

# ARES Operation Meeting

Summary of week 22 / 2023

**Hannes Dinter**, on behalf of the ARES crew

# Summary of week 22

	Mon. 29 <sup>th</sup> May	Tue.	Wed.	Thu.	Fri.
<b>Achievements</b>		<ul style="list-style-type: none"> <li>• ACHIP 2 piezo stage tests</li> <li>• AutoACC</li> <li>• ICT installed</li> <li>• Stability data analysis</li> </ul>	<ul style="list-style-type: none"> <li>• MDI charge monitors</li> <li>• Doocs server and machine state GUI development</li> <li>• X-band Modulator 1 repaired (power supply replaced)</li> <li>• EA.R1 field of view shifted (to be tested with beam)</li> <li>• STRIDENAS tests</li> </ul>	<ul style="list-style-type: none"> <li>• MPS X-band cabling</li> <li>• Doocs servers development</li> <li>• Preparations for STRIDENAS week</li> </ul>	<ul style="list-style-type: none"> <li>• TÜV rehearsal</li> <li>• Doocs server development</li> <li>• Displays for additional BKR console installed</li> </ul>
<b>Difficulties</b>		<ul style="list-style-type: none"> <li>• PHAROS RA stopped working (X2timer issue, fixed, but came back with 100% transmission)</li> <li>• Beam not in field of view of EA.R1 (fixed on Wed., to be tested)</li> <li>• Oscilloscope PC network issues (fixed)</li> </ul>			
<b>Notes</b>	<ul style="list-style-type: none"> <li>• Public holiday</li> </ul>				

# AutoACC shift

- Tested RL agents with new EA geometry and on BC screen:
  - New EA geometry does not seem to degrade performance
  - EA RL agent (polished donkey) does not work on BC screen (also bug suspected with magnet reordering)
- For time reasons we were neither to test the agent on the in-air screen nor the lattice agnostic agents. Given the results on the BC screen, the former is expected to fail.

# Stability data analysis (vertical)

BPM DL.G2 was measured in overnight stability run on 2023.03.09

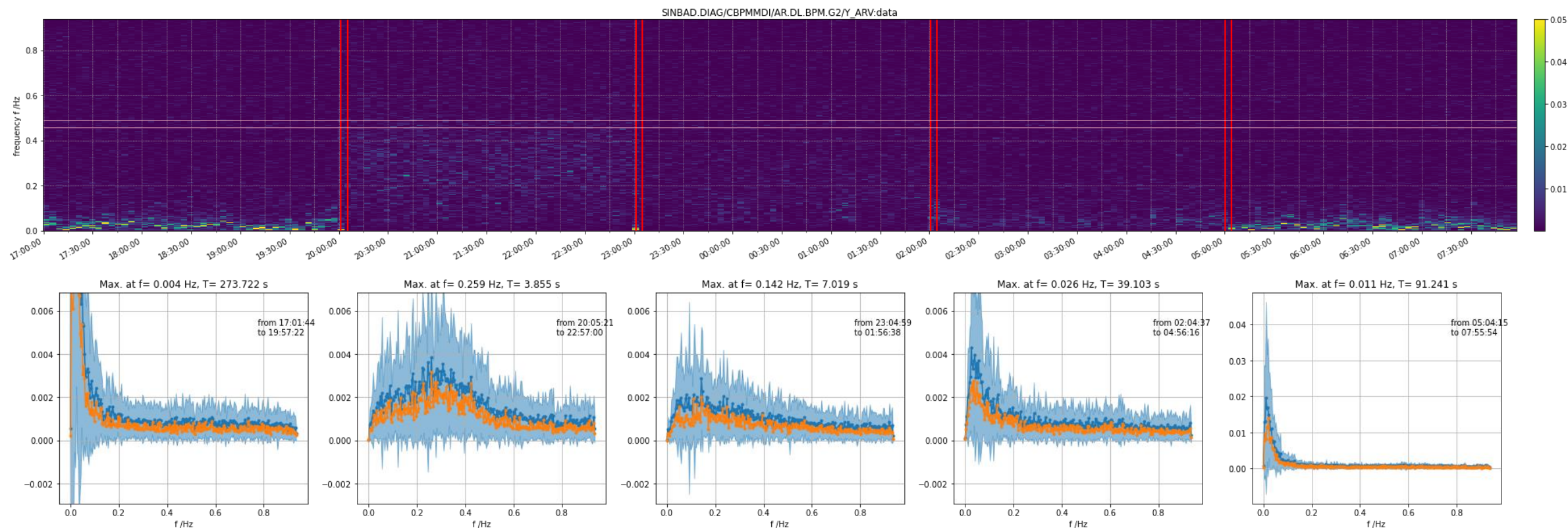
No feedback  
(zero gains)  
vertical and  
horizontal

