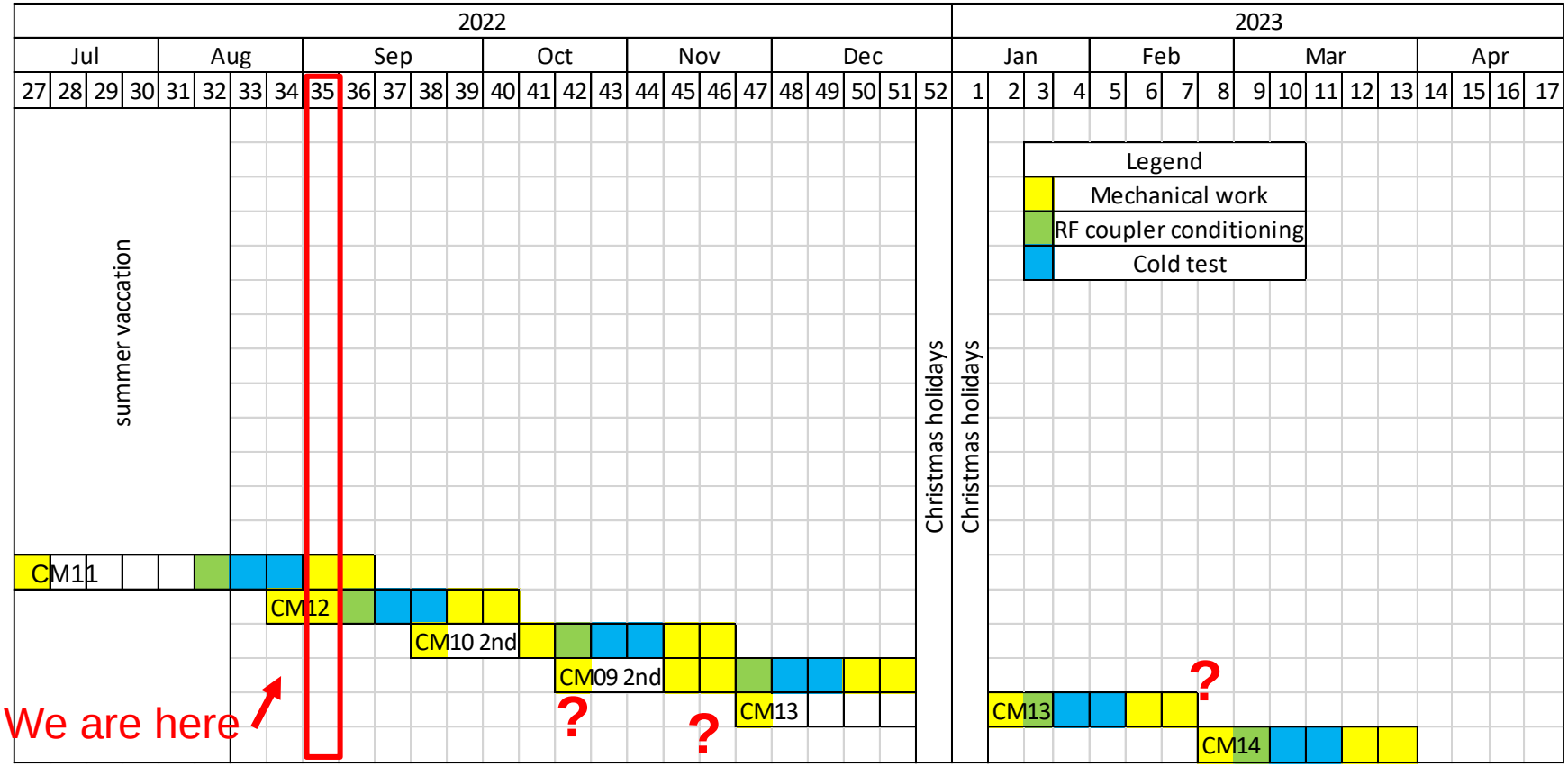
UPPSALA
UNIVERSITET

ESS weekly meeting (2022 W35)

A. Miyazaki, et al

Global planning updated (preliminary)



- CM11 will be shipped to ESS on September 8th (W36)
- We are preparing for CM12 tests
- CM10's will be ready for shipping with the same box as CM11's (W37 or W38)
- CM09 should be assembled with a new cavity string → Update (?)
- CM13's cavities were tested at IJCLab (?)

Progress of W34&W35, and planning of W36&W37

week		W34											
date		MON		TUE		WED		THU		FRI		SAT	SUN
		22-aug		23-aug		24-aug		25-aug		26-aug		27-aug	28-aug
		m	a	m	a	m	a	m	a	m	a		
present CM	**CM11**	Major power cut		fix Kaessor	filling Dewar	4K filling / 2K pumping	CAVIN motor stress test			start warming up		vent insulation vacuum	warming up
							preparation	CAVOUT MP conditioning	CAVOUT test LLRF				
next CM	**CM12**	reception at FREIA		reception test		doornob mounting / water leak check							

week		W35											
date		MON		TUE		WED		THU		FRI		SAT	SUN
		29-aug		30-aug		31-aug		01-sep		02-sep		03-sep	04-sep
		m	a	m	a	m	a	m	a	m	a		
previous CM	**CM11**	warming up completed	disconnect lines			swap the modules	N2 filling	doorknob dismounting		out-going test			
present CM	**CM12**	waiting at the docking area					waveguide connection	connect cryo lines	connect vacuum	pumping vacuum			

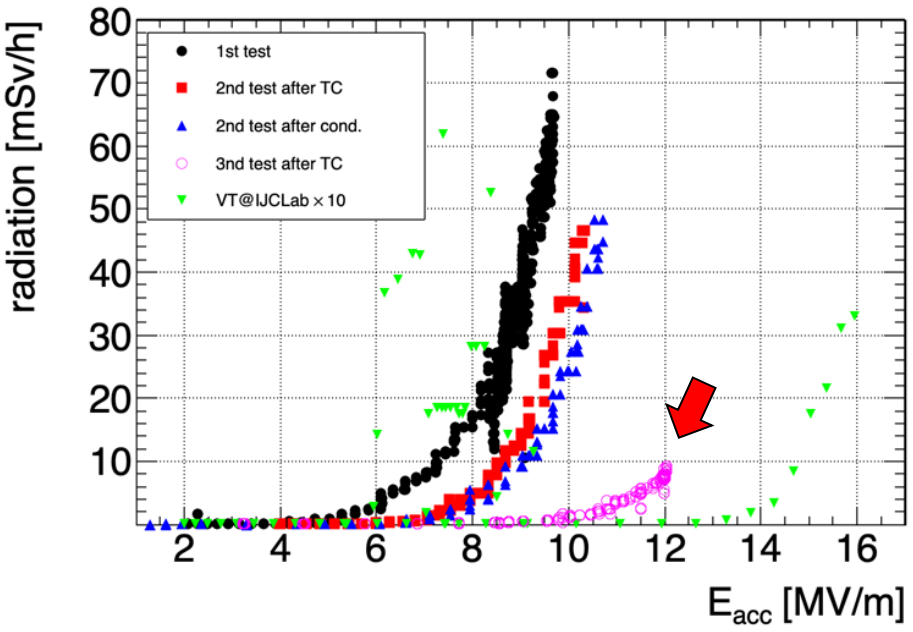
We are here

week		W36											
date		MON		TUE		WED		THU		FRI		SAT	SUN
		05-sep		06-sep		07-sep		08-sep		09-sep		10-sep	11-sep
		m	a	m	a	m	a	m	a	m	a		
previous CM	**CM11**	waiting in the docking area						**departure to ESS**		arrival at ESS			
present CM	**CM12**	warm coupler conditioning								LN2 cooling			

