UPPSALA
UNIVERSITET

ESS weekly meeting (2022 W08)

A. Miyazaki et al

General planning: almost the end of CM08

FREIA Planning	2022-01-19	2022													
		January				February				March				Ap	
Equipment	Responsible	3	10	17	24	31	7	14	21	28	7	14	21	28	4	11
	week #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Liquefier & 2K pumps	Esat															
RF power stations	Mykhailo															
Cryomodule test stan	Akira			CM07				CM08				CM09				

We are here

CM08 to ESS
CM10 from Orsay

- We are trying to catch up with the initial plan and try to be ready on W10
- **How long can you wait for the decision?**

W07 & W08 progress / W09 & W10 planning

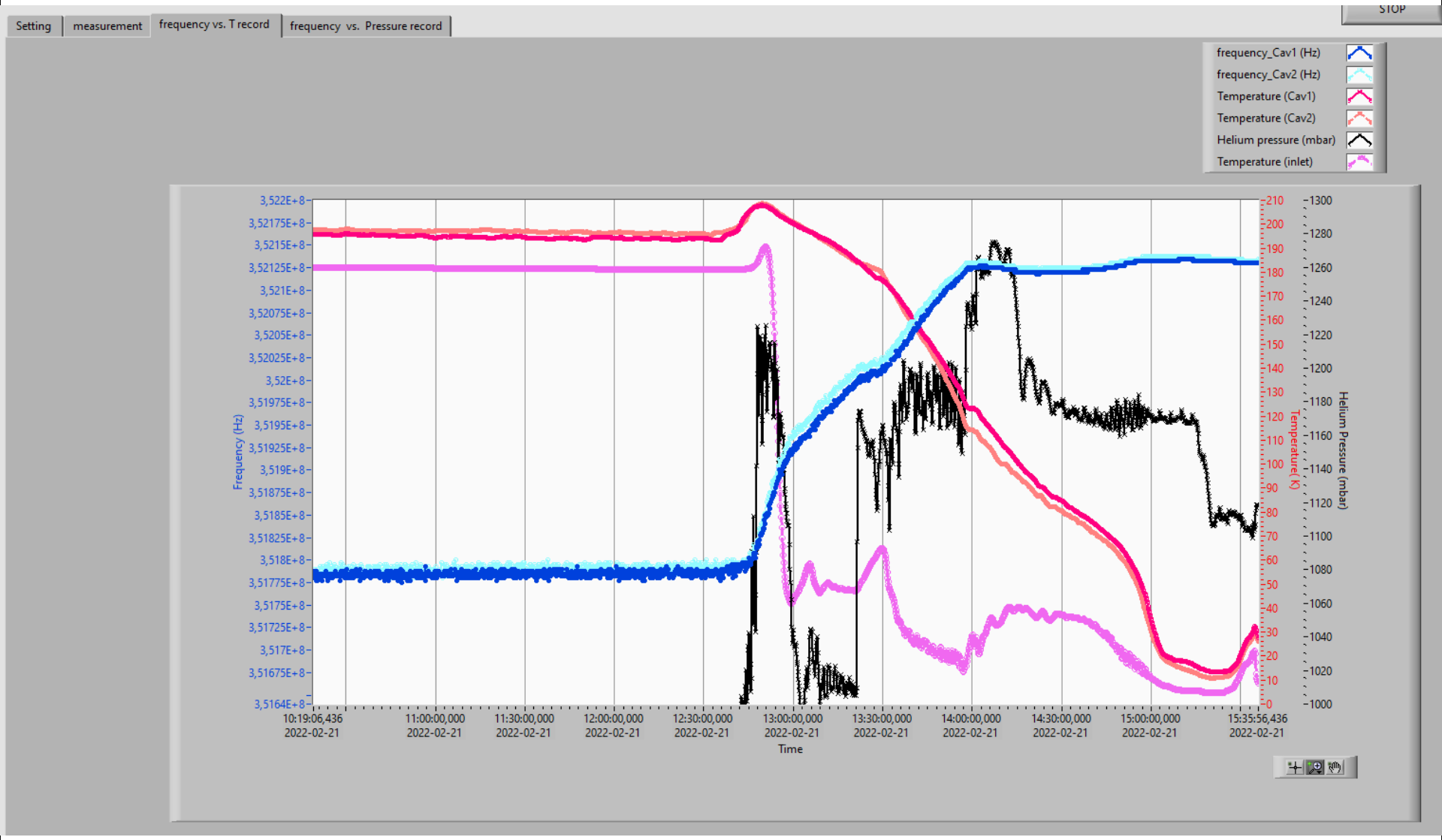
week		W07													
date		MON		TUE		WED		THU		FRI		SAT	SUN		
		14-feb		15-feb		16-feb		17-feb		18-feb		19-feb	20-feb		
		m	a	m	a	m	a	m	a	m	a				
present CM	**CM08**	LHe cooling	leak between insulation vac and Lhe	warming up		leak test		reconnect cryolines		coupler conditioning	start LN2 cooling				
next CM	**CM09**				reception test VNA										