Willi's gains  
vertical and  
horizontal

Vertical gains from  
9 February and  
horizontal gains  
from 2 March

Vertical gains from  
23 February and  
horizontal gains  
from 9 March

Both feedbacks  
off (repeat)



# Stability data analysis (horizontal)

BPM DL.G2 was measured in overnight stability run on 2023.03.09

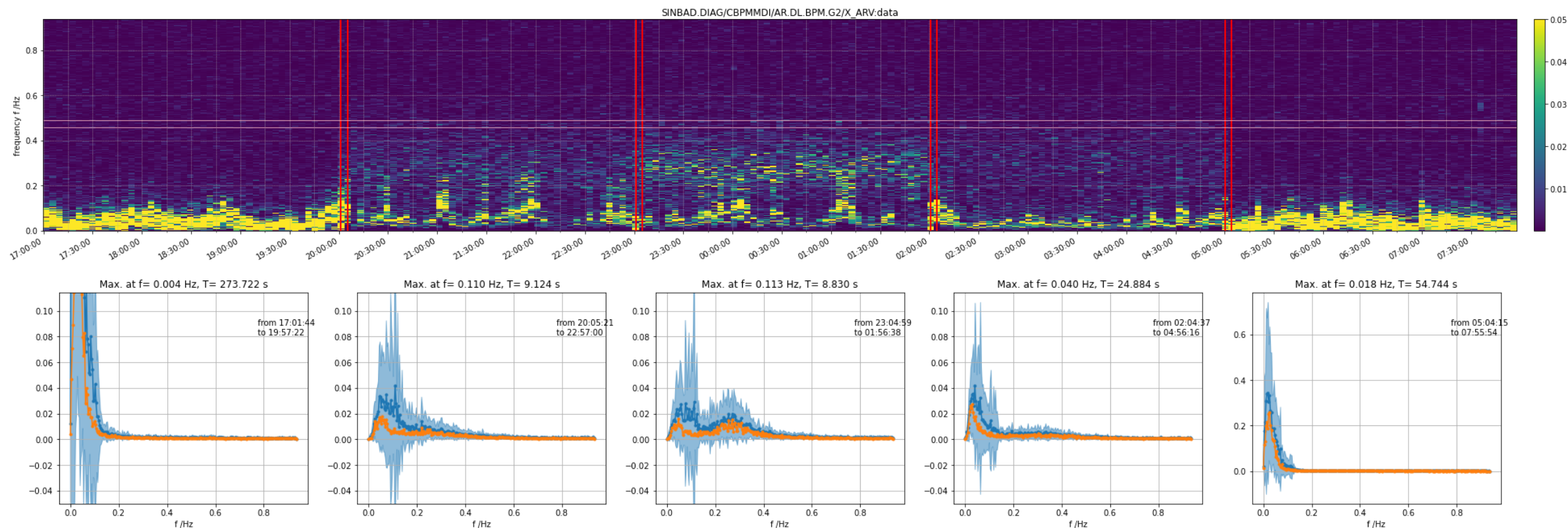
No feedback  
(zero gains)  
vertical and  
horizontal

