

RUN 1: LY studies with different gas flows

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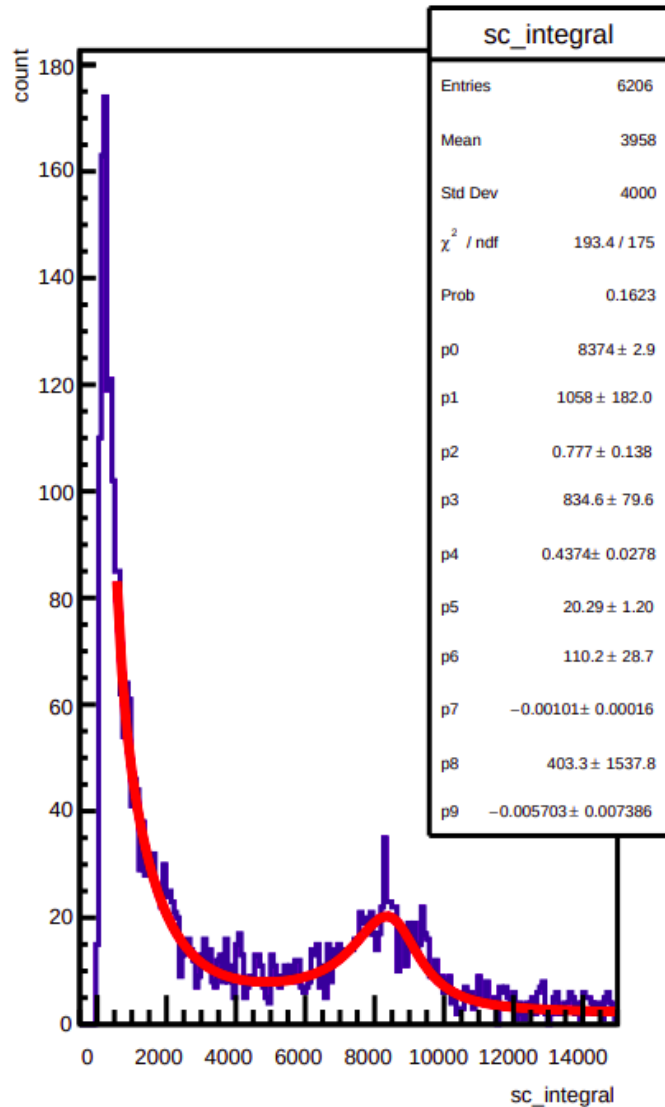
Goal

The goal is to study the LIME's response with different gas flow

-> The LY has been studied with different gas flow:

Flow (l/h)	Range Run
20	4205 - 4256
	4315 - 4509
	5110 - 5162
	5508 - 5565
10	5566 - 5729
3	4512 - 4780
1	5164 - 5490

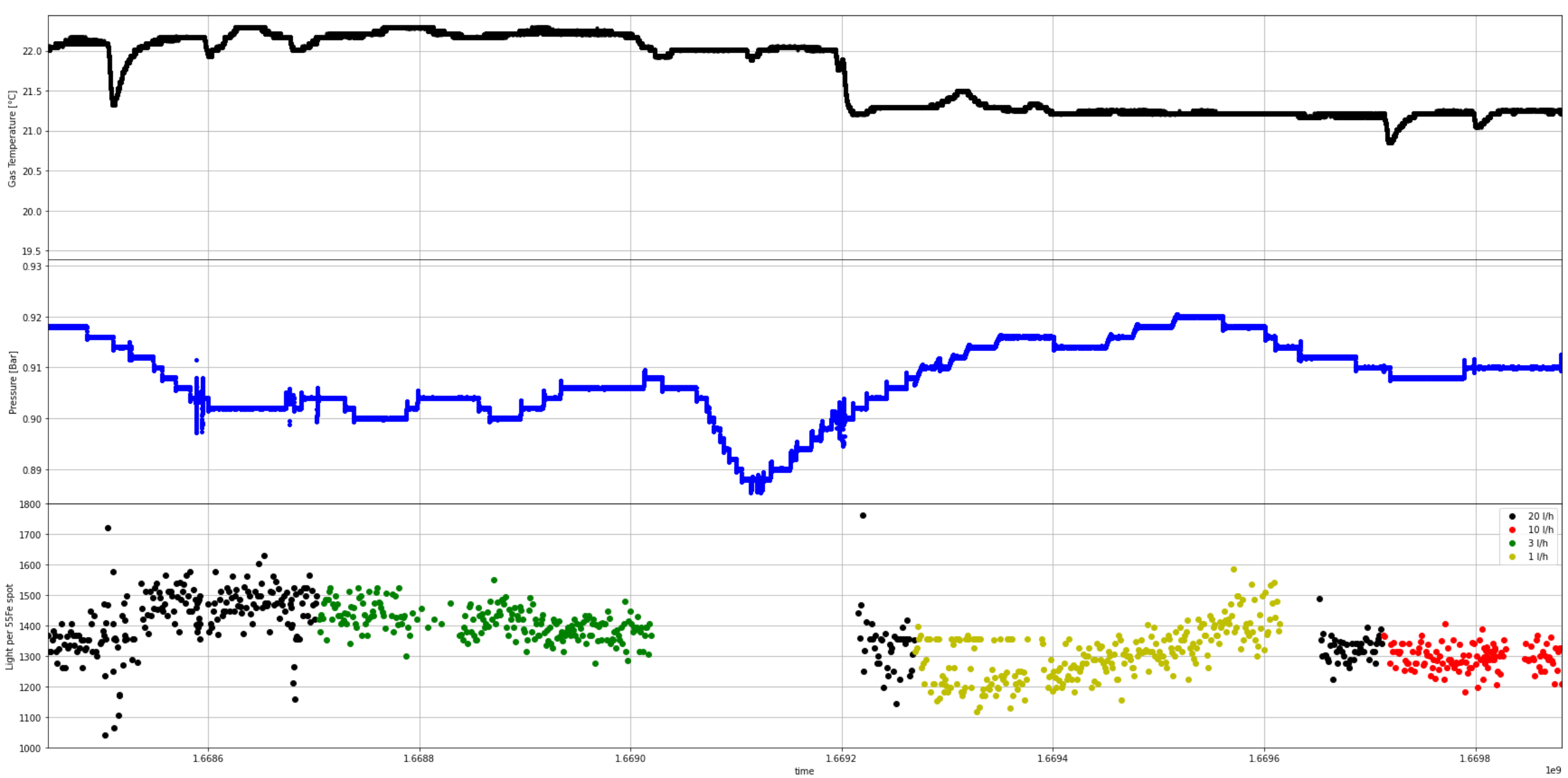
Parameter	Value
Exp time [s]	0.3
GEMs HV [V]	420
⁵⁵ Fe distance [cm]	25

