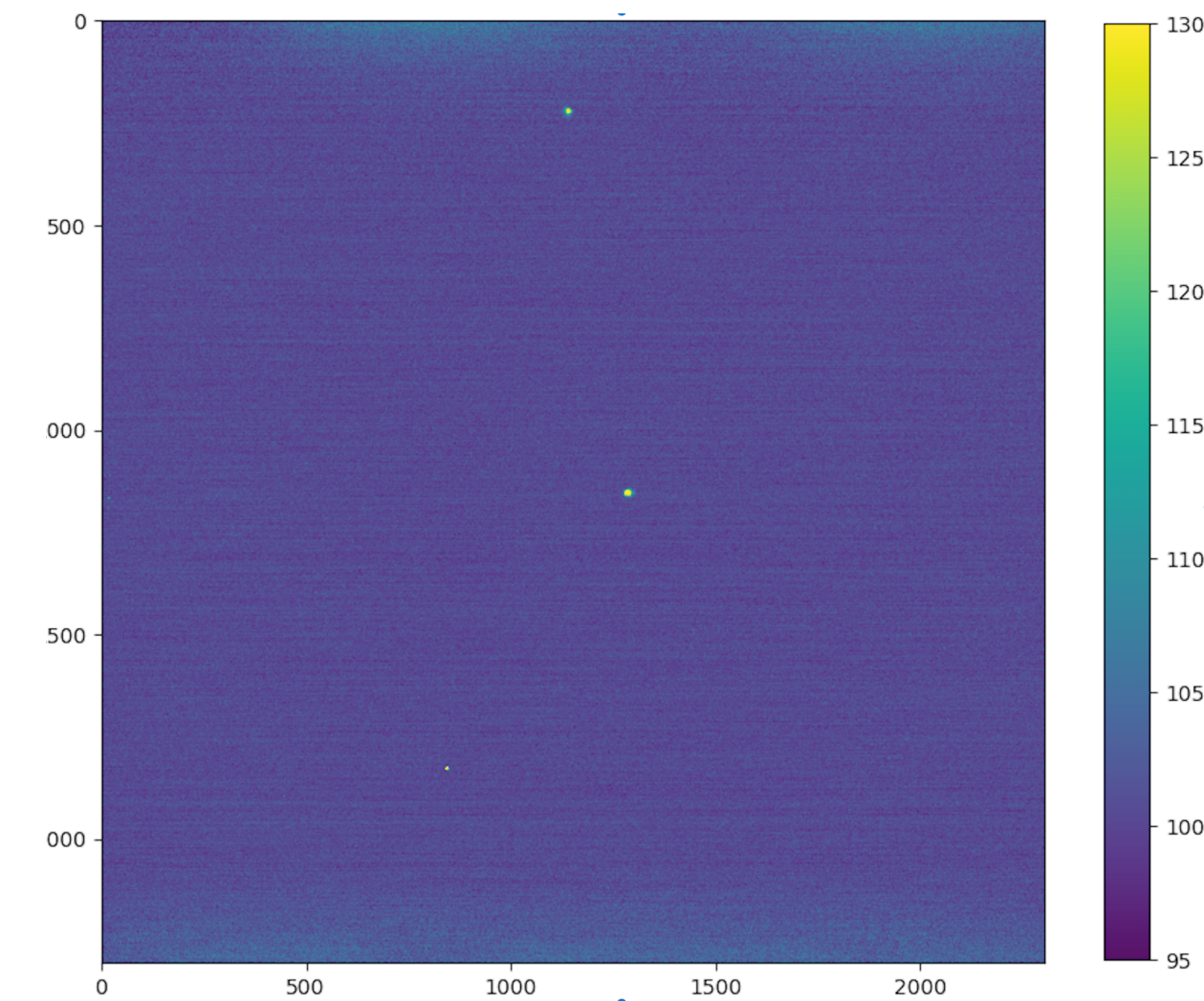


Meeting CYGNO News

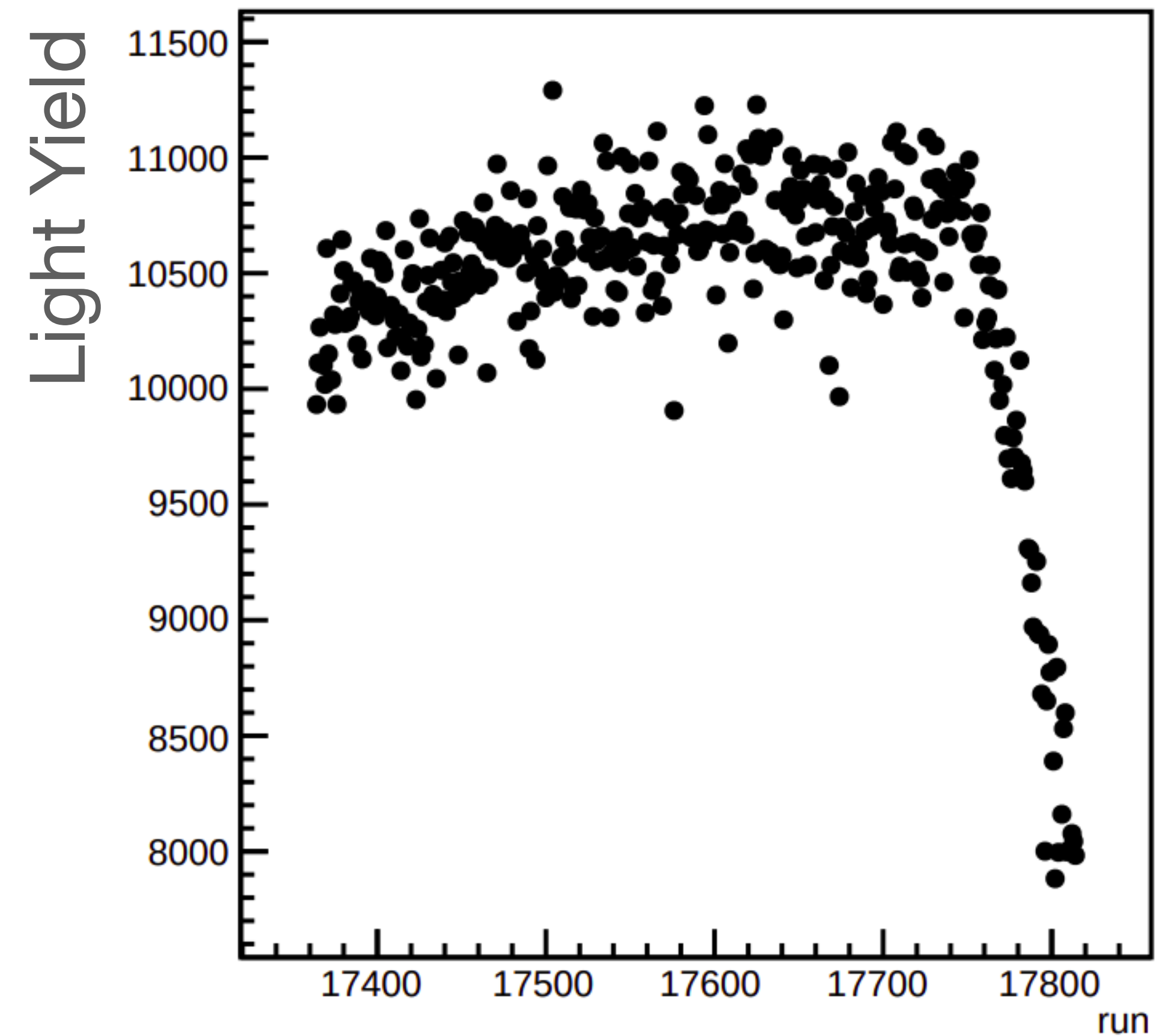
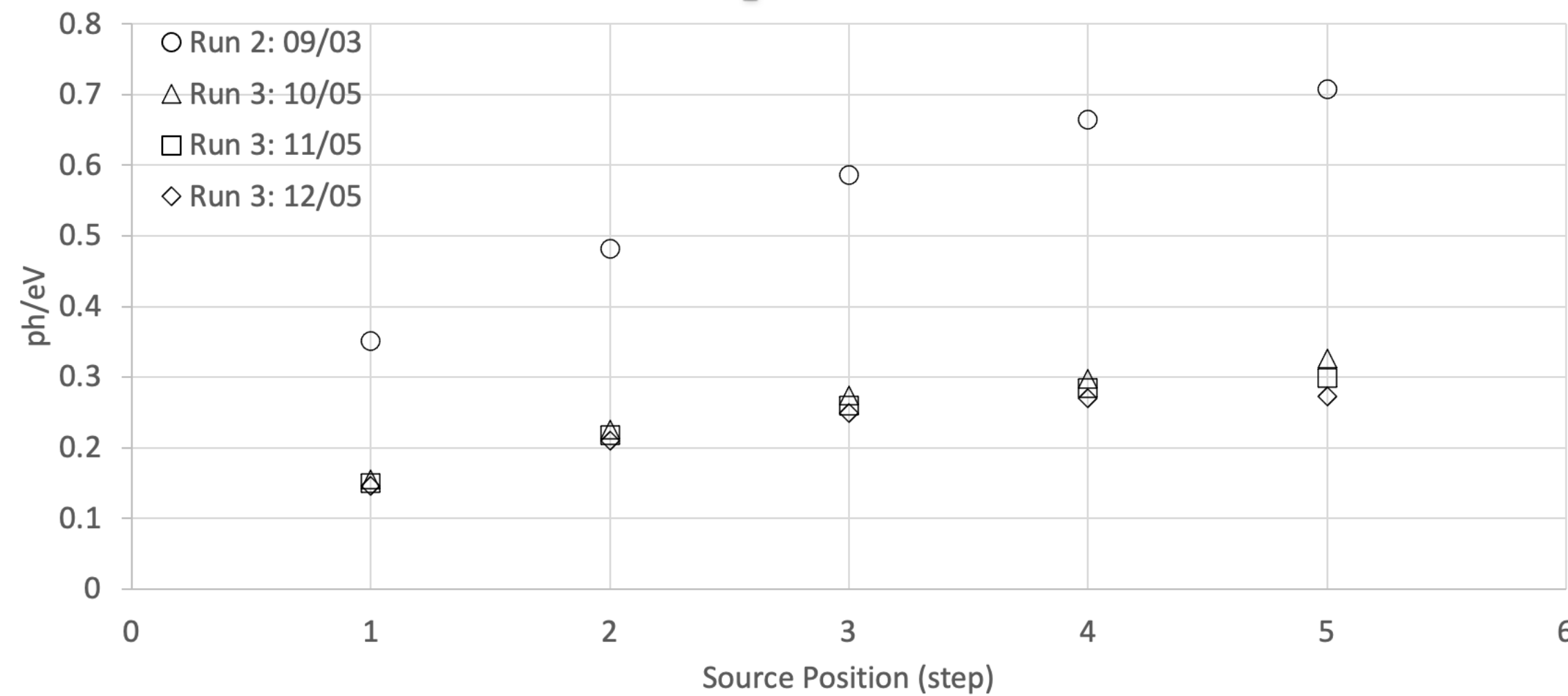
LIME: status

- On Wed 13/05 we turned On the GEM
- At 440V we have a light yield similar to Run2 (quantitative analysis to be done);
- We studied the trigger rate behavior with and without ^{55}Fe source (next slide);