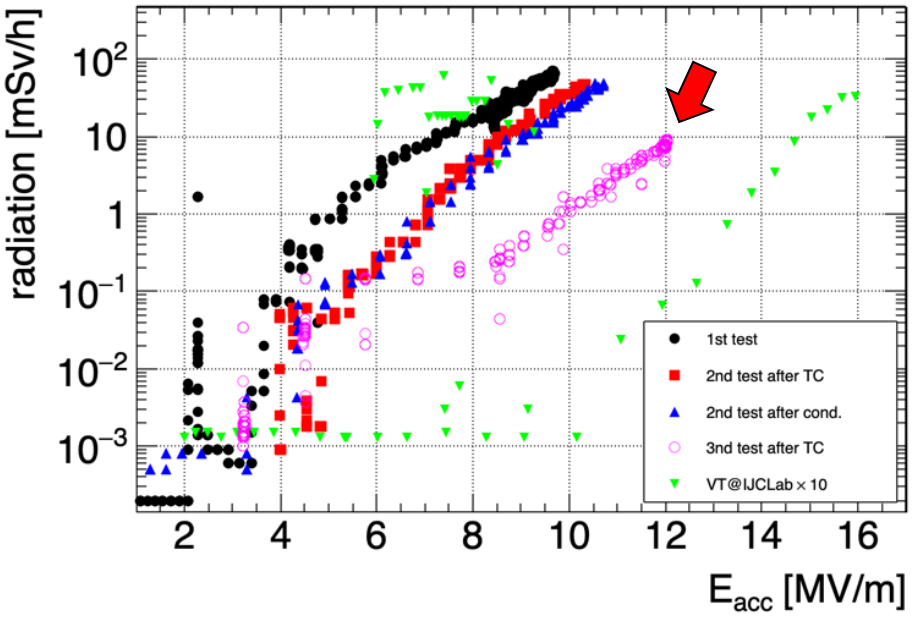
week		W37											
date		MON		TUE		WED		THU		FRI		SAT	SUN
		12-sep		13-sep		14-sep		15-sep		16-sep		17-sep	18-sep
		m	a	m	a	m	a	m	a	m	a		
present CM	**CM12**	start LHe cooling		4K filling		2 K pumping	calibration and interlock setup	CTS test		MP conditioning			
next CM	**CM10**	preparation at ESS											

CM11: CAVOUT FE was mitigated by TC

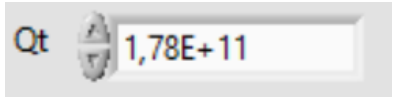
X-ray vs E_{acc} (linear)



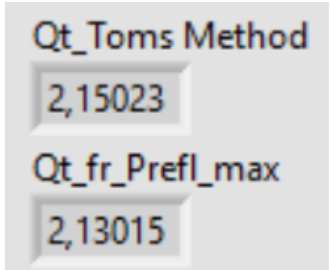
X-ray vs E_{acc} (log)



- The field reached 12 MV/m without impacting cryogenics
- As usual the case, Q_t used in the plots seems underestimating the E_{acc} (12 MV/m → 13.3 MV/m)
- We skipped the RF conditioning of this cavity because the performance seemed sufficiently good

