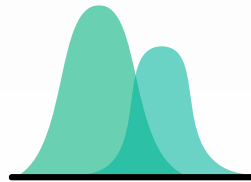
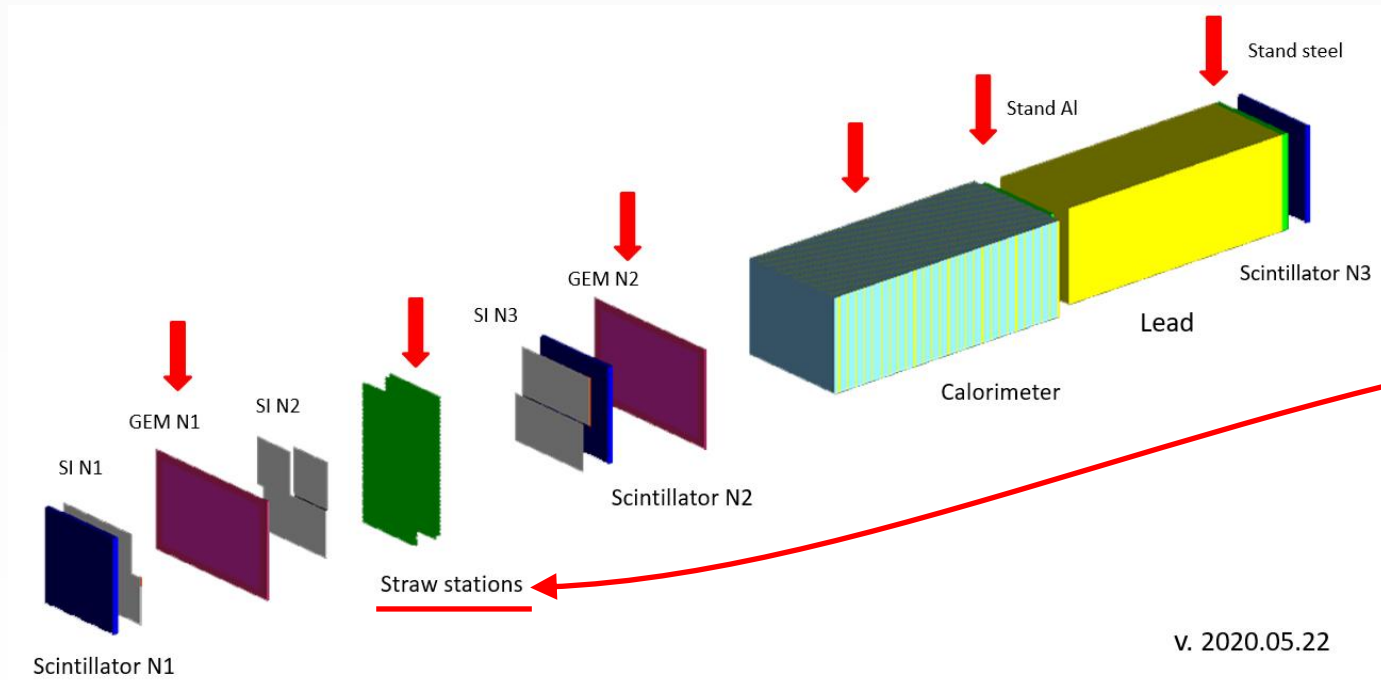


