

PDS time stability - II

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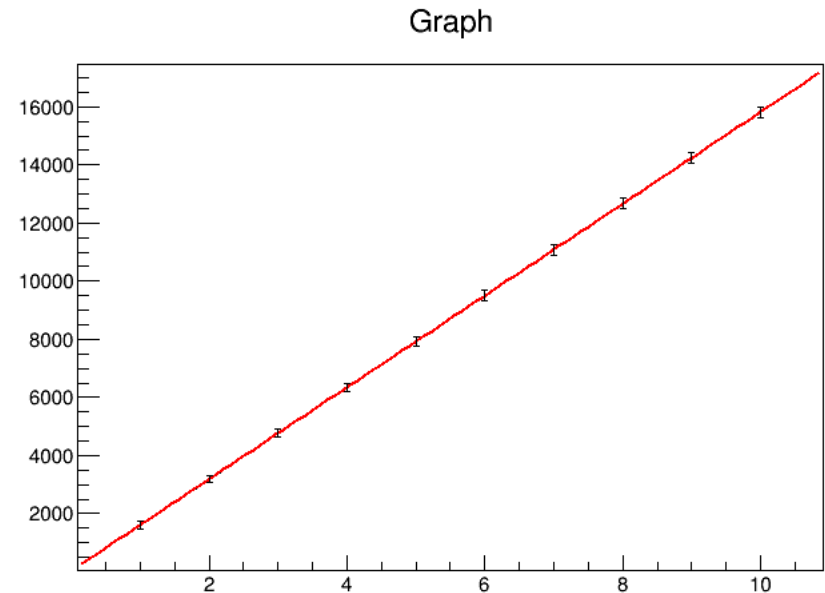
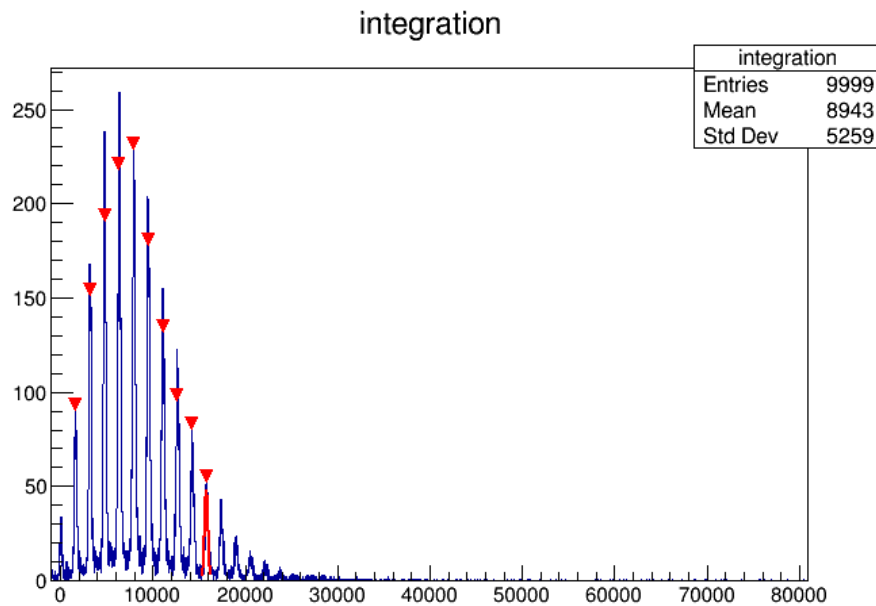
Analyzed runs

| # Run | HV (V) | Bias | Pulse Height | Date |
|-------|--------|---------|--------------|------------|
| 6848 | ? | Nominal | 577 | 20/02/2019 |
| 7224 | 0 | Nominal | 577 | 19/03/2019 |
| 7447 | ? | Nominal | 577 | 31/03/2019 |
| 7461 | ? | Nominal | 577 | 01/04/2019 |
| 7475 | ? | Nominal | 577 | 02/04/2019 |
| 7651 | ? | Nominal | 577 | 24/04/2019 |
| 7726 | ? | Nominal | 577 | 20/05/2019 |
| 7944 | ? | Nominal | 577 | 21/05/2019 |