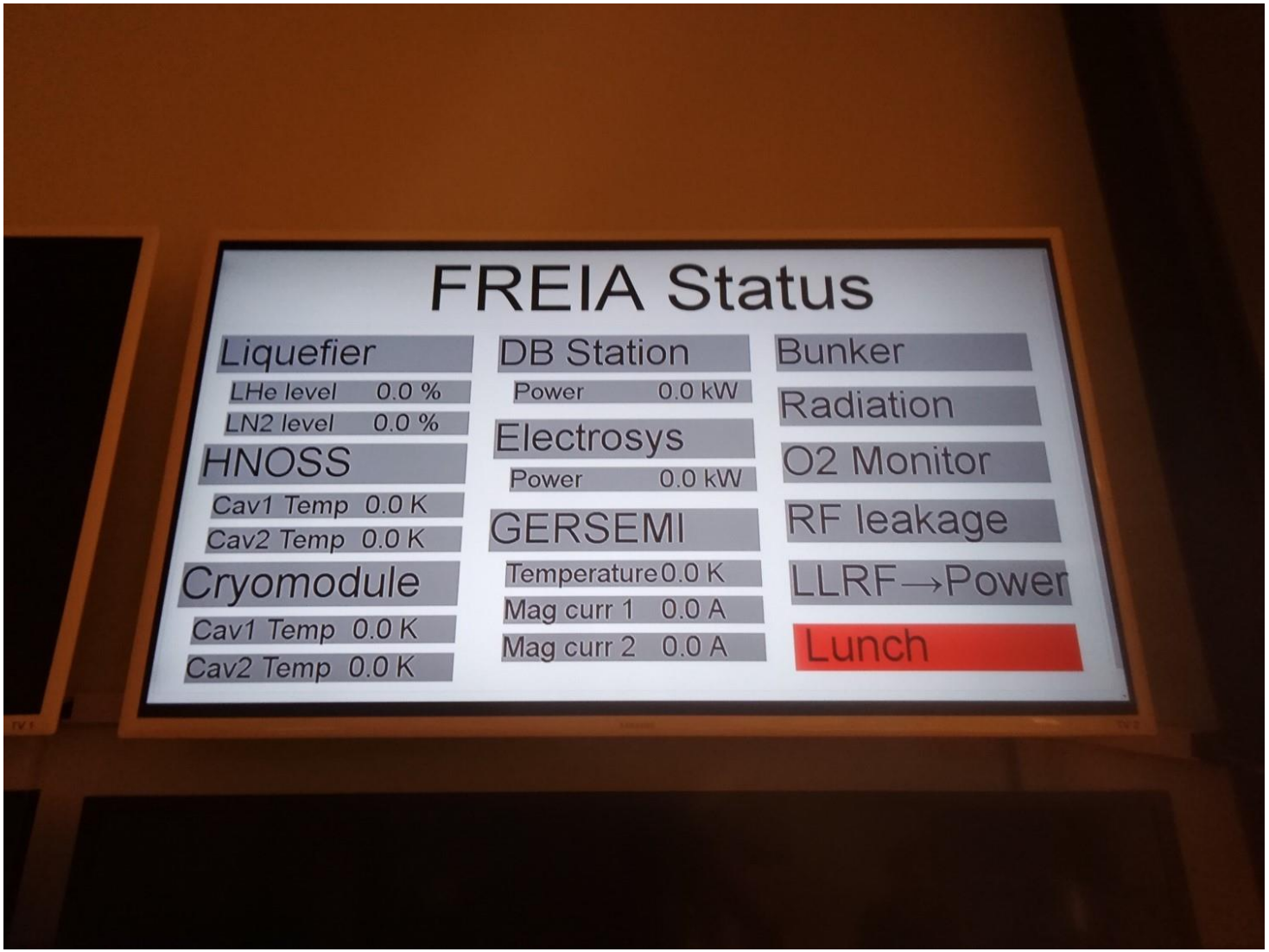


VT



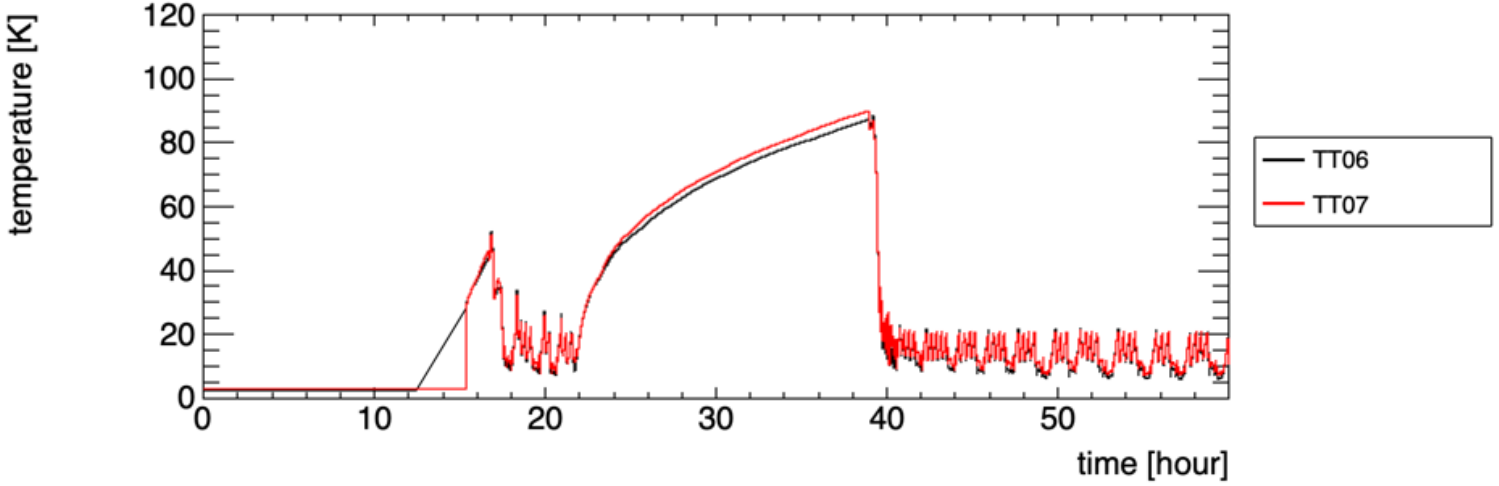
CM

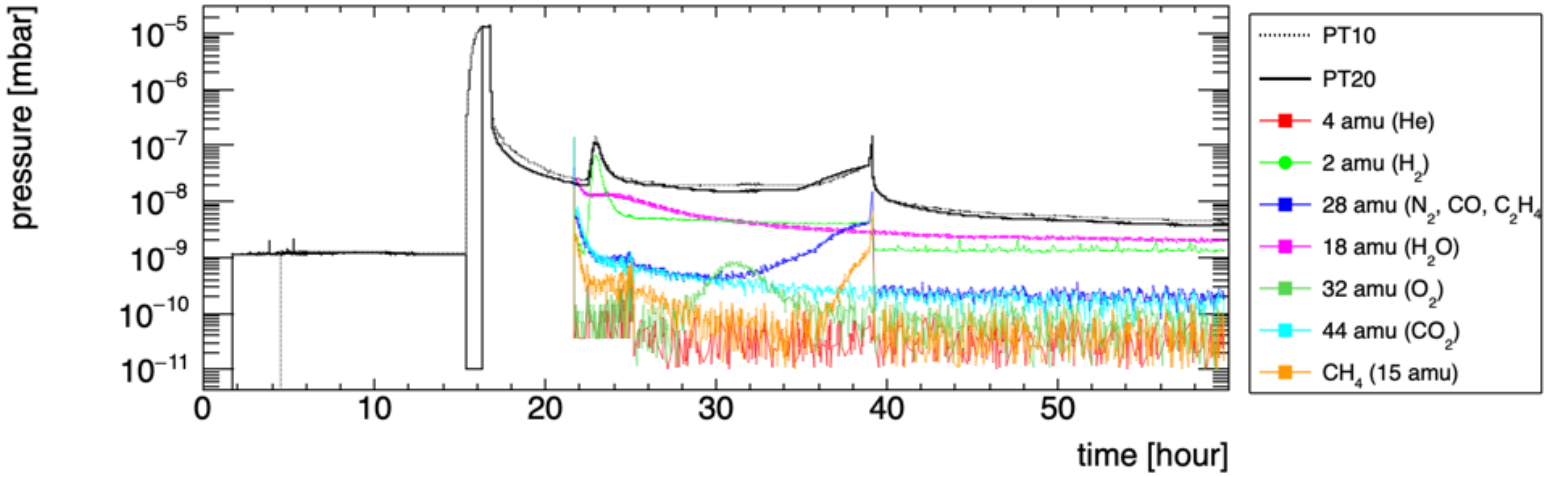
Electric substation @ Uppsala went for vacation