The system for parameters of working gas monitoring at MiniSPD stand

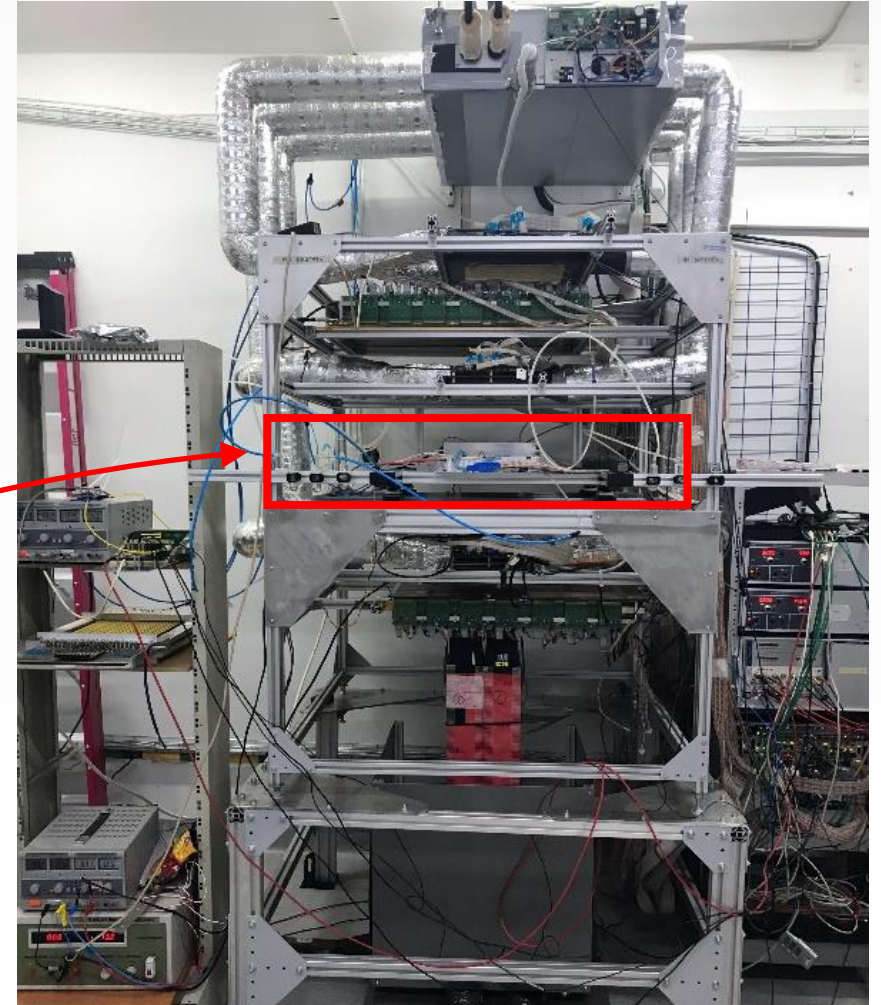
K.M. Salamatin



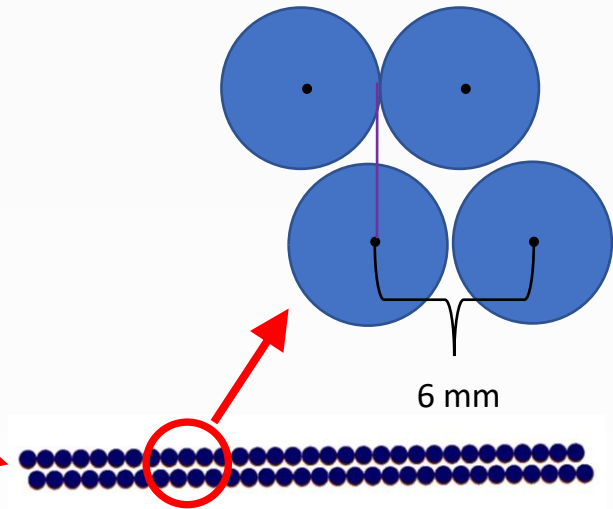
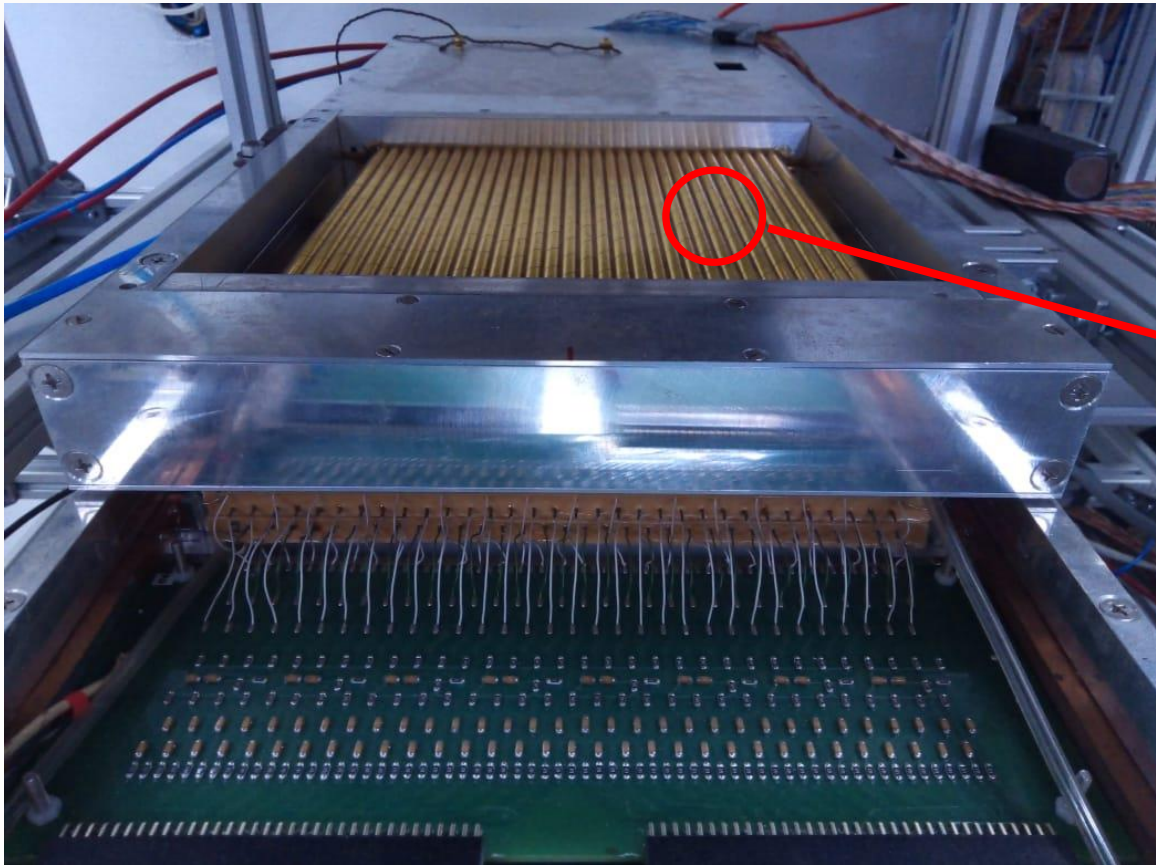
MiniSPD test stand



