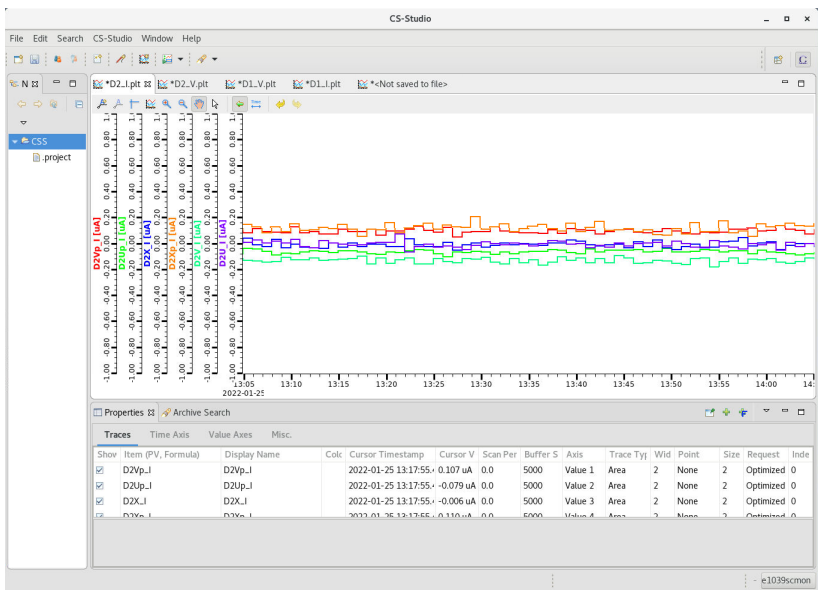
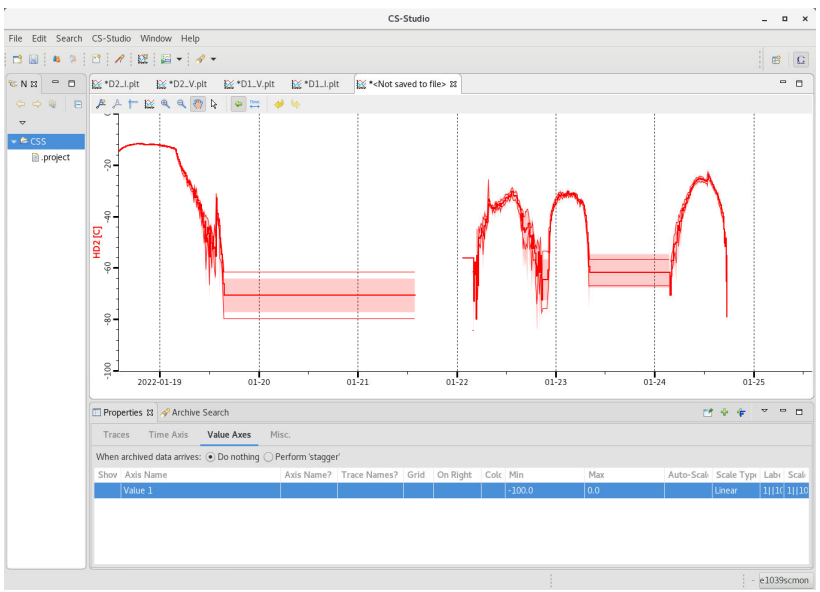
Global Slow Control System

- Server computer: `e1039scrun`
  - Will add RAM
  - Will check if the server processes run fine after OS reboot
  - Will check if the server processes run fine for a long time
- UI computer: `e1039scmon1`
  - Succeeded at launching CS-Studio
    - Live mode
    - Archiver mode





  - Misha will test the alarm handler
  - Hope to add the target-related variables to this system