week		W08													
date		MON		TUE		WED		THU		FRI		SAT	SUN		
		21-feb		22-feb		23-feb		24-feb		25-feb		26-feb	27-feb		
		m	a	m	a	m	a	m	a	m	a				
present CM	**CM08**	LHe cooling		4K filling	2K pumping	2K pumping retry	MP conditioning only CAV OUT	CTS & MP cond of CAV IN		move CTS & static heat load	dynamic heat load	warming up			
				coupler conditioning	RF calibration, f vs p	RF interlock setup									
next CM	**CM09**			doorknob mounting	leak checked	**We are here**									
next next CM	**CM10**	preparation at Orsay													

week		W09													
date		MON		TUE		WED		THU		FRI		SAT	SUN		
		28-feb		01-mar		02-mar		03-mar		04-mar		05-mar	06-mar		
		m	a	m	a	m	a	m	a	m	a				
previous CM	**CM08**	warming up completed / open the bunker		disconnect cryogenics	swap modules	N2 filling		out going test		out going test		waiting in the box			
present CM	**CM09**					connect cryogenics		connect vacuum pumps		pumping vacuum					
next CM	**CM10**	preparation at Orsay								departure from Orsay		transport			

week		W10													
date		MON		TUE		WED		THU		FRI		SAT	SUN		
		07-mar		08-mar		09-mar		10-mar		11-mar		12-mar	13-mar		
		m	a	m	a	m	a	m	a	m	a				
previous CM	**CM08**	waiting in the box		departure to ESS		preparing report		publish report							
present CM	**CM09**	coupler warm conditioning								purging	N2 cooling				
next CM	**CM10**	transport from Orsay						arrival at UU		reception test					