v. 2020.05.22

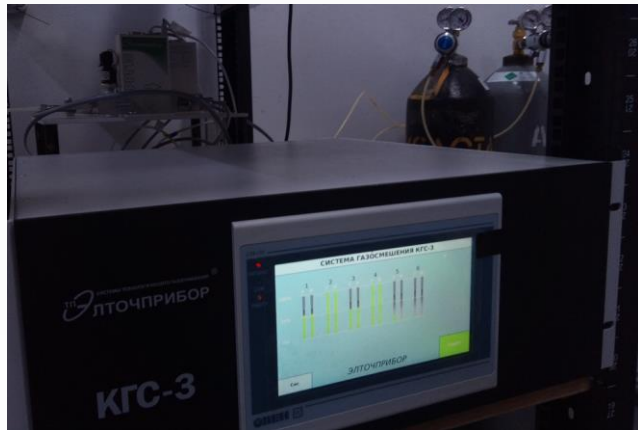


Straw tracker



- Cameras: 2
- Straws (in one camera): 2×32 (2 layers)
- D: 6 mm; L: 200 mm; d: 30 μ m
- HV: ISEG EHS 8030P
- TDC: AFI TDC64VE

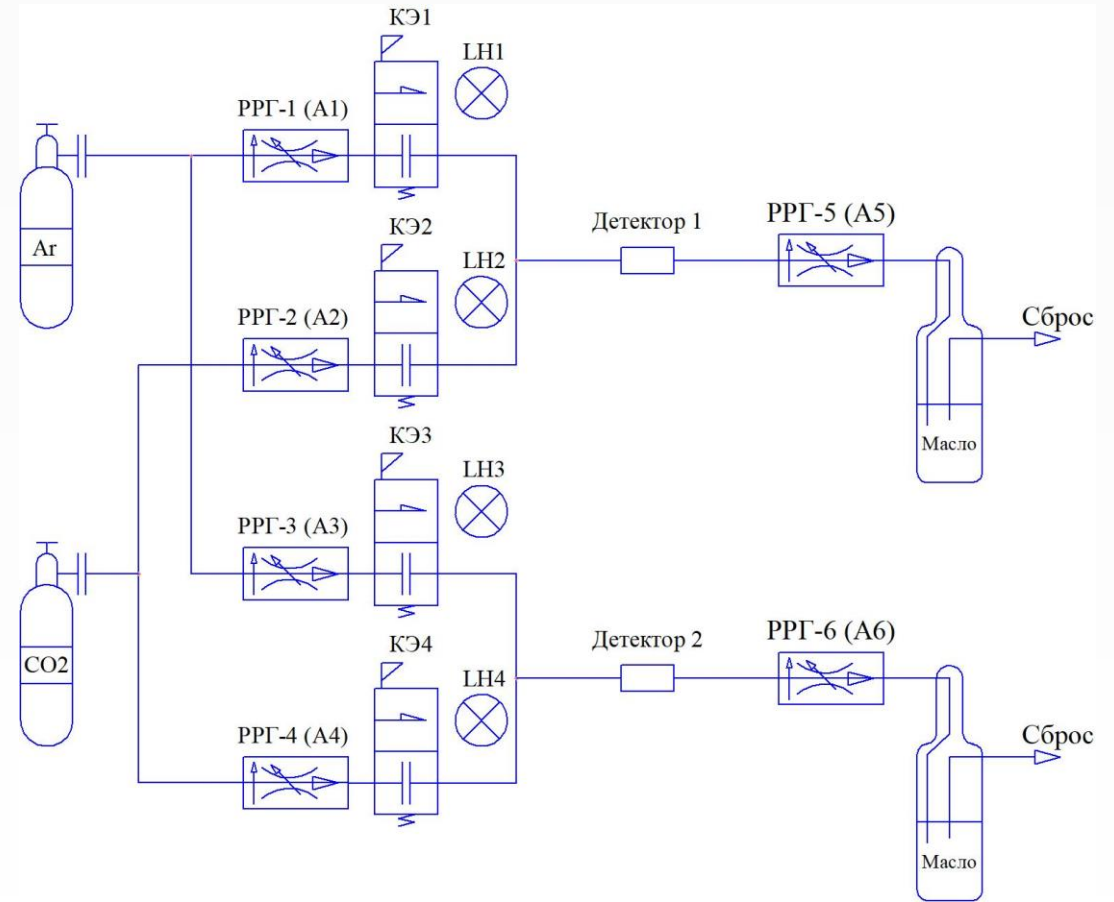
Gas supply system



Gas Mixing Controller



