

Updates on XY calibration

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Outline

- 2024-11 XY campaign
- GAP 2024-084

Review of November 2024 campaign

- FD shift **2024/11/20 – 2024/12/07** (17 nights)
 - 4 people
 - 9 DAQ nights
 - 27 telescopes —————> first time for **LL1 / LL2 / LL5 / LL6 !!**
 - 31 measurement runs
- Thanks to Hermann-Josef, Kai, Pavel and Martin!
- Some hardware/software/operator errors → all recoverable

2024-11 XY campaign summary

calib. const. / (γ / ADC)

12
10
8
6
4
2

LL1

LL2

LL3

LL4

LL5

LL6

LM1

LM2

LM3

LM4

LM5

LM6

LA1

LA2

LA3

LA4

LA5

LA6

CO1

CO2

CO3

CO4

CO5

CO6

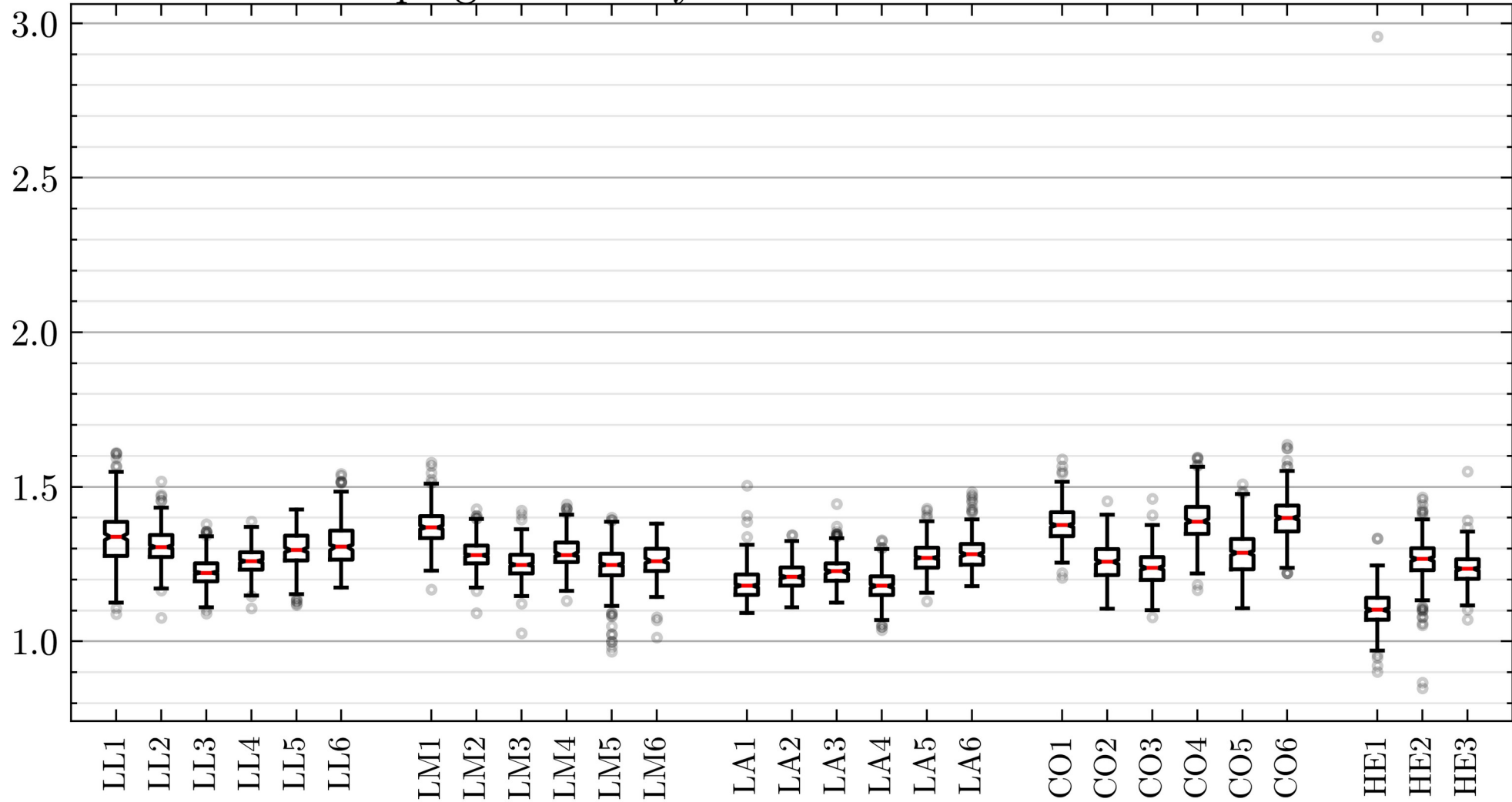
HE1

HE2

HE3

2024-11 XY campaign summary

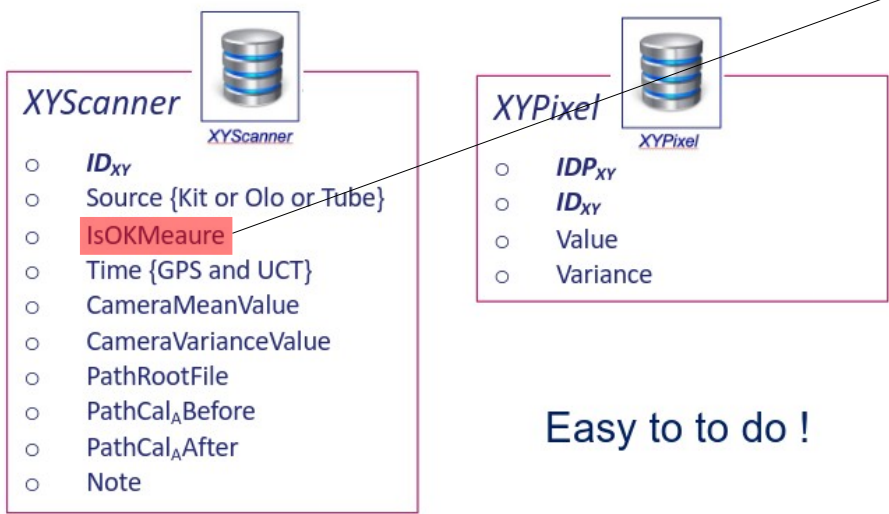
XY calib. const. / std. calib.



Quality assurance (GAP2024-084)