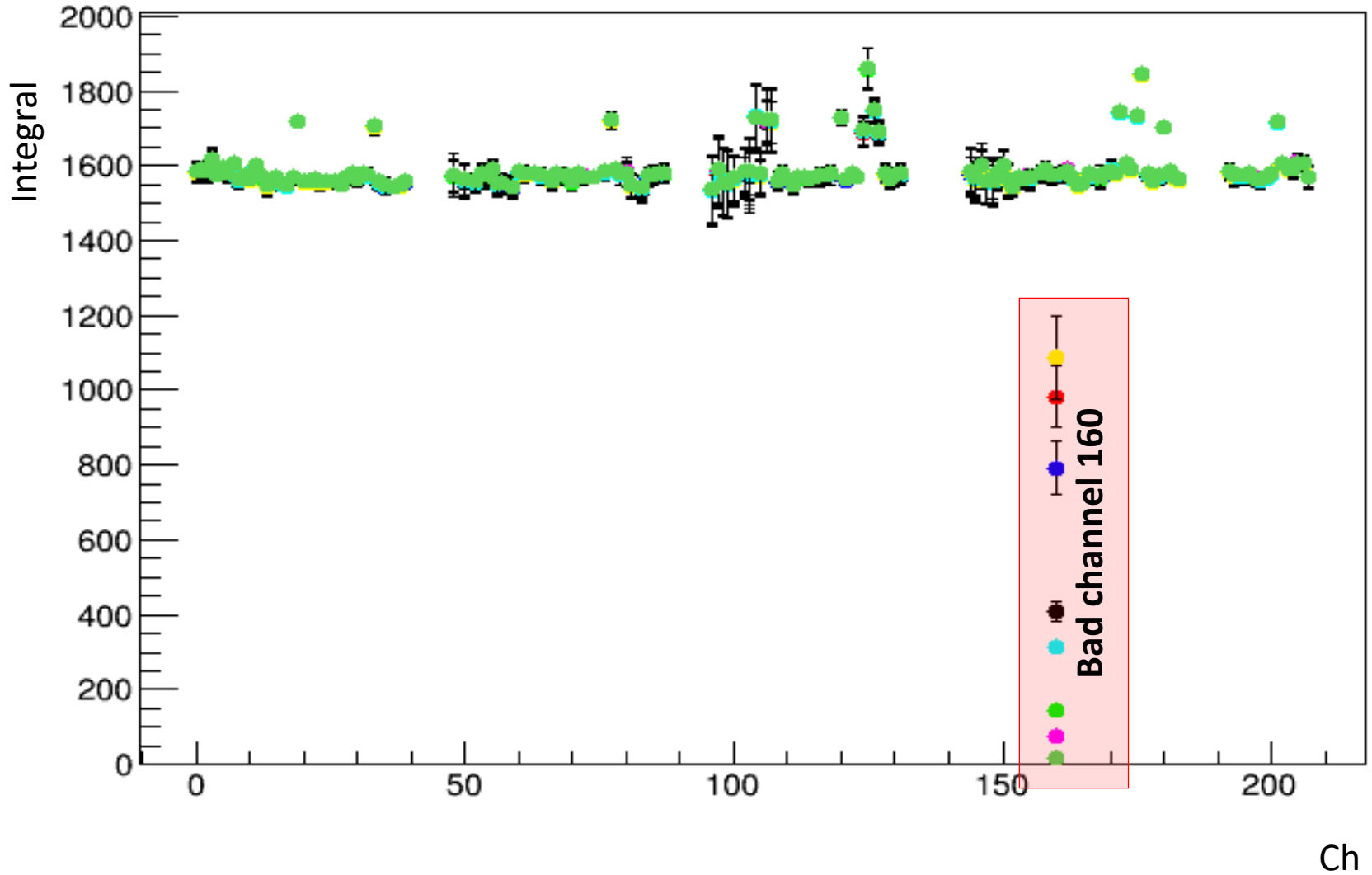
- Calibration of channels
- Gain vs Time
- Light collection vs time