- We left with 5 l/h flux + 20 l/h recirculation;
- Automatic reconstruction procedure was setup by Igor A. and started few days after and we had the chance to study the behavior of ^{55}Fe peak position



LIME: status

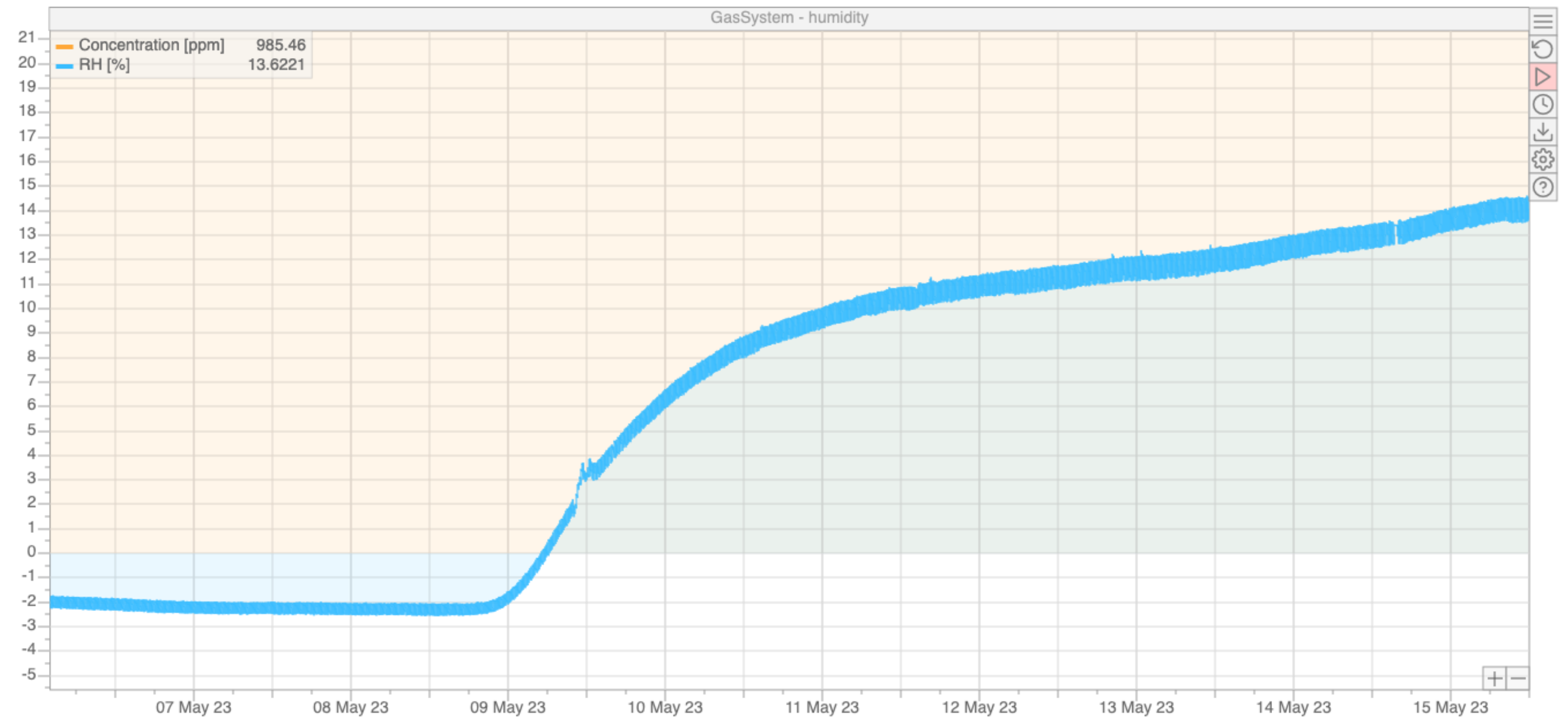
- Rita A. performed a first study of its behavior
- A sudden LY decrease was found around 2023-05-08 23:09:20



