NCU meeting
2/27

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Weekly meeting

- 1. The DAQ of the experiment is fixed already.
- ➔ Start data taking from next Monday

- 2. The codes used in finding the energy spectrum coming from the Ge detector and translated into the ID of the certain kind of the nuclear are explored already.
- ➔ Can produce the plot with the old data

- 3. Proceed the visa application
- ➔ After the health insurance is confirmed, the process will be initiated.

Weekly meeting

- Fixed the smallest pT problem
- ➔ Somehow I took a stupid mistake
- ➔ Now is ok and will produce the right picture laters.

Problem: How do we know the source of the radiation?

- Since from the scratch, we only have the receiver with its own unit of energy but not the real energy of the coming photons.

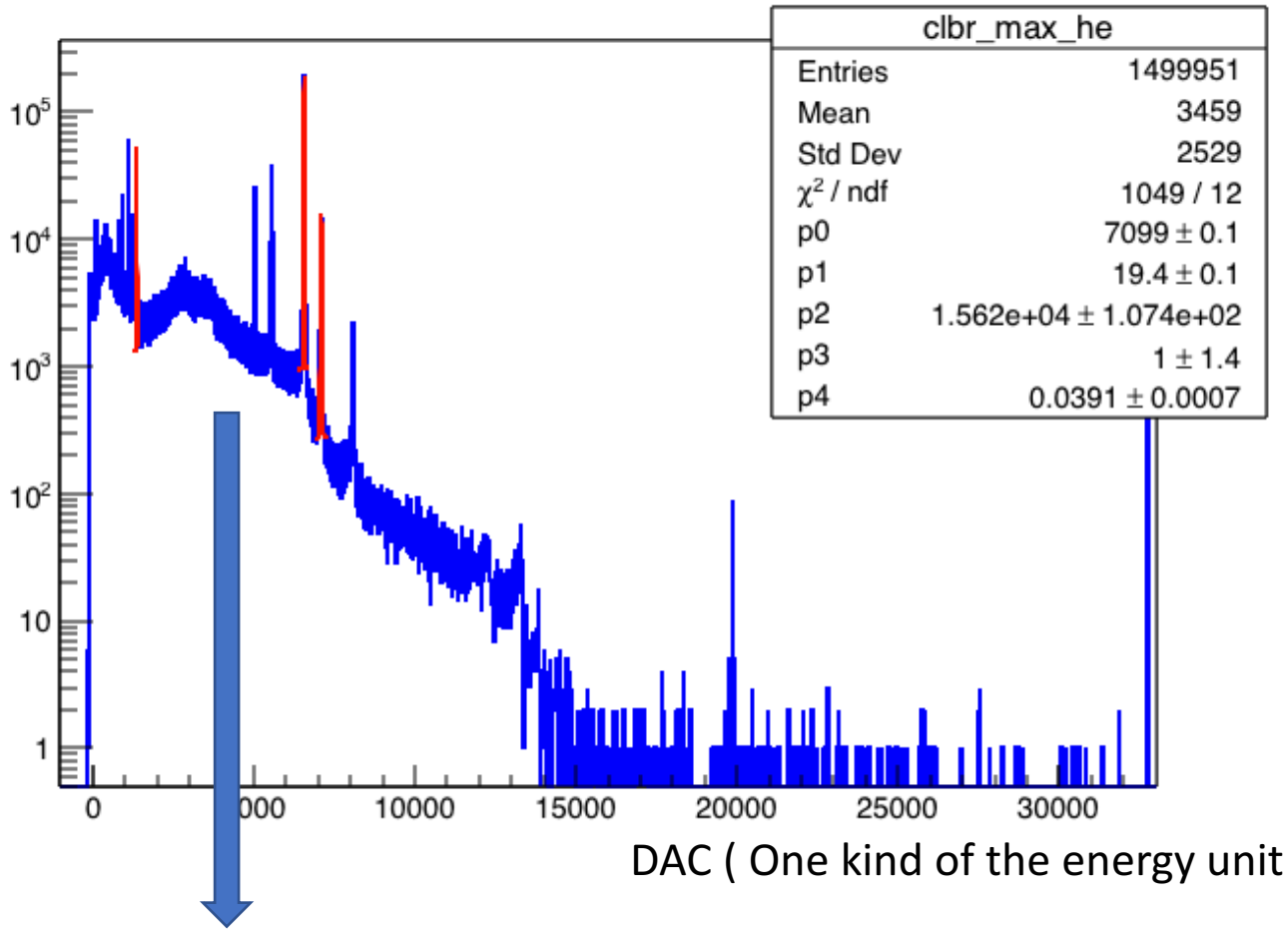
- We need to use the well-known spectrum of the certain resource to calibrate the energy of the radiation with our equipment.