Mass Flow Controller



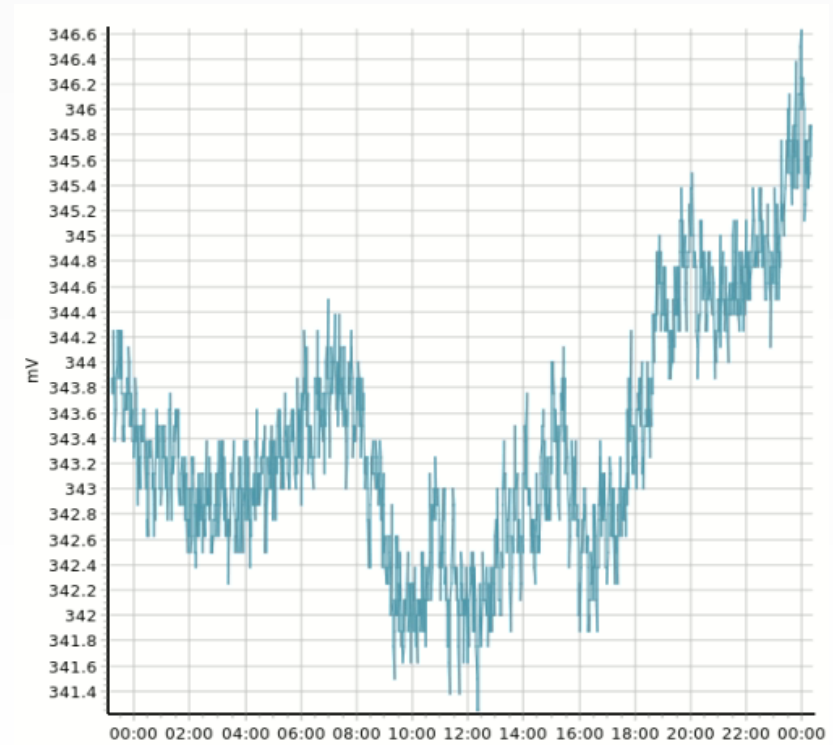
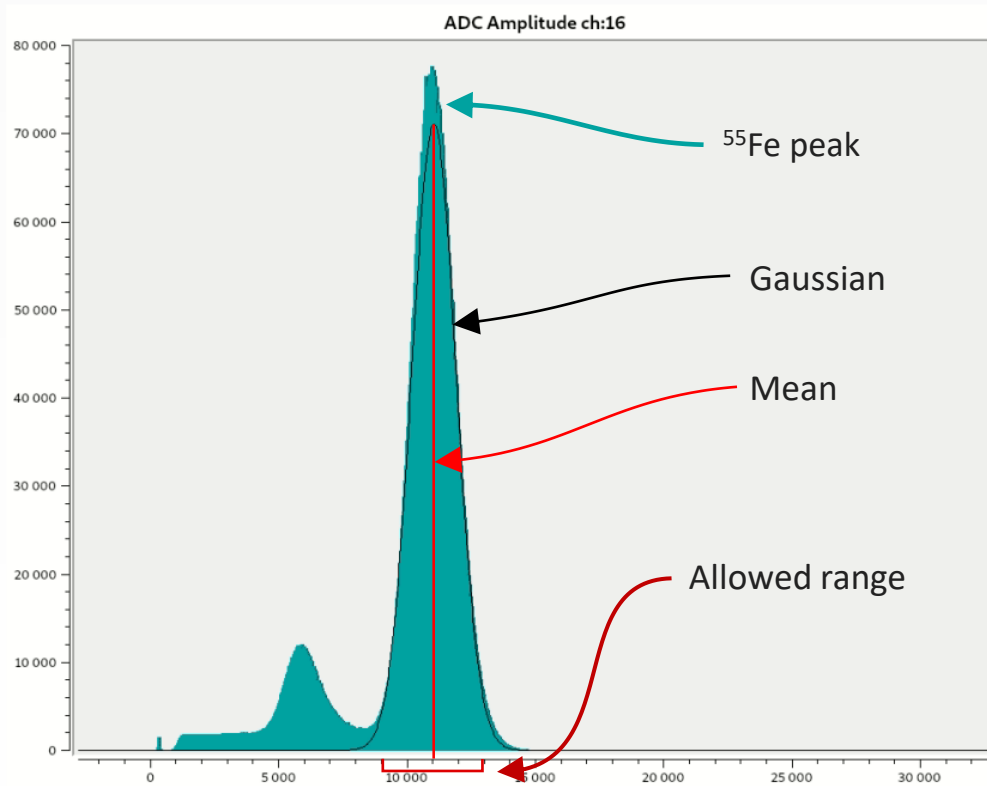
Slow Control System

What does the gas gain factor depend on?

- Gas temperature
- Absolute gas pressure
- Proportional composition of the gas mixture
- Supply voltage