- Confirmed by the daily calibration results (thanks to people who performed it)

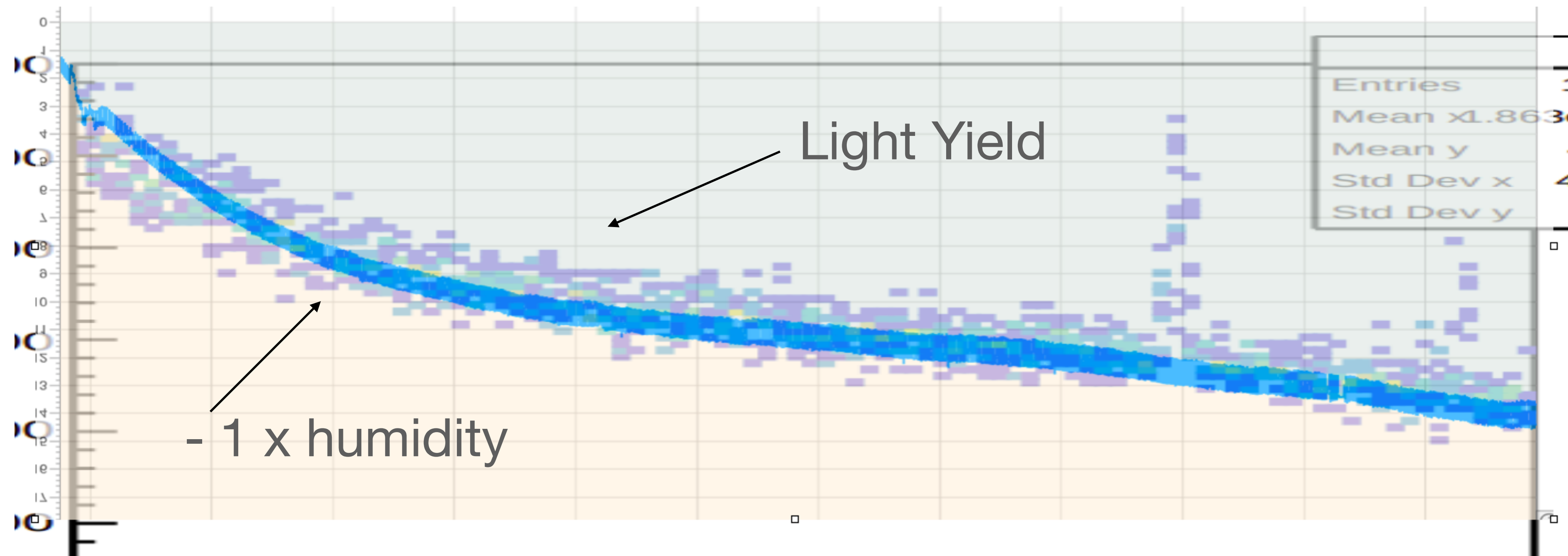
LIME: status

- A sudden LY decrease was found around 2023-05-08 23:09:20
- A sudden increase of humidity in the gas was found at the same moment probably due to an issue on the gas booster that stopped working at the same time