Create A FD_Calib_XY Database




Easy to to do !



Gaetanos/Fabios talk last November

GAP-2024-084

Quality assurance for XY Scanner calibration measurements



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Abstract

The XY scanner [1] offers a new method of calibrating the Fluorescence Detector (FD) cameras. It has been shown that the systematic uncertainty of pixel calibration constants can be minimized to almost half (from 9% to 4.4%) by using a smaller light source over the standard (Drum) calibration. We examine the data from past XY scanner measurement runs, and propose test statistics as well as first quality cuts based on which the usability of future XY scanner can be evaluated.

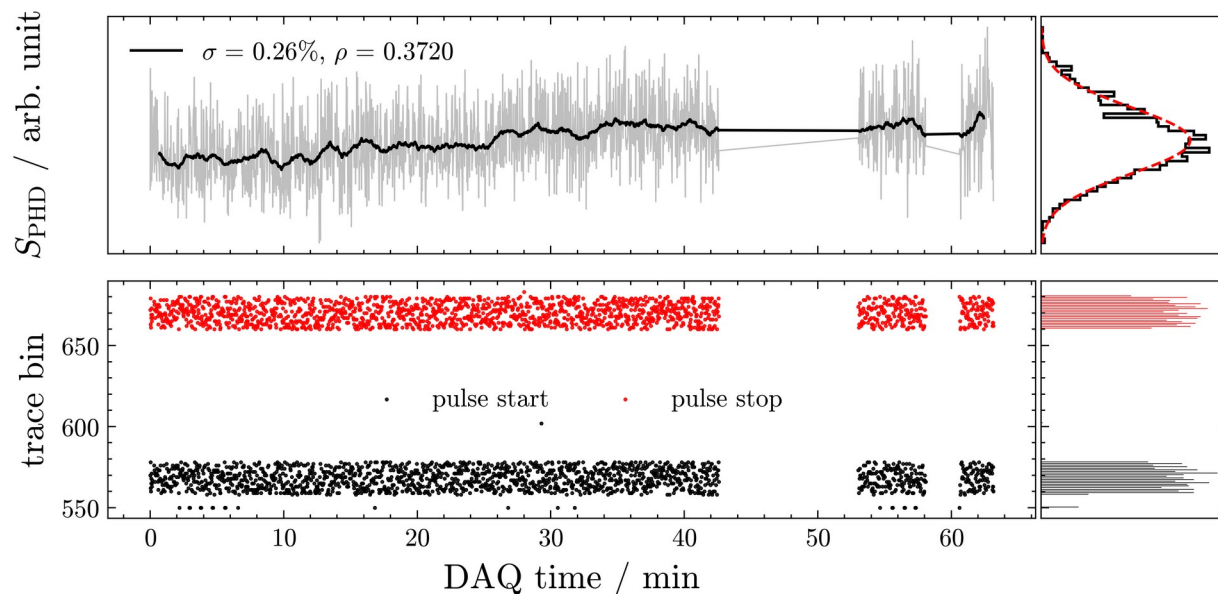
Keywords: Fluorescence, Detector, FD, XY, Scanner, Quality, Assurance, Pixel, Calibration