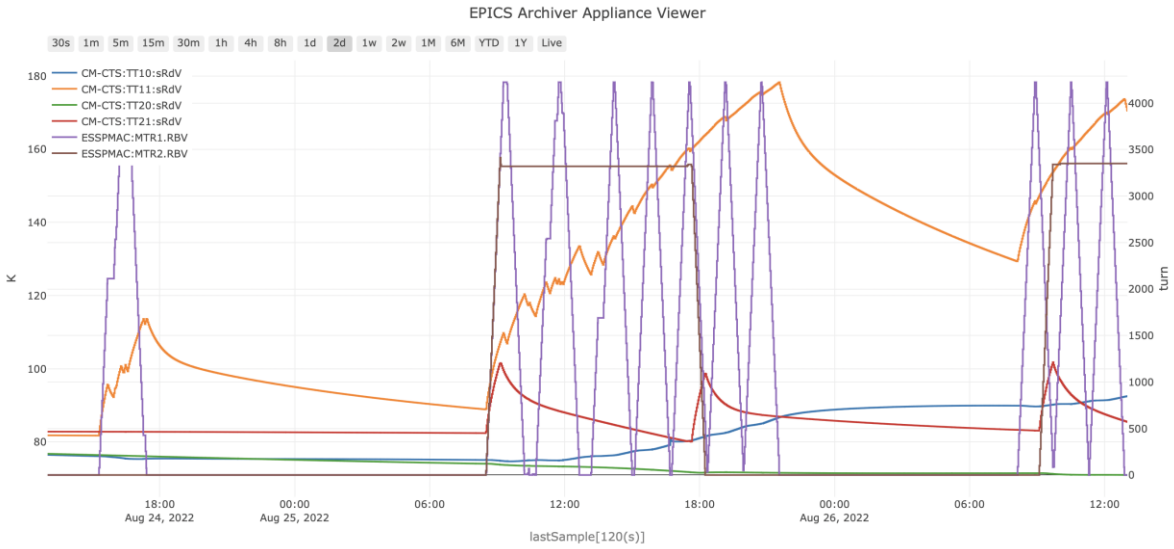
We lost only 1-2 days for recovery

CM11: out gas after the power cut





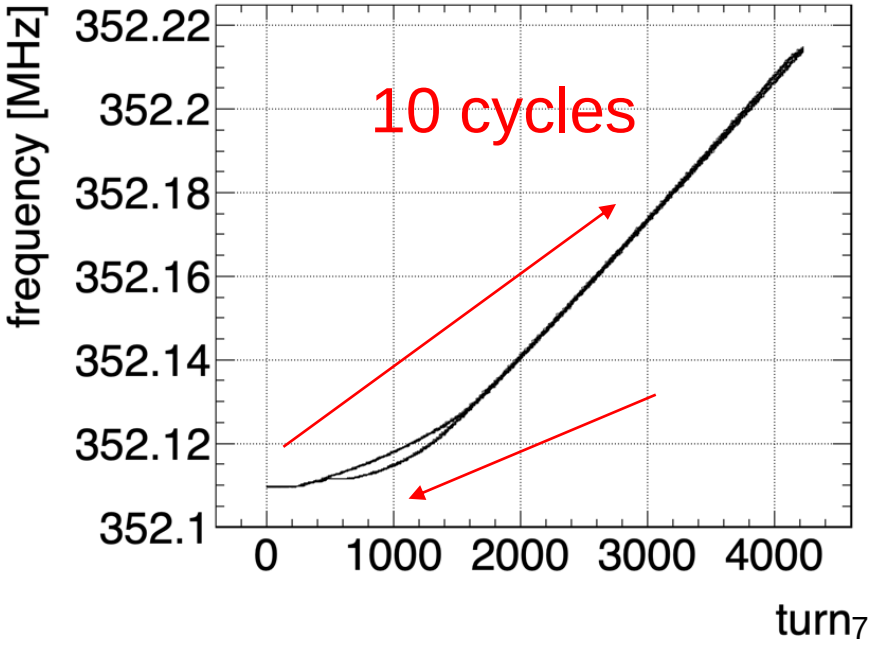
CM11: CAVIN motor stress test (CTS1)



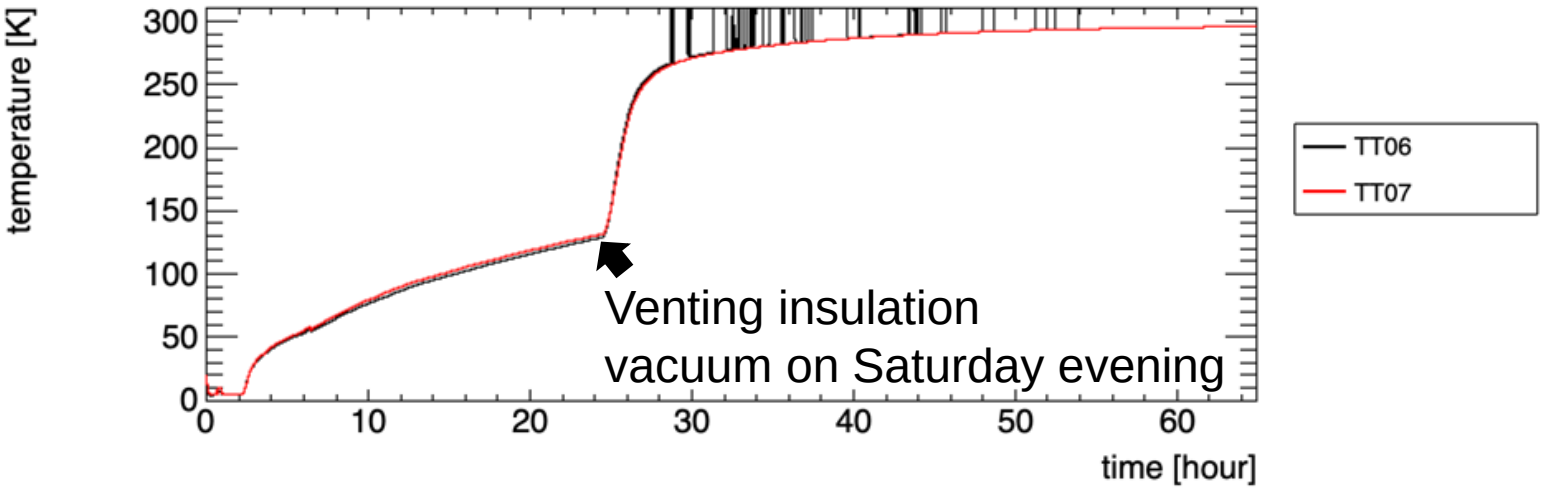
10 cycles = 84400 turns
A few more cycles for cavity tests so the total turns are more than 100k turns