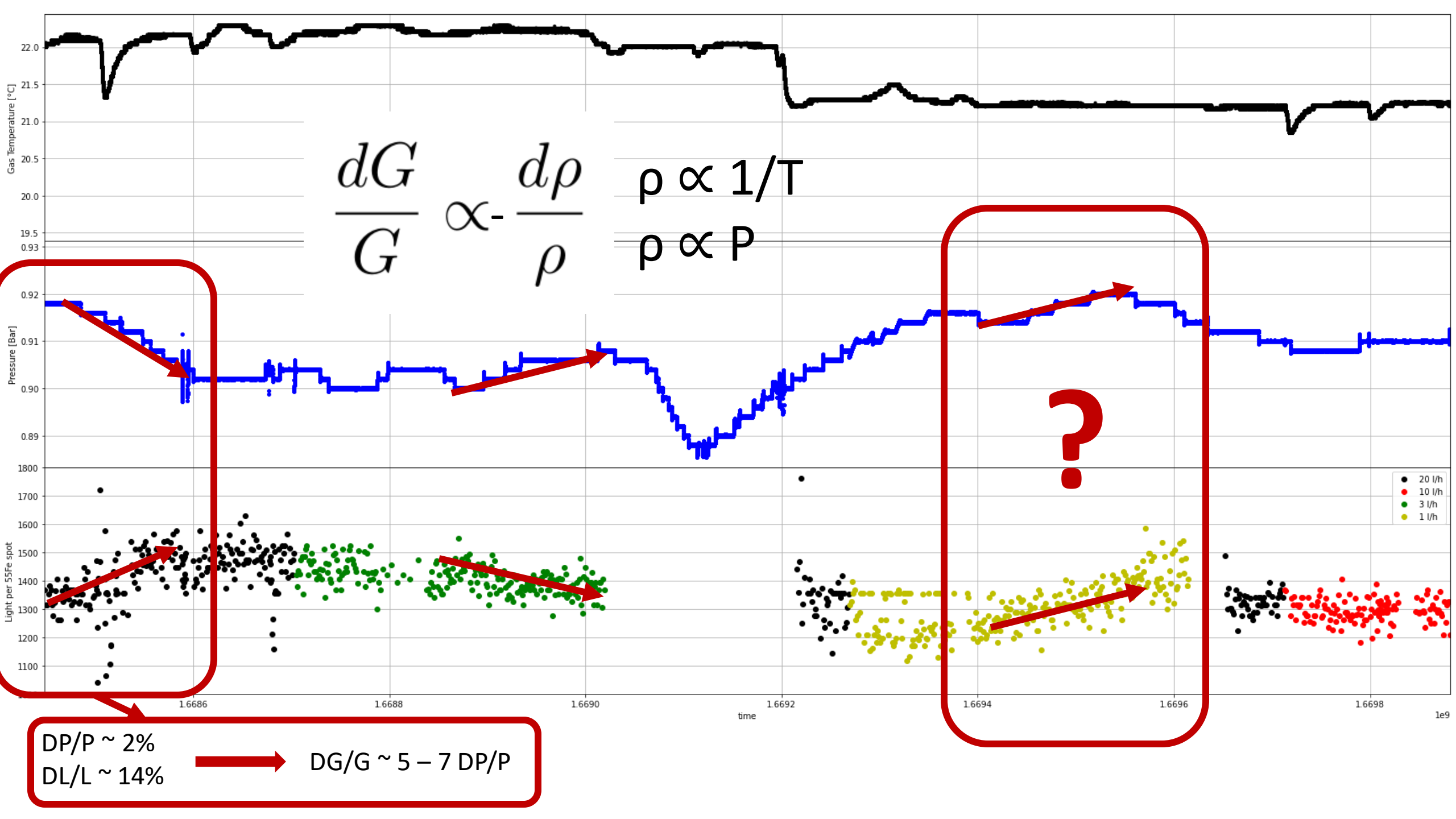


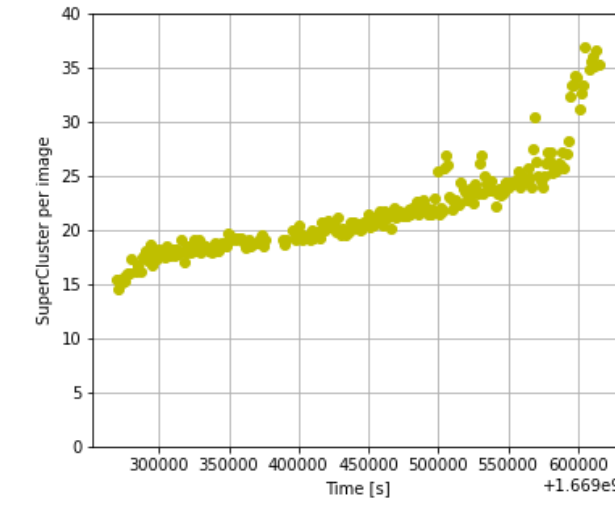
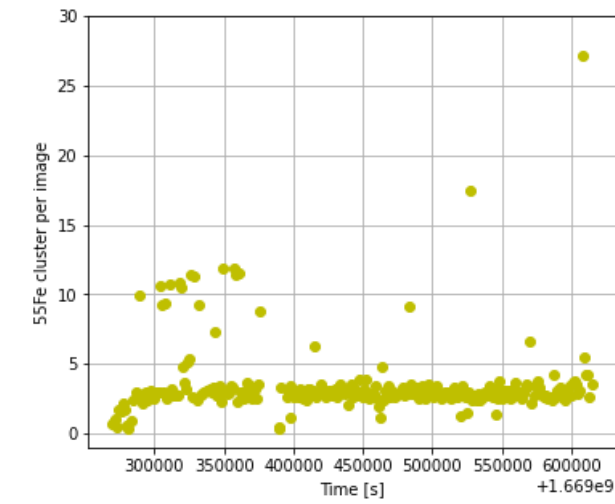