Willi's gains  
vertical and  
horizontal

Vertical gains from  
9 February and  
horizontal gains  
from 2 March

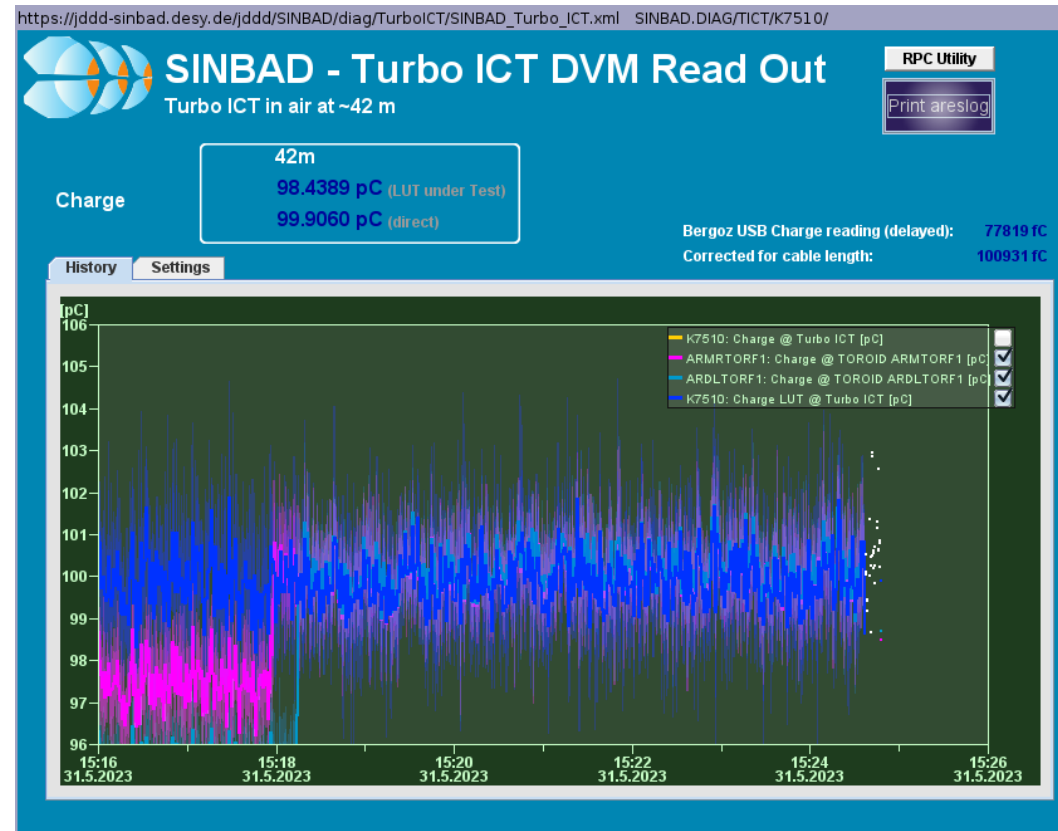
Vertical gains from  
23 February and  
horizontal gains  
from 9 March

Both feedbacks  
off (repeat)