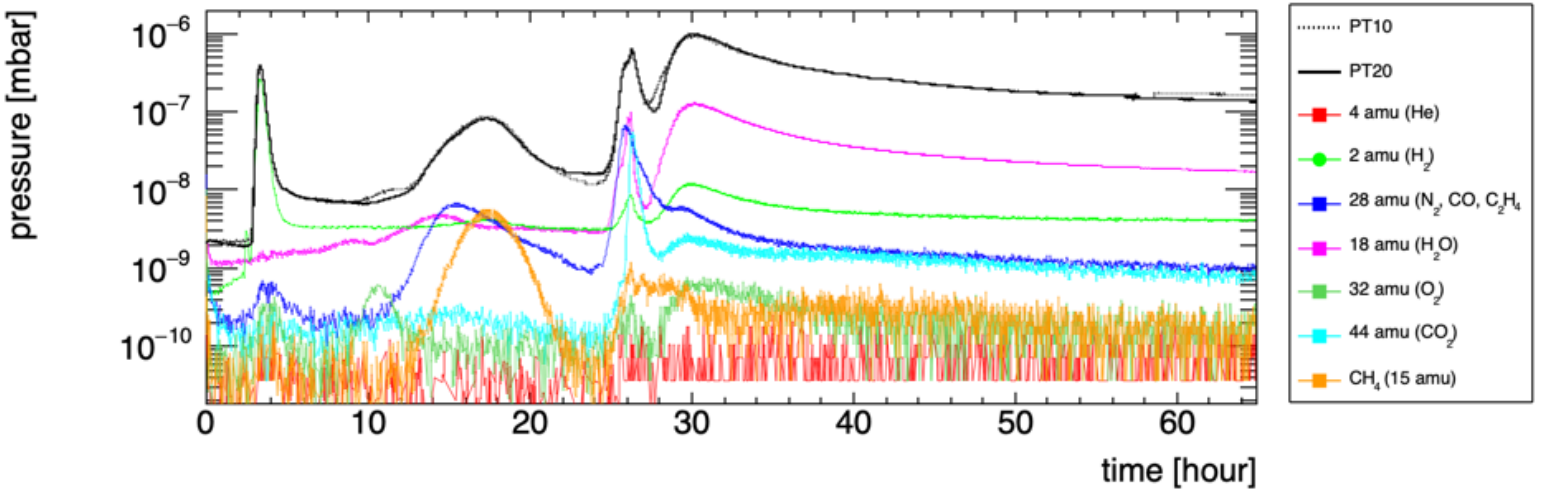
- No major issues were observed during the tests
- One strange behavior was that the limit switch position was shifted by 25 turns (lost?)
  - This happened twice

- More stress tests in coming modules?



