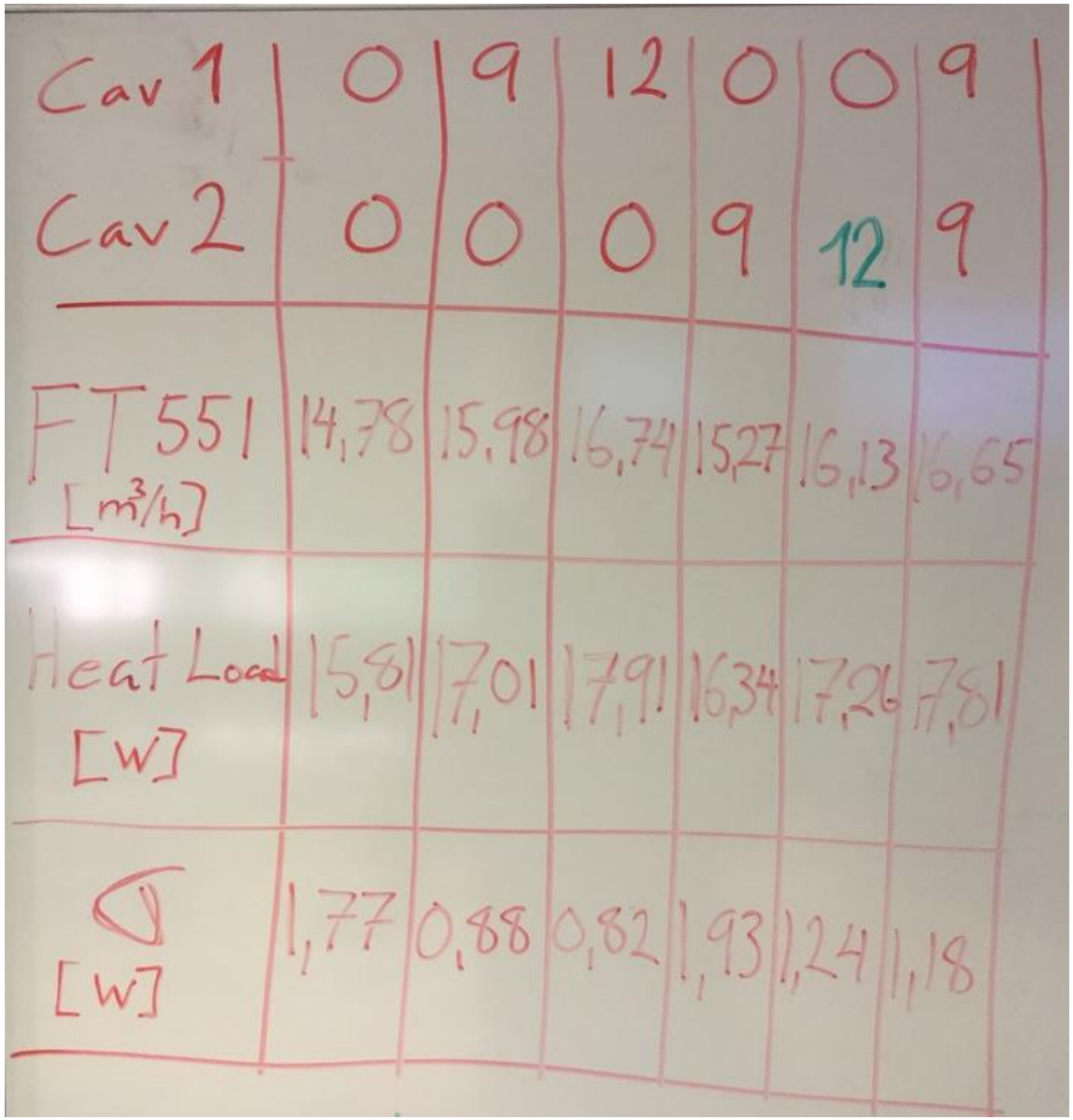
UPPSALA
UNIVERSITET

ESS weekly meeting (2022 W39)