LIME: status

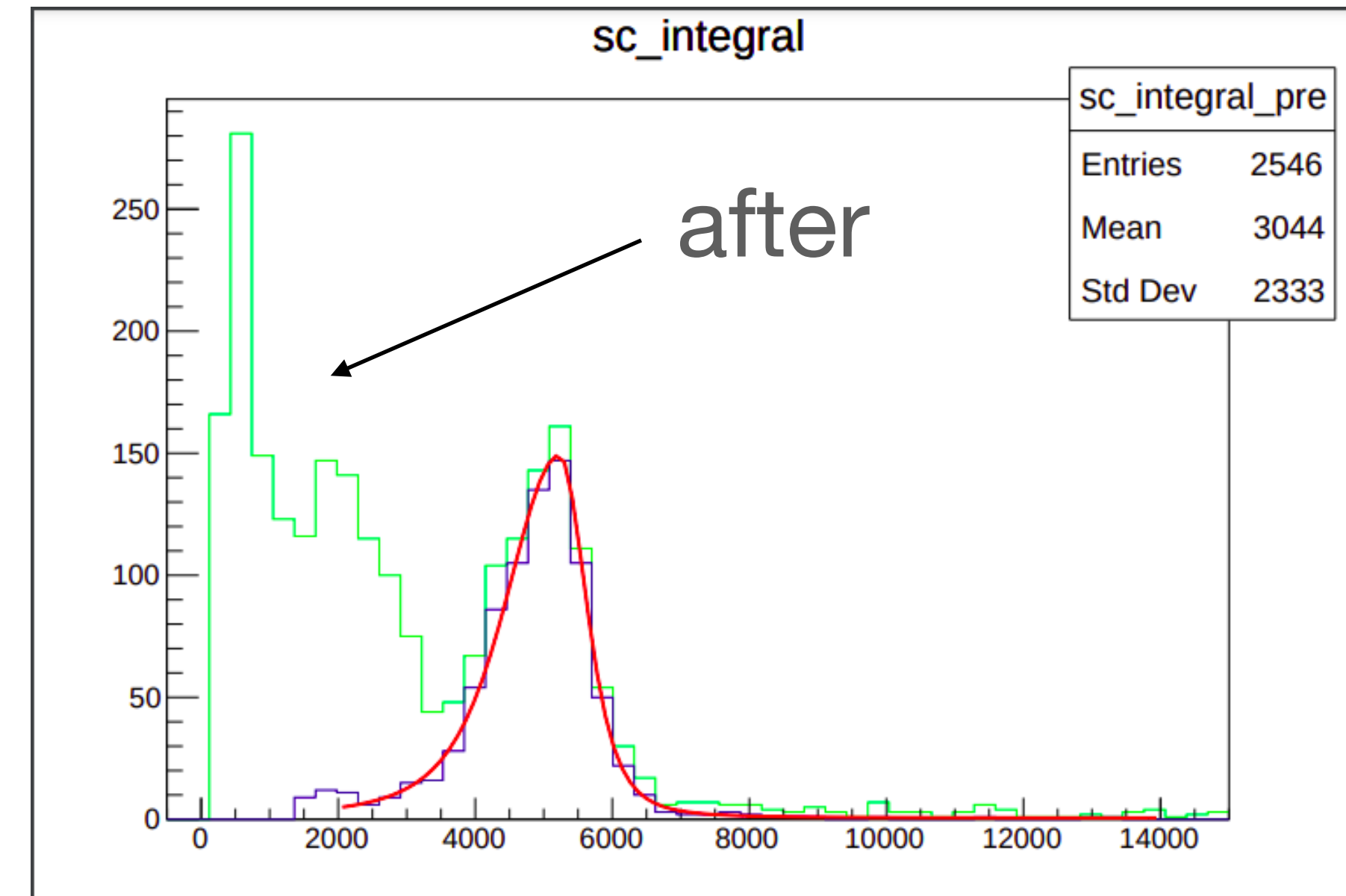
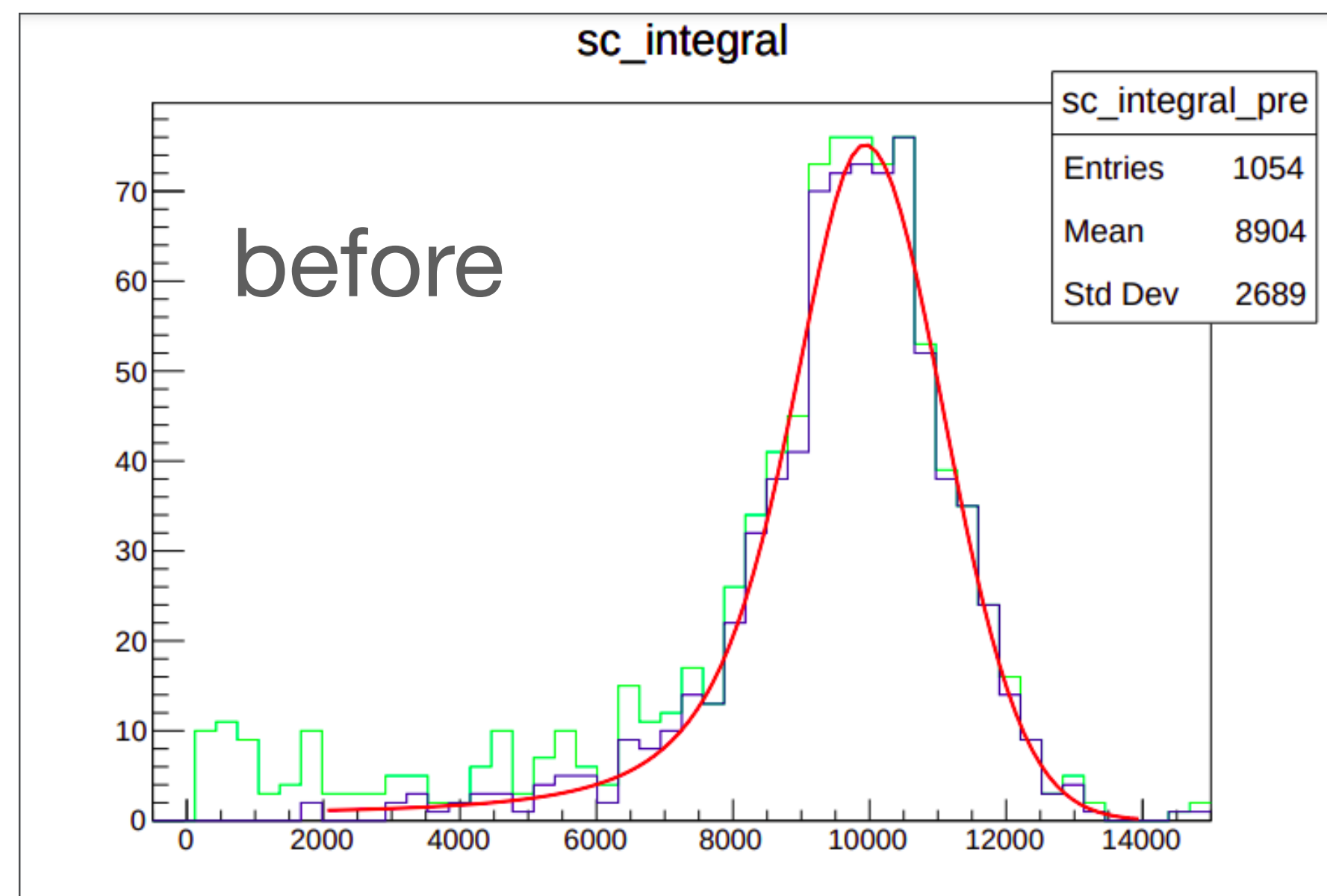
- By superimposing the LY in the BKG runs and $(-1) \times$ humidity, an almost perfect correlation was found.