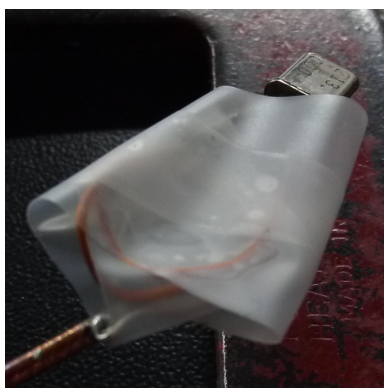
Readout of Manual Annealing System

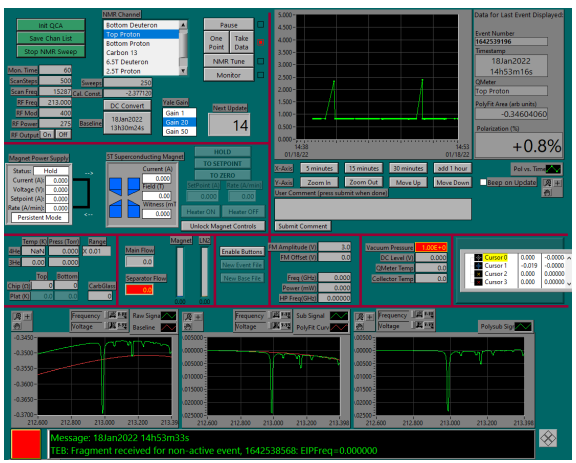
- Sensors and readout device
  - Two thermocouples (TCs)
  - MCC E-TC at slow-control rack
  - Waqar and I will connect them on Thursday
- Software interface
  - Set up a standalone VI on the target computer,
    which shows a graph of “temperature vs time” of each channel
  - With a readout rate of 1 Hz and a TSV-file output
  - Any specific function that you want at present??

PDP Readout Test

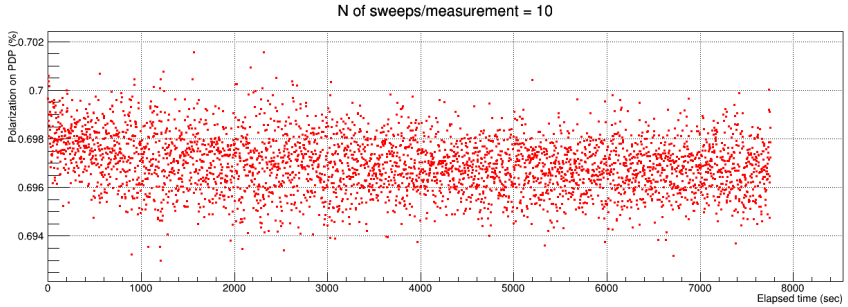
- Purpose: Check whether the measurement precision $(\sigma) \propto 1/\sqrt{N_{sweep}}$
- GitHub branch for development:

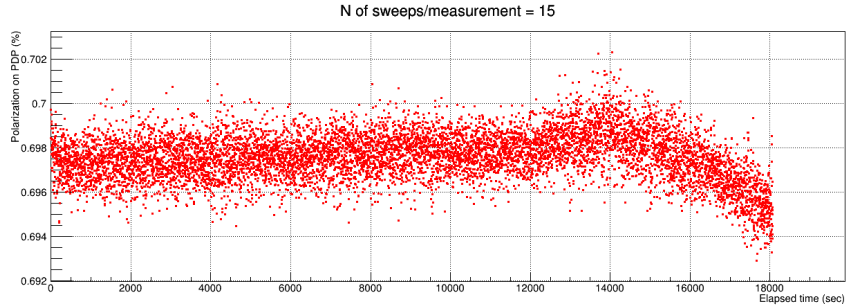
  `https://github.com/uva-spin/e1039-target-controls/tree/devel_pdp`
- Problem last week: N of opened TCP ports exceeds the limit
  - Fixed a bug in "TCL Get Message.vi", which didn't close TCP ports
  - Found that the error stops when all "Read" buttons in "TTM.vi" and "MWC.vi" were disabled. Not a permanent fix yet
- Long measurements on Jan. 21-24
  - All devices were kept power-on beforehand
  - With N of sweeps/measurement = 10, 15, 250 and 500
  - TSV files at `https://drive.google.com/drive/folders/1MLGu8yyPVVAqm6fDmxFEhgldQWHQcQzu`