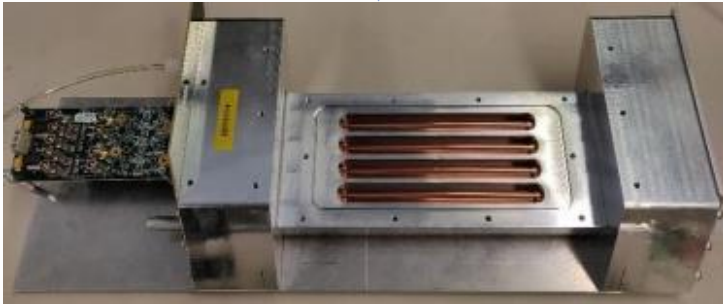


The method of control



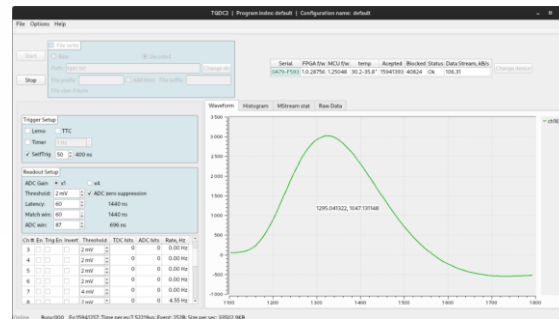
Means of control

Gas Mixture



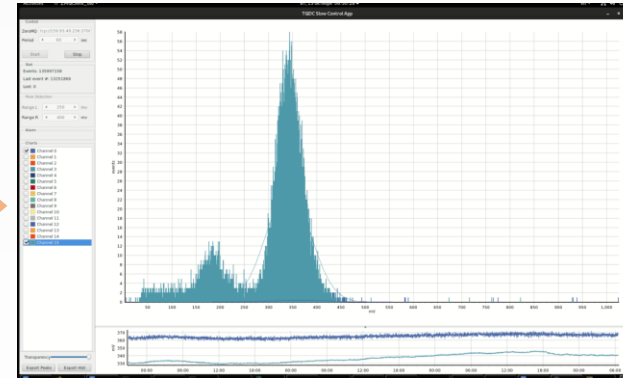
Gas Gain Monitor
(small straw chamber)

Events



ADC (AFI TQDC16VS) & Driver

Events (ZeroMQ)



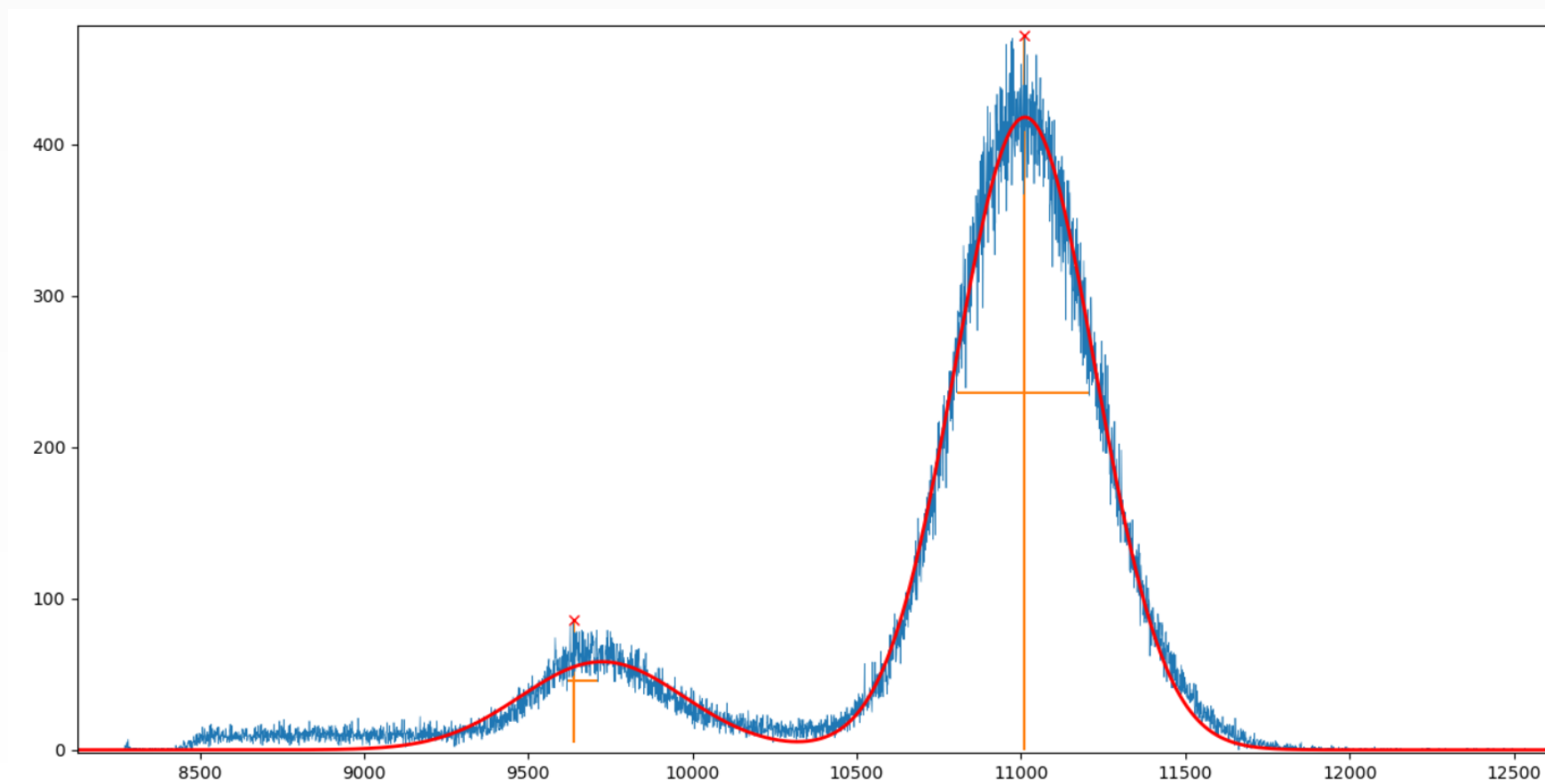
Slow Control App

Alarm!