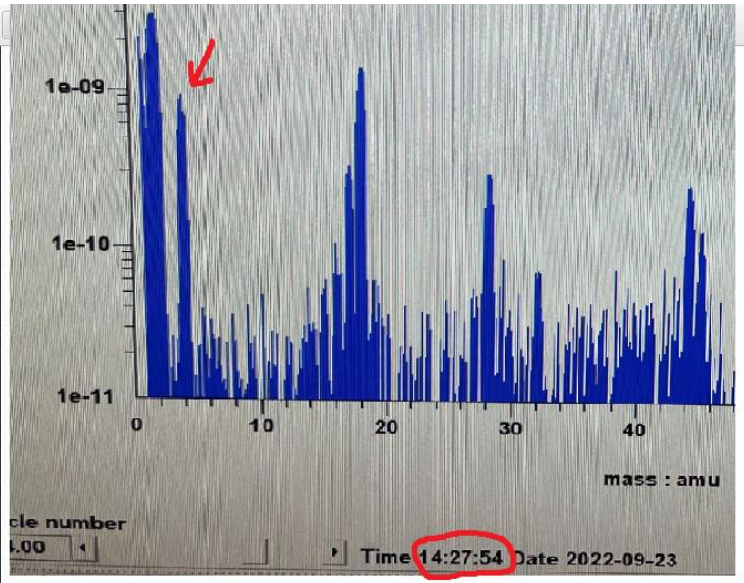
A. Miyazaki et al

CM12: heat load measurement



Cav 1	0	9	12	0	0	9
Cav 2	0	0	0	9	12	9
FT 551 [m³/h]	14,78	15,98	16,74	15,27	16,13	16,65
Heat Load [W]	15,81	17,01	17,91	16,34	17,26	17,81
Δ [W]	1,77	0,88	0,82	1,93	1,24	1,18

CM12: warming up and nightmare again



Hydrogen peak (2 amu)

CM-Vac:PT10:PrsR
14:27, 5.700E-9 mBar

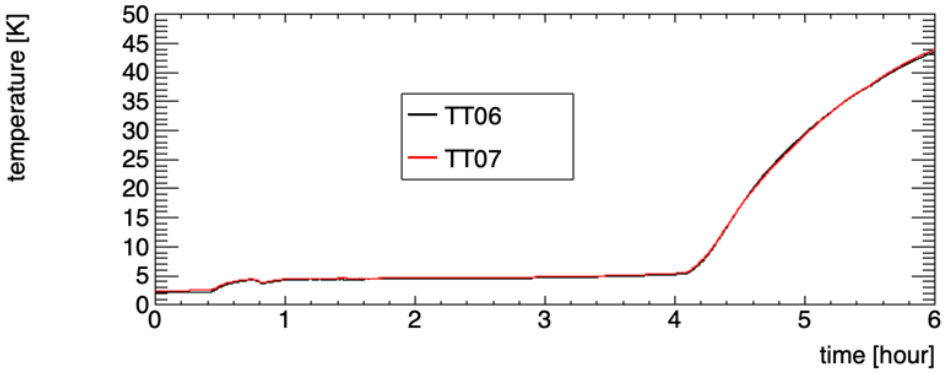
CM-CM:TT05:sRdV
14:27, 11.2 K

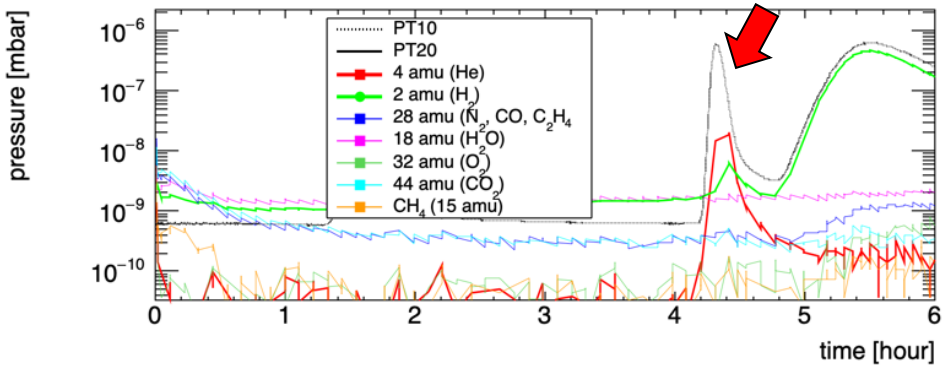
CM-Vac:PT10:PrsR [mBar] CM-CM:TT05:sRdV [K] CM-CM:TT07:sRdV [K] CM-Vac:PT20:PrsR [mBar]

