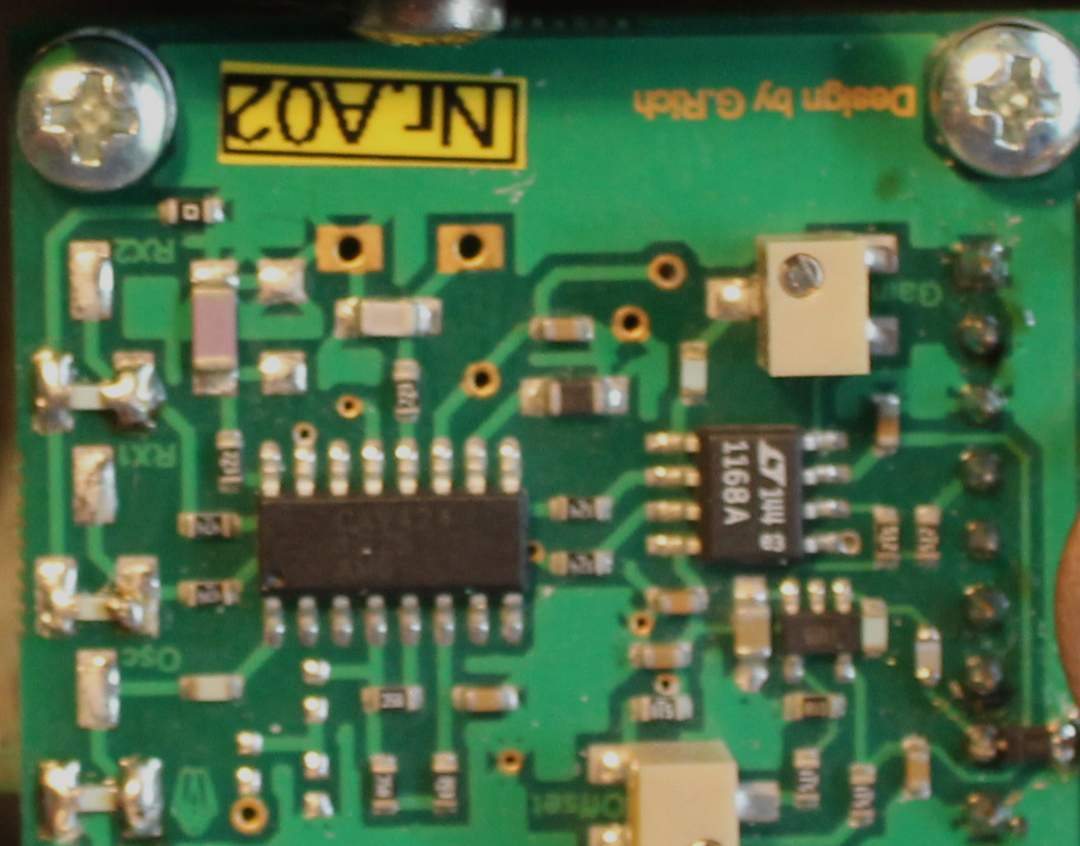


The AGATA Patch Box and the LN2 Readout

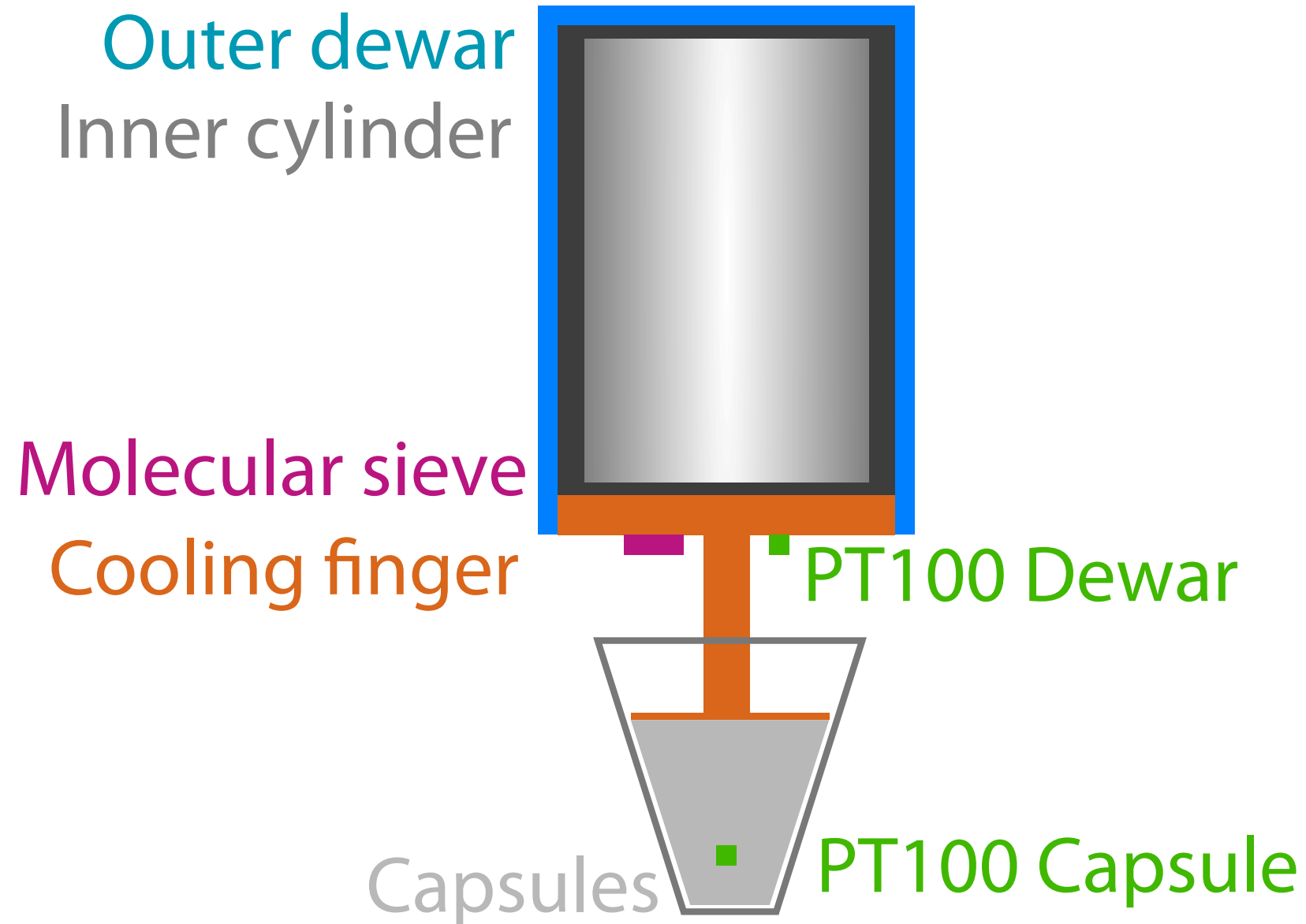
15th AGATA week GANIL 2014

B. Birkenbach, H. Hess, A. Vogt, T. Steinbach, D. Schneiders,
J. Eberth, P. Reiter

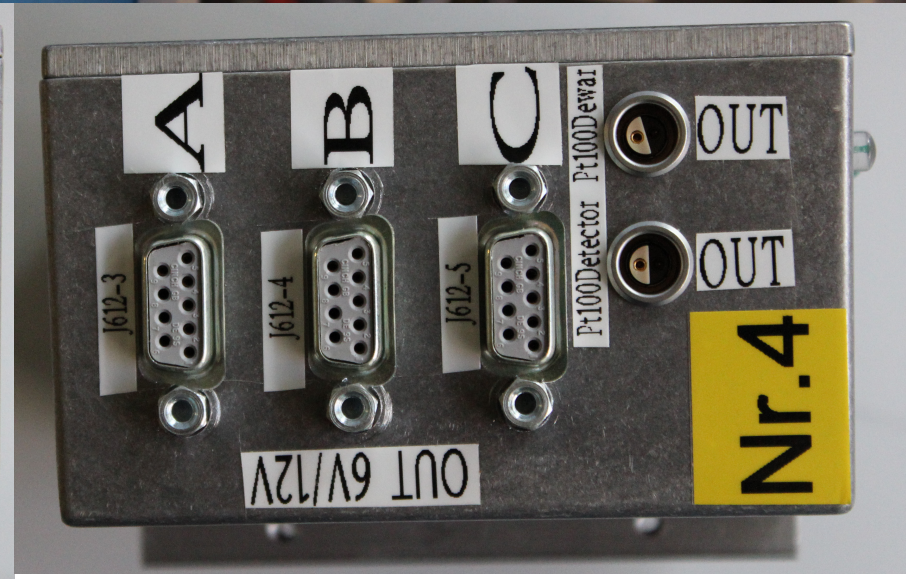
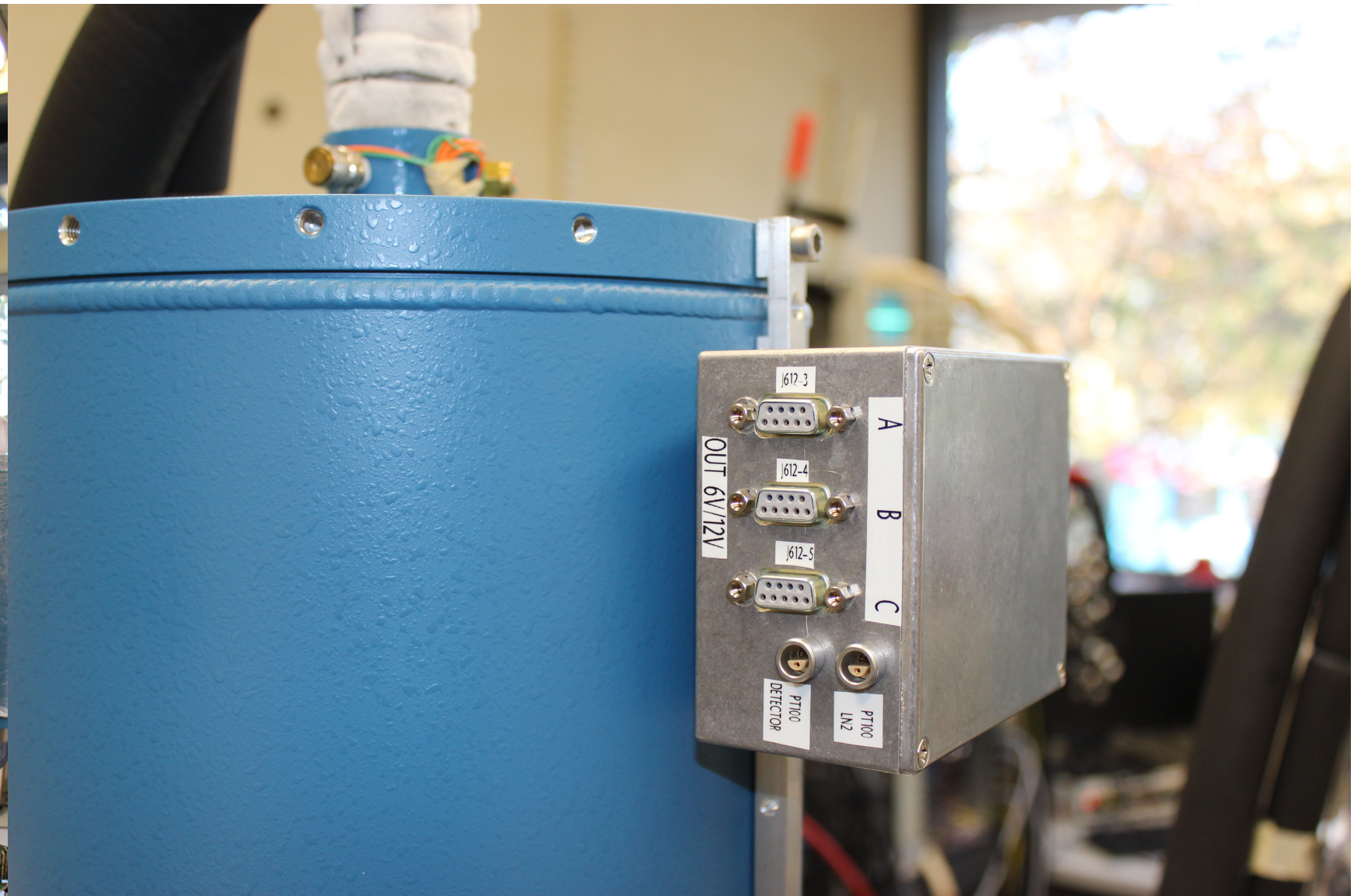
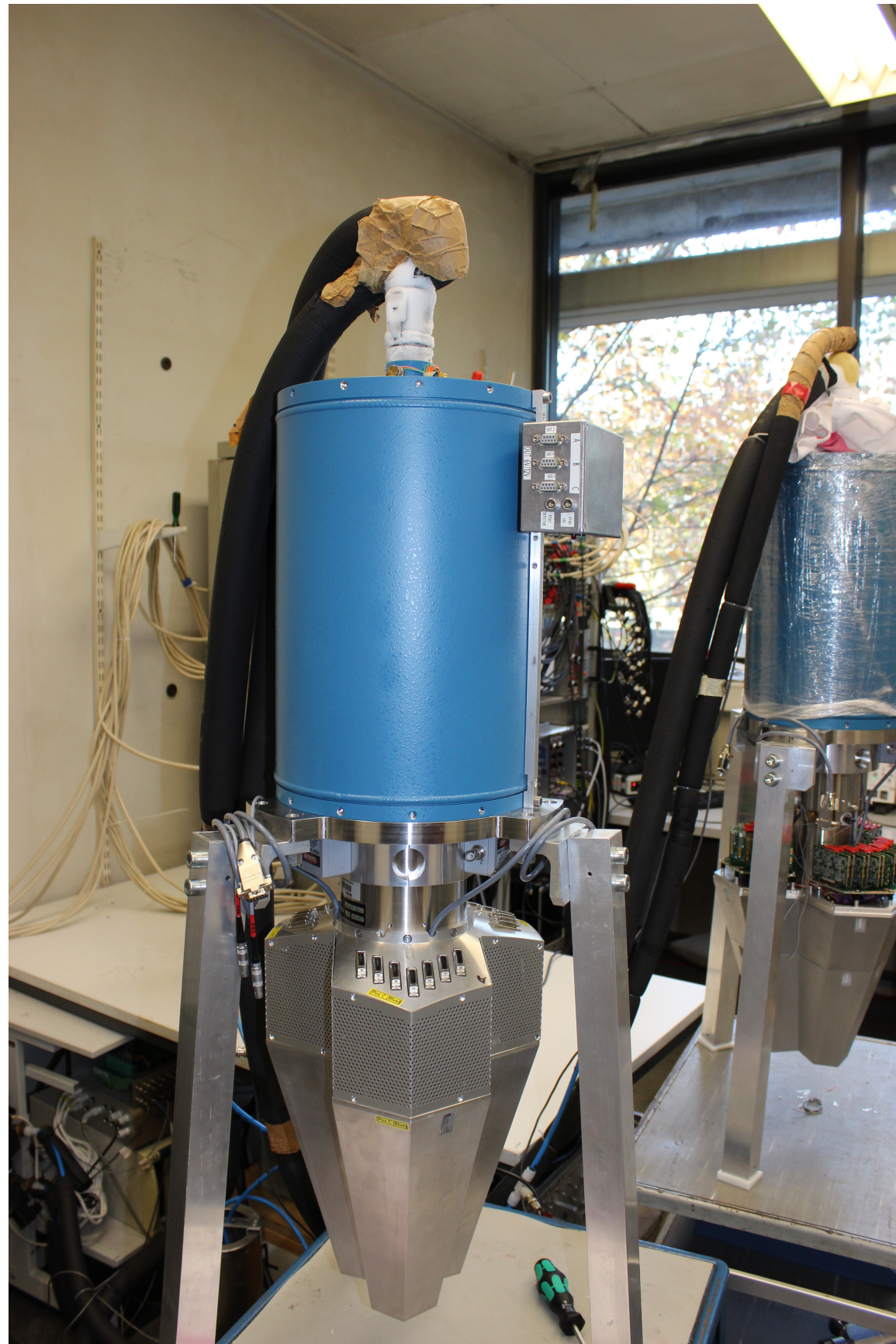