- For example
- → We can use the Ba133 to find the spectrum
- → Then use the already-calibrated line to detect the new one.

Energy spectrum

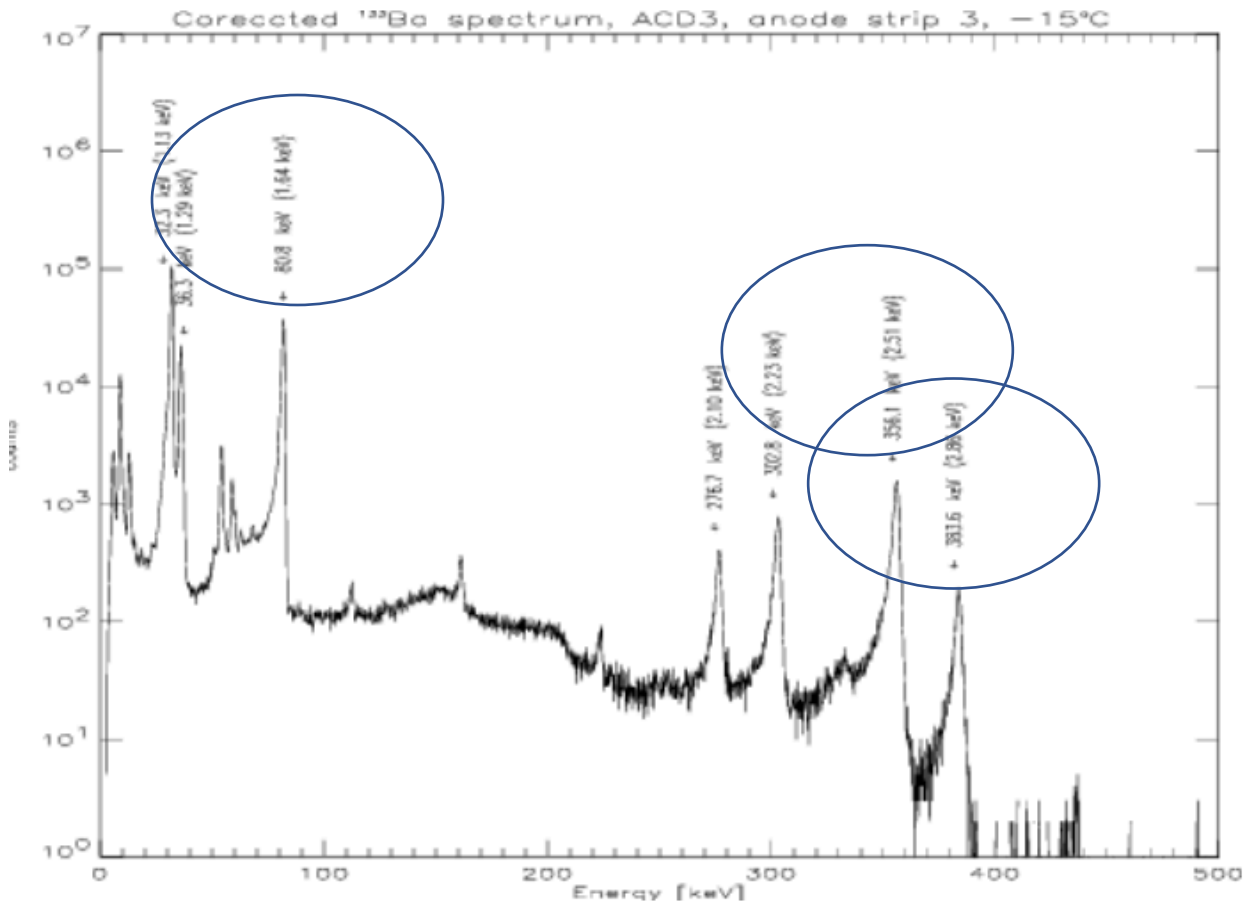
Ba133 for the calibration

Event number

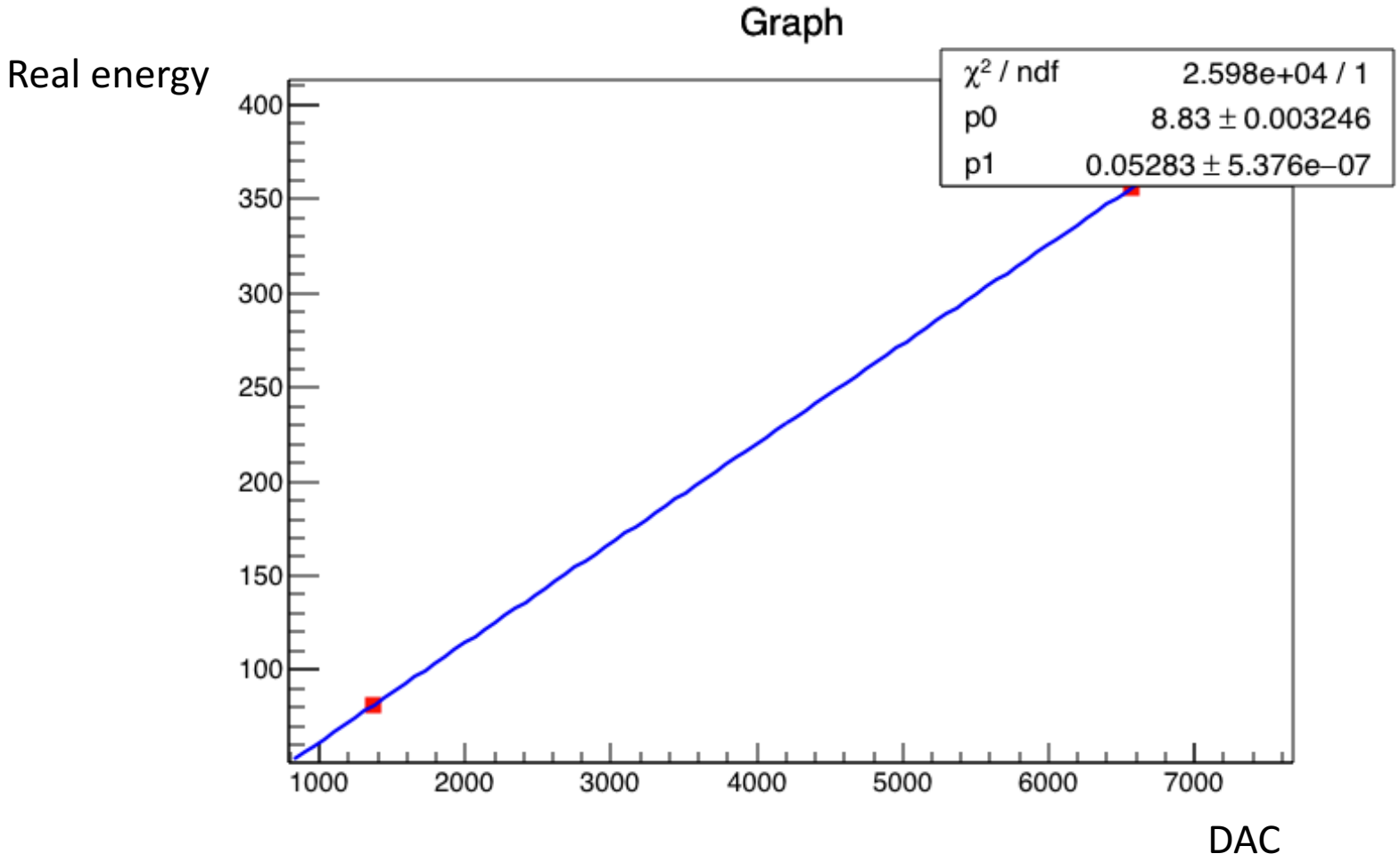


DAC (One kind of the energy unit from the equipment)