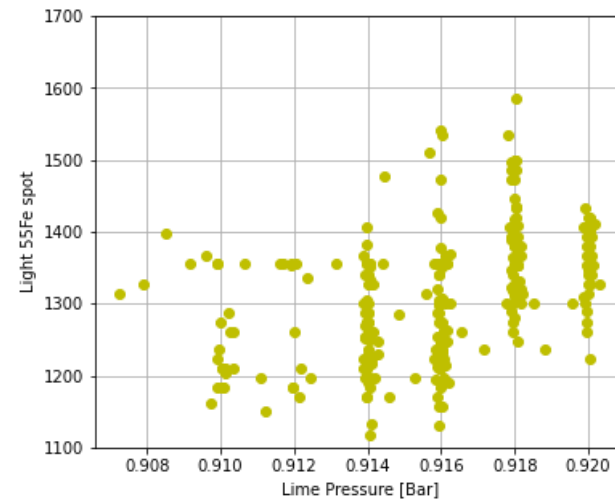
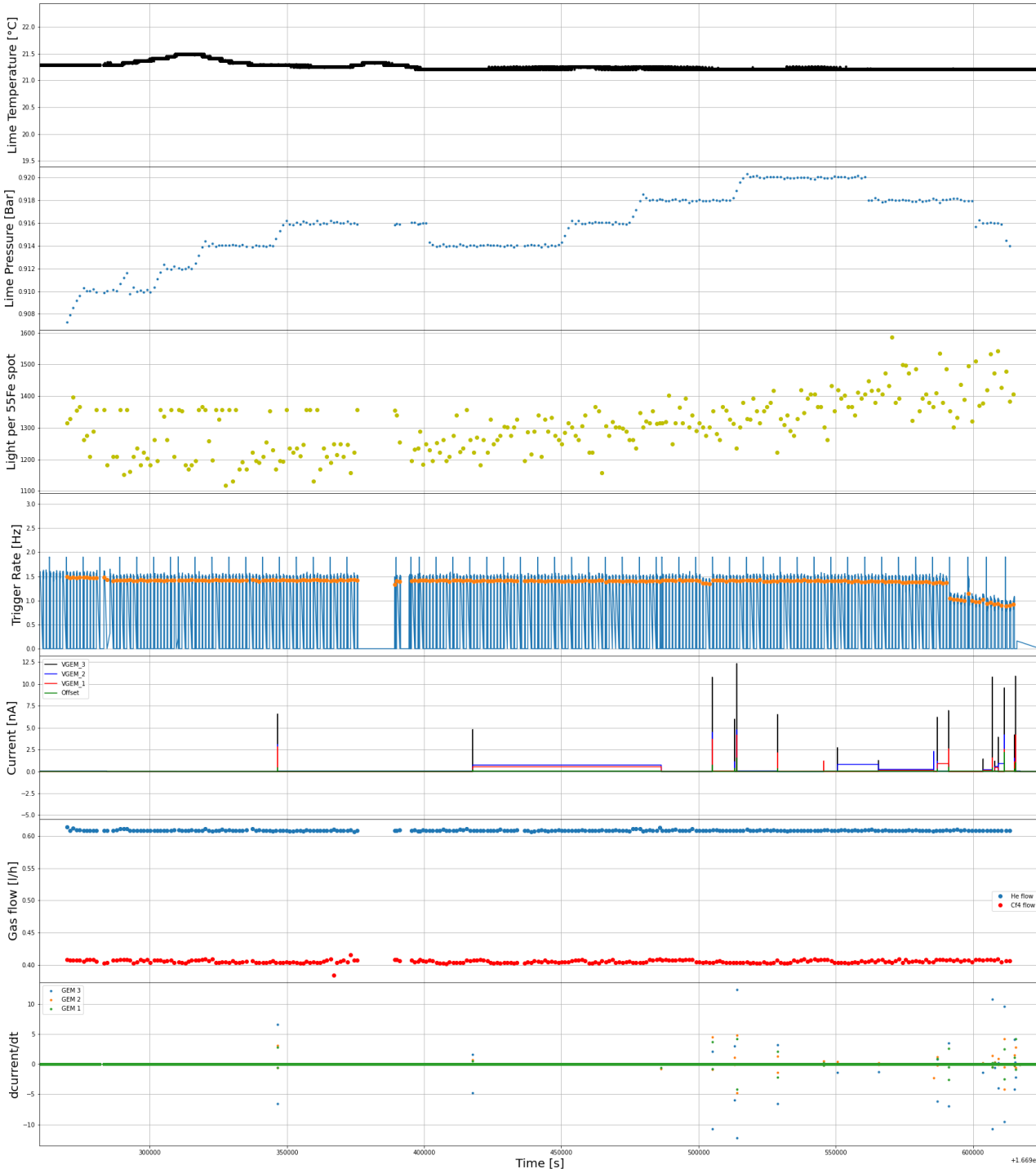
The LY has been evaluated fitting the integral distribution with:

exp + exp + Cruiff function

The mean of the Cruiff function defines the ^{55}Fe peak

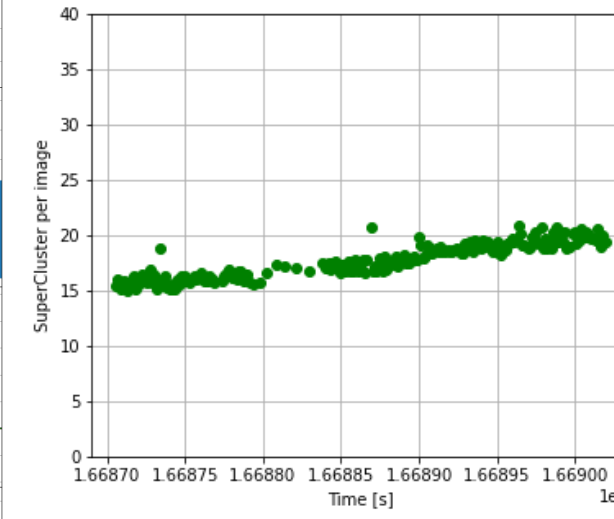
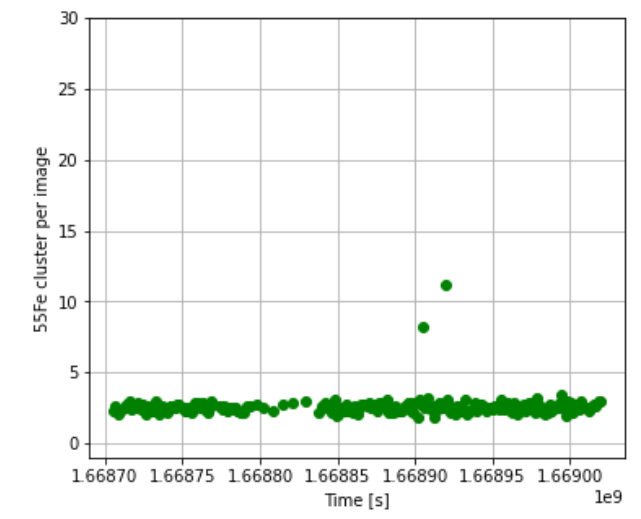
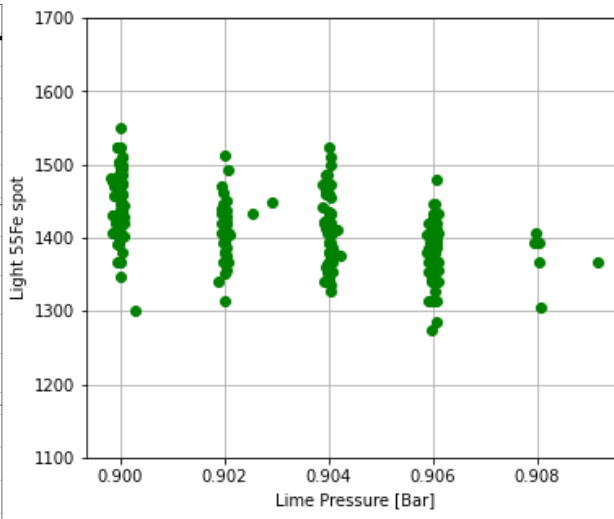
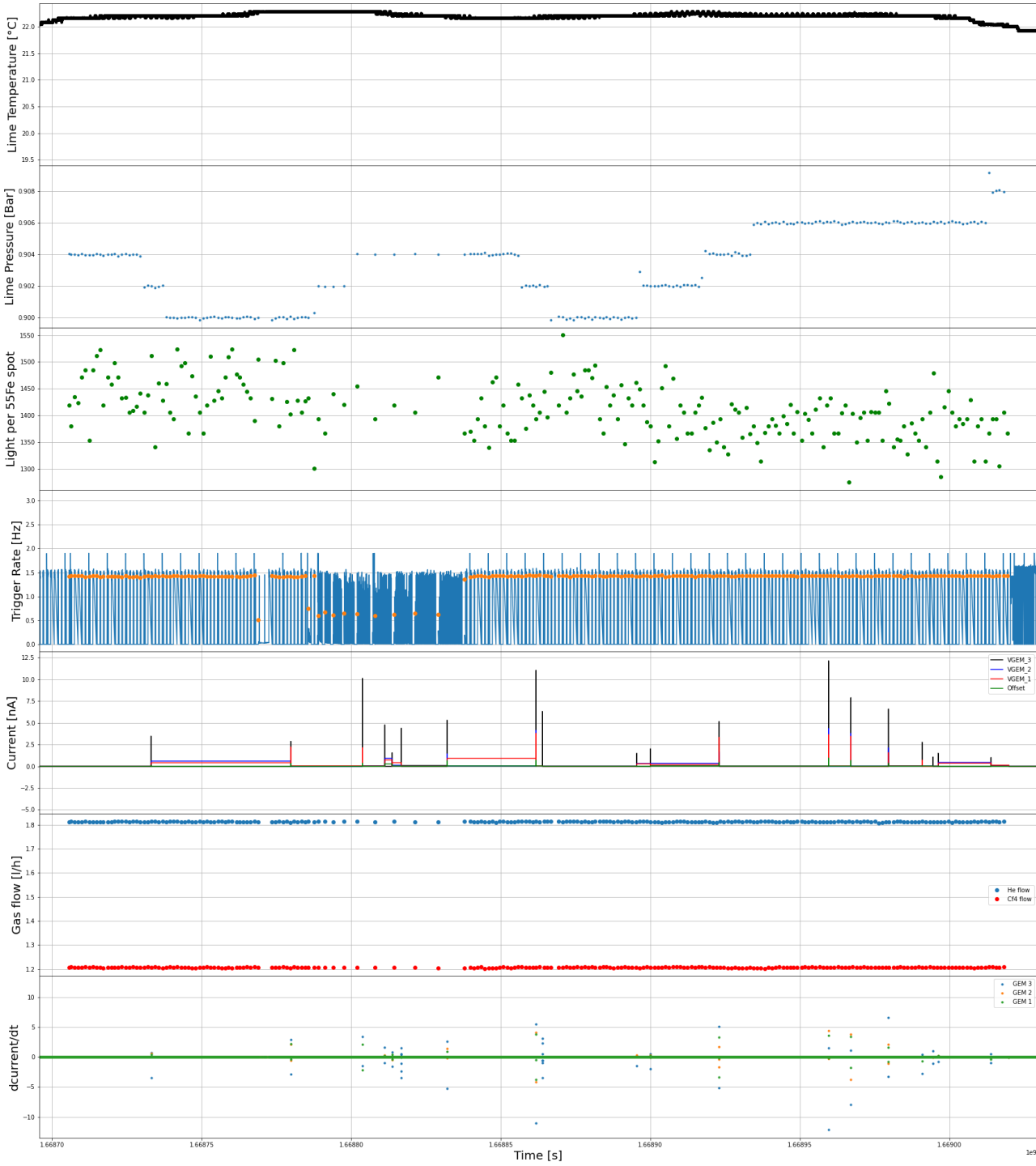