What is the patch box used for?

- **The patch box is the interface between infrastructure and the detector**
- It passes the two PT100 signals to the infrastructure
- It takes the big Fischer connectors from the LVPS. It filters and passes the power line it to the detectors
- It takes the capacitive readout of the LN2 status of the dewar, transforms and passes it to the infrastructure
- It houses the BSD card



Where is the patch box located?



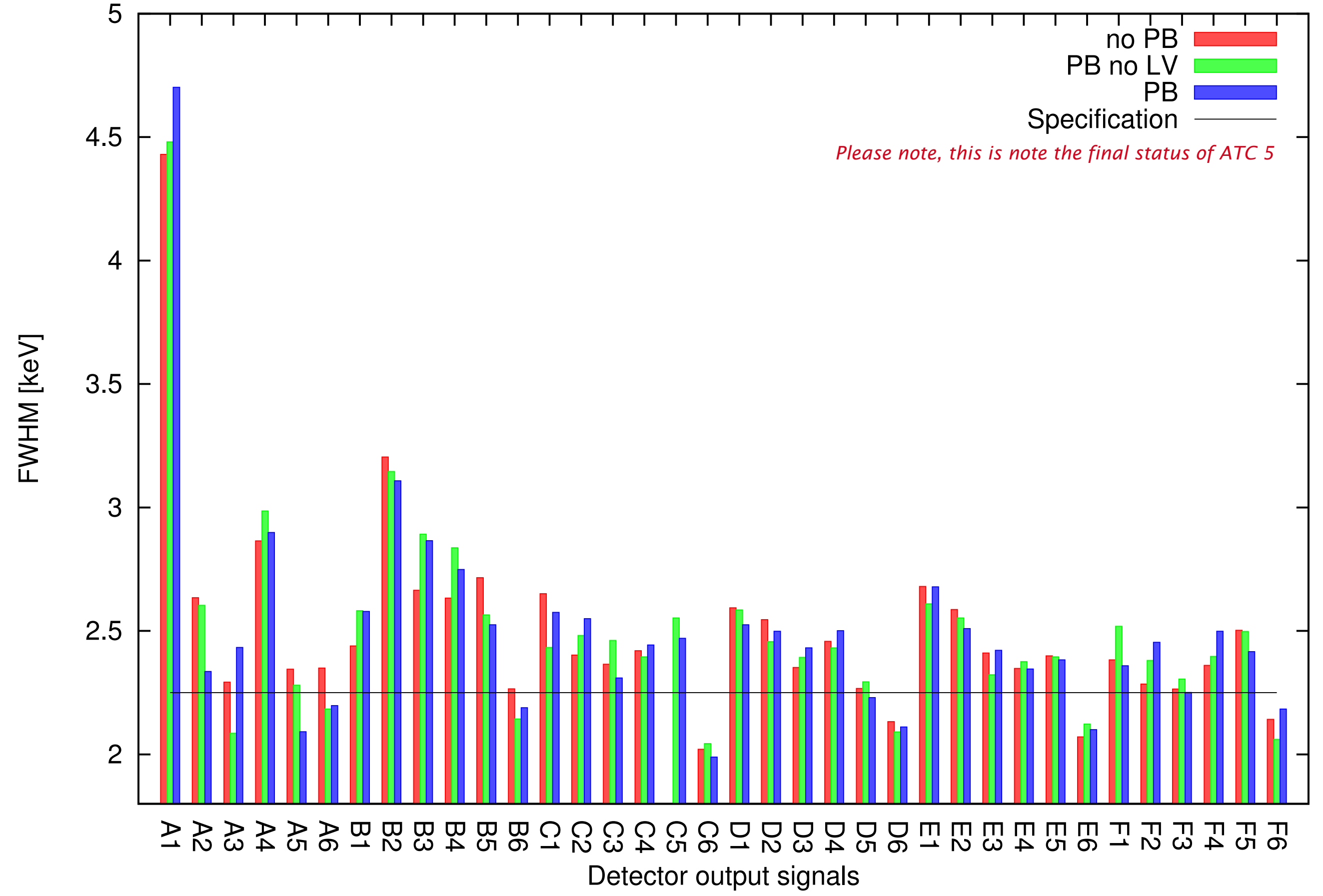
Does the patch box influence the detector performance