- LY is heavily effected by HV (quantitative analysis on-going)

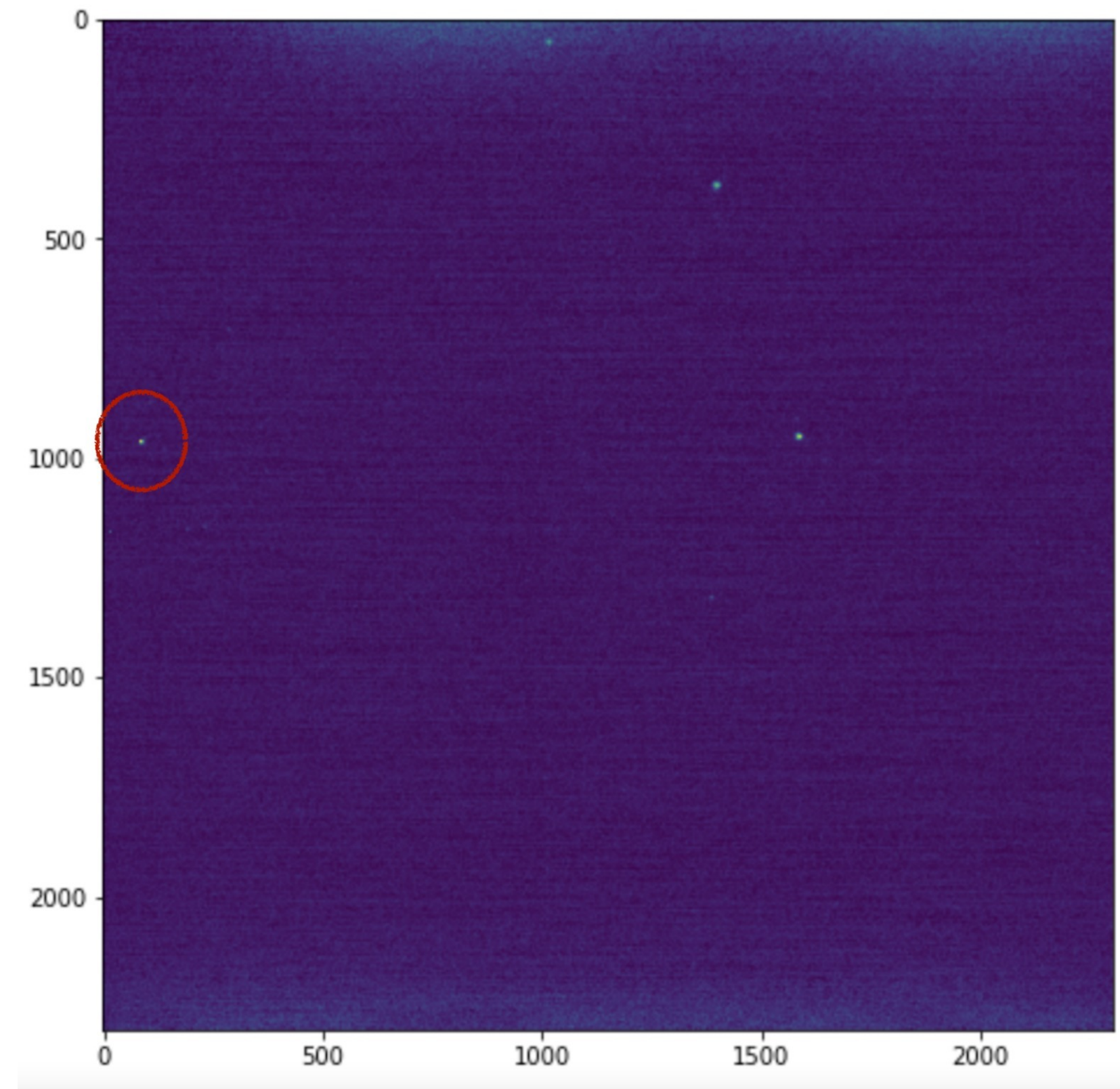
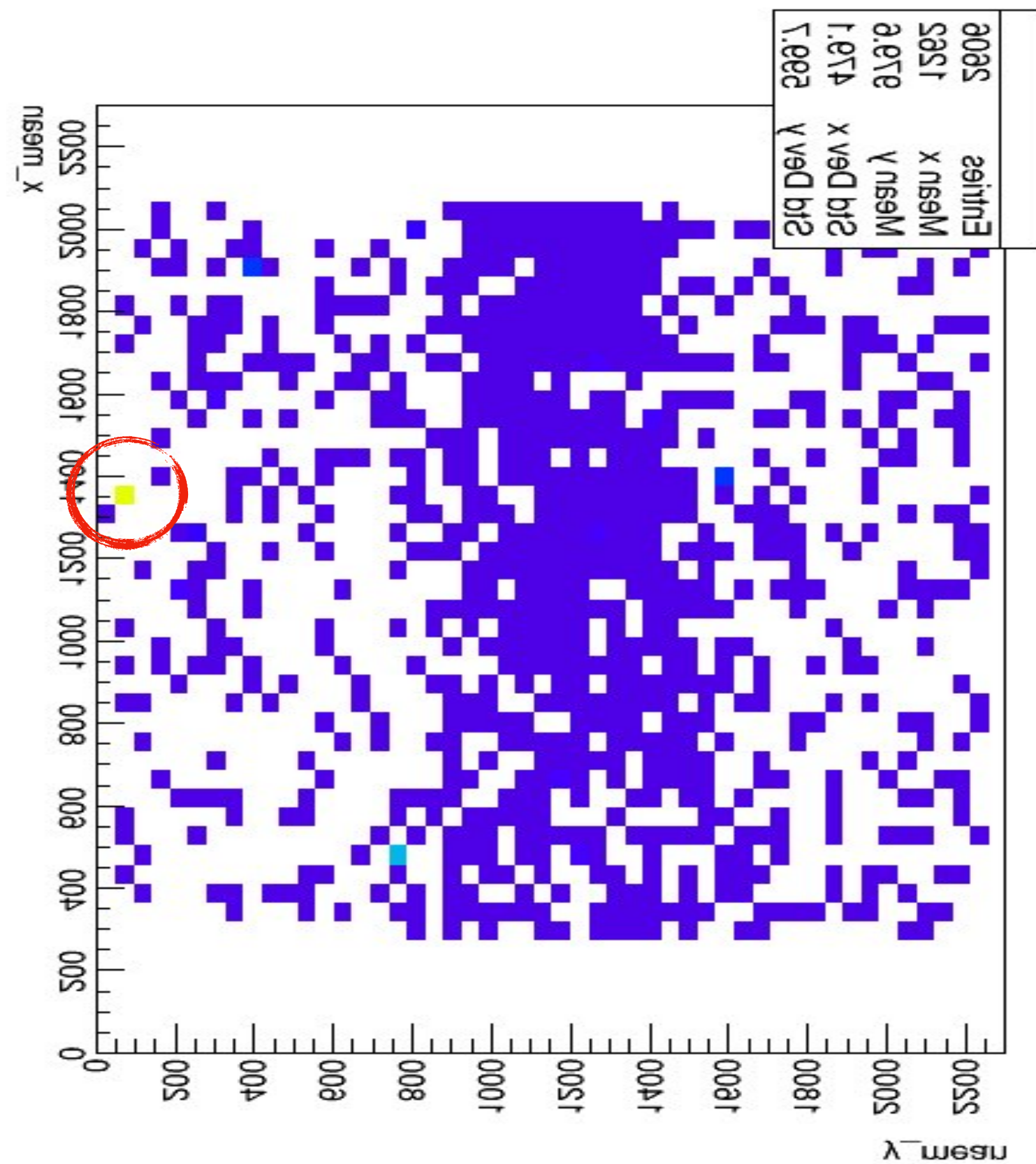
LIME: status

- We also found too high and unstable Trigger Rate since Monday;
- Rita A, pointed out that a strange background was appearing in the ^{55}Fe spectra.