Three well-known energy peaks



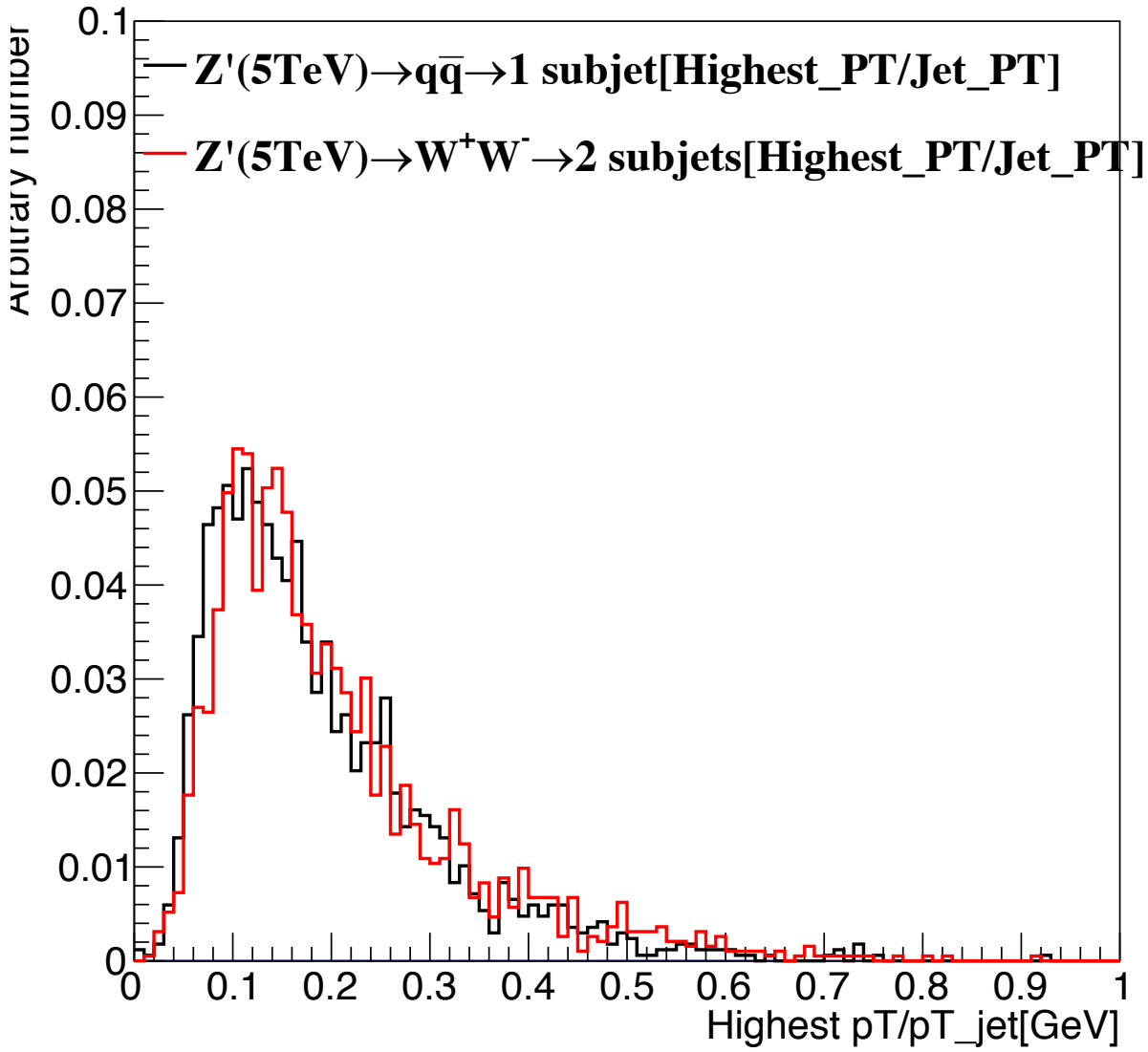
We can know the correspondence between the real energy and the DAC



FD project

- Stupid mistake: Forget to open the jet-axis cut…
- The problem: I forgot to open the jet_axis_eta<0.6 cut, but I already open the cut about cutting off the particle outside the eta>1 since the particle outside the HCAL barrel won't be included.
- (Found with the smallest pT/ PT jet)
- ➔ Result in:
- Some jets actually are out of the eta>1 but only 1~2 particles are included in the eta<1, so those unwanted events are extracted.
- ➔ Now is fixed and waiting for the validation of the plots.

a


Z'(5TeV)→qq̄→1 subjet[Highest_PT/Jet_PT]
Z'(5TeV)→W+W-→2 subjets[Highest_PT/Jet_PT]
Arbitrary number
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Highest pT/pT_jet[GeV]

To-do list

- 1. Data taking in the next week (Was fixed yesterday.)

- 2. Will learn about handling the data coming from the DAQ
- ➔ High Gain, Low Gain, and so on
- ➔ Decode them and store into a bunch of the trees

- 3. Would like to do the energy resolution studies with those data

- 4. Keep proceeding on the FD papers.