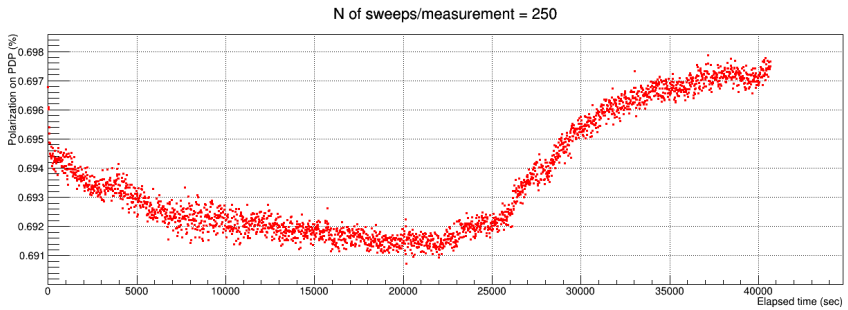


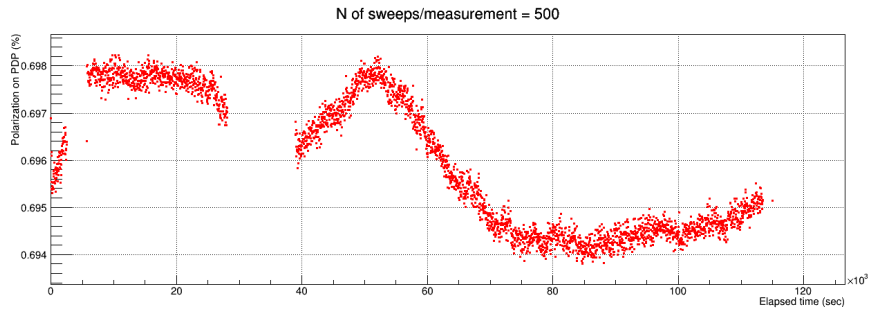


PDP output value vs elapsed time



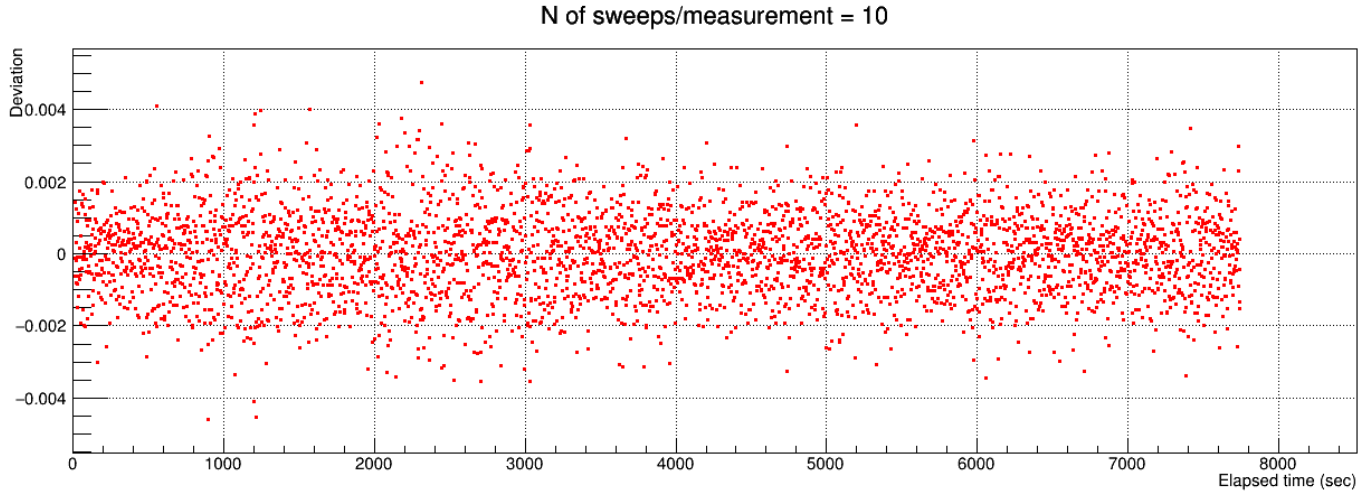


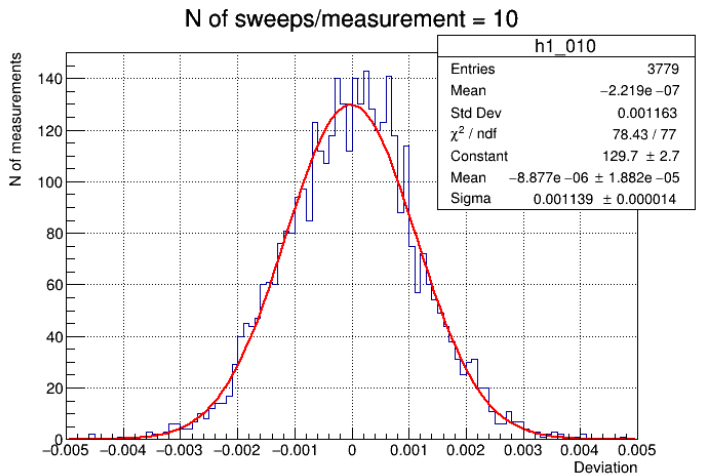




- Smaller drift and no jump this time

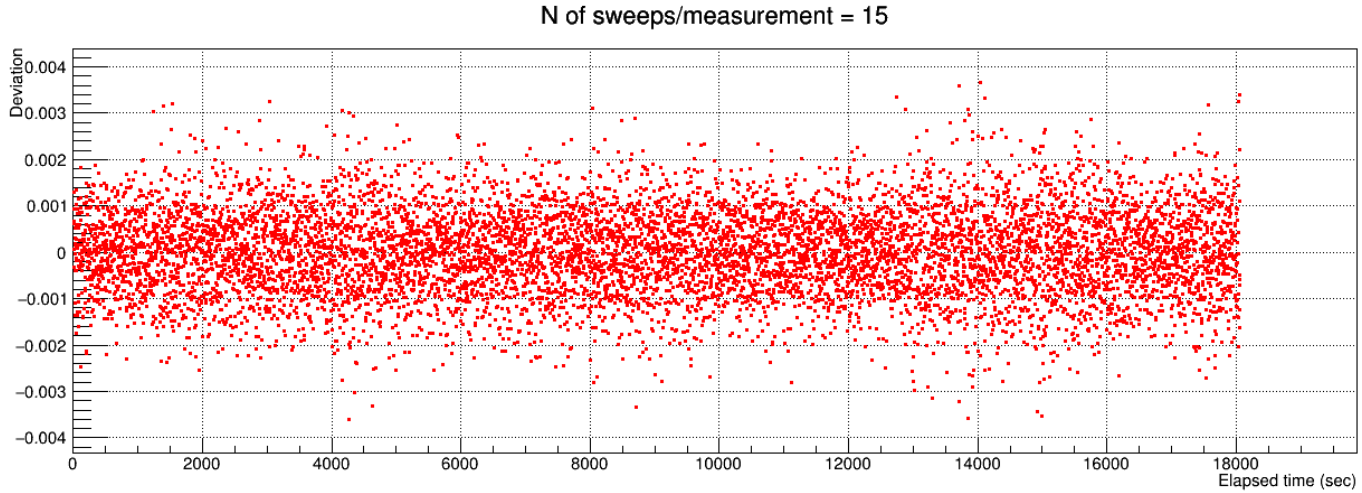
- Deviation from 10-point average: $\delta_i^P \equiv P_i - \sum_j^{i-5\cdots i-1,i+1\cdots i+5} P_j/10$
  - $N_{sweep} = 10$