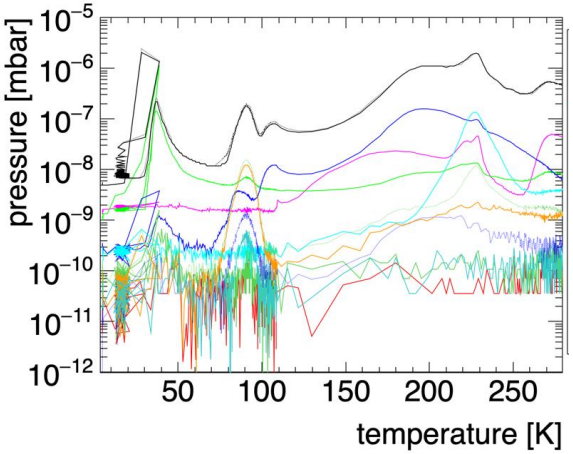
CM11: 3rd warming up & out gassing



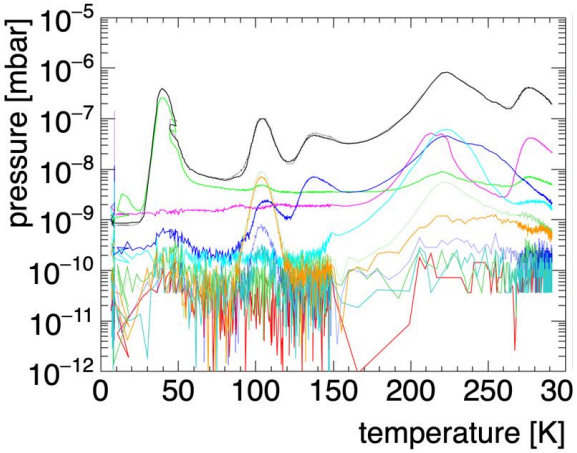


CM11: outgassing during warming up summary

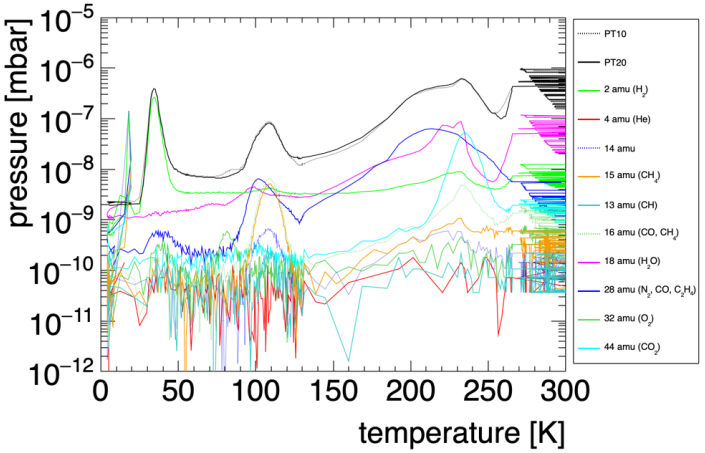
1st warming up



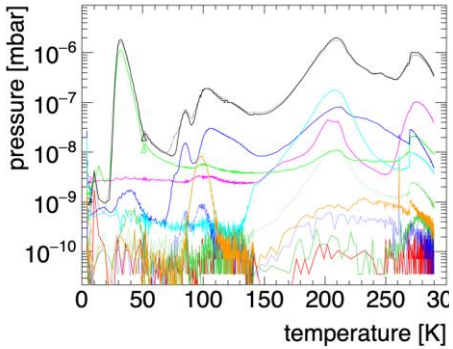
2nd warming up



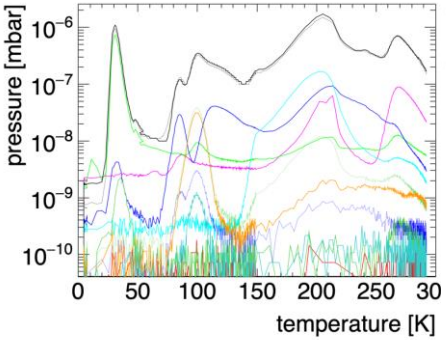
3rd warming up



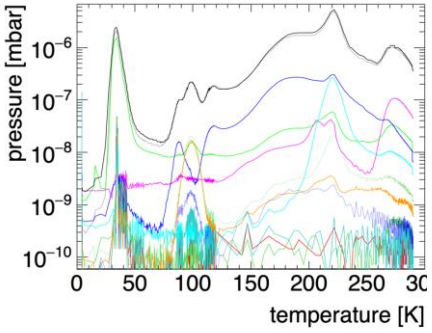
Cf. CM06



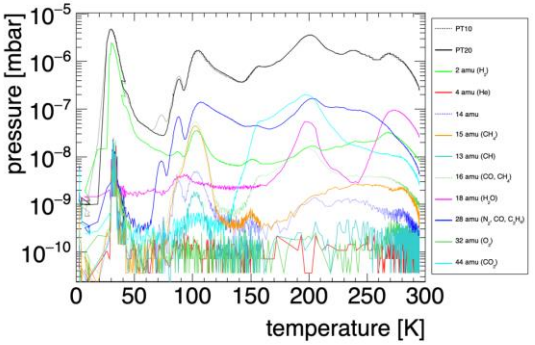
Cf. CM07



Cf. CM08

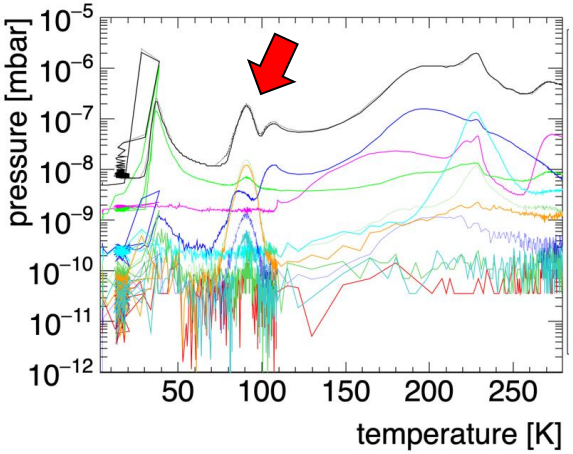


Cf. CM10