Operator

Locating of the control peak



Software interface

Main settings

Statistics

Alarm settings

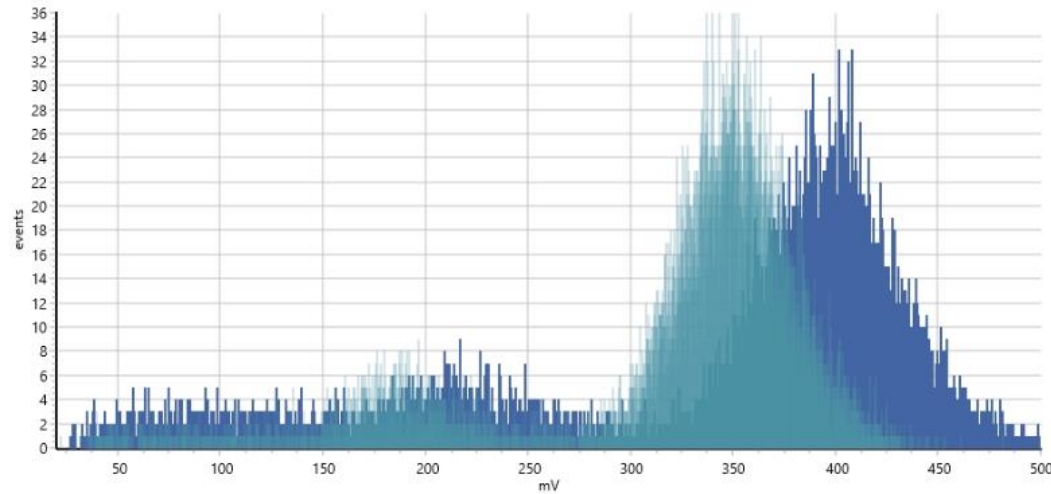
Channels list
& Legend

Display settings

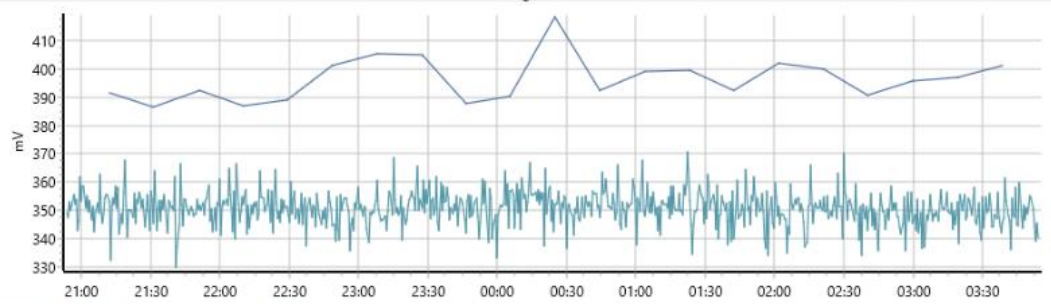
Export tools

The control panel for the TQDC Slow Control App includes the following sections:

- Control:** ZeroMQ (tcp://), Period (15000), Start/Stop buttons, Trim (Left: 20 mv, Right: 500 mv).
- Stat:** Events: 11424903, Last event #: 11619794, Lost: 0.
- Alarm:** (Empty section)
- Charts:** List of channels 4 through 15 with checkboxes. Channel 15 is selected.
- Transparency:** Slider set to approximately 50%.
- Export tools:** Export Peaks and Export Hist buttons.