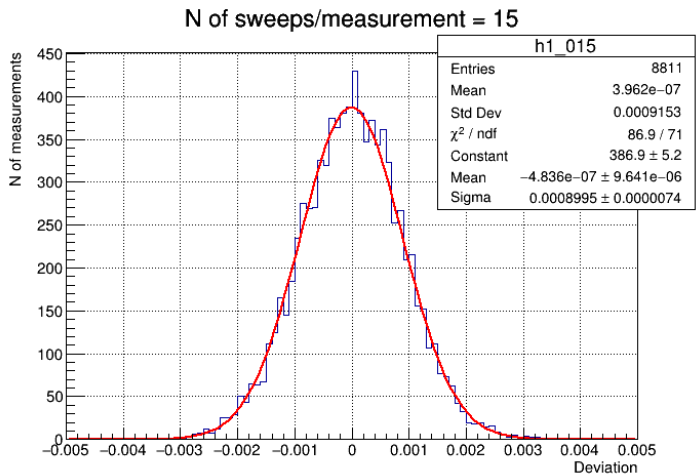




$$\sigma_{Gaus} \cdot \sqrt{N_{sweep}} = 0.0036$$

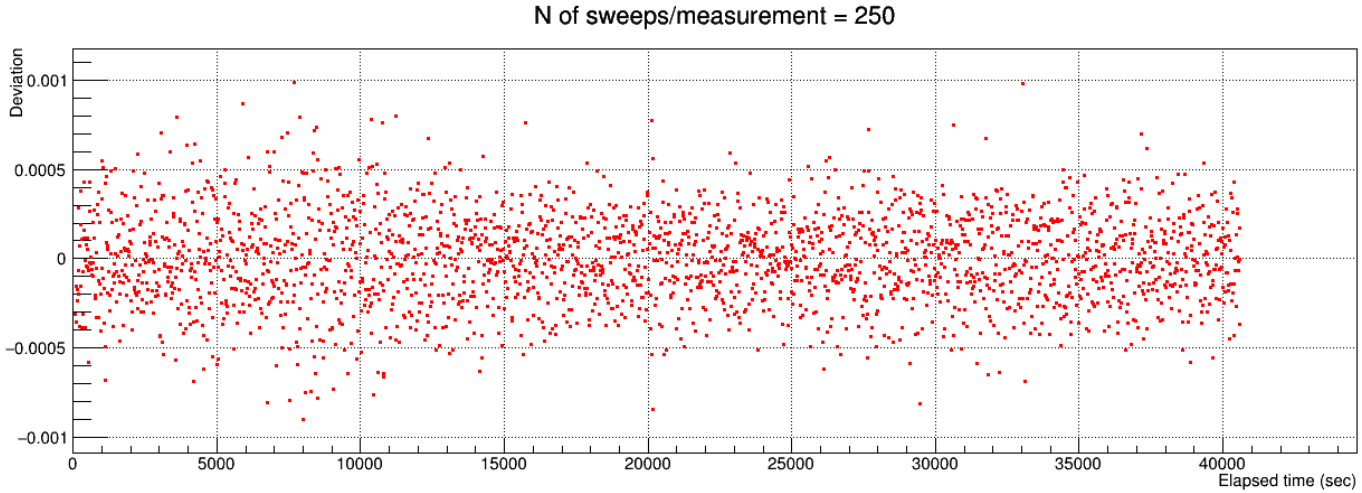
- Deviation from 10-point average: $\delta_i^P \equiv P_i - \sum_j^{i-5\cdots i-1,i+1\cdots i+5} P_j/10$
  - $N_{sweep} = 15$