B002 1.3 MeV - ATC5 2014/08/15

standard NIM
low voltage
supply and
patch box not
mounted

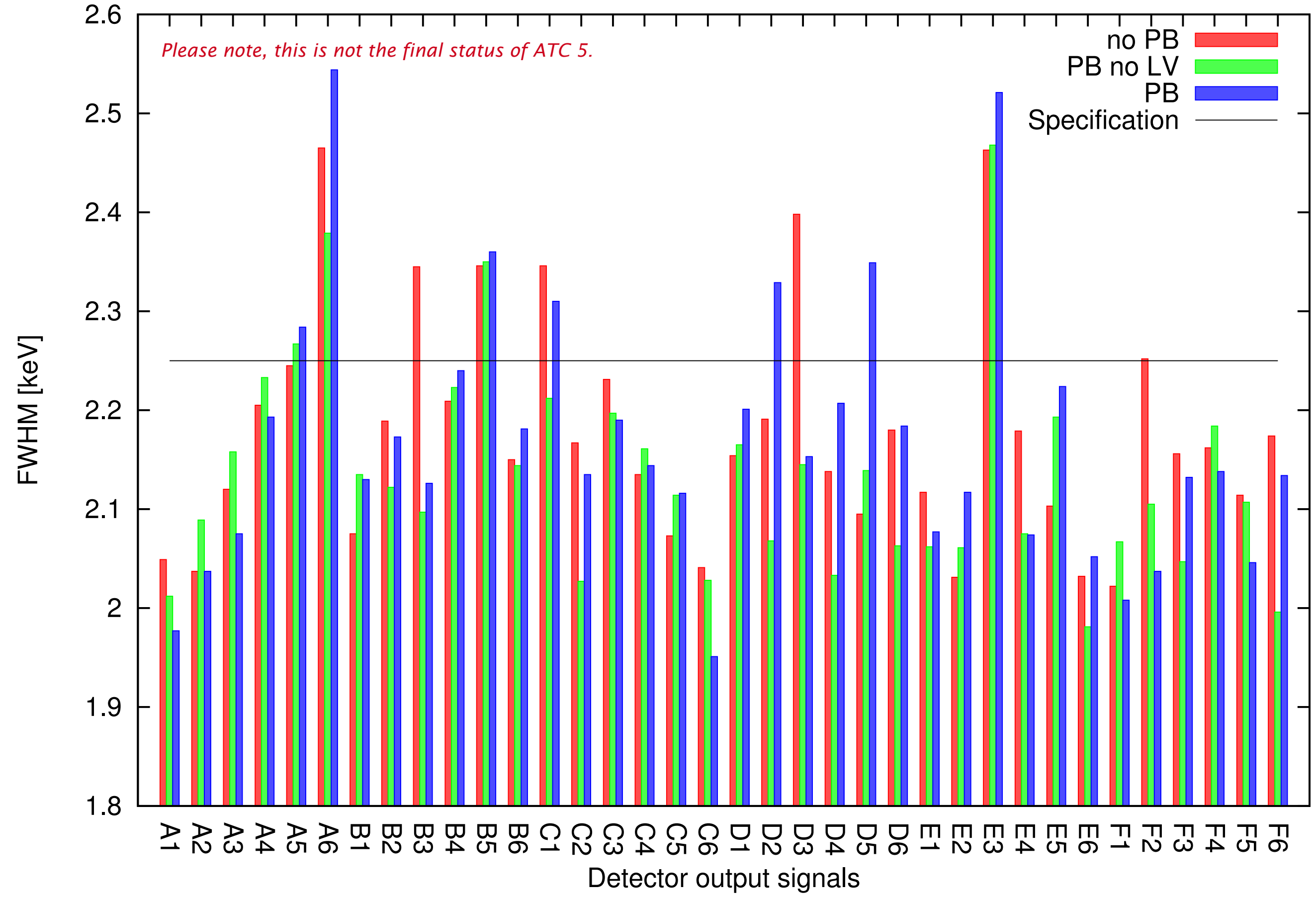
patch box
mounted with
standard NIM
low voltage

patch box
mounted with
AGATA LVPS



Performance of C009 in ATC5

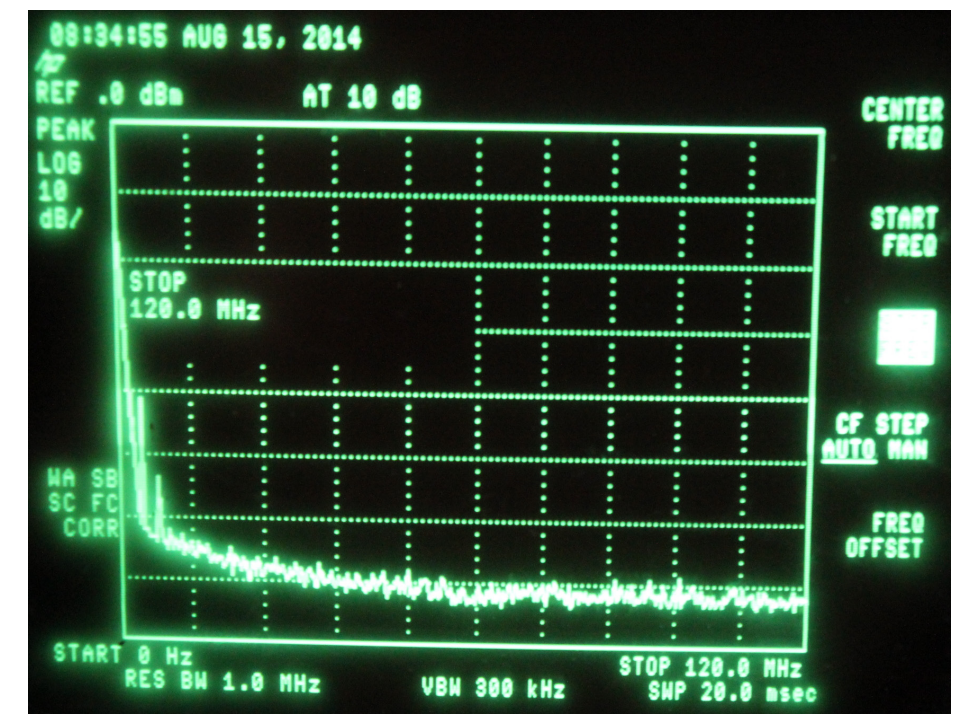
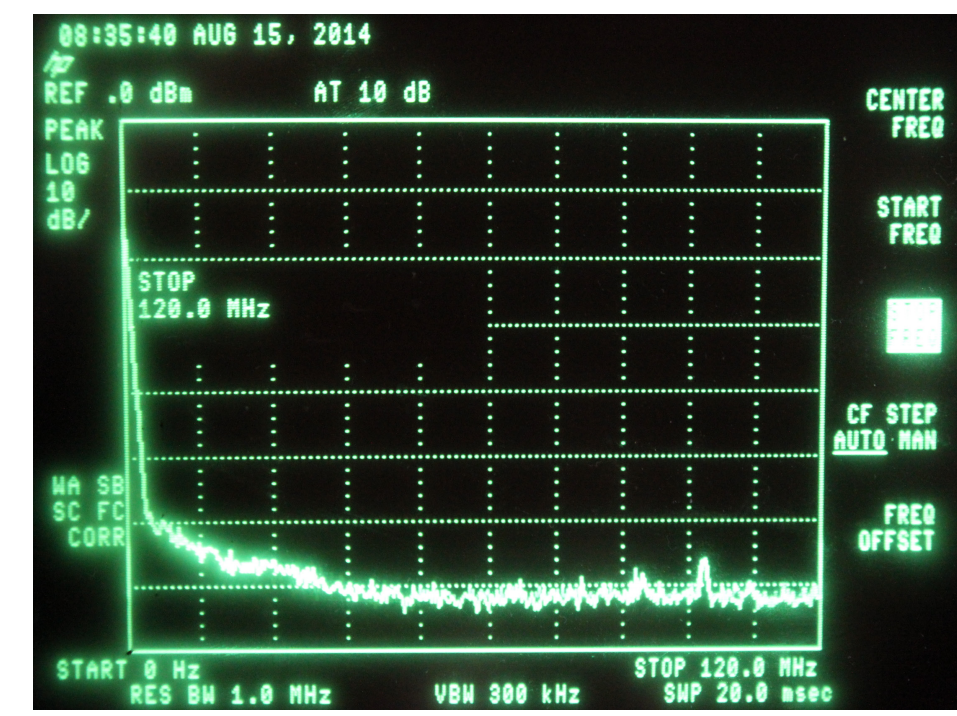
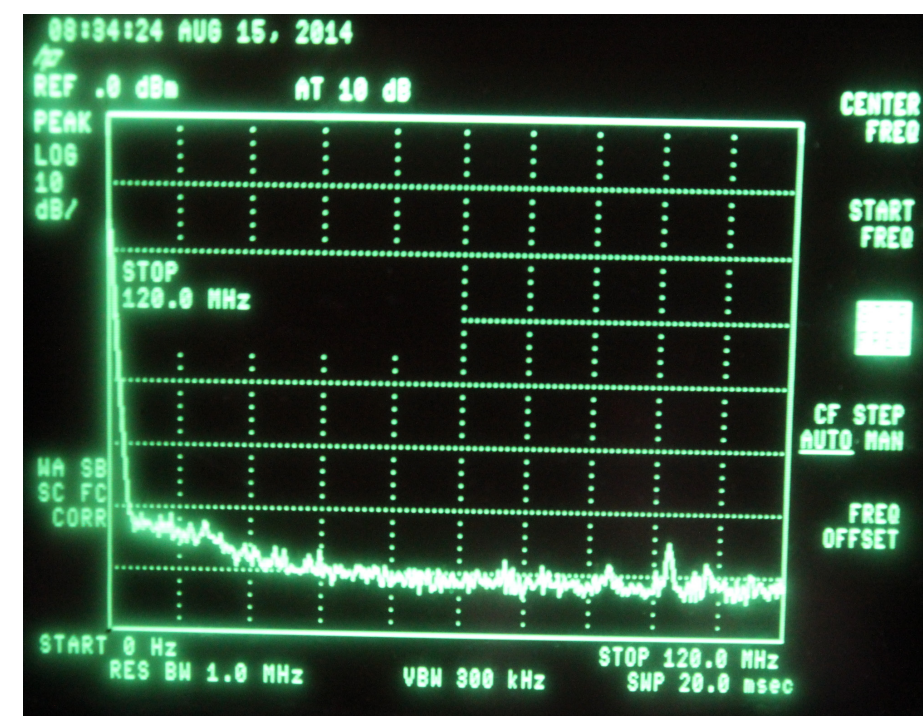
C009 1.3 MeV - ATC5 2014/08/15