SensL channel calibration

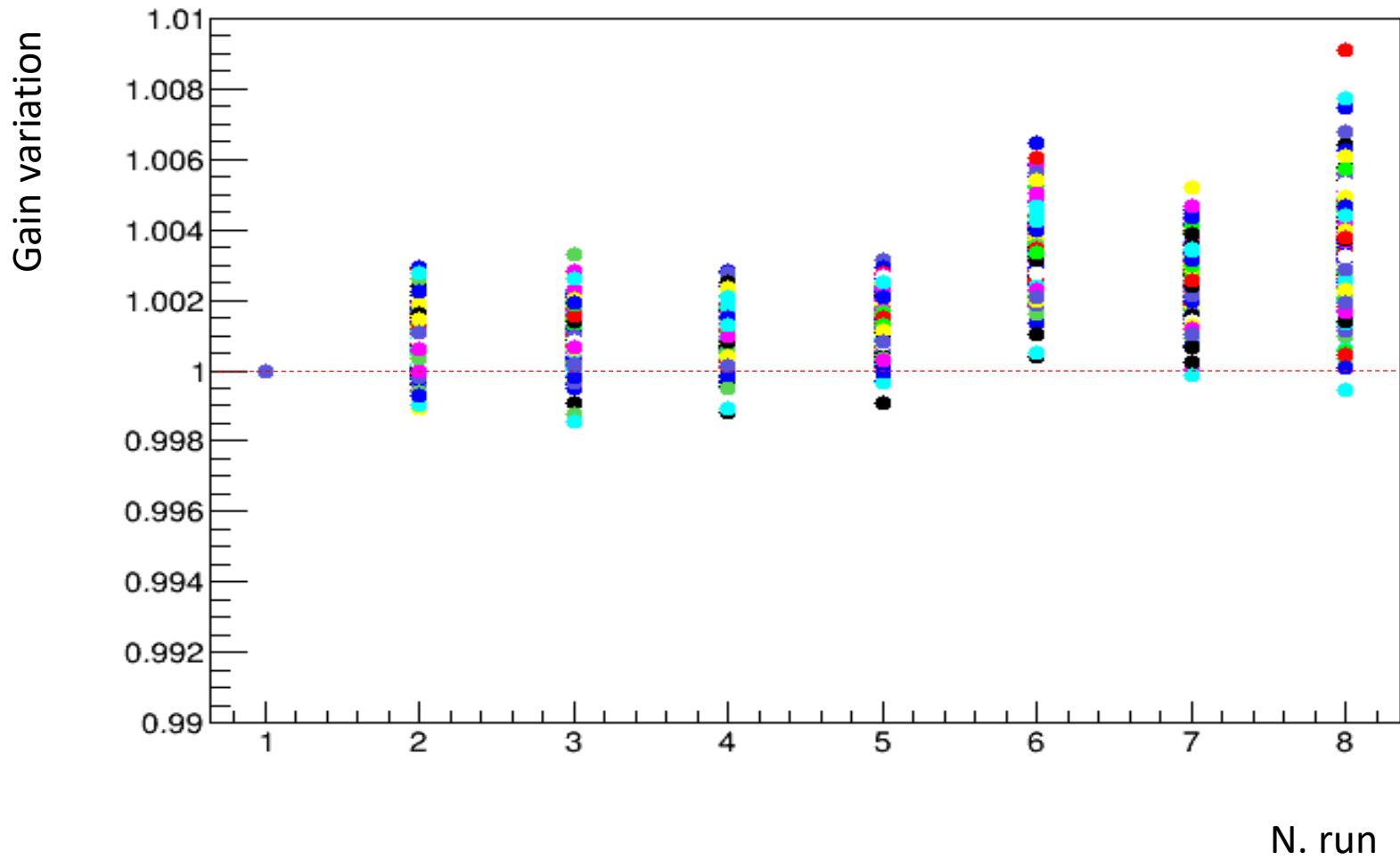
- Taking distributions from preprocessed data
- Peak finder giving as much as possible photo-electrons peaks
- Linear regression to find out calibration