# MDI charge monitors

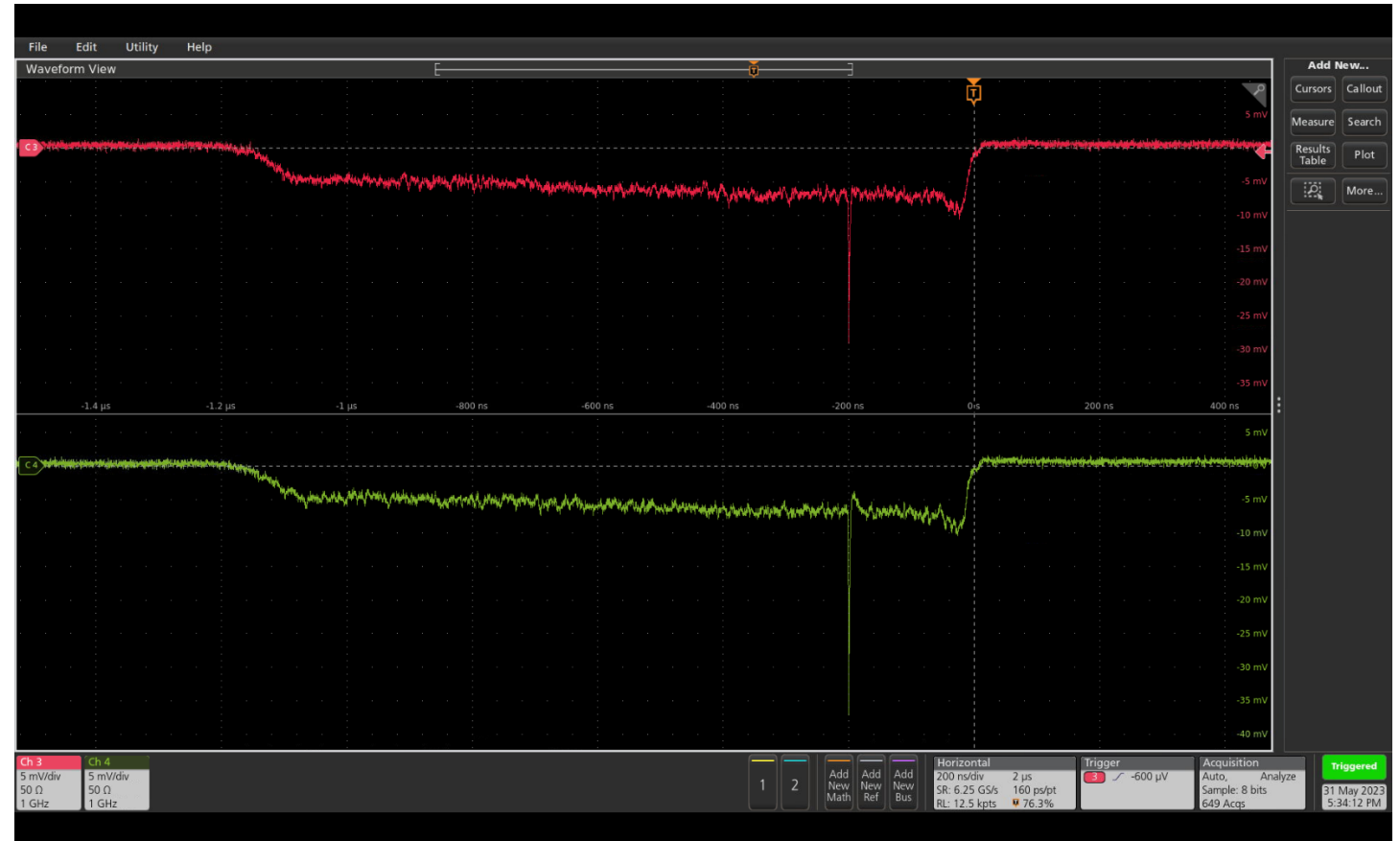
- Recorded all charge monitors between 0.2pC and 200pC (machine state file saved)
- Changed Toroid scales to Turbo-ICT (look-up table)



# STRIDENAS tests

## Preparations for STRIDENAS week

- Cabling
- HV
- Oscilloscope read-out
  - Network
  - Doocs server
- Leakage current via doocs
- Measurement script preparation



