

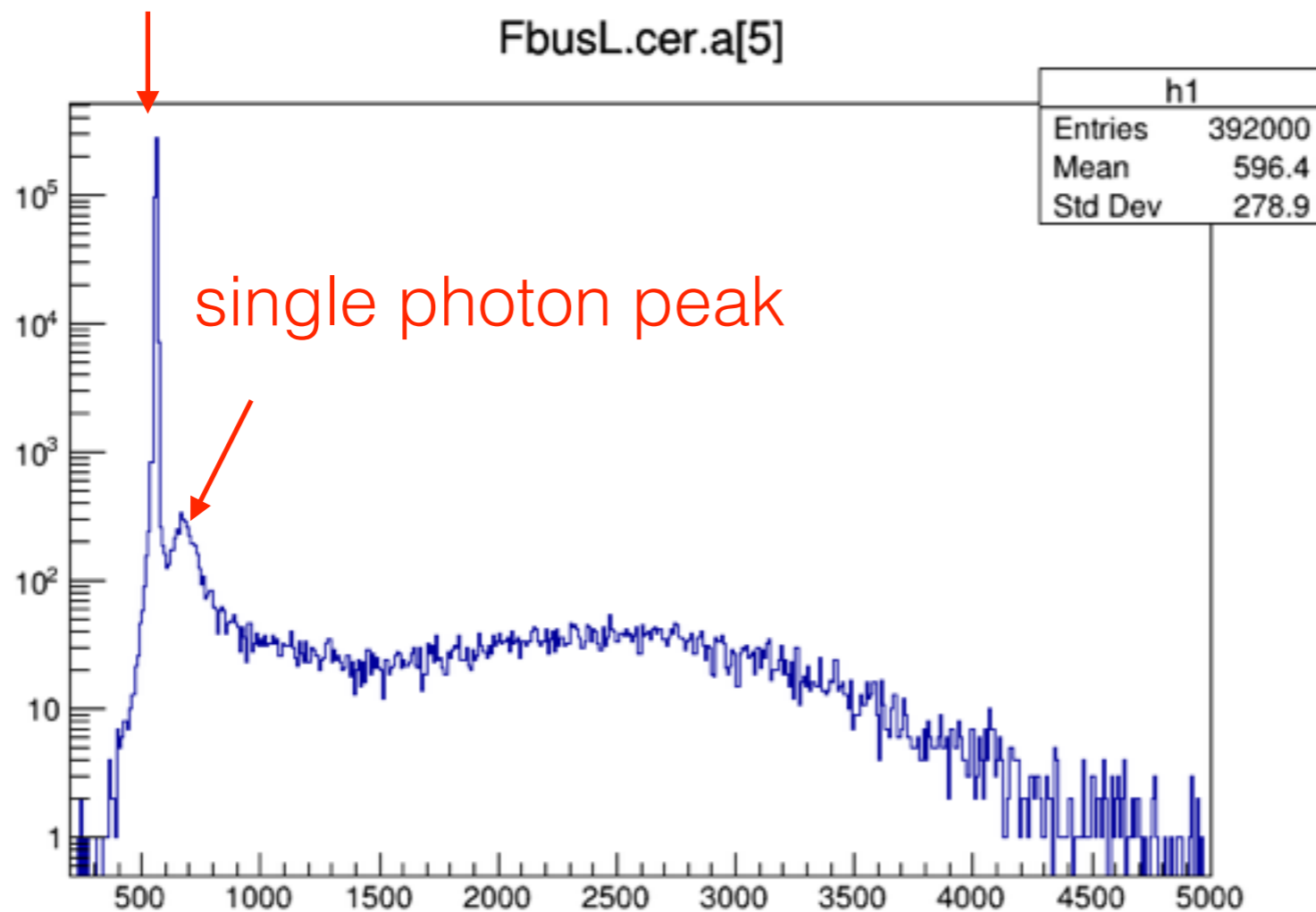
Cherenkov, Scintillator ADC calibration

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ADC calibration purpose:

1. find the pedestal value; \longrightarrow **ped**
2. make the PMTS of one detector has same corresponding; \longrightarrow **gain**