Quality assurance (GAP2024-084)

- Analyze all past XY runs, identify outliers, define test statistics
 - Cal A open shutter before/after, Olomouc light source, stepsize 6 cm
- Reject runs with abnormal test statistics

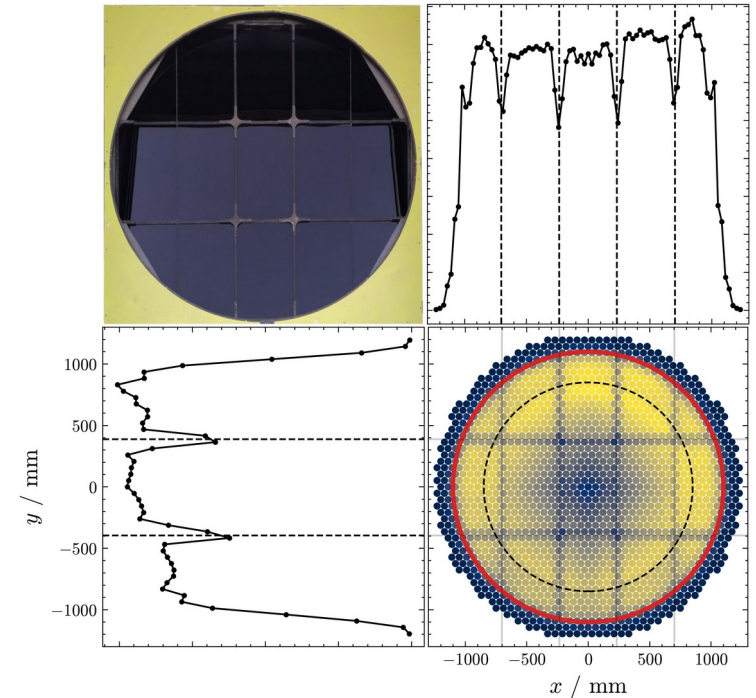
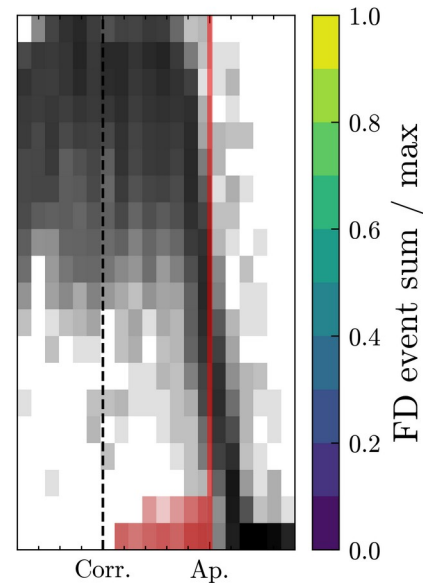
Quality assurance (GAP2024-084)

- Analyze all past XY runs, identify outliers, define test statistics
 - Cal A open shutter before/after, Olomouc light source, stepsize 6 cm
- Reject runs with abnormal test statistics
 - Light source stability



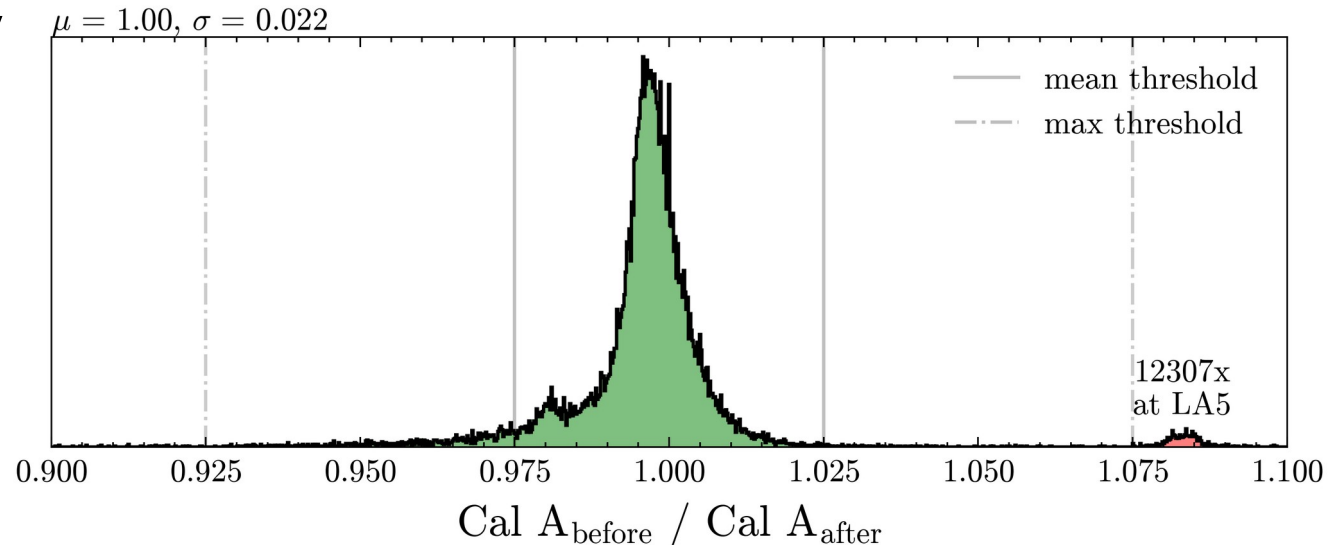
Quality assurance (GAP2024-084)