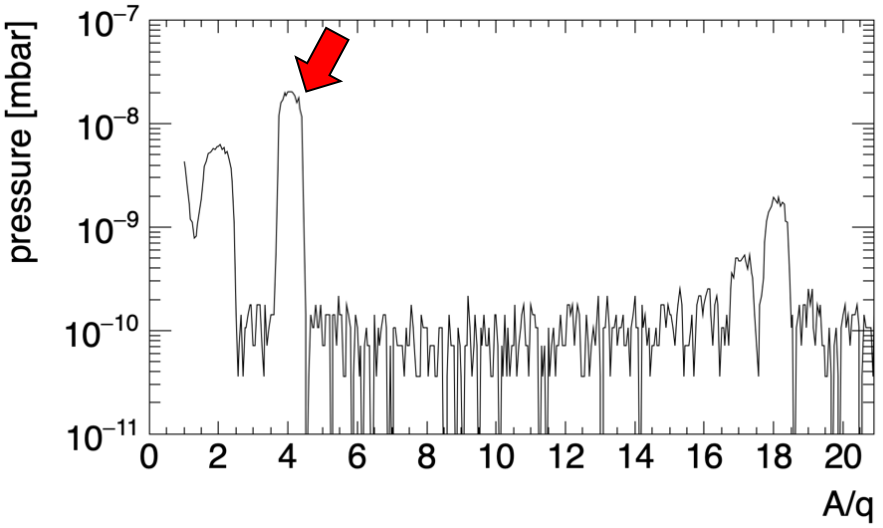
1.16E-6
5.78E-7
1.00E-10

14:00
2022-09-23
14:05
14:10
14:15
14:20
14:25
14:30
14:35
14:40
14:45
14:50
14:55
15:00
15:05
15:10
15:15
15:20
15:25

Cf: CM09







Difference:

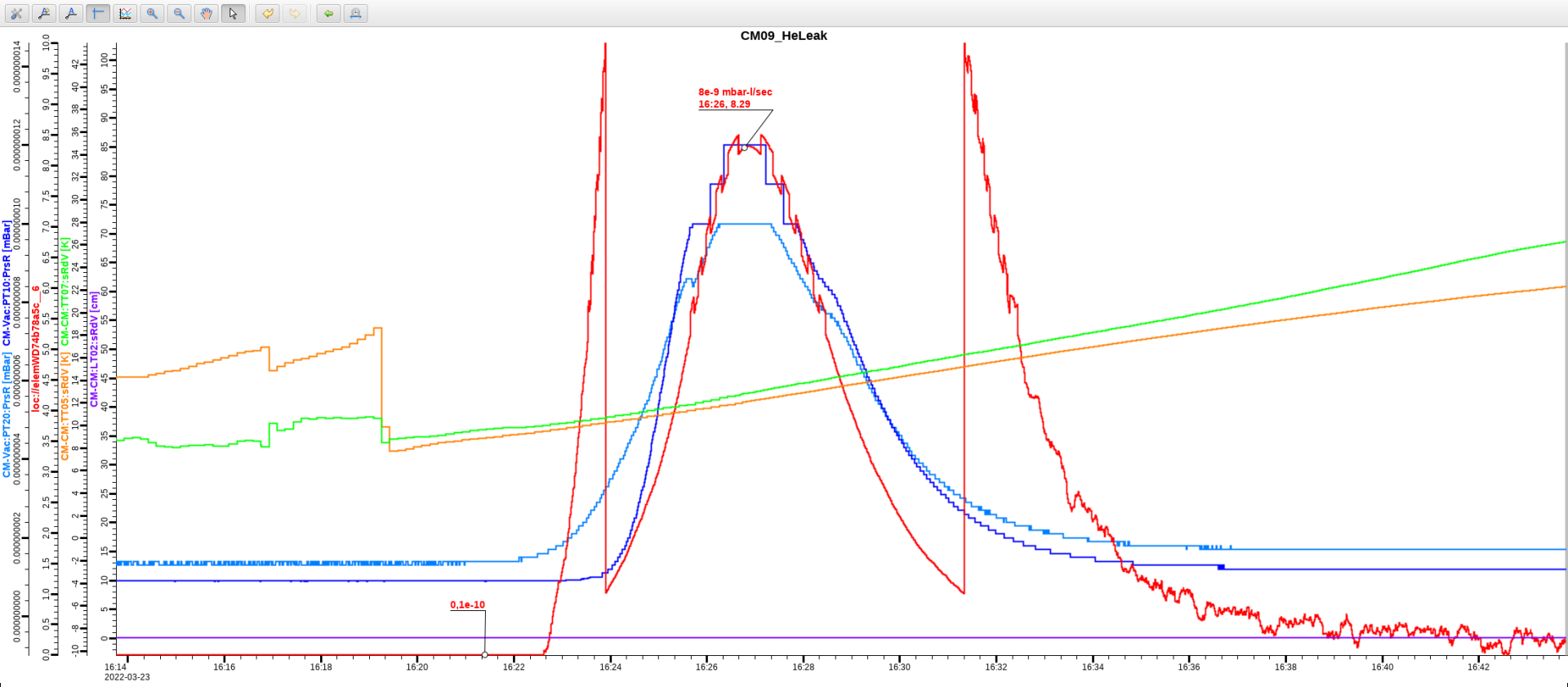
-CM09 showed 1e-6 mbar peak in Penning

-CM12 showed 6e-9 mbar peak only

2 orders of magnitude smaller signal

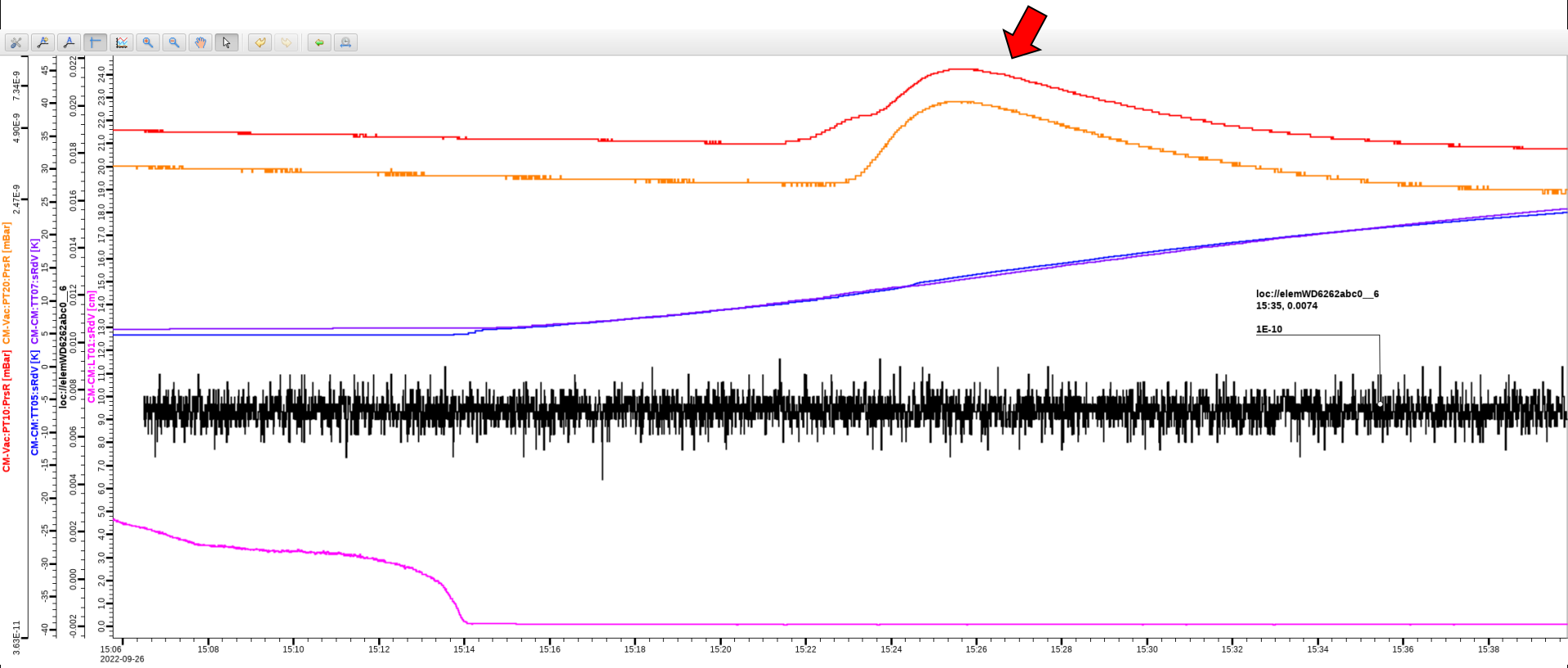
Cf. CM09: leak was confirmed 2/3

Leak detector detected He



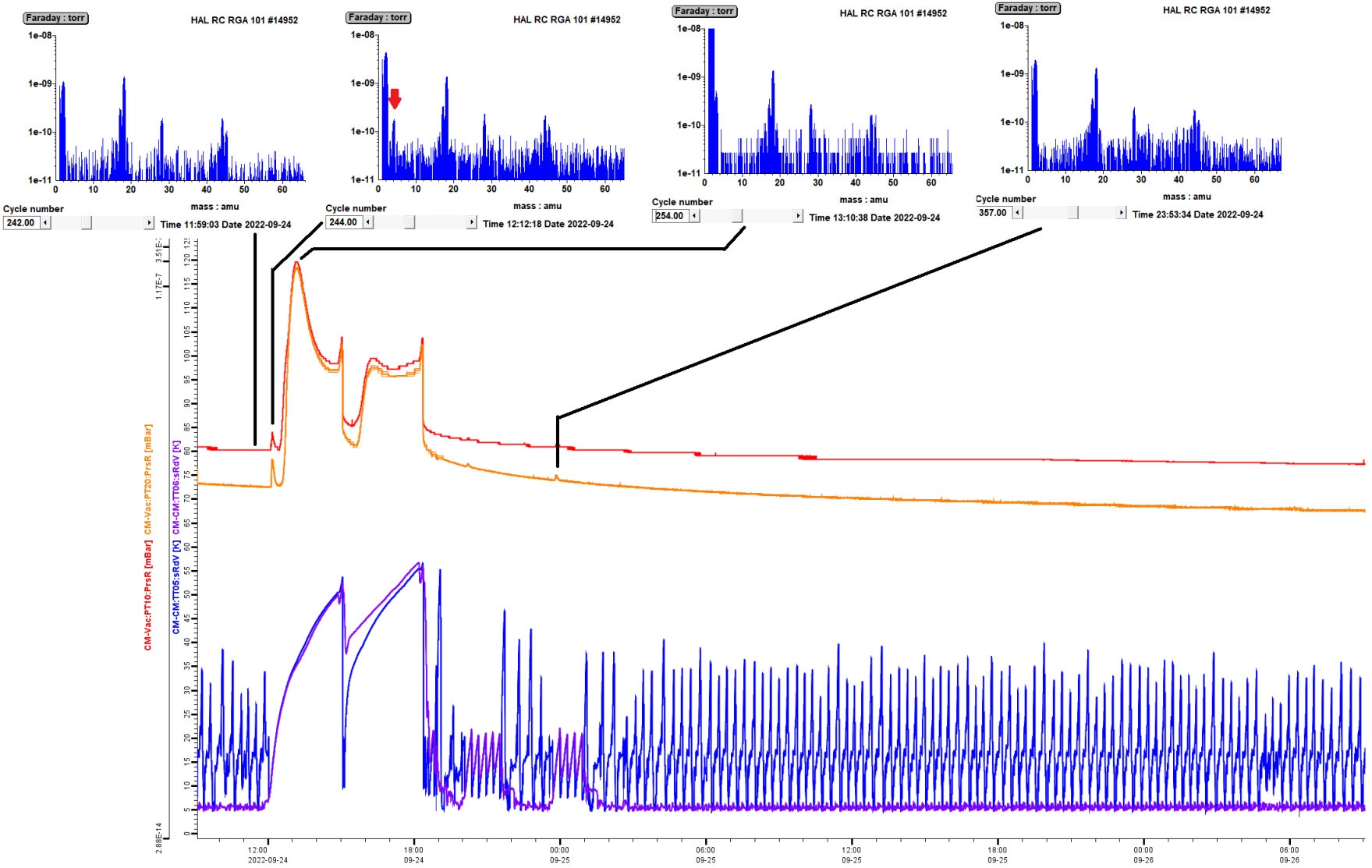
→ We did the same for CM12

CM12: Leak detector did not react



However, doubt in the calibration of our leak detector

CM12: He signal was reproducible



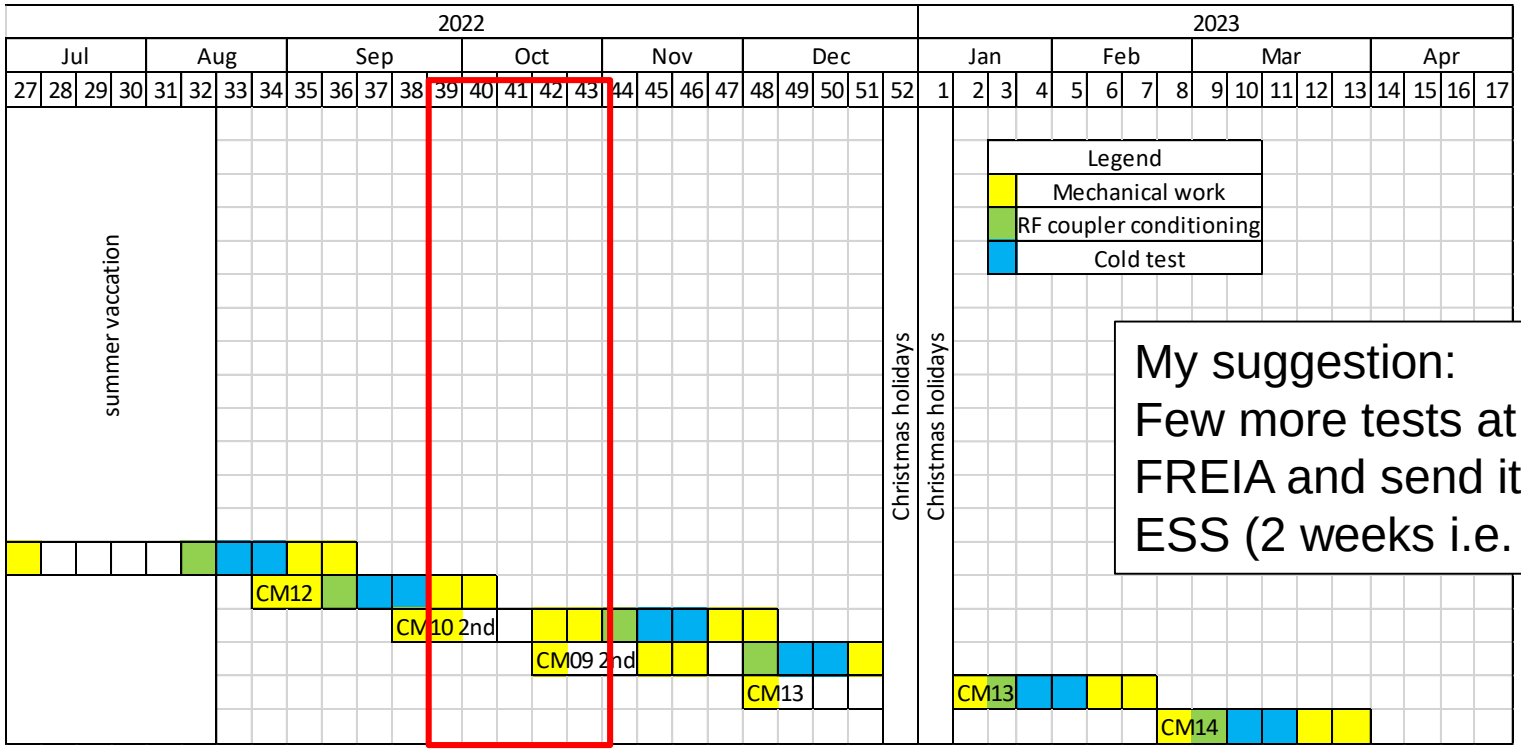
Observed twice (Friday and Saturday) at 11-13 K during warming up

CM12: GHe pressure dependence

- No signal in RGA' 4 amu by pressurizing the helium circuit up to 1.3 bar both at warm and at cold (> 20K)
- Our infrastructure is not designed to pump GHe when the cryomodule is at cold
  - Pumping GHe at 11K to see disappearance of 4 amu was not possible
- The last thing we can do is to pressurize the SCHe line higher than 1.3 bar

CM12, CM10, CM09 Planning

week		W39													
date		MON		TUE		WED		THU		FRI		SAT	SUN		
		26-sep		27-sep		28-sep		29-sep		30-sep		01-okt	02-okt		
		m	a	m	a	m	a	m	a	m	a				
present CM	**CM12**	Leak test: RGA sees 4 amu at 13 K but leak detector does not see He		warming up	break insulation vacuum	leak tests up to 1.3 bar in Ghe		warming up completed	leak test inside the bunker	swap (?) continue leak test inside?					
next CM	**CM10**	thermalization		reception tests											



My suggestion:
Few more tests at FREIA and send it to ESS (2 weeks i.e. W41)

We have some gap due to

- Electrosys preamplifier in Electrosys (min 3 weeks)
- Fixing regulation plunger's sealing Teflon in Linde system (max 2 weeks)