Gain

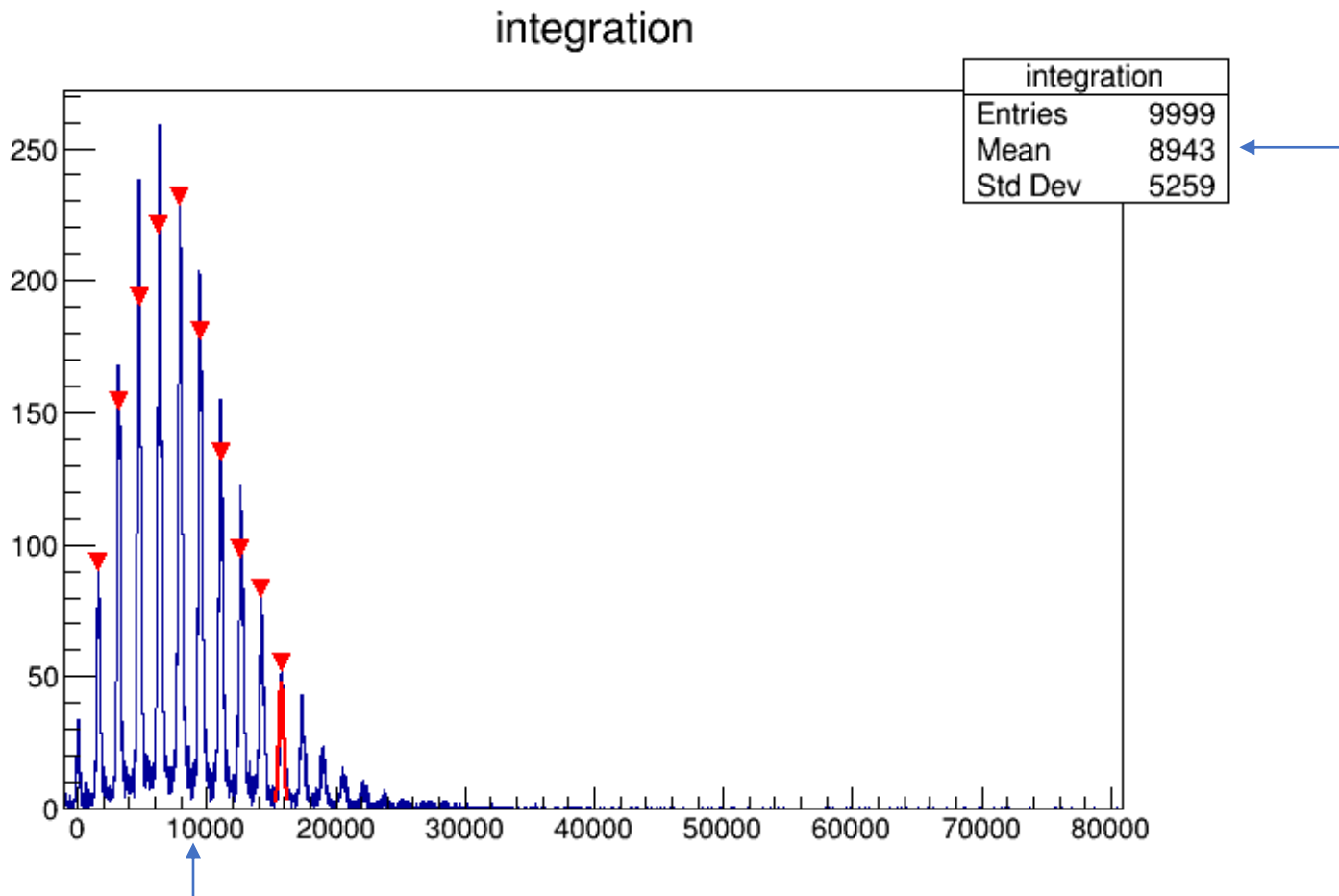


Gain vs time



Light collection

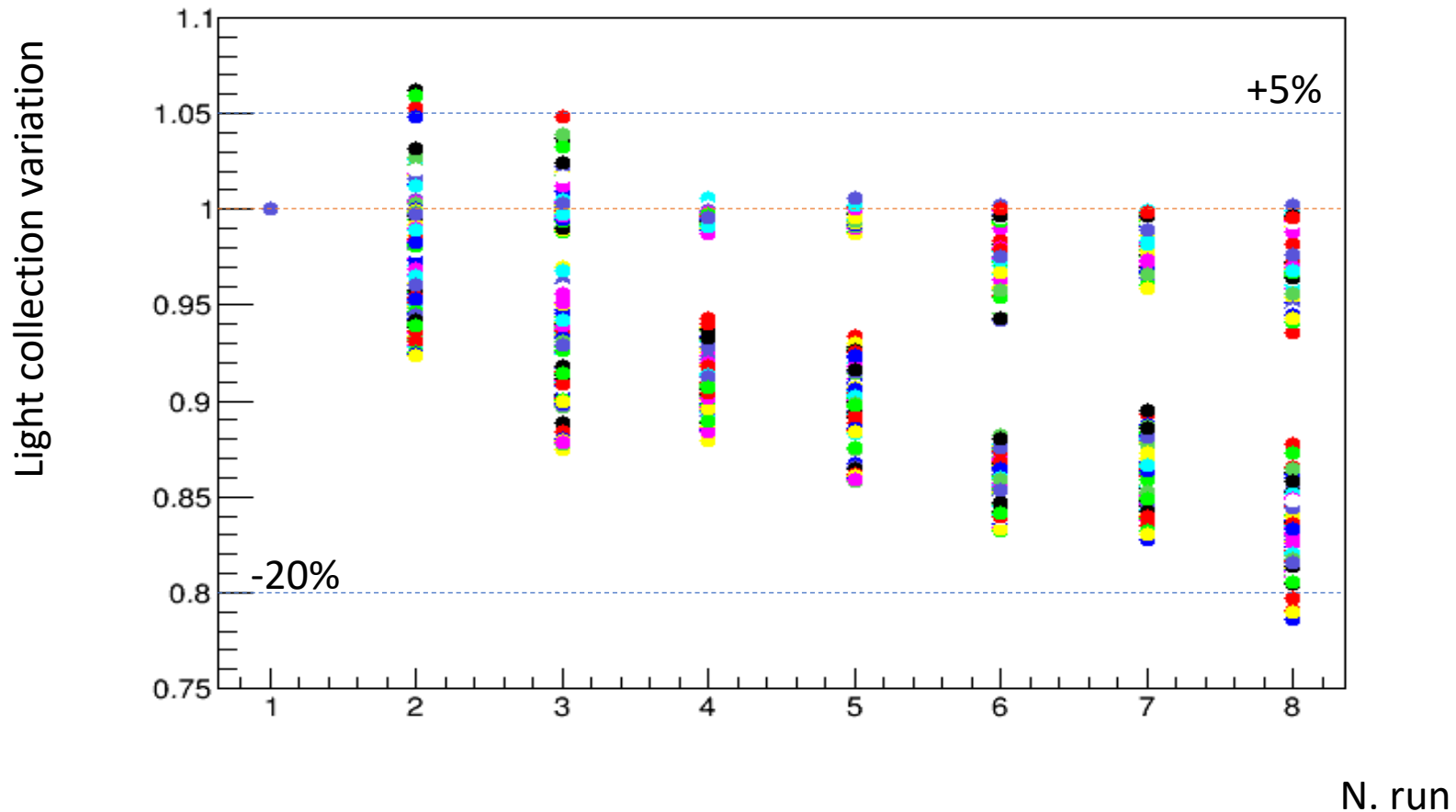
- Average number of incoming photons used as parameter
- $n_{\text{ph}} = \text{Mean} / \text{Gain}$