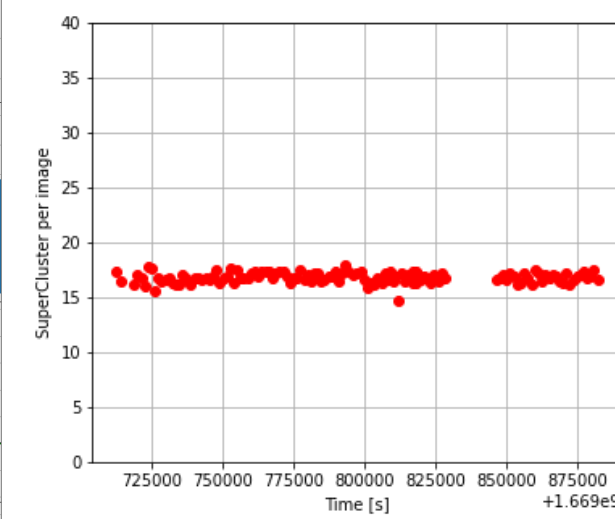
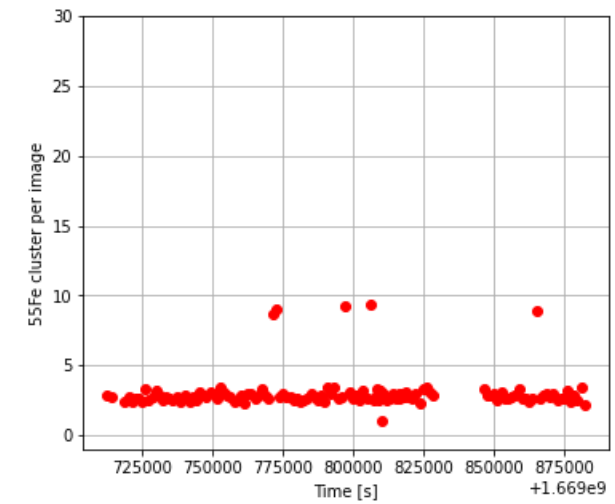
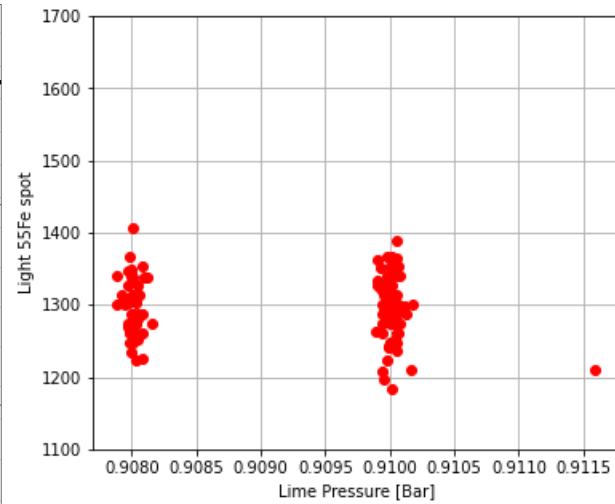
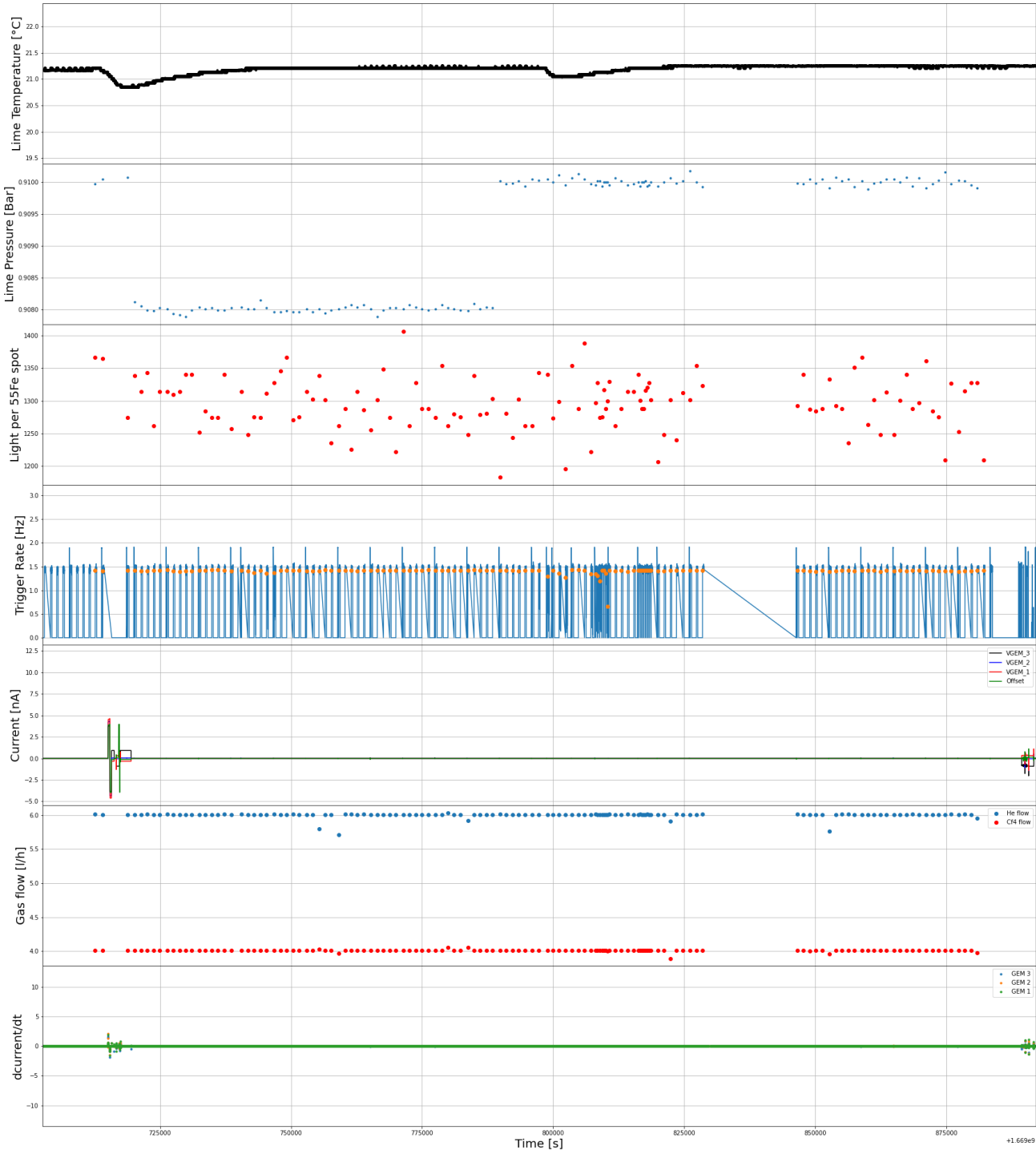
Flow = 1 l/h

- Increasing the pressure, the LY increase
- There are some current fluctuations;
- The average trigger rate decreases;
- The number of super cluster per image increases and the number of the ^{55}Fe cluster per image is constant \rightarrow the background increases