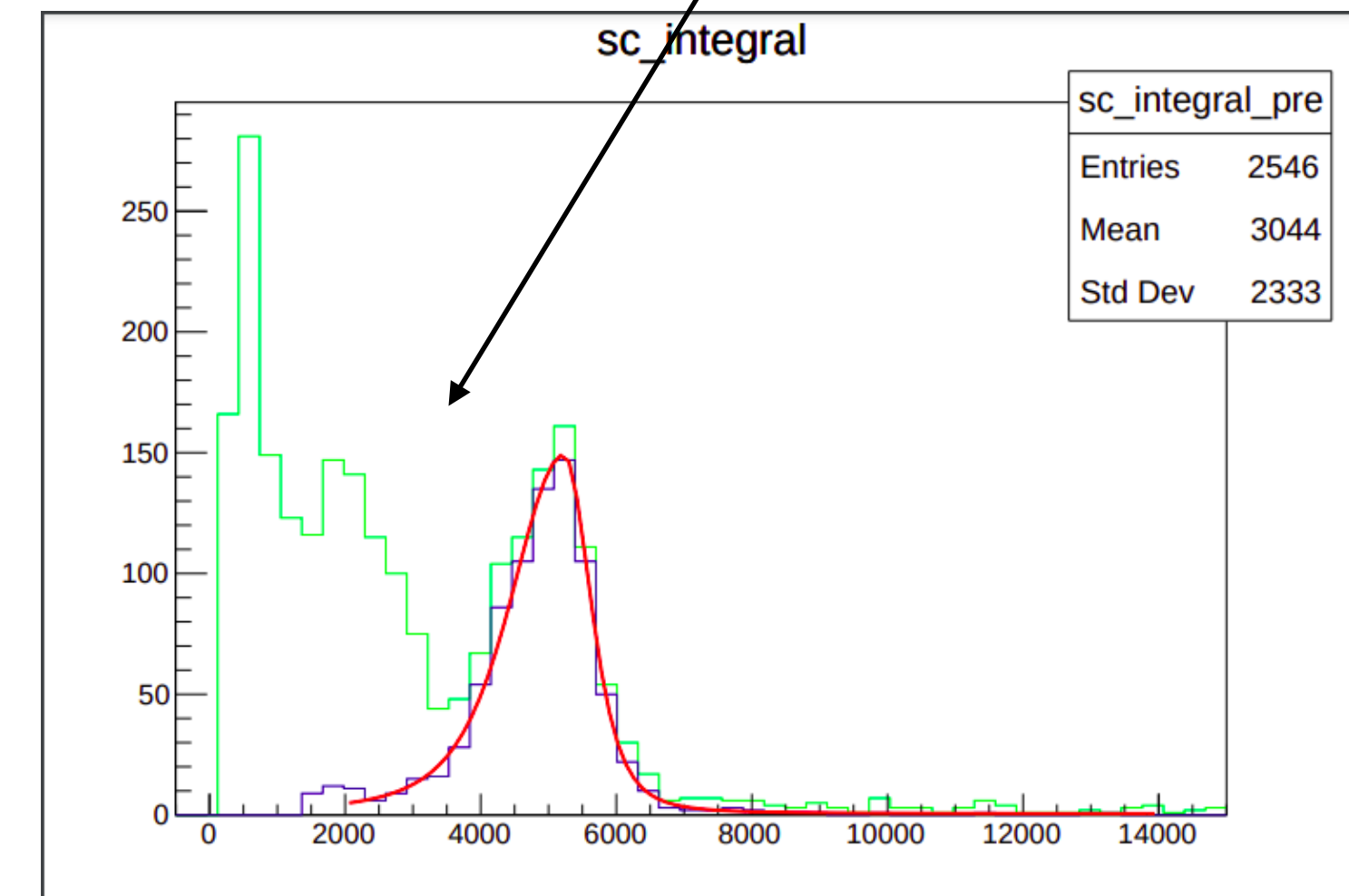
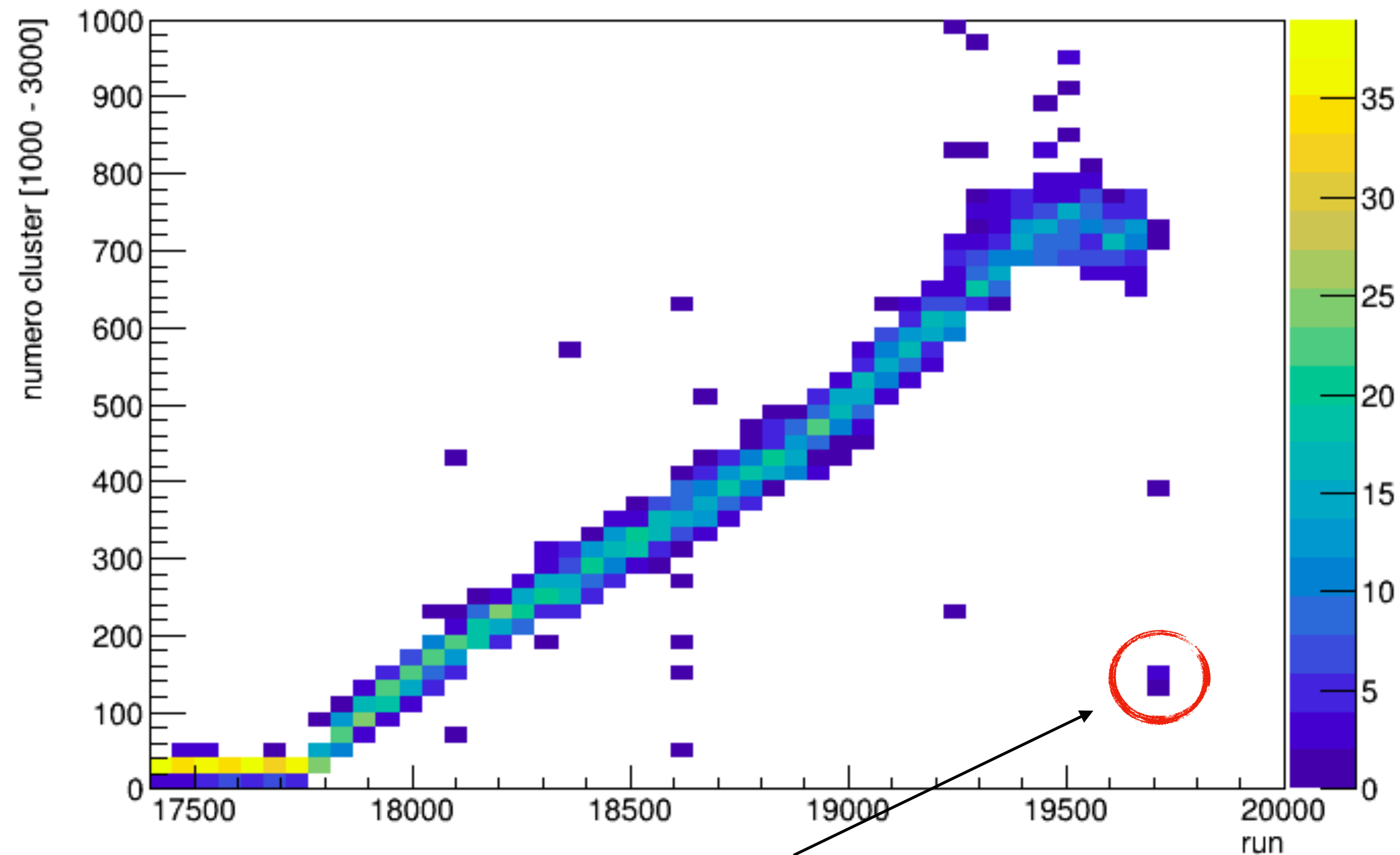
LIME: status