Light collection

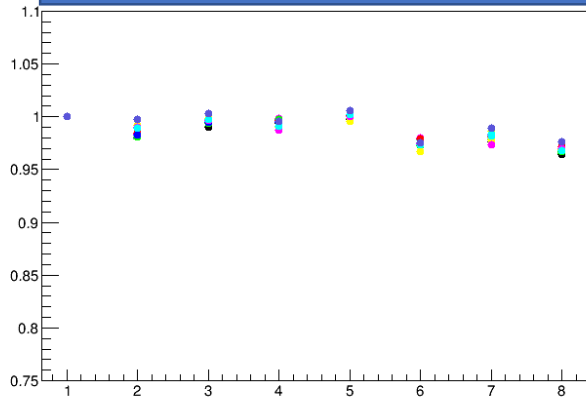
- The light collected shows differences between runs
- Let's consider the ratio:

$$r = \frac{n_{ph}}{n_{ph \text{ of } 1^{st} \text{ run}}}$$

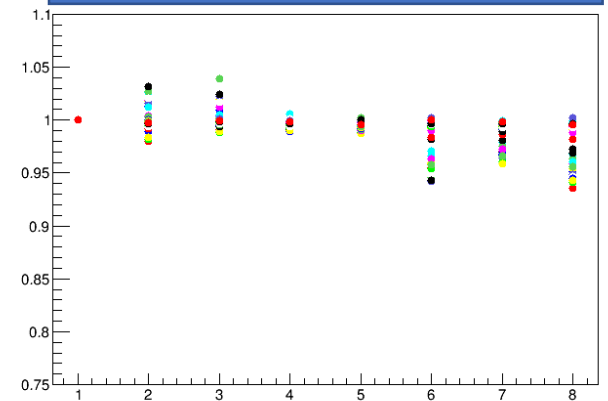


Light collection

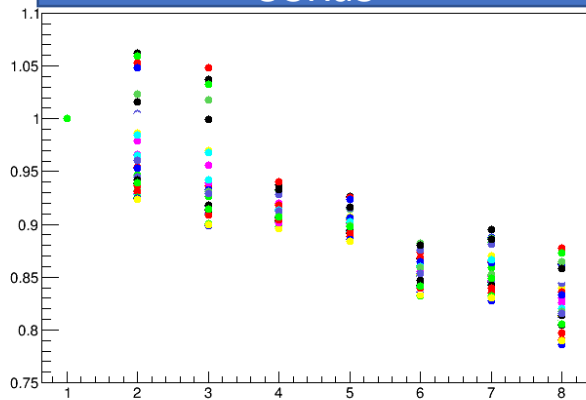
USDaS



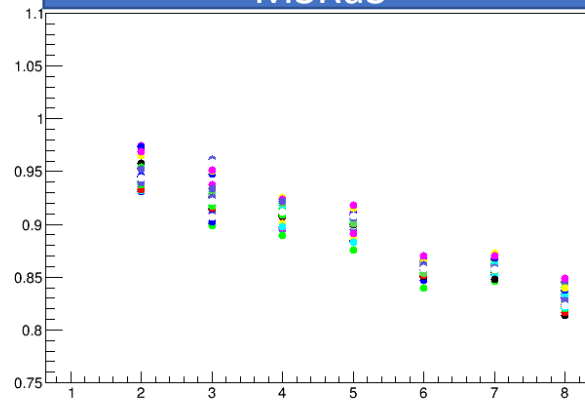
DSDaS



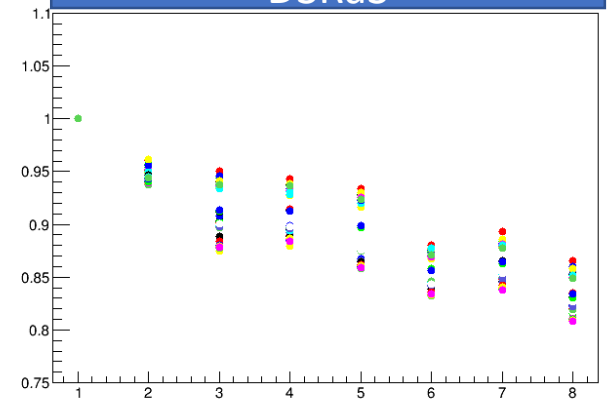
USRaS



MSRaS

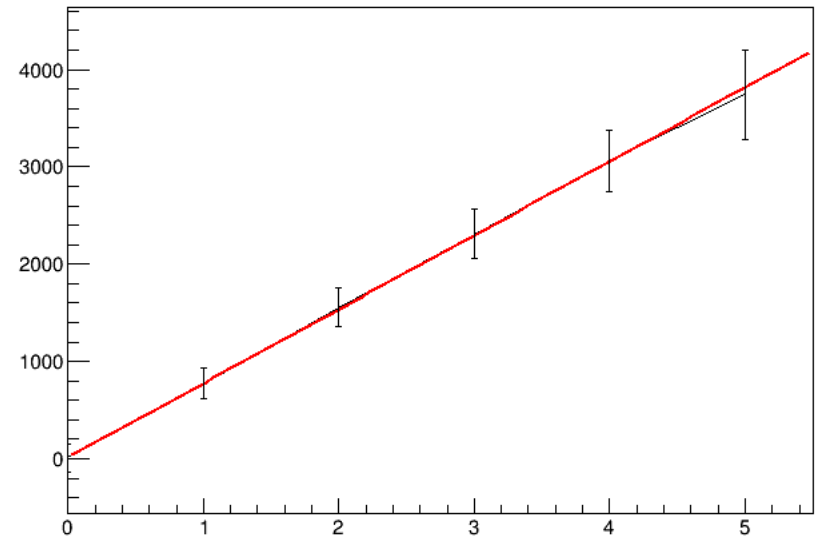
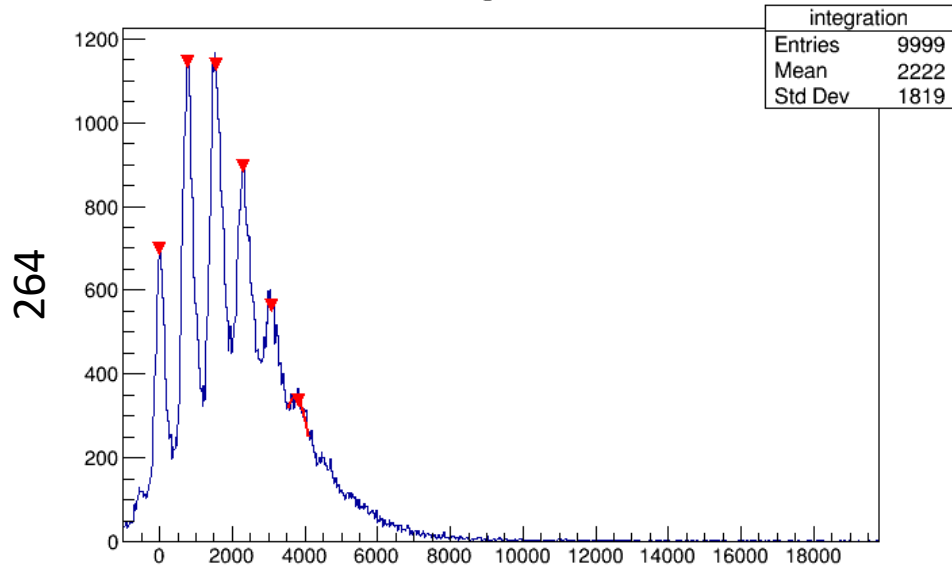