# Doocs servers and tools development

Name	Address	File Value	Actual Value	Difference	Apply File Value	Restore Options
Horizontal TCA Steerer AREAMCH1	SINBAD.MAGNETS\MAGNET.ML\AREAMCH1\CURRENT.SP	-0.0727845638915634	-0.07289900630712509	0.00011444091796875	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\AREAMCH1\CURRENT.RBV
Horizontal TCA Steerer AREAMCH2	SINBAD.MAGNETS\MAGNET.ML\AREAMCH2\CURRENT.SP	-0.0036621163599193096	-0.003547675209119916	-0.0001144411507993365	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\AREAMCH2\CURRENT.RBV
Vertical TCA Steerer AREAMCV1	SINBAD.MAGNETS\MAGNET.ML\AREAMCV1\CURRENT.SP	0.7301344275474548	0.7301344275474548	0.0	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\AREAMCV1\CURRENT.RBV
Horizontal TCA Steerer ARMRMCH1	SINBAD.MAGNETS\MAGNET.ML\ARMRMCH1\CURRENT.SP	0.02746587246656418	0.02746587246656418	0.0	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARMRMCH1\CURRENT.RBV
Vertical TCA Steerer ARMRMCH1	SINBAD.MAGNETS\MAGNET.ML\ARMRMCH1\CURRENT.SP	0.02700810879468918	0.02712254971265793	-0.00011444091796875	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARMRMCH1\CURRENT.RBV
Quadrupole ARMRMQZM1	SINBAD.MAGNETS\MAGNET.ML\ARMRMQZM1\CURRENT.SP	-28.570383071899414	-28.55756378173828	-0.012819290161132812	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARMRMQZM1\CURRENT.RBV
Horizontal TCA Steerer ARMRMCH2	SINBAD.MAGNETS\MAGNET.ML\ARMRMCH2\CURRENT.SP	0.927087664604187	0.9269732236862183	0.00011444091796875	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARMRMCH2\CURRENT.RBV
Vertical TCA Steerer ARMRMCH2	SINBAD.MAGNETS\MAGNET.ML\ARMRMCH2\CURRENT.SP	-0.6730283498764038	-0.6730283498764038	0.0	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARMRMCH2\CURRENT.RBV
Quadrupole ARMRMQZ2	SINBAD.MAGNETS\MAGNET.ML\ARMRMQZ2\CURRENT.SP	16.684213638305664	16.684213638305664	0.0	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARMRMQZ2\CURRENT.RBV
Horizontal TCA Steerer ARMRMCH3	SINBAD.MAGNETS\MAGNET.ML\ARMRMCH3\CURRENT.SP	0.02689366787672043	0.0267792509610653	0.00011444278061389923	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARMRMCH3\CURRENT.RBV
Vertical TCA Steerer ARMRMCH3	SINBAD.MAGNETS\MAGNET.ML\ARMRMCH3\CURRENT.SP	0.02723699063062668	0.02712254971265793	0.00011444091796875	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARMRMCH3\CURRENT.RBV
Quadrupole ARMRMQZ3	SINBAD.MAGNETS\MAGNET.ML\ARMRMQZ3\CURRENT.SP	-0.0	-0.0	0.0	Set	should_be_degaussed: True, stability_address: SINBAD.MAGNETS\MAGNET.ML\AR...
Vertical TCA Steerer ARMRMCH4	SINBAD.MAGNETS\MAGNET.ML\ARMRMCH4\CURRENT.SP	0.4269798696041107	0.42709431052207947	-0.00011444091796875	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARMRMCH4\CURRENT.RBV