ATC 5 core resolutions with analog electronics

Please note, this is not the final status of ATC 5.

Detector	No PB	PB nim LV	PB LVPS
A004	2.66 keV	2.68 keV	2.82 keV
B002	2.34 keV	2.31 keV	2.25 keV
C009	2.39 keV	2.46 keV	2.34 keV

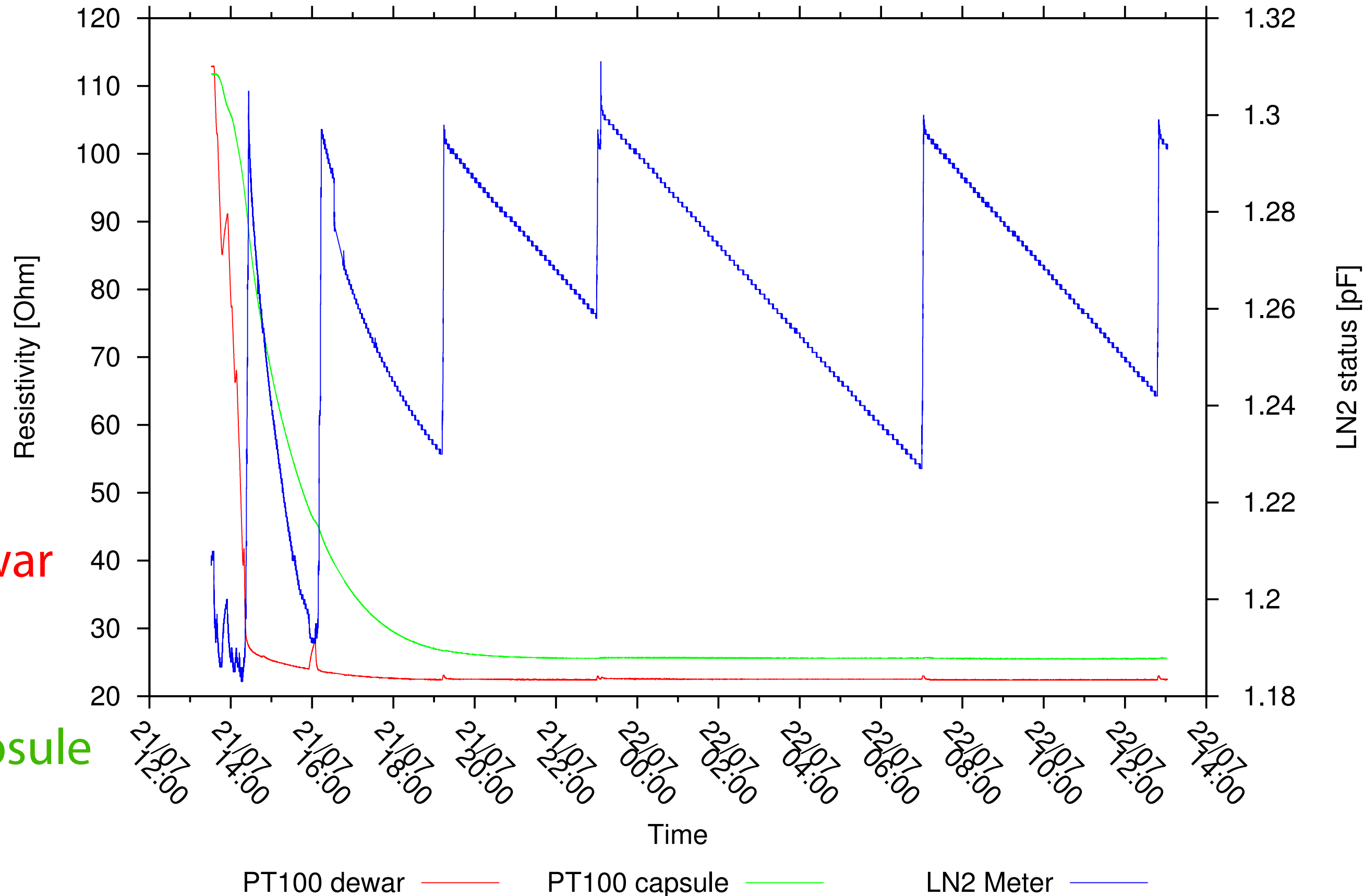
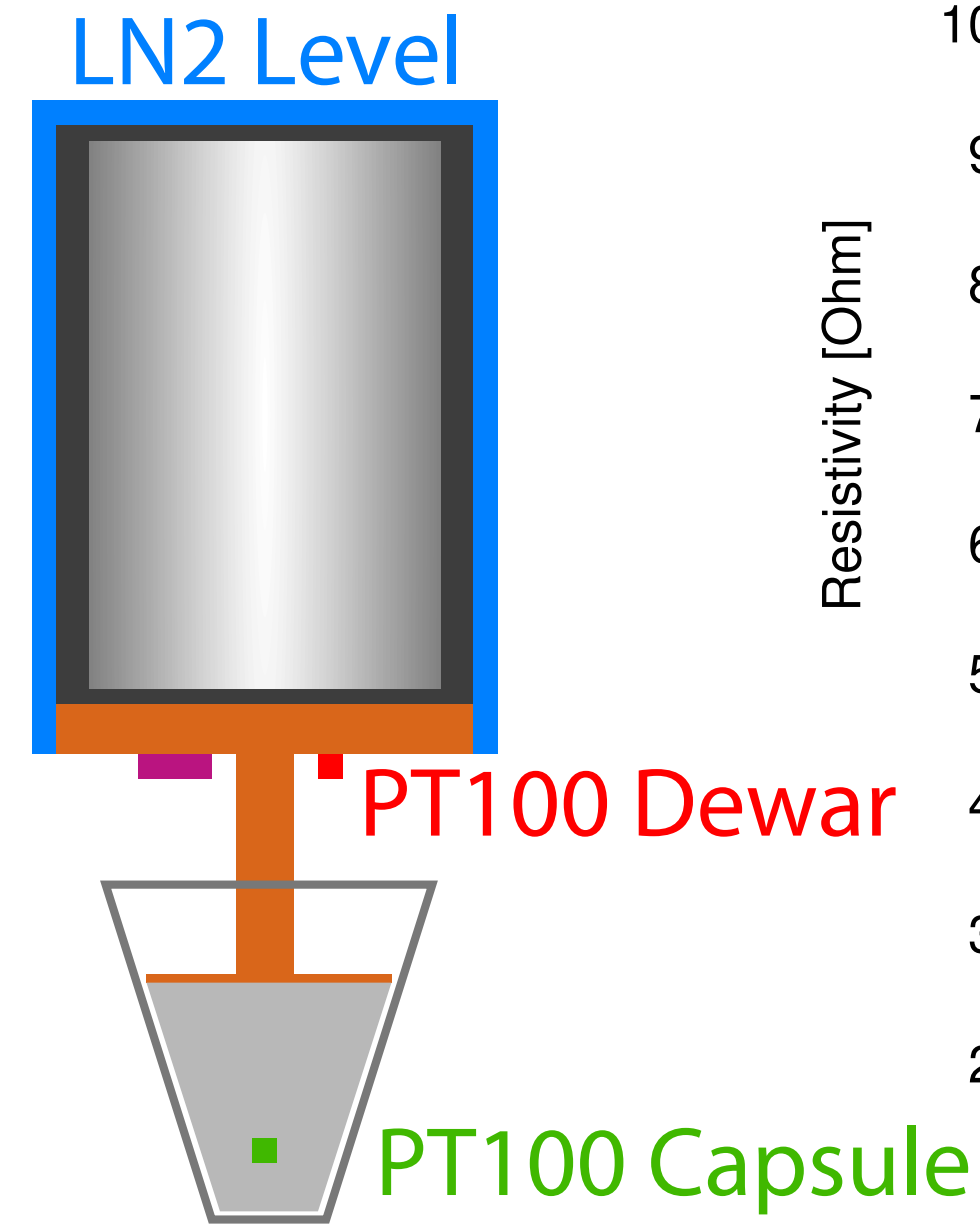