DSRaS

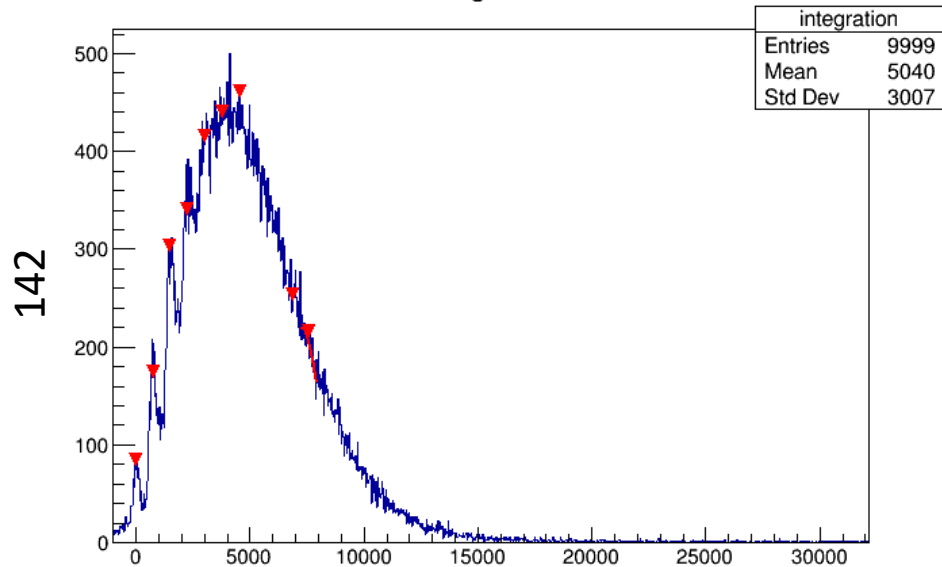


Arapuca channel calibration

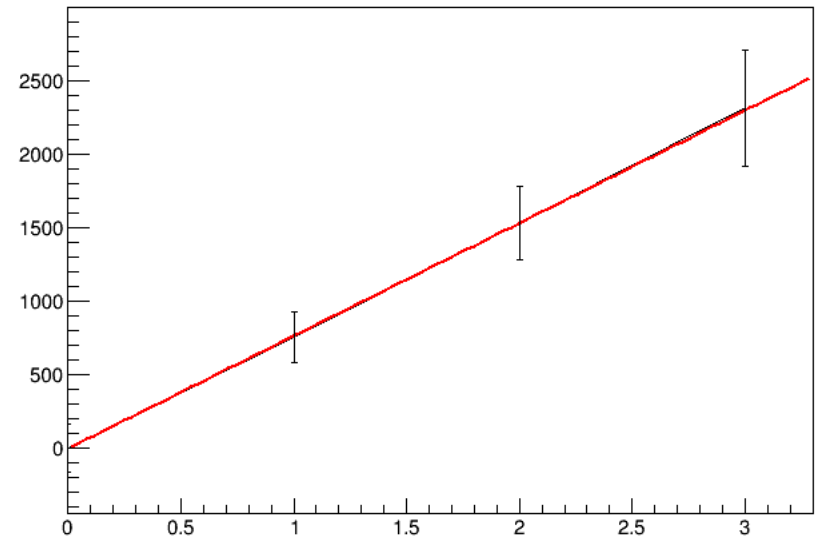
integration



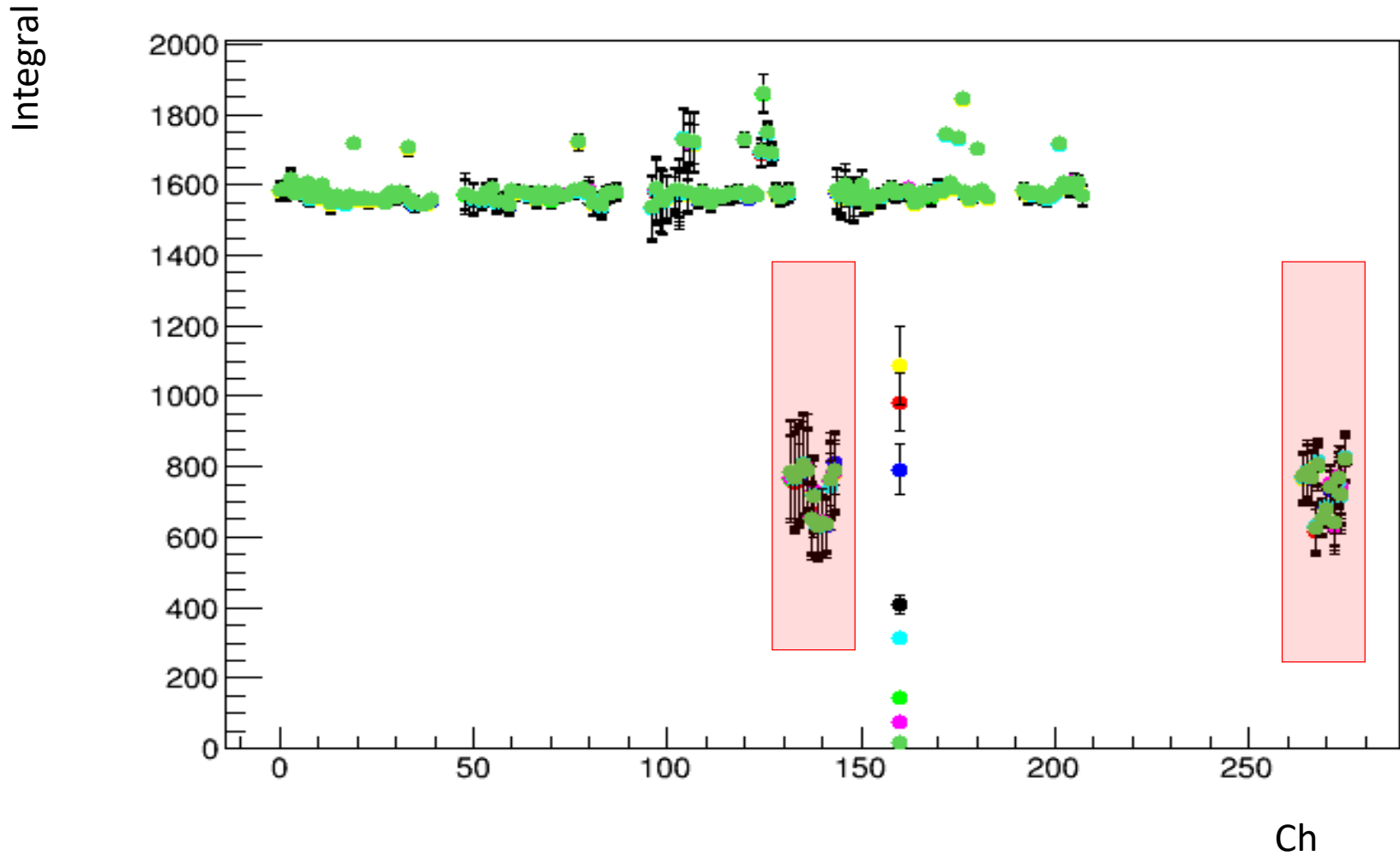