Flow = 3 l/h

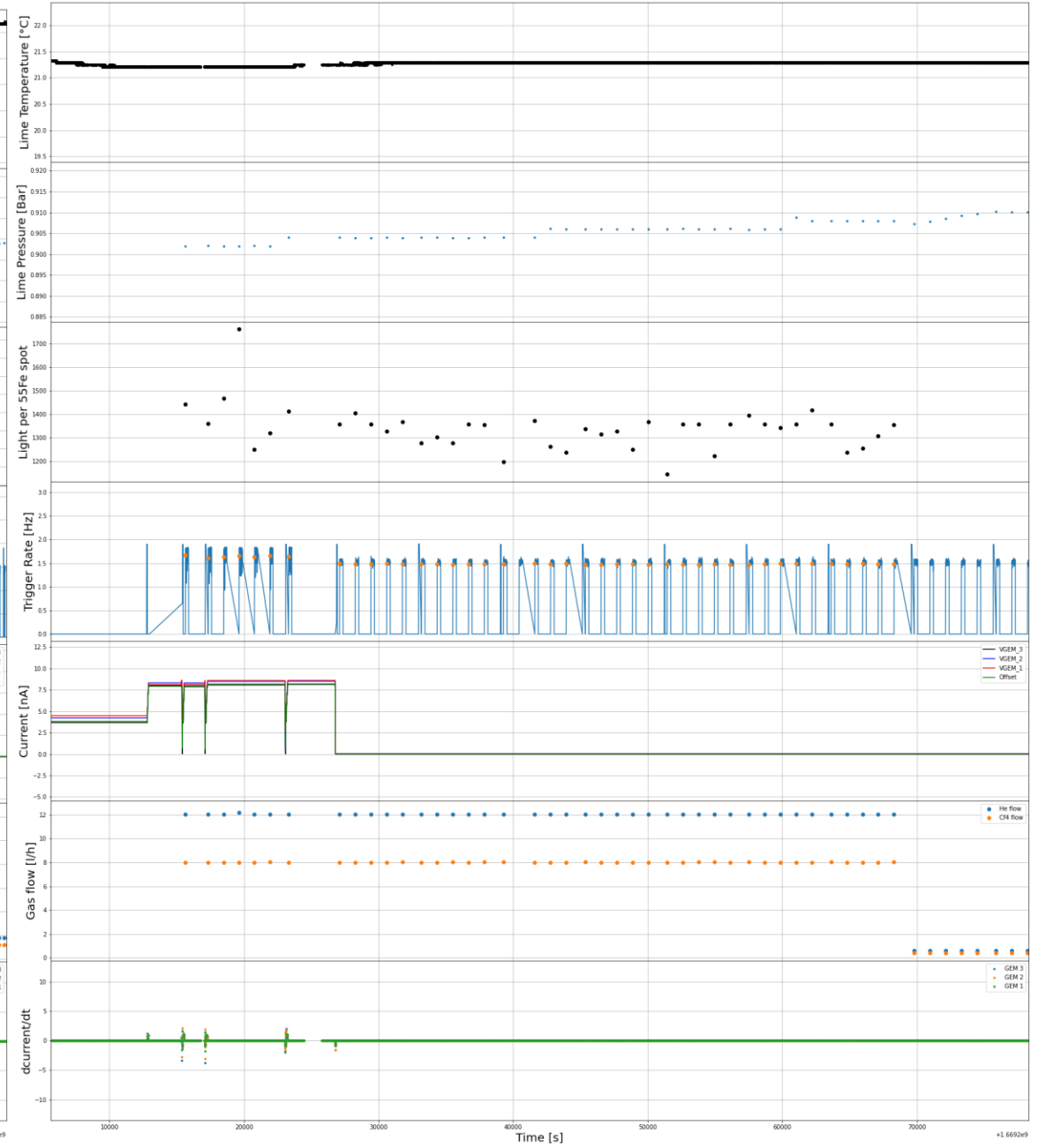
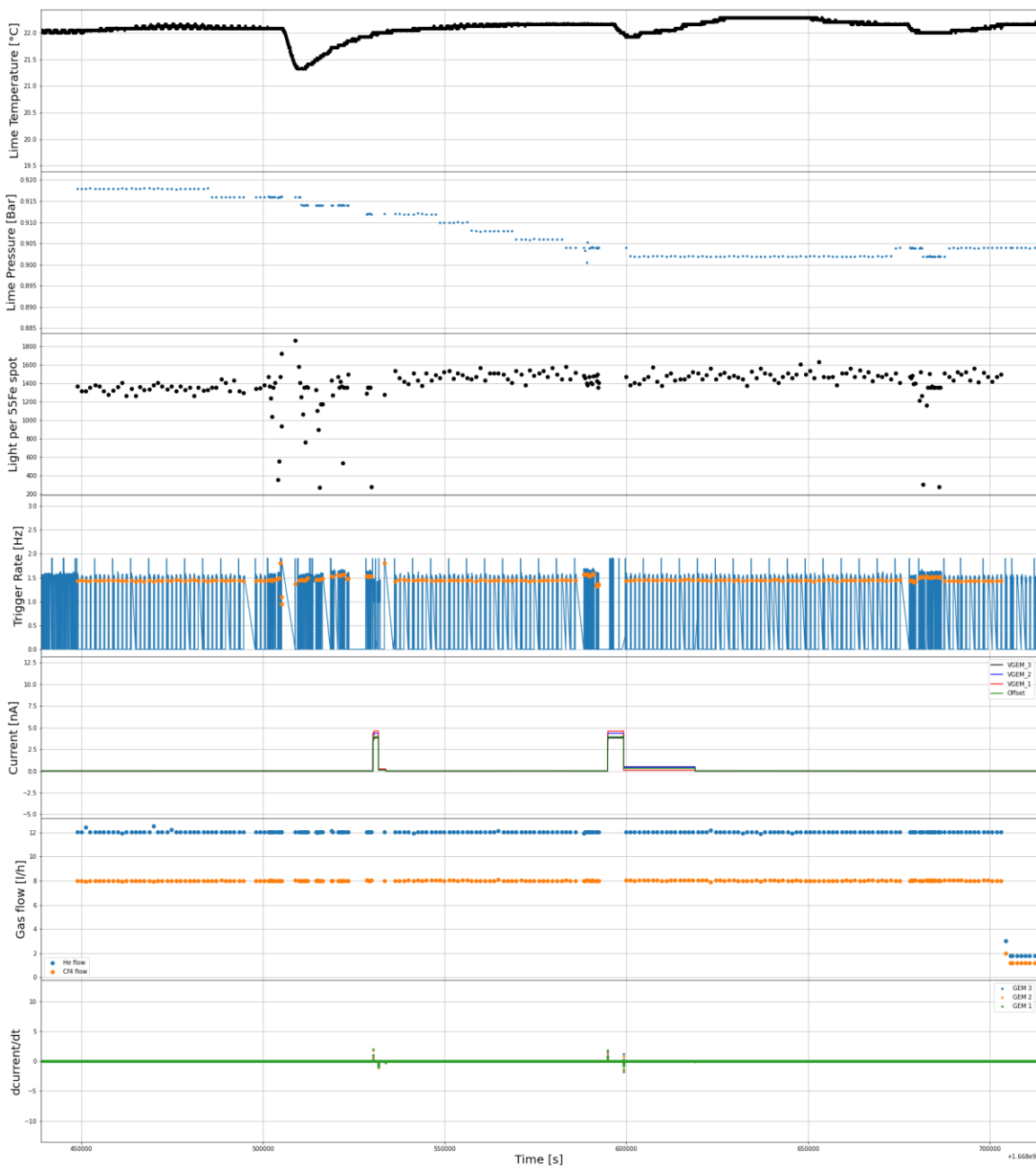
- Increasing the pressure, the LY decreases
- There are some current fluctuations;
- The number of super cluster per image increases and the number of the ⁵⁵Fe cluster per image is constant -> the background increases;