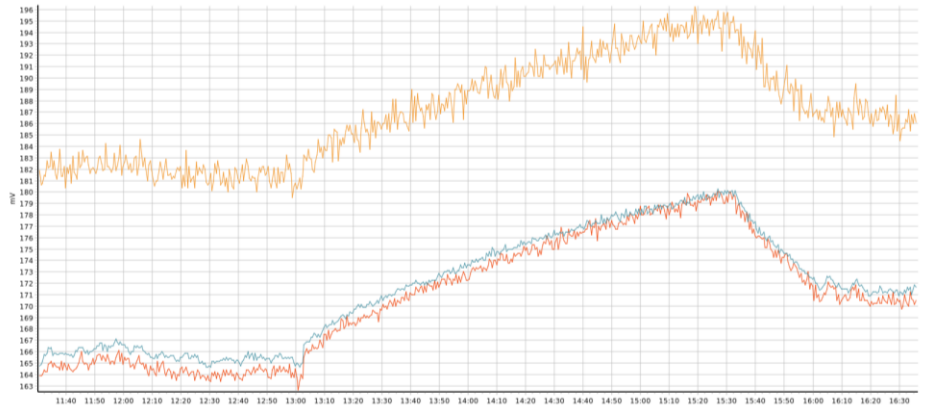


Last histograms

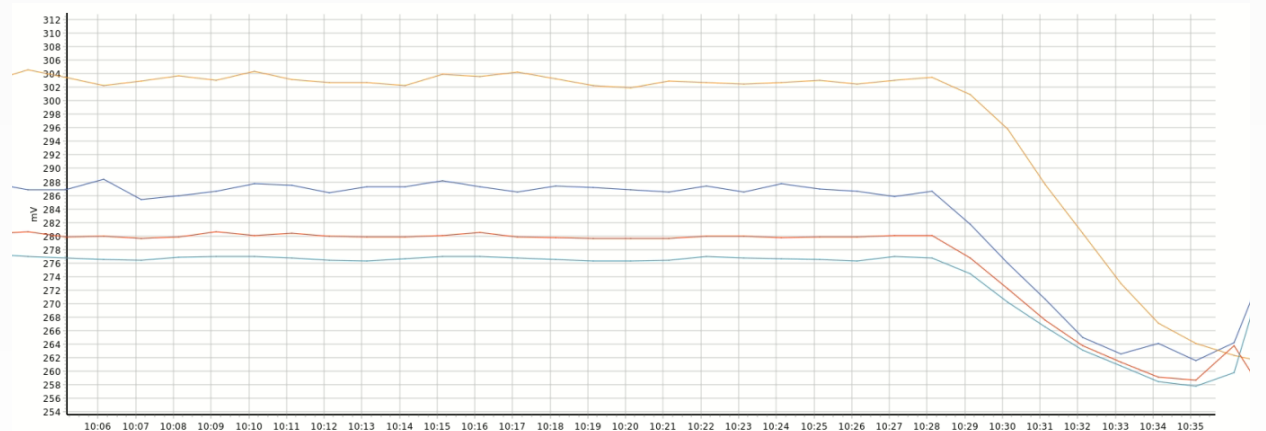


Peaks in time

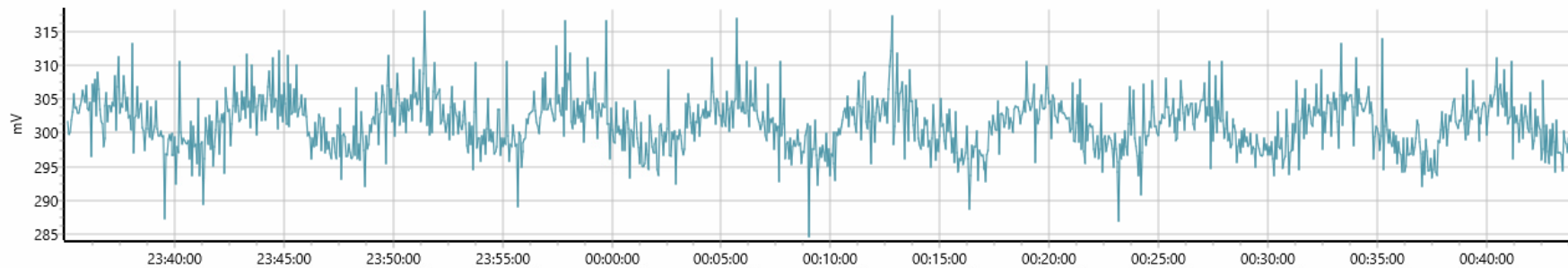
Results of software operation



Temperature effect

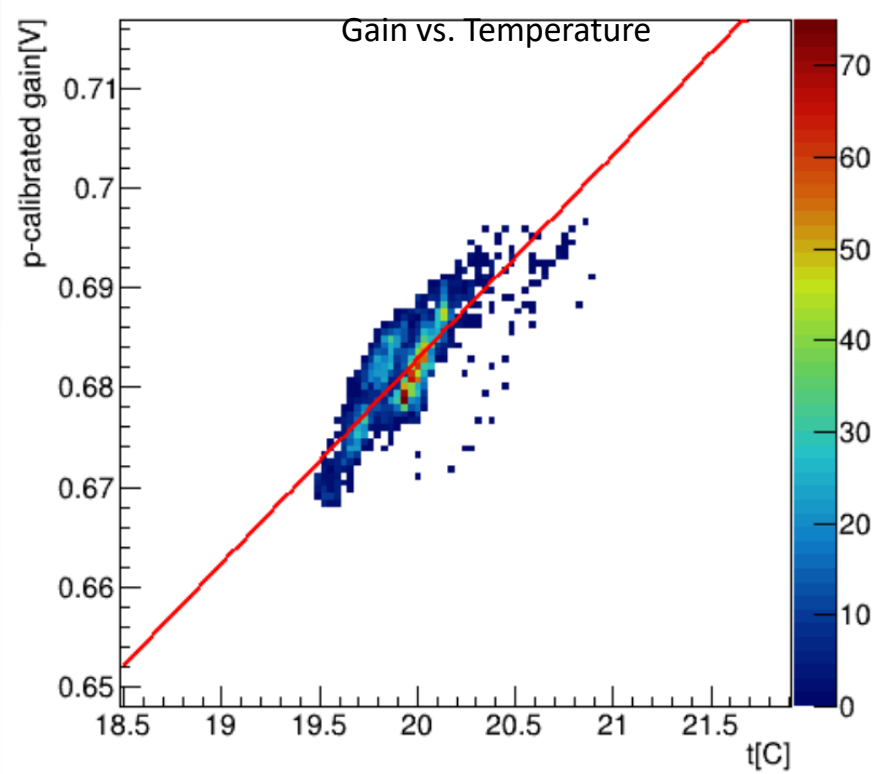
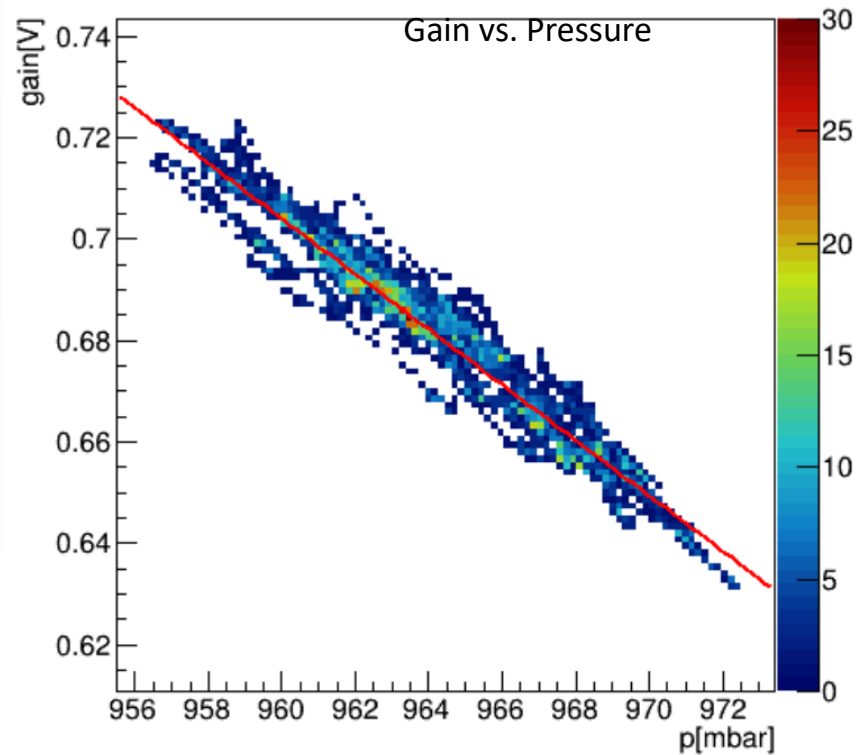