integration



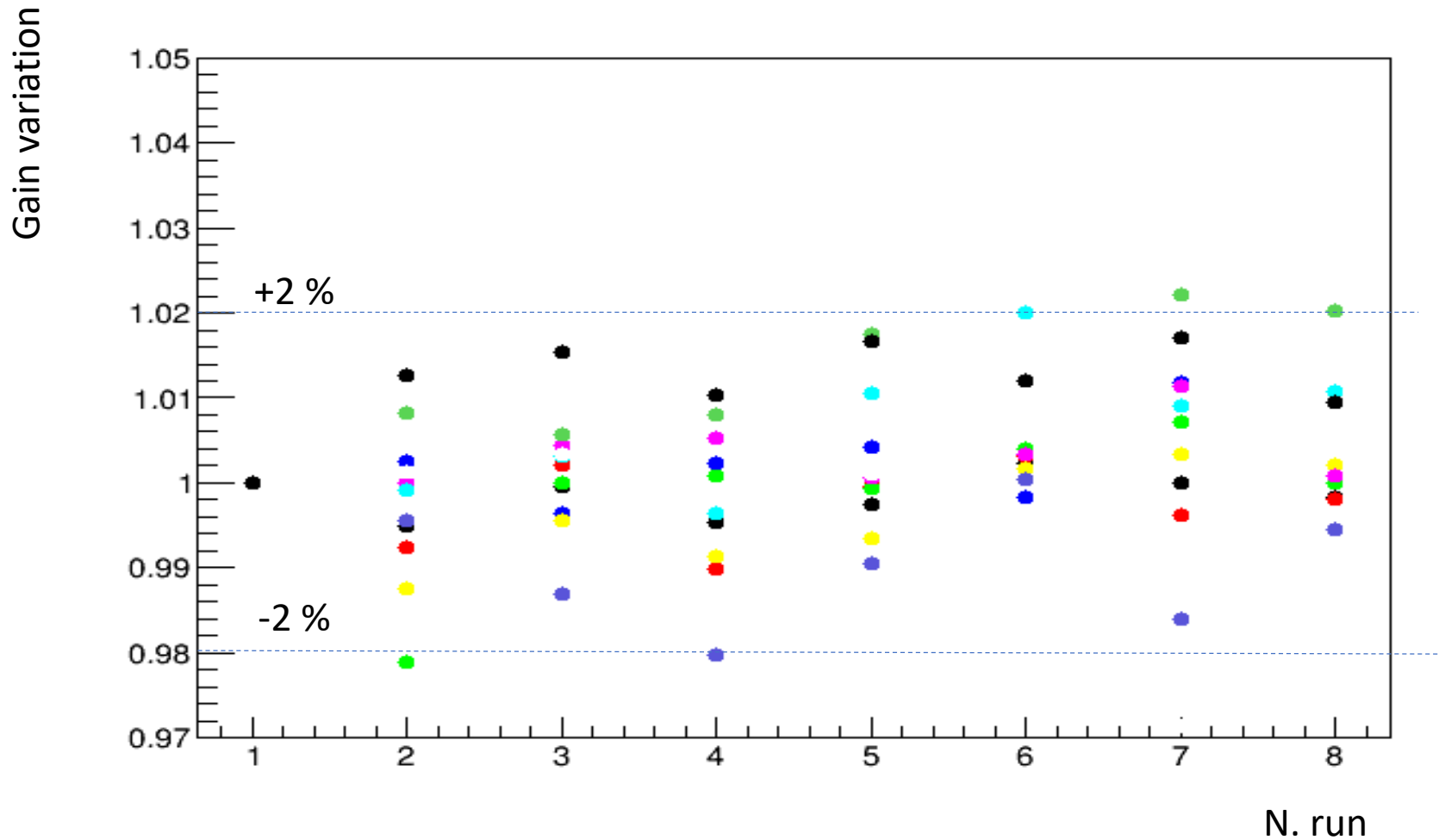
Graph



Gain with Arapuca



Gain vs time – Arapuca 2



Light collection

Light collection variation