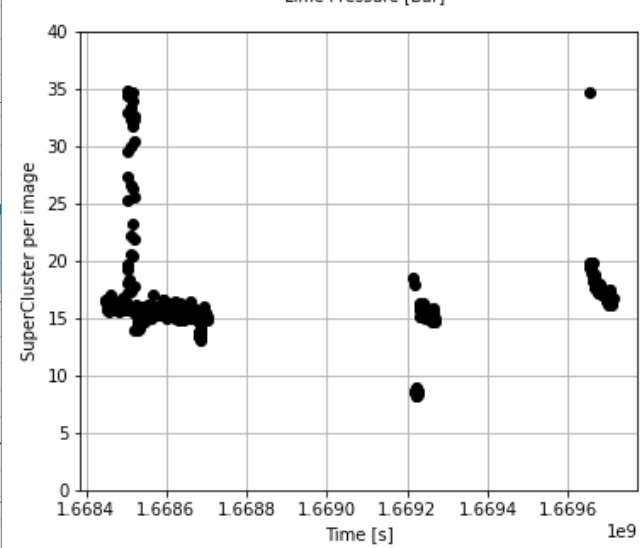
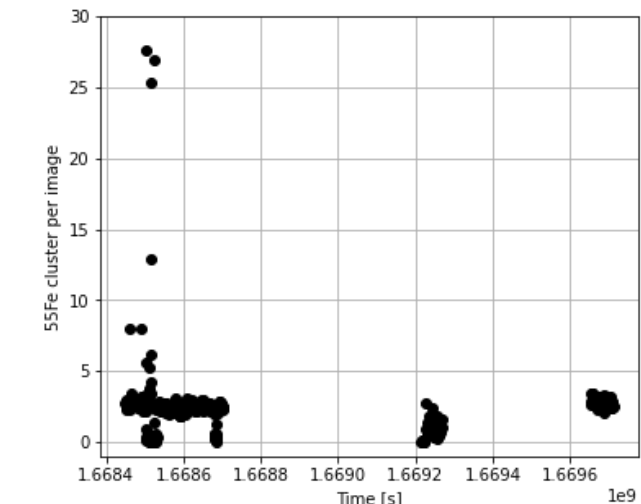
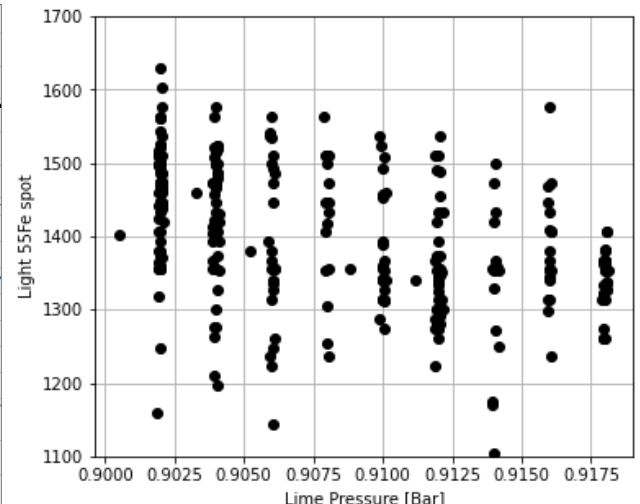
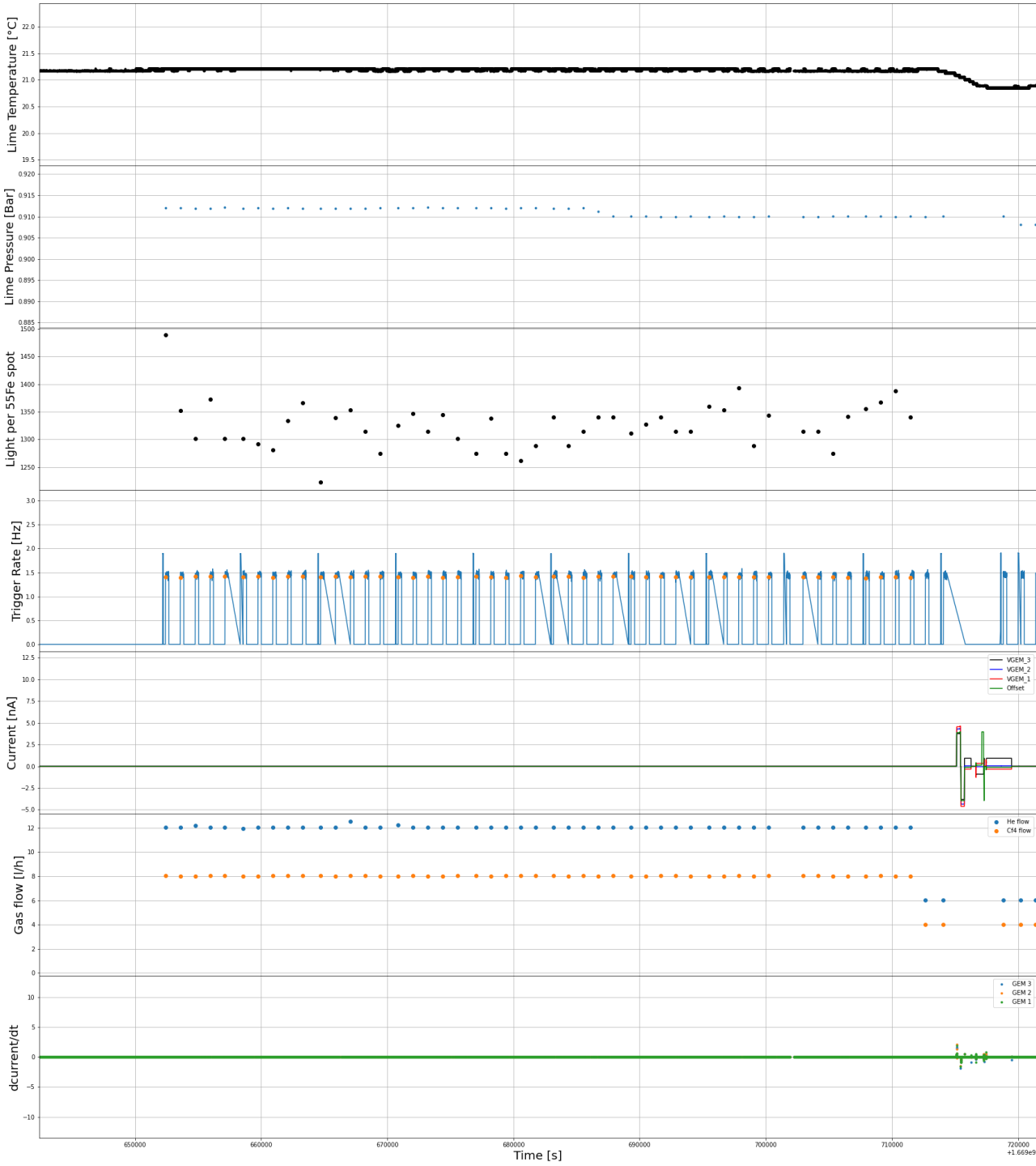