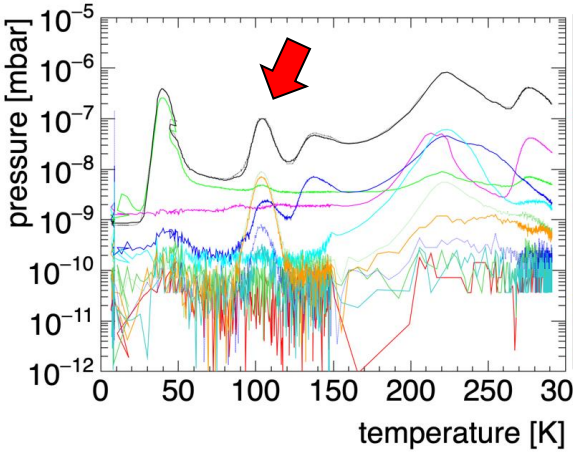


CM11: outgassing during warming up summary

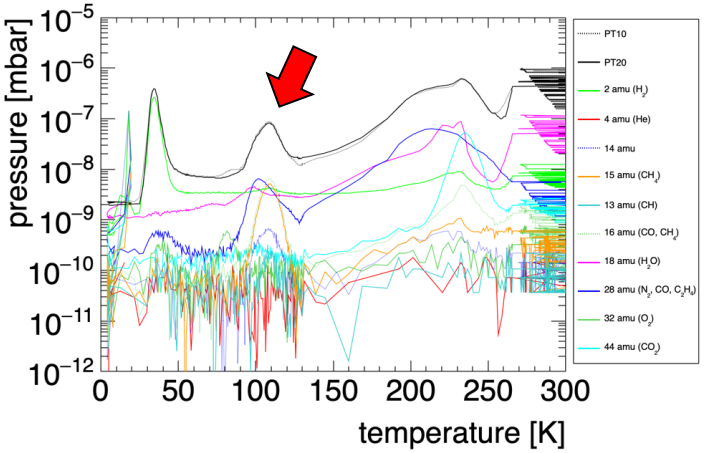
1st warming up

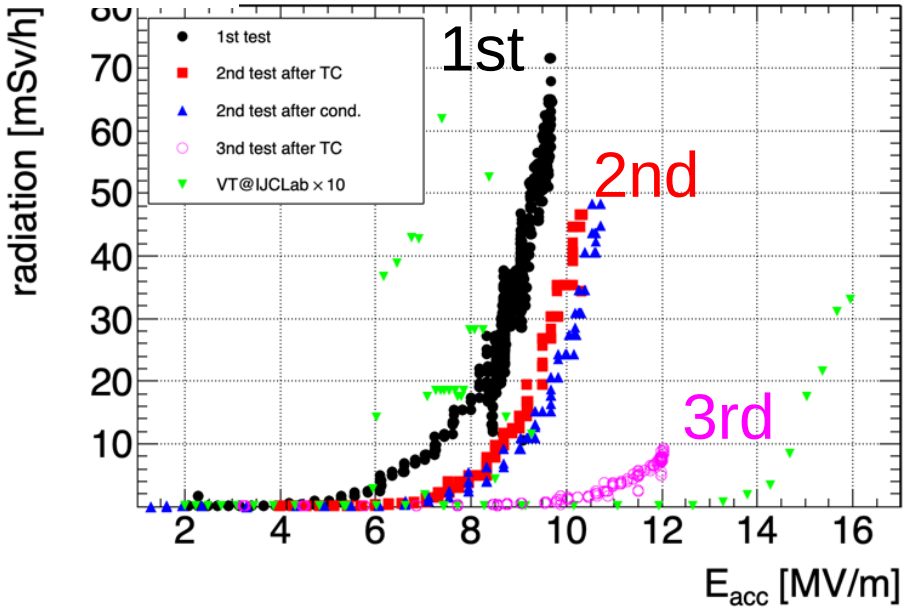


2nd warming up



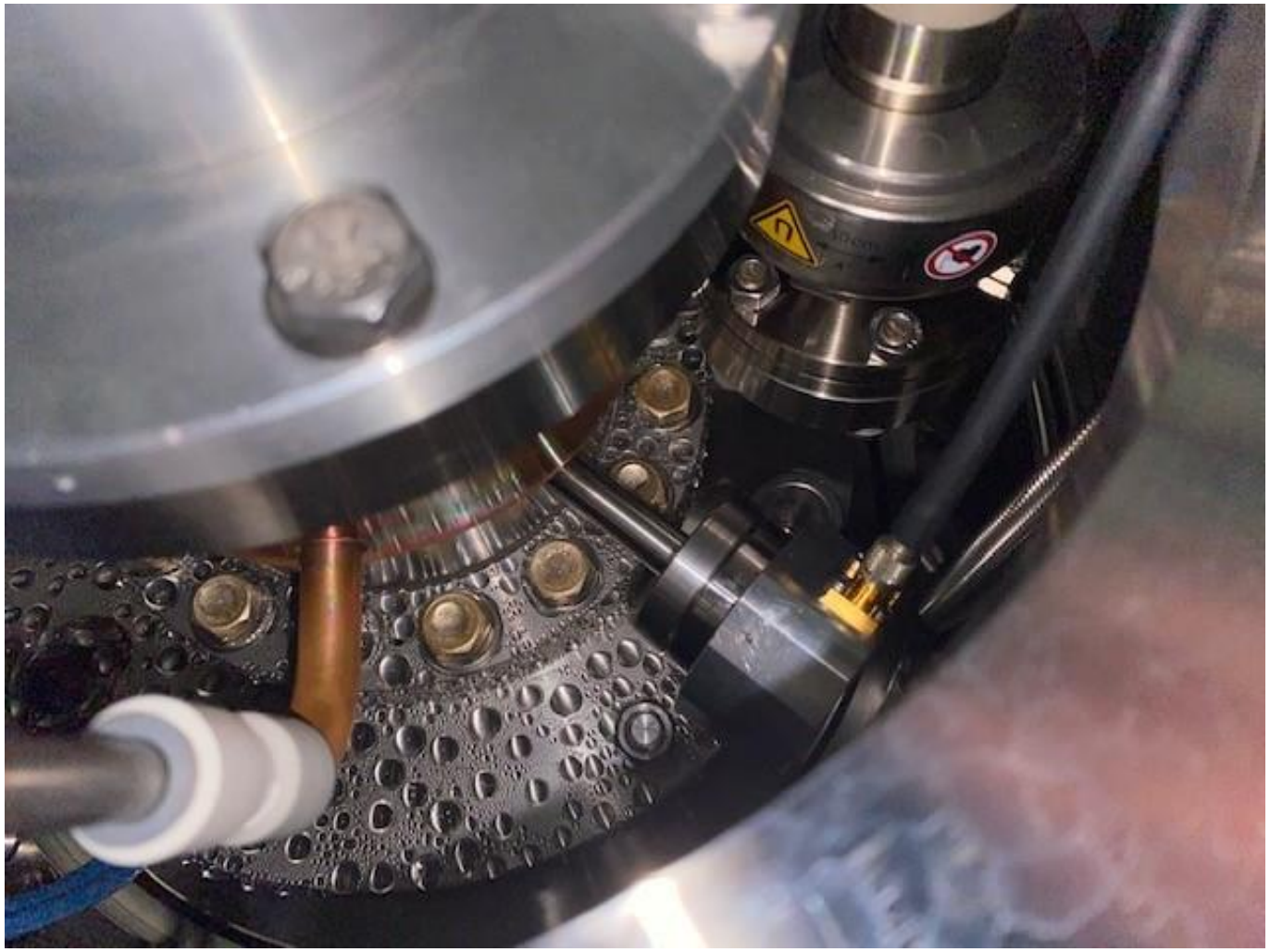
3rd warming up





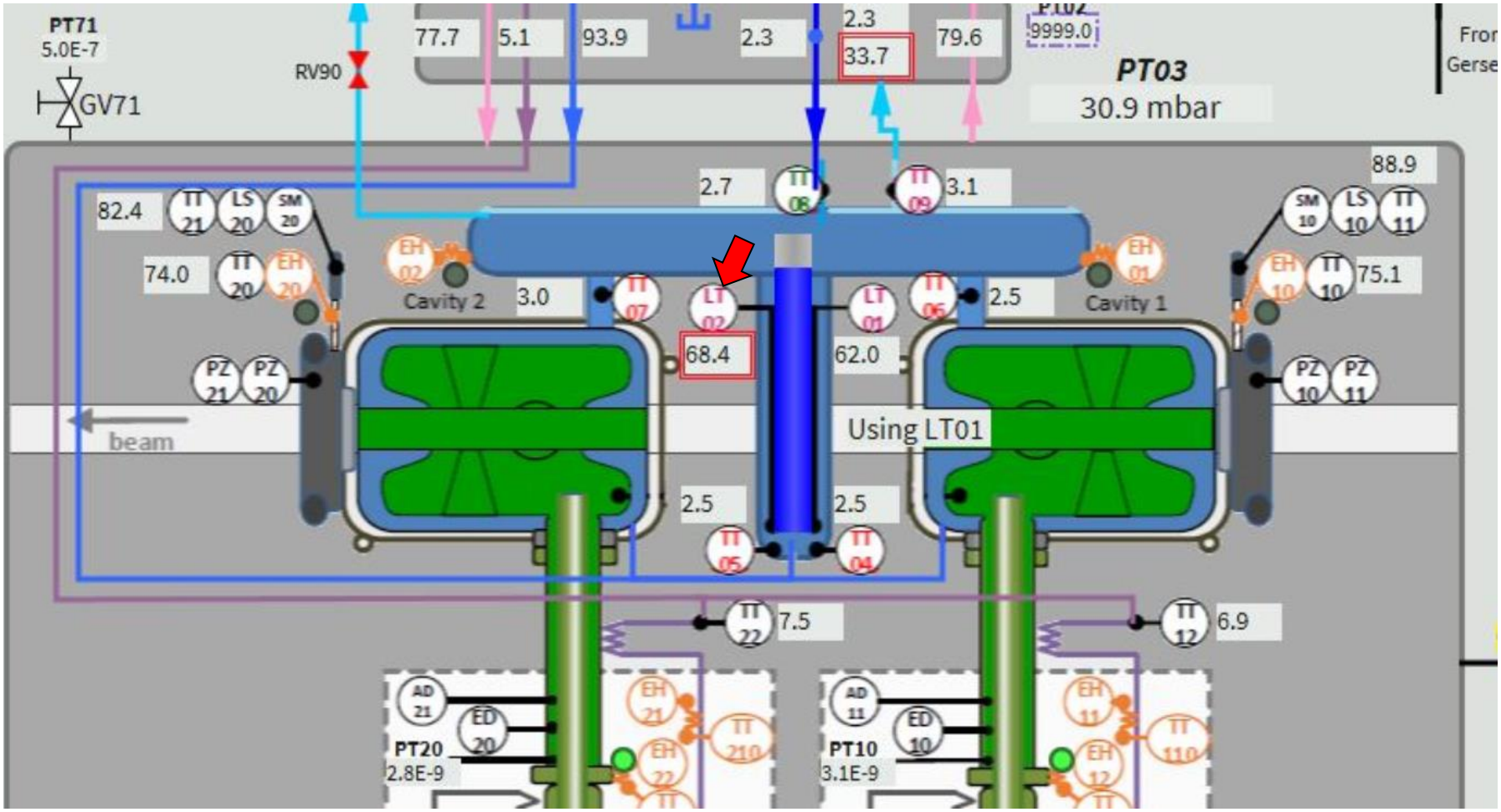
Did the thermal cycles get rid of CH?

CM11: CAVIN water condensation



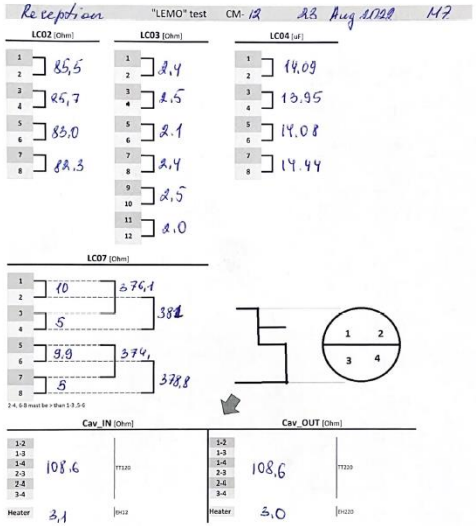
- Increase the heater regulation target to 290-295 K to 295-300 K
- Pt100 may not be attached nicely