Horizontal TCA Steerer ARMRMCH4	SINBAD.MAGNETS\MAGNET.ML\ARMRMCH4\CURRENT.SP	-1.1727927923202515	-1.1729072332382202	0.00011444091796875	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARMRMCH4\CURRENT.RBV
Quadrupole ARMRMQZ4	SINBAD.MAGNETS\MAGNET.ML\ARMRMQZ4\CURRENT.SP	-0.0	-0.0	0.0	Set	should_be_degaussed: True, stability_address: SINBAD.MAGNETS\MAGNET.ML\AR...
Quadrupole ARMRMQZ5	SINBAD.MAGNETS\MAGNET.ML\ARMRMQZ5\CURRENT.SP	-0.0	-0.0	0.0	Set	should_be_degaussed: True, stability_address: SINBAD.MAGNETS\MAGNET.ML\AR...
Vertical TCA Steerer ARMRMCH5	SINBAD.MAGNETS\MAGNET.ML\ARMRMCH5\CURRENT.SP	-0.042800985276699066	-0.042800985276699066	0.0	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARMRMCH5\CURRENT.RBV
Horizontal TCA Steerer ARMRMCH5	SINBAD.MAGNETS\MAGNET.ML\ARMRMCH5\CURRENT.SP	0.07701888680458069	0.0771332772254944	-0.00011444091796875	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARMRMCH5\CURRENT.RBV
Quadrupole ARMRMQZ6	SINBAD.MAGNETS\MAGNET.ML\ARMRMQZ6\CURRENT.SP	-0.0	-0.0	0.0	Set	should_be_degaussed: True, stability_address: SINBAD.MAGNETS\MAGNET.ML\AR...
BC Dipole Coil ARBCBHK1	SINBAD.MAGNETS\MAGNET.ML\ARBCBHK1\CURRENT.SP	-0.004119880963116884	-0.004005439579486847	-0.00011444138363003771	READ-ONLY	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARBCBHK1\CURRENT.RBV
BC Dipole Coil ARBCBHK2	SINBAD.MAGNETS\MAGNET.ML\ARBCBHK2\CURRENT.SP	-0.0021743816323578358	-0.002288227831572294	0.0001144411507993365	READ-ONLY	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARBCBHK2\CURRENT.RBV
BC Dipole Coil ARBCBHK3	SINBAD.MAGNETS\MAGNET.ML\ARBCBHK3\CURRENT.SP	-0.00034332339419052005	-0.00034332339419052005	0.0	READ-ONLY	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARBCBHK3\CURRENT.RBV
BC Dipoles	SINBAD.MAGNETS\MAGNET.ML\ARBCBHK1\CURRENT.SP	-0.0	-0.0	0.0	READ-ONLY	should_be_degaussed: True, stability_address: SINBAD.MAGNETS\MAGNET.ML\AR...
Vertical TCA Steerer ARDLQCM1	SINBAD.MAGNETS\MAGNET.ML\ARDLQCM1\CURRENT.SP	-0.022888226434588432	-0.022773785516619682	-0.00011444091796875	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARDLQCM1\CURRENT.RBV
Horizontal TCA Steerer ARDLQCM1	SINBAD.MAGNETS\MAGNET.ML\ARDLQCM1\CURRENT.SP	-0.24295853078365326	-0.2428440898658485	-0.00011444091796875	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARDLQCM1\CURRENT.RBV
Quadrupole ARDLQZM1	SINBAD.MAGNETS\MAGNET.ML\ARDLQZM1\CURRENT.SP	-19.56817054748535	-19.56817054748535	0.0	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARDLQZM1\CURRENT.RBV
Quadrupole ARDLQZM2	SINBAD.MAGNETS\MAGNET.ML\ARDLQZM2\CURRENT.SP	21.174638748168945	21.174638748168945	0.0	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARDLQZM2\CURRENT.RBV
Vertical TCA Steerer ARDLQCM2	SINBAD.MAGNETS\MAGNET.ML\ARDLQCM2\CURRENT.SP	-0.019817756979485485	-0.019817756979485485	0.0	Set	stability_address: SINBAD.MAGNETS\MAGNET.ML\ARDLQCM2\CURRENT.RBV