Fourier spectra for all cores and some segments were checked



Cryostat Information available for the infrastructure

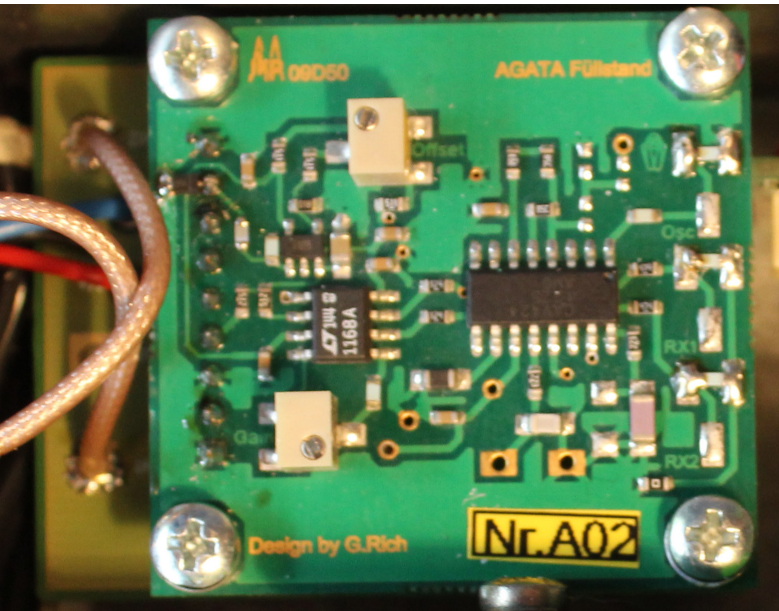
Cooling of ATC 5 (2014/18/08)



Capacitance to Voltage

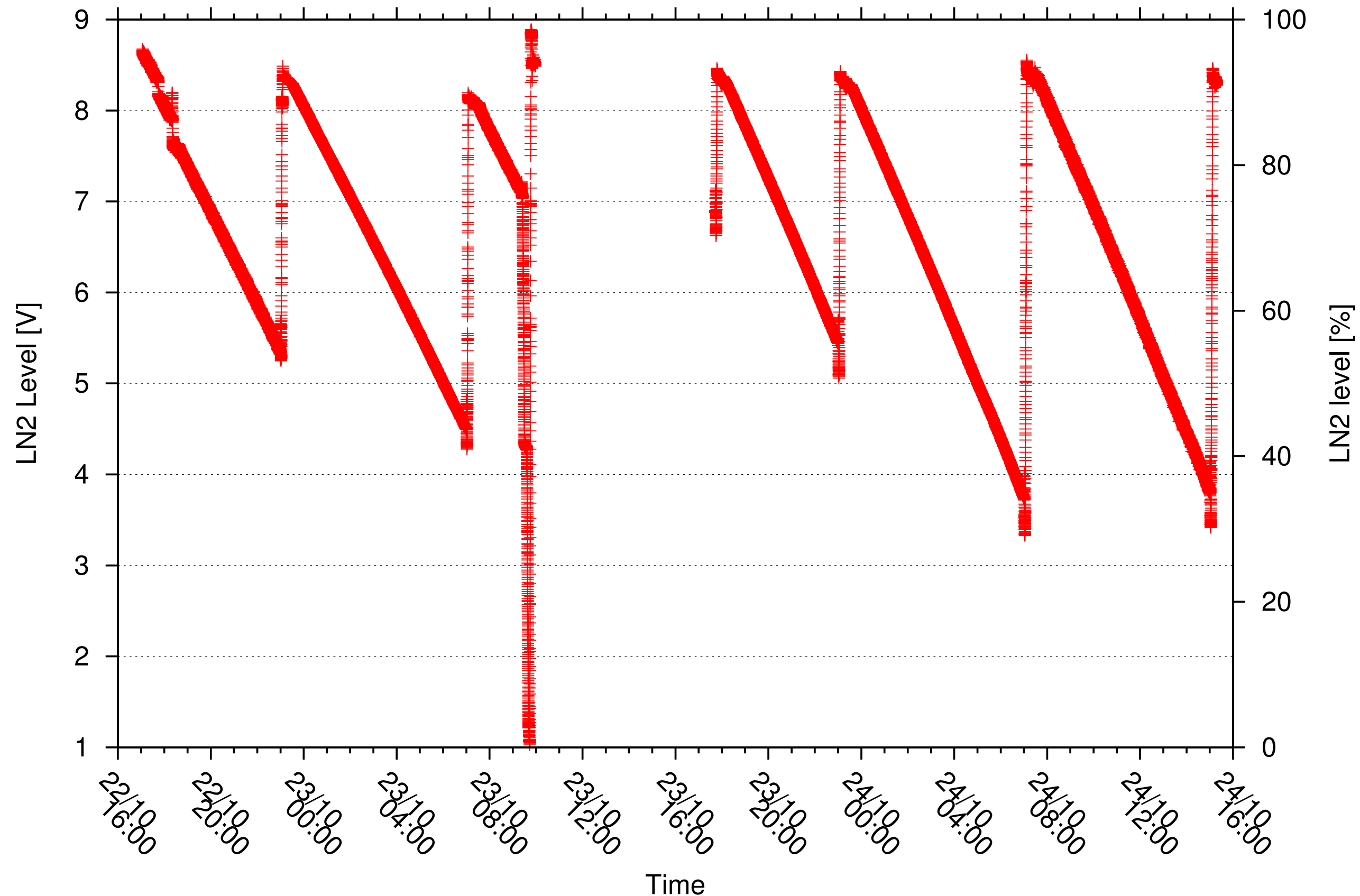
The liquid nitrogen fill level meter for the AGATA triple cluster detector
D. Lersch et. al., NIM A 640 (2011) 133-138

