
 - Made in TRIUMF or WUT.
- Fit the charge distribution by gaussian.



Fitting results of QDC

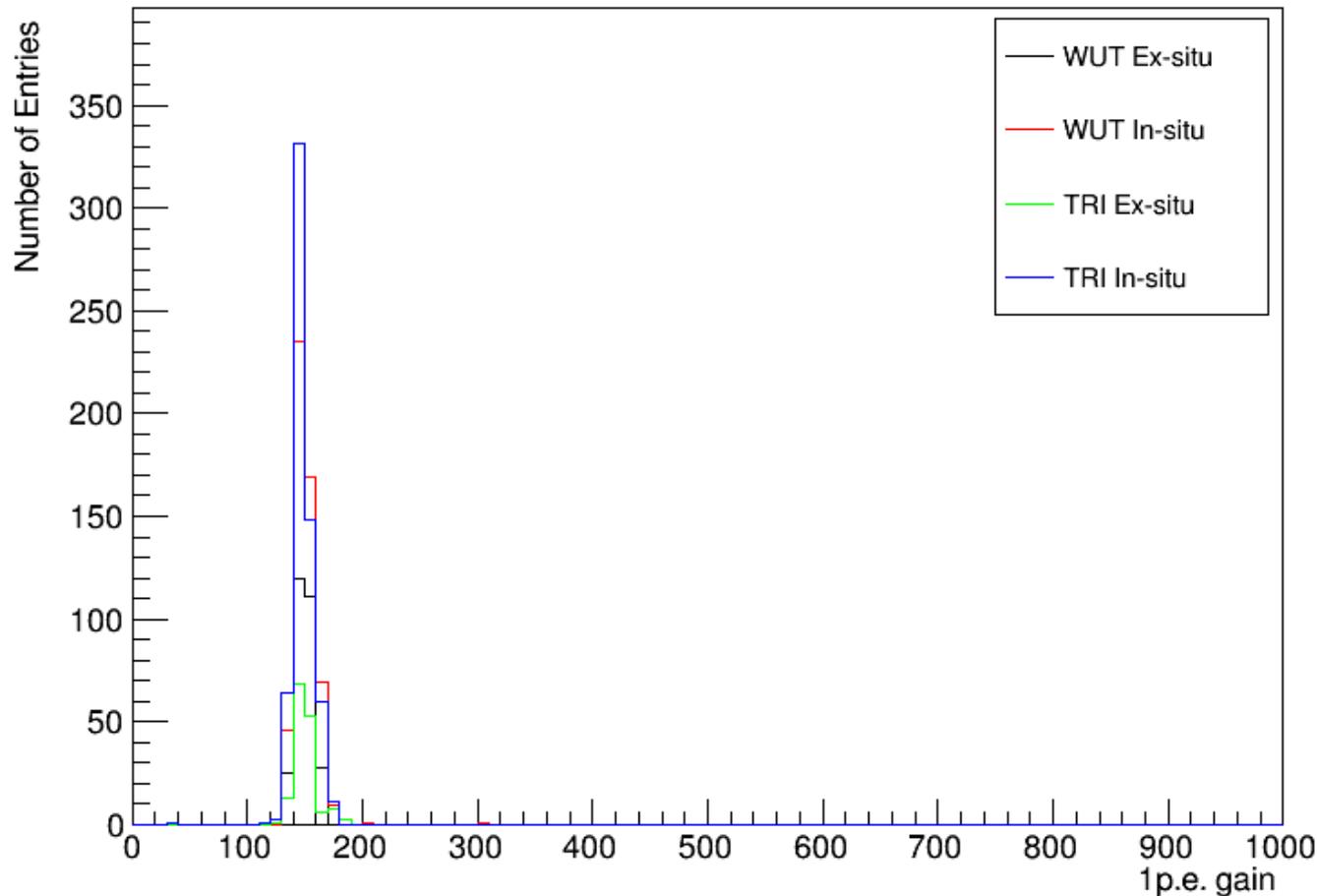


- Same placement as mPMTs on the previous page.
- Set the fitting range as the peak ± 100 .
- The range are too large for some mPMTs (need to tune).

LED

- I looked for the run data other than self-triggered data.
 - Software-trigger:
 - Located in /eos/experiment/wcte/wcte_tests/mPMT_led_events/ as dict file (pkl).
 - I understand how to read these.
 - Hardware trigger (External trigger):
 - I could not find hardware-trigger run of LED in the spreadsheet and the server.
- I don't fully understand why the self-trigger data was insufficient for OpticSiren.
- ToDo:
 - Plot the Gaussian peaks as 1p.e. gains for each mPMT category.
 - Check data qualities.
 - Make MC.
 - For some reason, it seems the job wasn't properly submitted to the lxplus job system, but since no error logs were generated, the cause remains unknown.

1p.e. distribution



- Plotted the distribution of the gaussian peaks as single p.e. gains for each mPMT category.