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 - Cal A open shutter before/after, Olomouc light source, stepsize 6 cm
- Reject runs with abnormal test statistics
 - Light source stability
 - Measurement setup



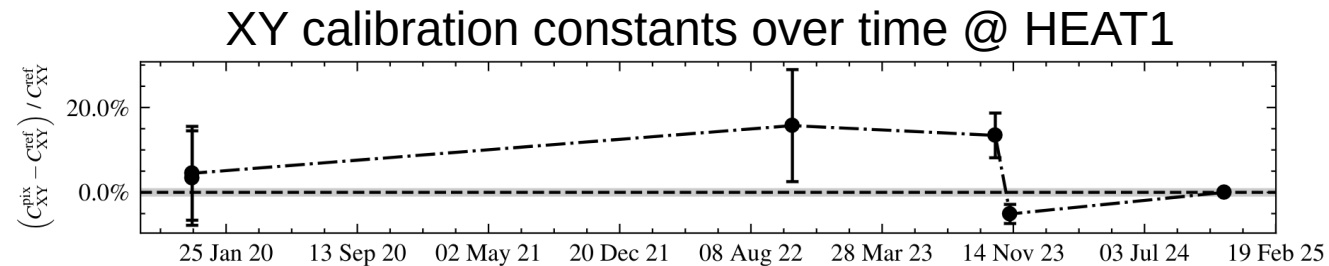
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 - Camera stability



Quality assurance (GAP2024-084)

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- Reject runs with abnormal test statistics
 - Light source stability
 - Measurement setup
 - Camera stability
 - (Calibration stability)



Backup

HE1 @ 2024-11

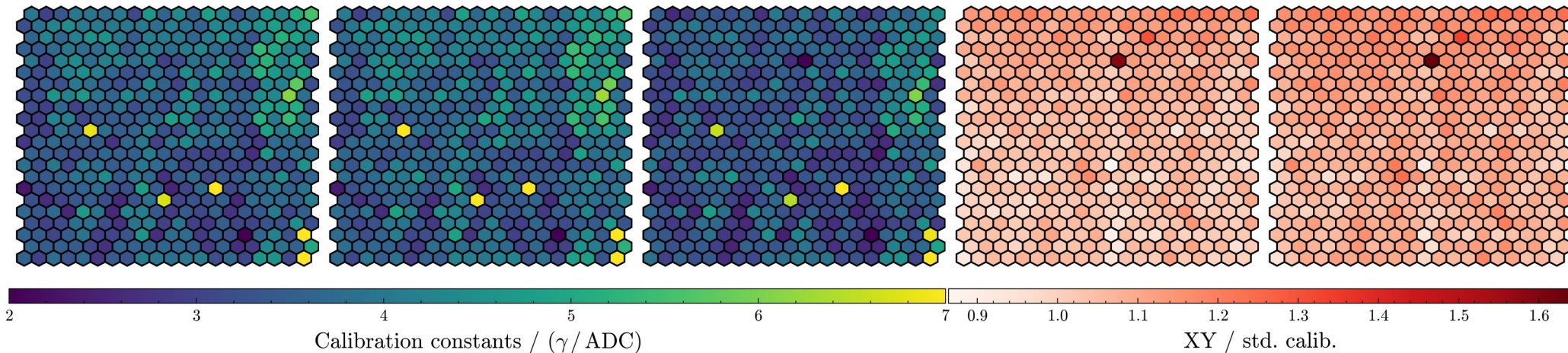
XY

XY corr.

std. calib.

XY / std. calib.

XY corr. / std. calib.



LM6 @ 2024-11

XY

XY corr.

std. calib.

XY / std. calib.

XY corr. / std. calib.