Upright Position - ATC 4 (2014/10/23)



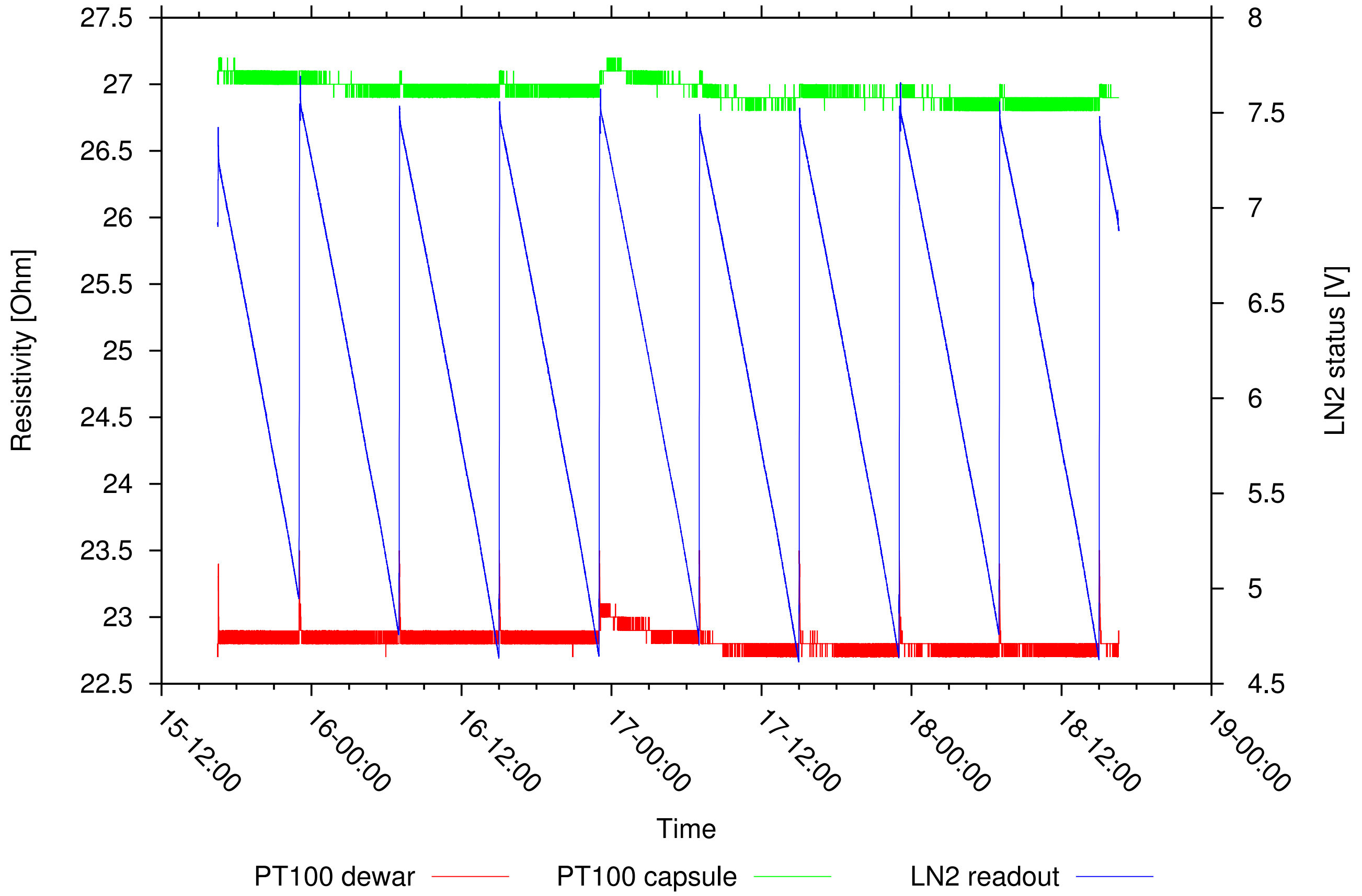
IKP did

- develop initial and following designs
- buy hardware for 70 LN2 cards and boards
- provide 19 systems to the AGATA community (rest will follow until end of 2014)