Flow = 10 l/h

- The number of super cluster per image is constant and the number of the ⁵⁵Fe cluster per image is constant;

Three different areas with gas flow = 20 l/h are shown



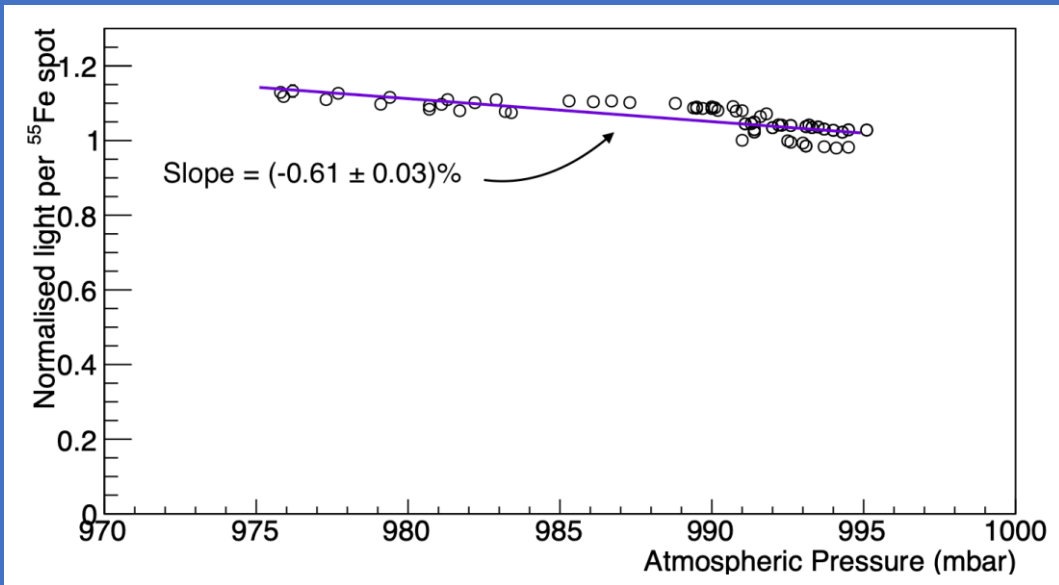


Flow = 20 l/h

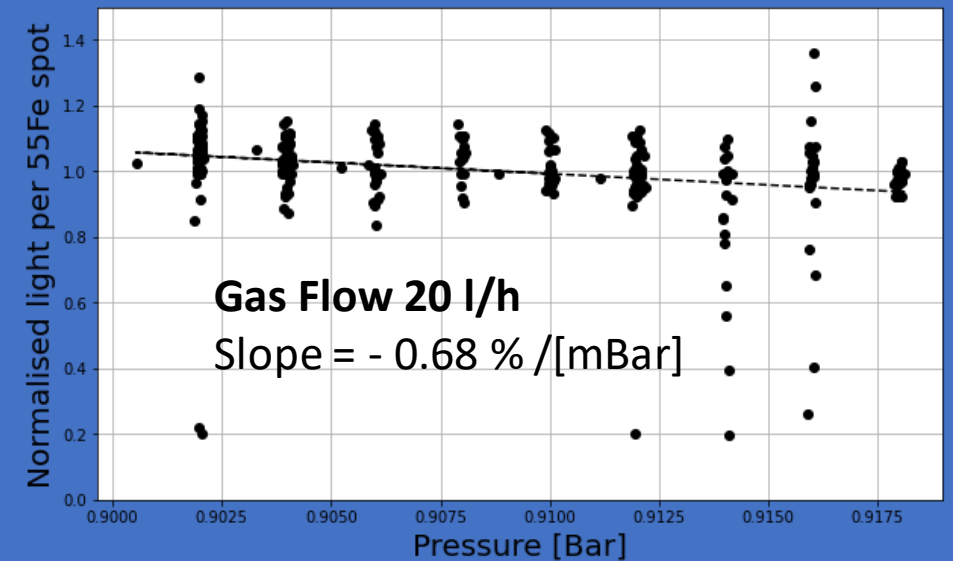
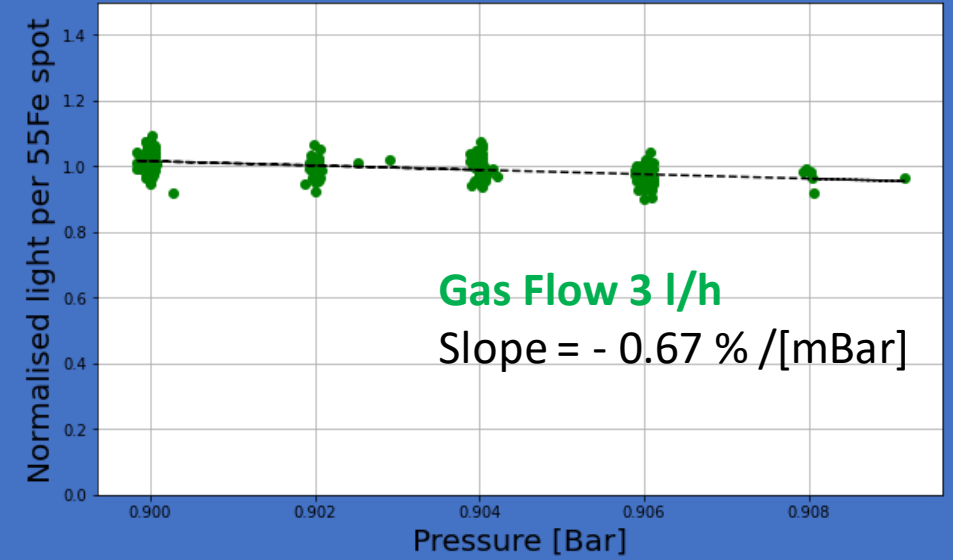
- Decreasing the pressure, the LY increase

The light is normalised to the first run and a linear fit is done

Overground at LNF



Run1 - Underground at LNGS



The same LY decrease factor!

Spikes per hour

For each GEM, the spikes are defined as the variation of the current

-> For each gas flow the number of spikes per hour is less than 1