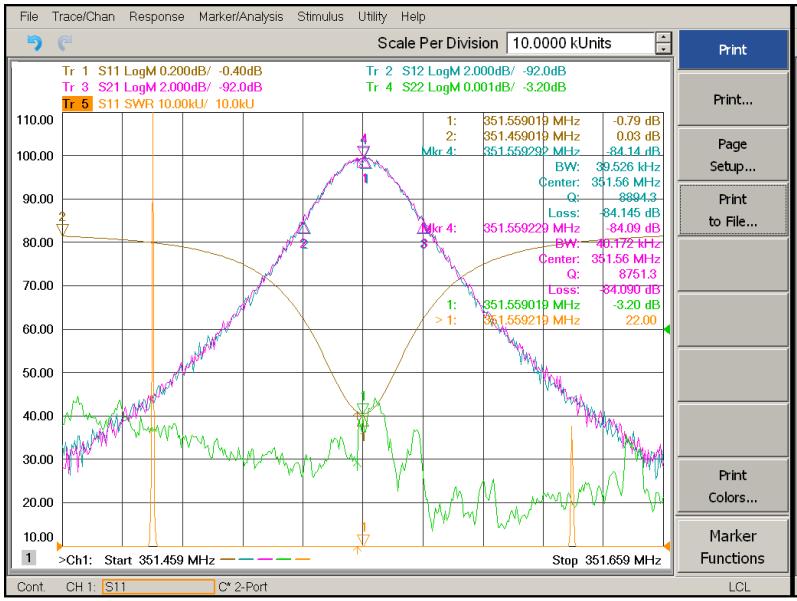
CM11: ~~LT02 is shorted to the ground~~



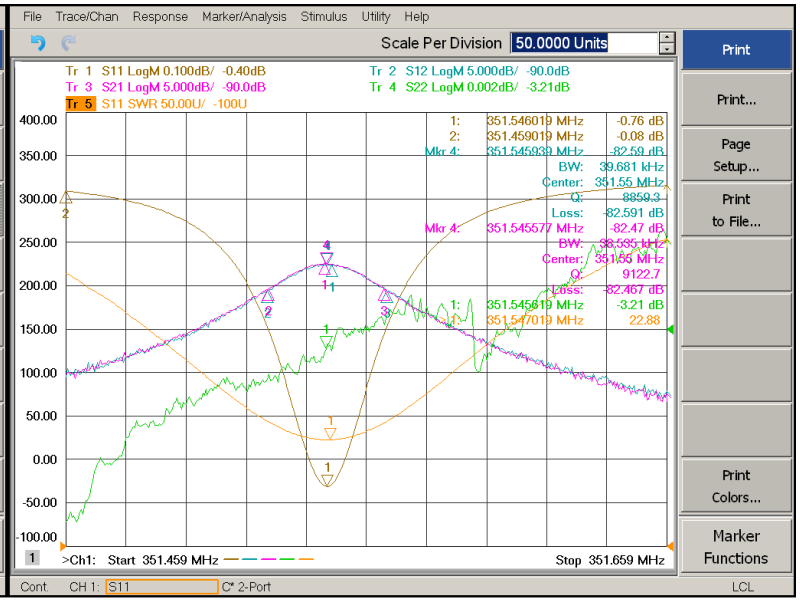
- It seems like an issue on the LEMO connector side
  - We added a kapton film to insulate pins
- The modification in the LHe probe is after CM12
  → CM11 will be anyway fixed at ESS

CM12: reception



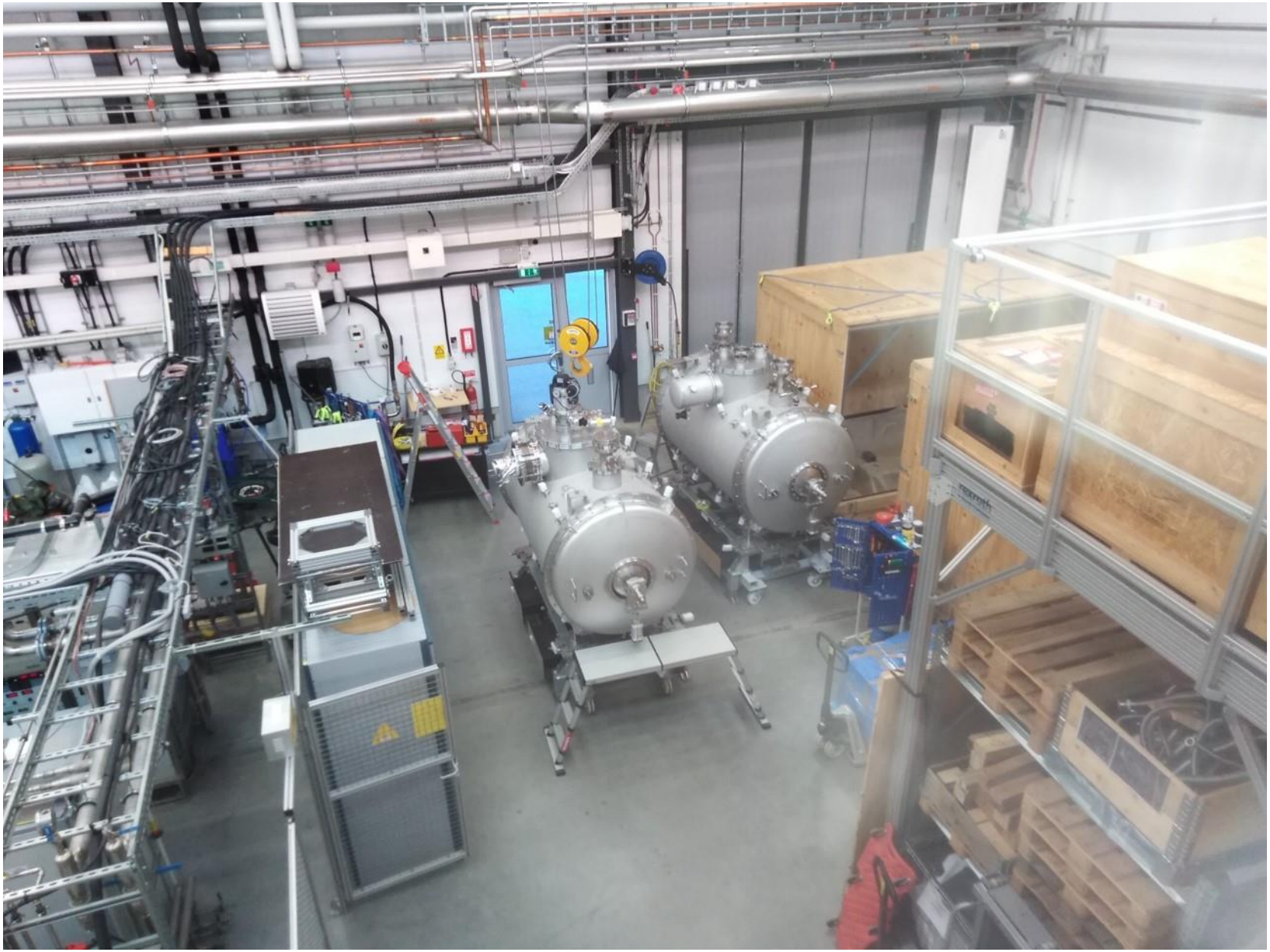


CavIN



CavOUT

CM11 & CM12 swapped



CM12: flange issue again ☹

- The welded flange seems distorted and the flange ring from CM02 did not fit
- The flange ring with CM12 did not fit either
- The one with CM11 fit → we swapped the flange