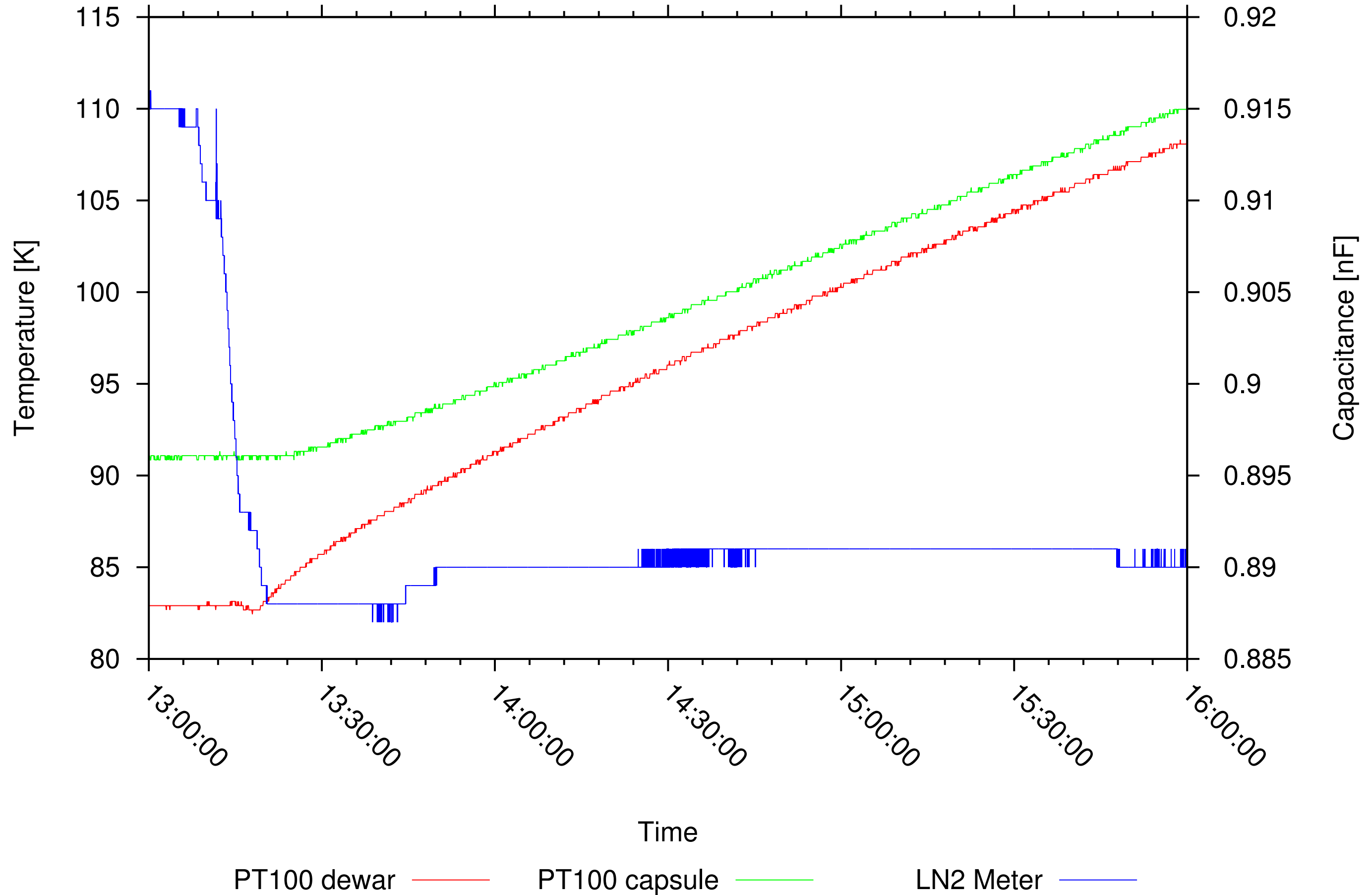
Surveillance of ATC5 @ IKP

Surveillance of ATC 5 (2014/18/08)

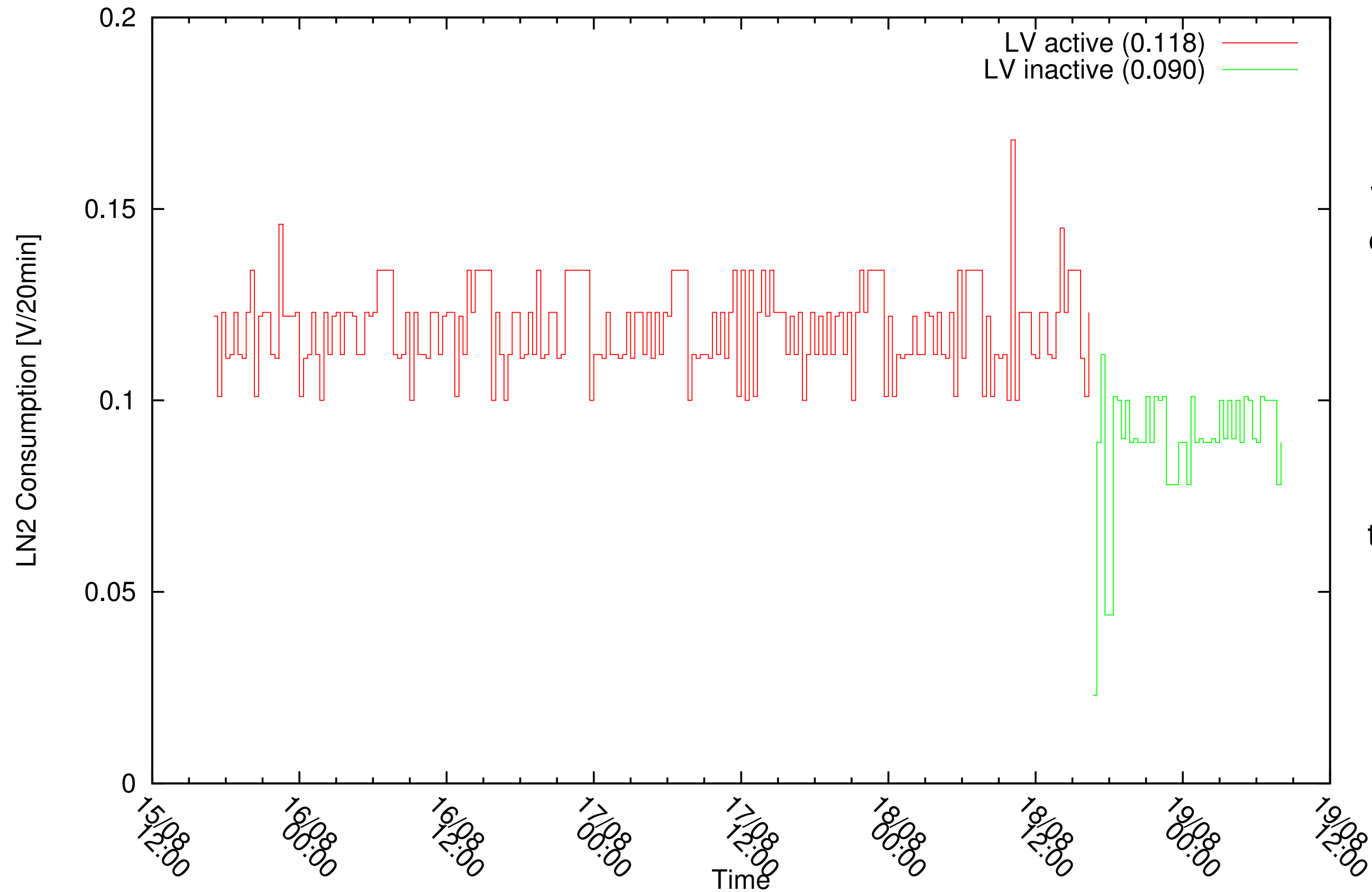


Safe warmup of ATC 5

Warmup of ATC 5 (2014/08/21)



LN2 consumption could be monitored



We can calculate the cooling power of the cryostat now.

It is at least

7 Watt

that is within our expectation

Conclusion

- LN2 readout is working / All hardware will be available
- Patch box is working and not inducing extra noise in the system
- We can now monitor:
 - + LN2 filling level
 - + LN2 consumption
- **We need to test and investigate the behaviour of the systems in the frame**

Thanks



For manufacturing the patch boxes
and mounting rods

For your attention!

Stay cool!