Out of gas (Ar)

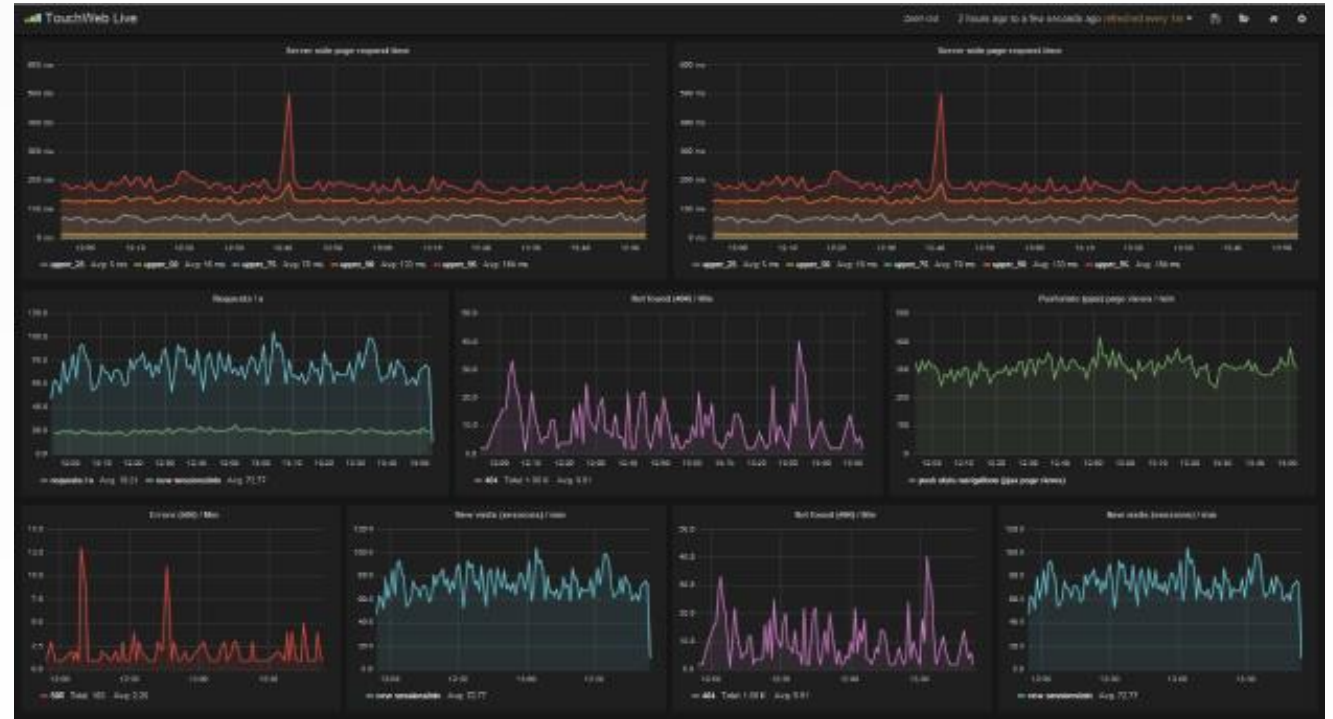


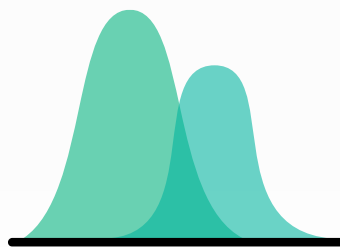
Bad climate control effect

Development: Temperature and pressure correction



Development: Integration with Tango Controls





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