pedestal



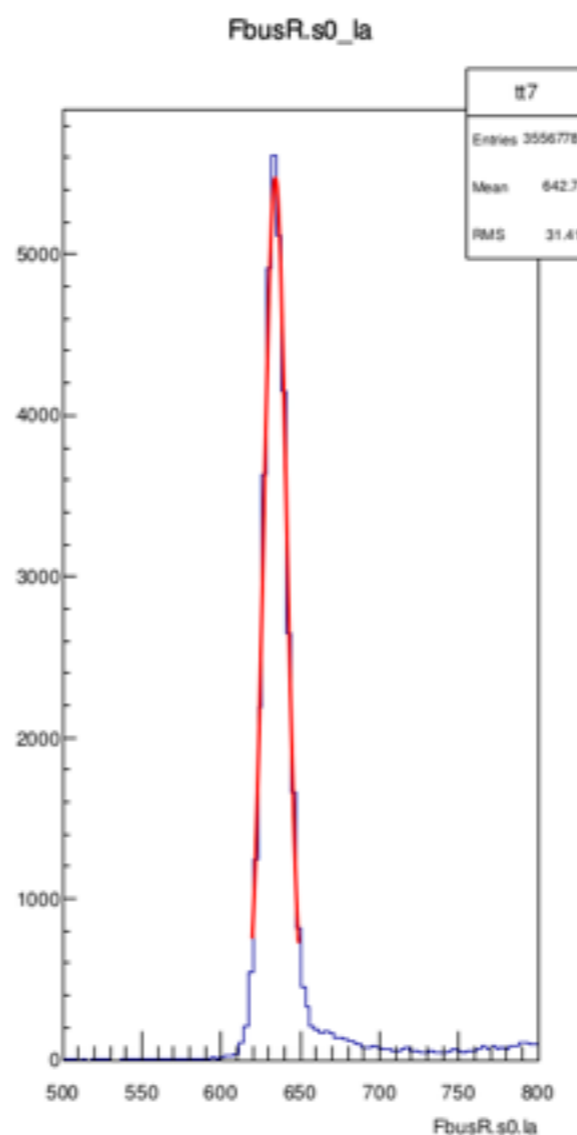
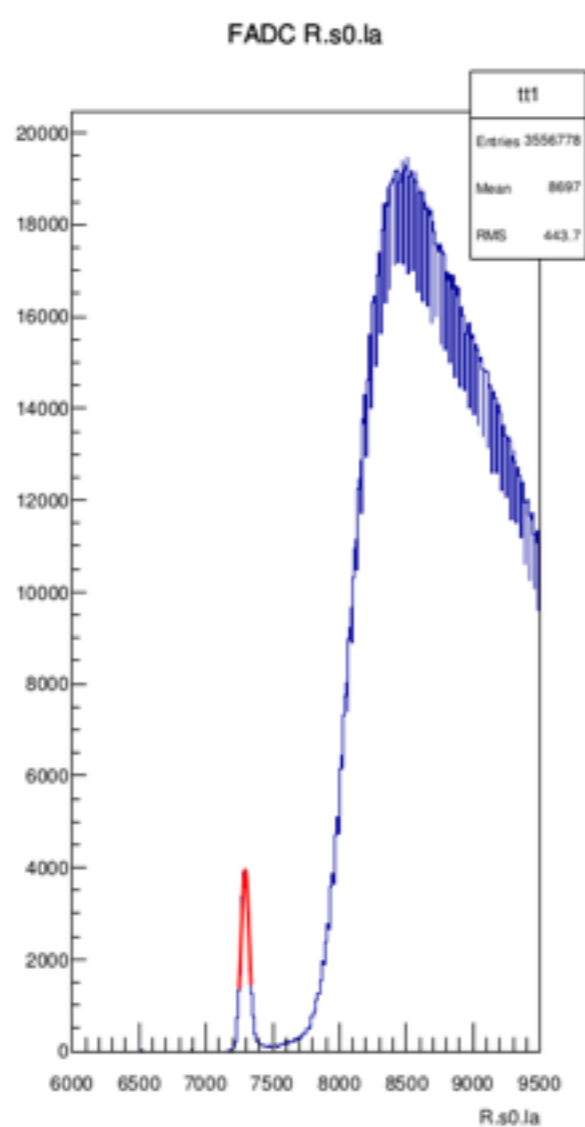
Pedestal:

- **Use raw ADC spectrum:**

FADC: L.cer.a; L.s2.la; L.s2.ra; L.s0.la; L.s0.ra;

FastBus: FbusL.cer.a; FbusL.s0.la; FbusL.s0.ra;

- **Fit the pedestal peak by using Gaussian function;**



gain match

- For one detector, we need the sum ADC from all PMTs;
- different PMTS respond differently to same signal;
- gain match all PMTs' signal peak to one value;

- **FastBus ADC gain:**

- 1). Using raw ADC spectrum;
- 2). Fit single photon peak value:
 - Cherenkov: Gaussian function;
 - Scintillator: Landau function;
- 3) gain = $N/(\text{peak_value} - \text{pedestal})$;

Cherenkov: both LHRS and RHRS make single photon peak to 100;

S0: LHRS match peak to 250; RHRS to 550;

- **FADC ADC gain:**

1). pedestal for each event is read from hardware and it's automatically used in Analyzer;

2). use pedestal subtracted ADC spectrum to fit the photon peak;

- L.cer.a_p; L.s2.la_p; L.s2.ra_p; L.s0.la_p; L.s0.ra_p;
- Cherenkov: Gaussian function;
- Scintillator: Landau function;

3) gain = N/peak_value;

S2: LHRS peak match to 300; RHRS to 170;

S0: LHRS peak match to 400; RHRS to 900;

Cherenkov: both LHRS and RHRS match to 300;