Update Actual Values Name: Saved via Cockpit | Author(s): DEGAUSTEST Created: 31.05.2023 - 16:56:12

Load File Save State Write all File Values to Machine Act on machine

pi\_stage\_server.xml doocs://mpyub23592:610493379/SINB...

PI

1=Q-545.240

Referenced:  Reference

Current position: 8.0500 mm

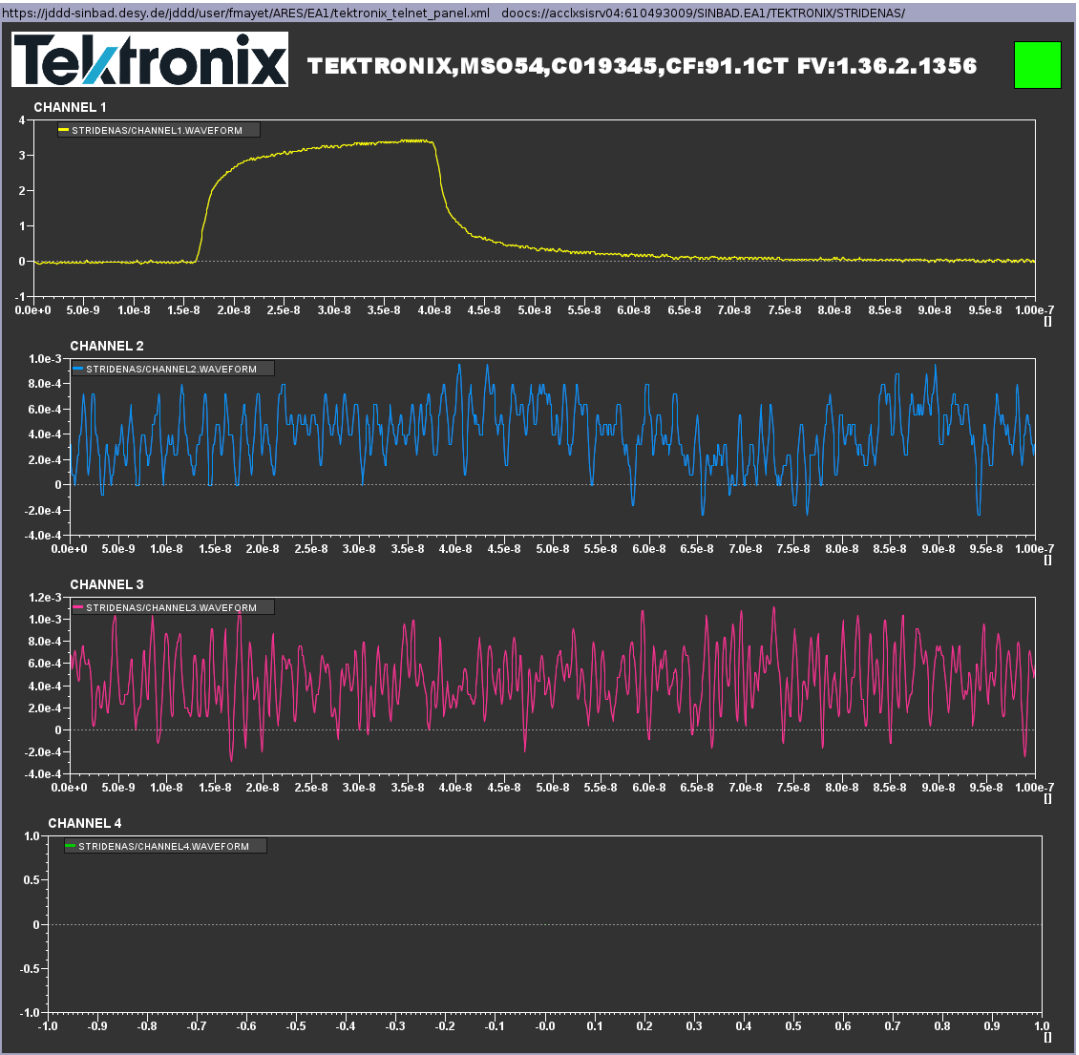
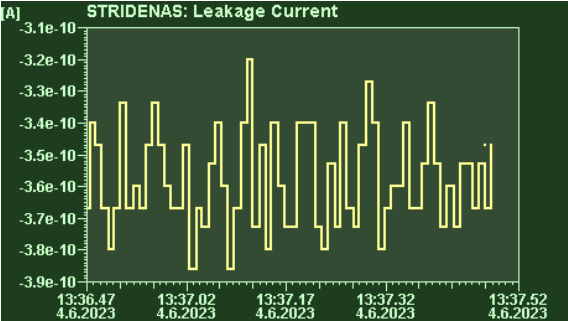
Setpoint: 8.05 mm