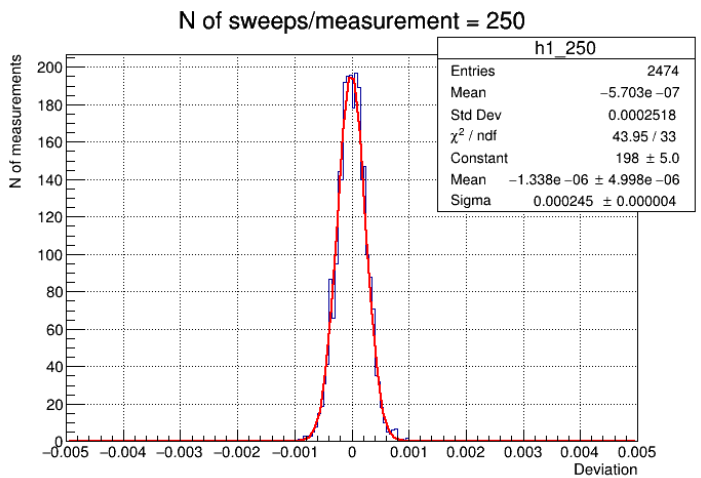




$$\sigma_{Gaus} \cdot \sqrt{N_{sweep}} = 0.0035$$

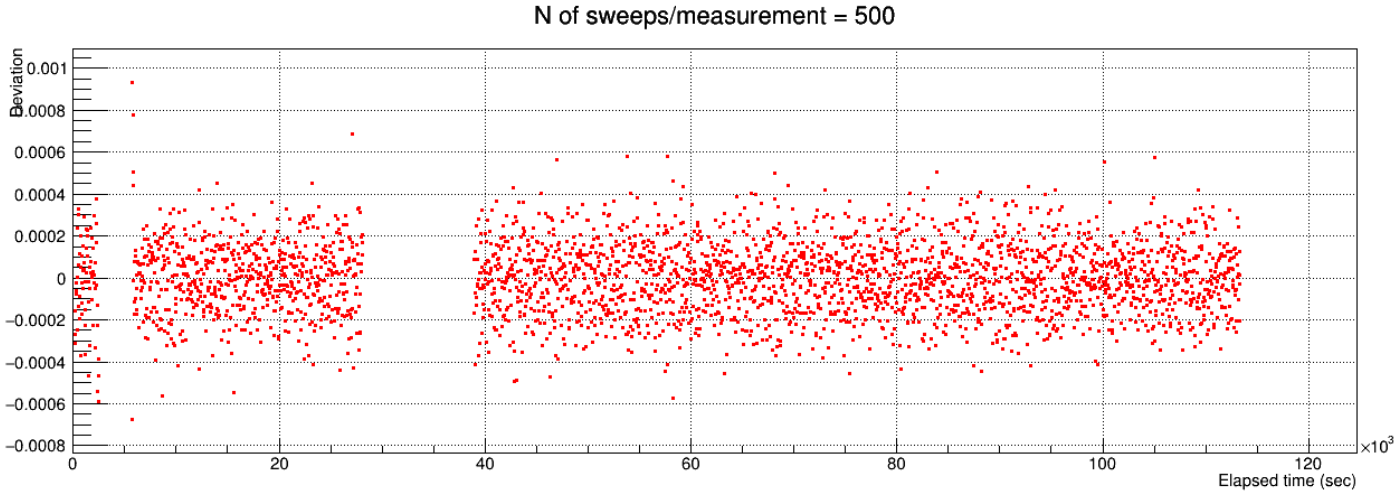
- Deviation from 10-point average: $\delta_i^P \equiv P_i - \sum_j^{i-5\cdots i-1,i+1\cdots i+5} P_j/10$
  - $N_{sweep} = 250$

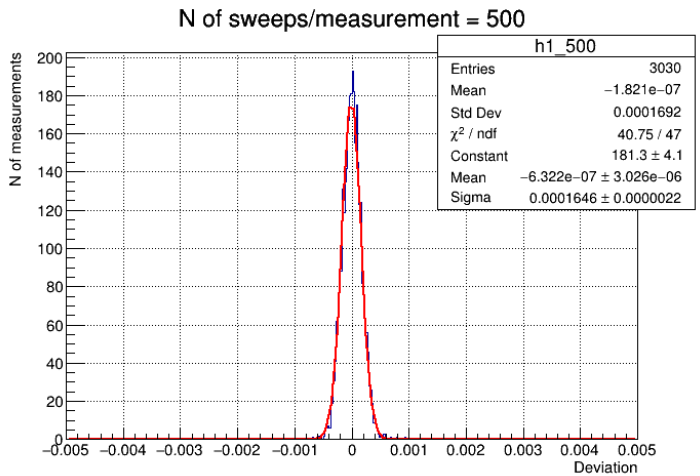




$$\sigma_{Gaus} \cdot \sqrt{N_{sweep}} = 0.0039$$

- Deviation from 10-point average: $\delta_i^P \equiv P_i - \sum_j^{i-5\cdots i-1,i+1\cdots i+5} P_j/10$
  - $N_{sweep} = 500$





$\sigma_{Gaus} \cdot \sqrt{N_{sweep}} = 0.0037$

  - $\sigma_{Gaus} \cdot \sqrt{N_{sweep}}$ is constant. OK