- From the map we discovered they were due to spots always in the same place -> hot spots!



LIME: status

- We then found that number of reconstructed clusters in this LY region started to increase when humidity suddenly increased

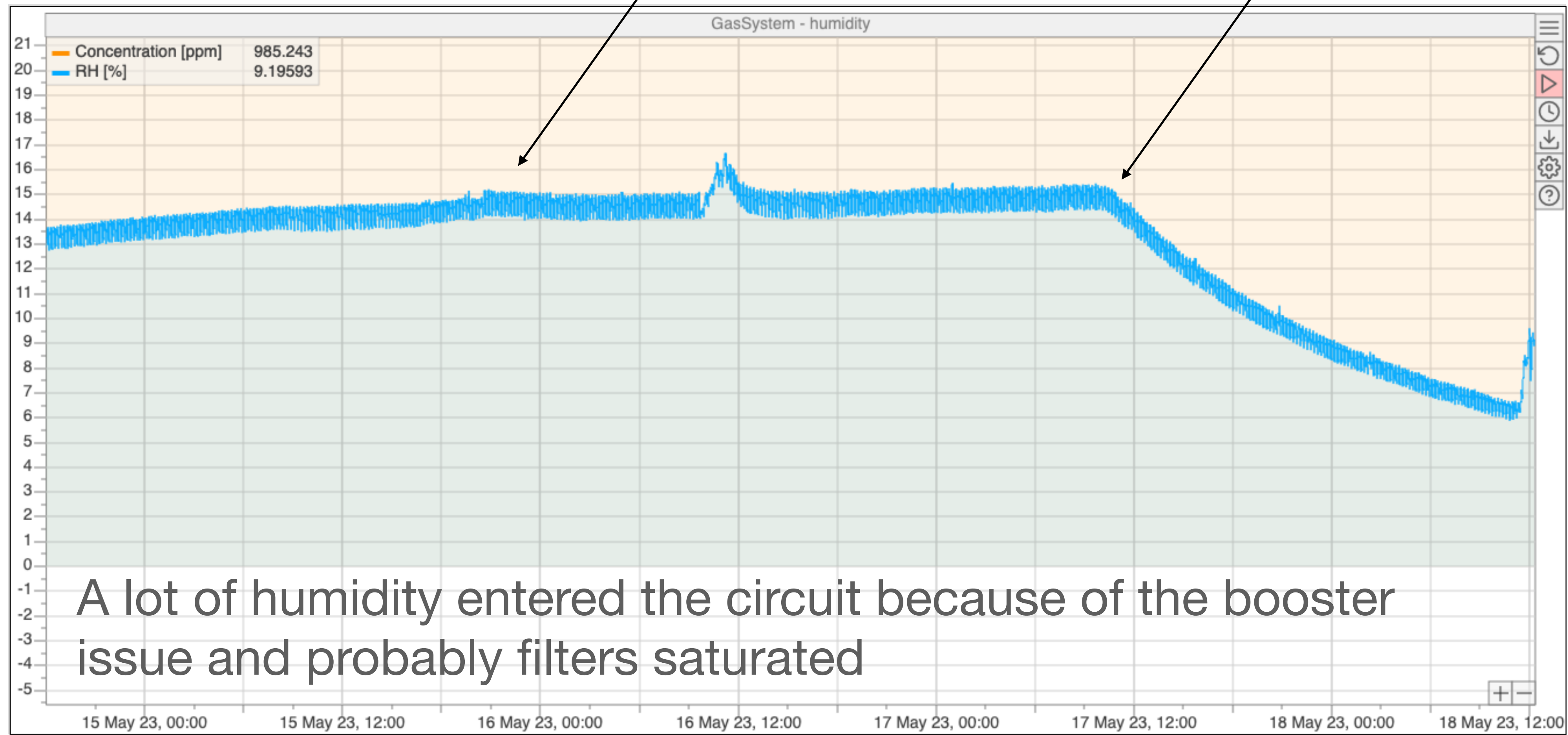


impurities probably entered the gas mixture together with humidity

LIME: status

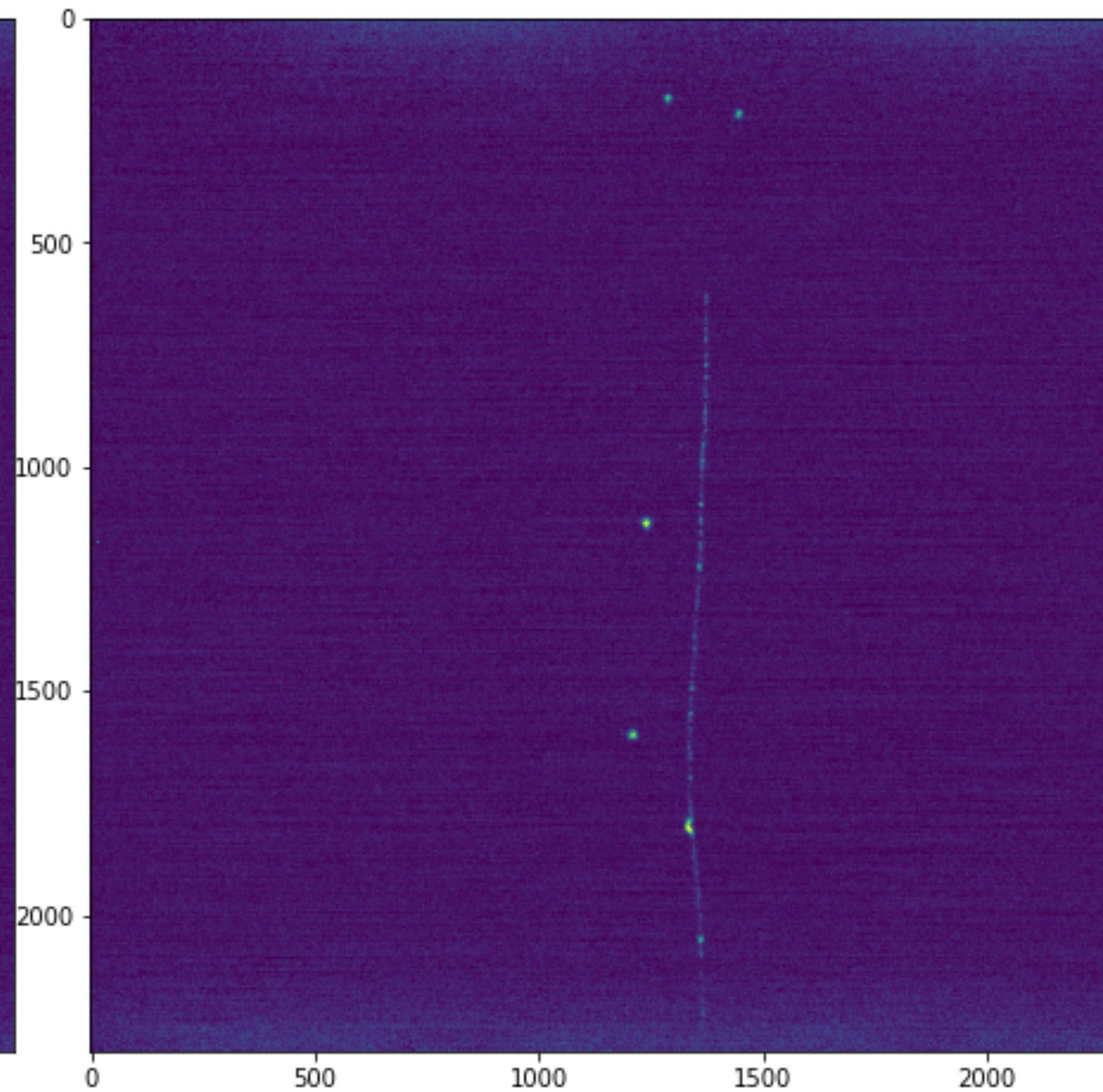
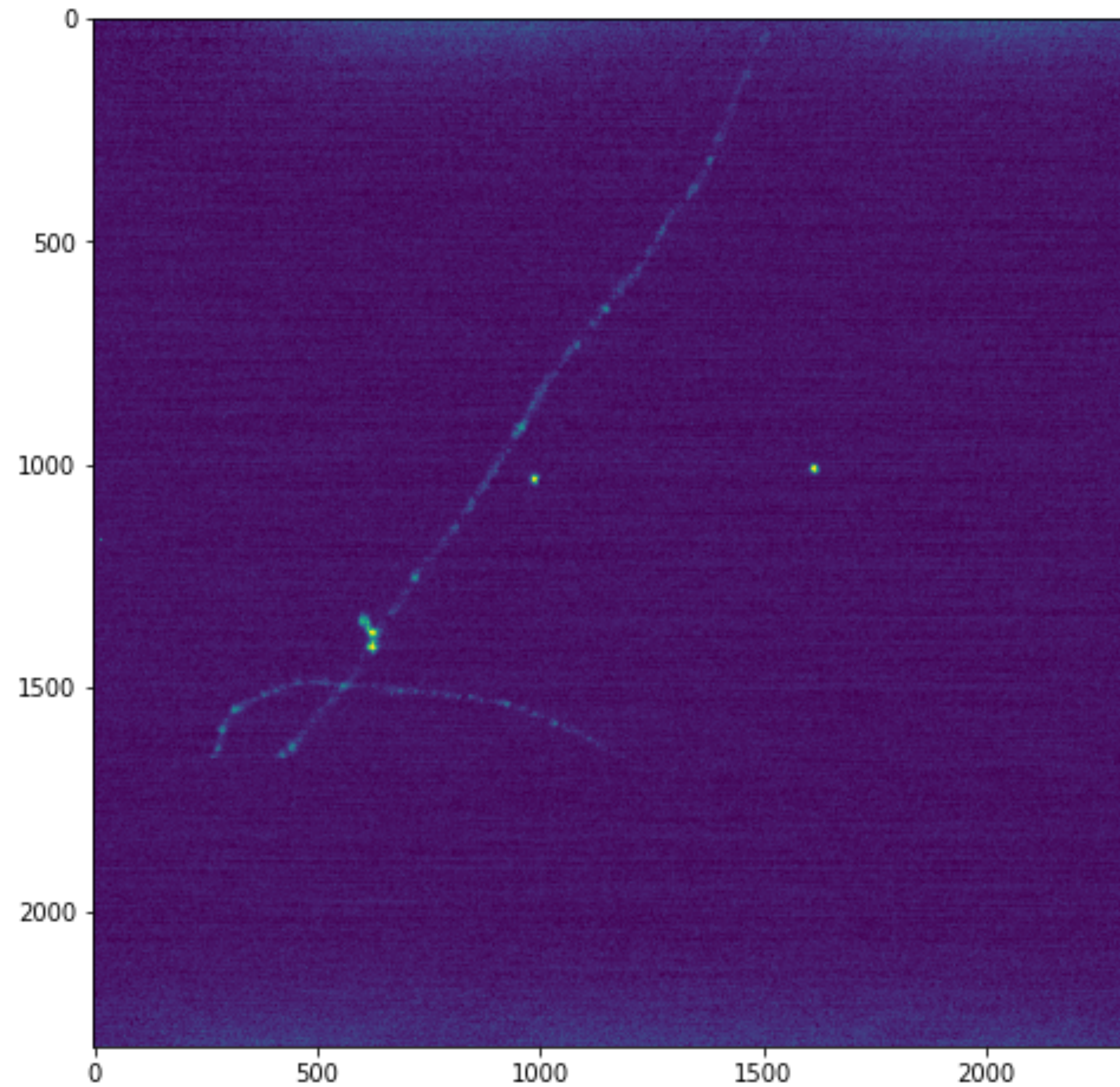
Increasing the flux to 20 l/h only reduced the humidity increasing rate

By-passing the filters worked



LIME: status

This morning, with 5-6% RH, LIME was working again



Good LY and
no hot-spots

LIME: status and plans

- The new humidity sensor is able to indicate relevant issues on the gas quality affecting LY and stability;
- Trigger rate also showed to be a sensitive variable and we are working to put it in the monitoring tools;
- **AmBe** source won't be available next week. We are following a discussion between DAMA and Gran Sasso Lab management;
- Let's hope for the 29/05
 - So, please, fill the shift booking page

May 2023

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
	Commissioning and calibration with ^{55}Fe					
14	15	16	17	18	19	20
	Solving issues of gas system					
21	22	23	24	25	26	27
	Background and calibration with ^{55}Fe					
28	29	30	31			
	AmBe					