Moving:

Position limits: -13.0000 mm

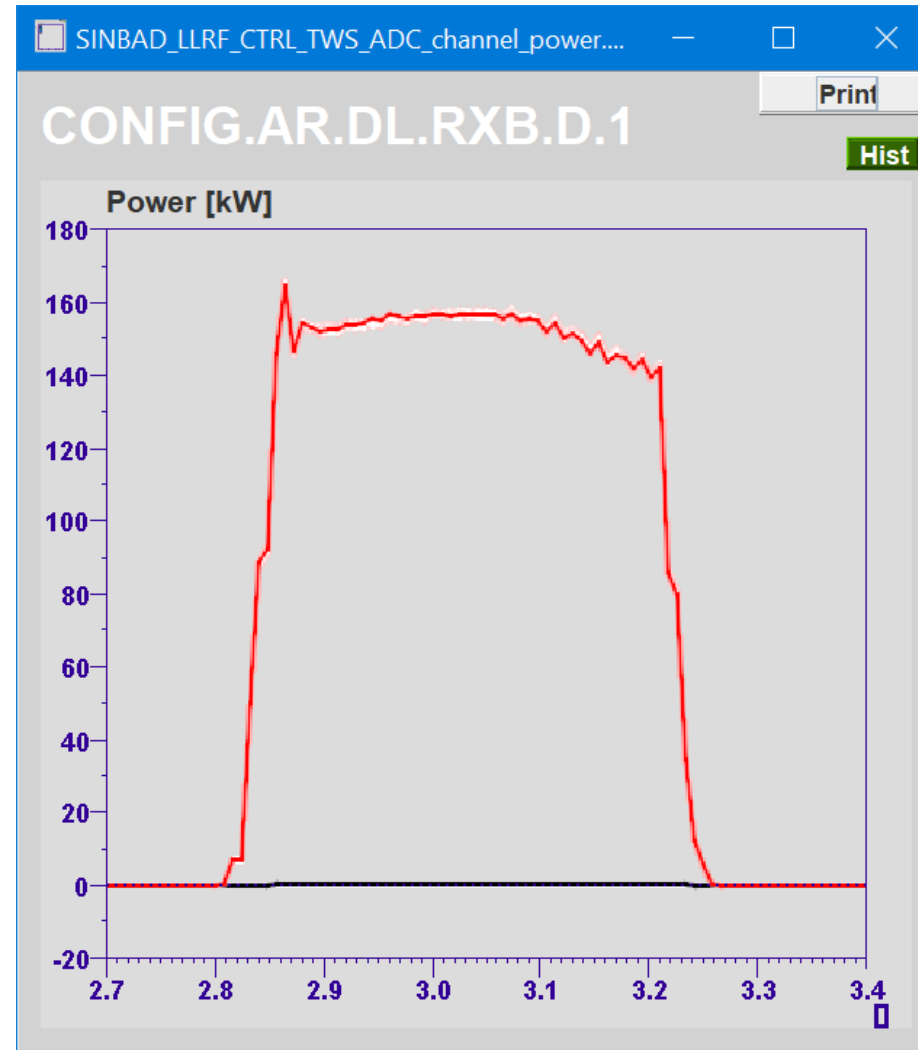
13.0000 mm

Stage location: SINBAD Box



# POLARIX Modulator1 online again (required for TÜV)

Three phase power relay replaced, problem solved.



# Plan for this week

- MON:
  - TÜV including X-band
  - STRIDENAS preparations
- TUE: STRIDENAS
- WED: STRIDENAS
- THU: STRIDENAS
- FRI: STRIDENAS

# Schedule

## Week 23

Date	Shift Leader
5.06.	-
6.06.	Sonja, Willi
7.06.	Willi, Sonja
8.06.	Frank, Sonja
9.06.	Thomas, Sonja

If you want to learn or join the shift: please give the shift leader a call (BKR 2840 / SINBAD Box 2454)