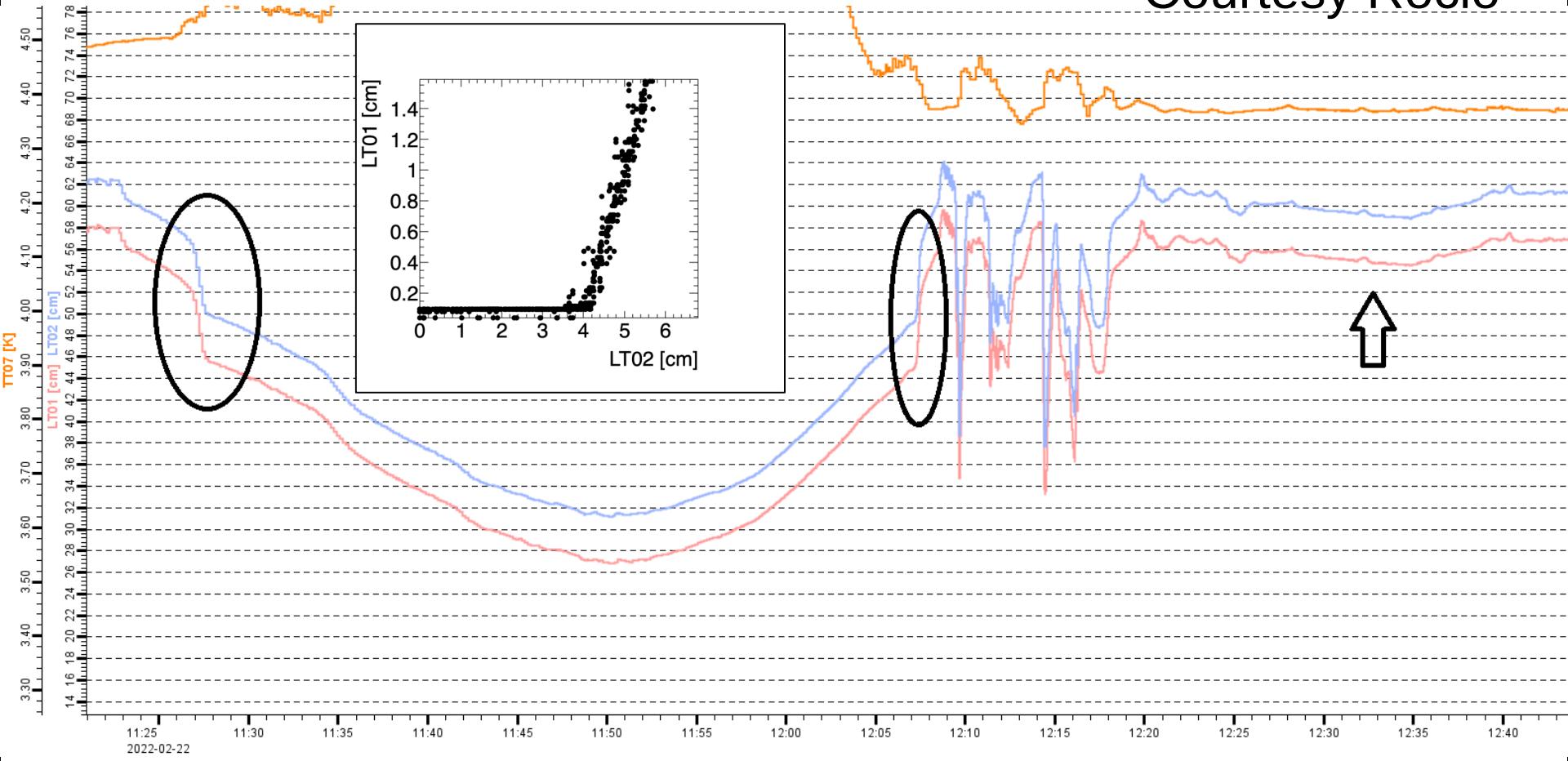
CM08: cooling down



No leak this time

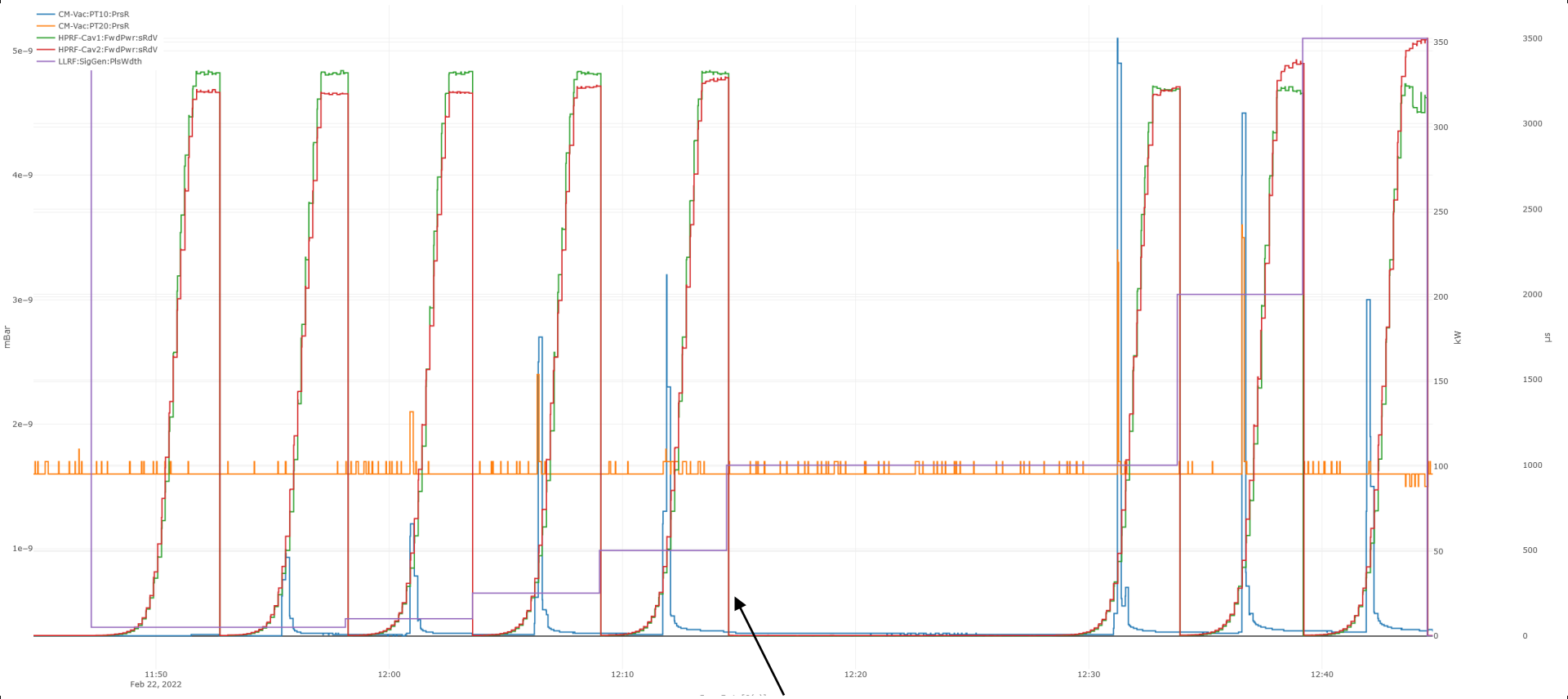
LT01 shows a “negative” offset

Courtesy Rocio



LT02 is used as a regulation target

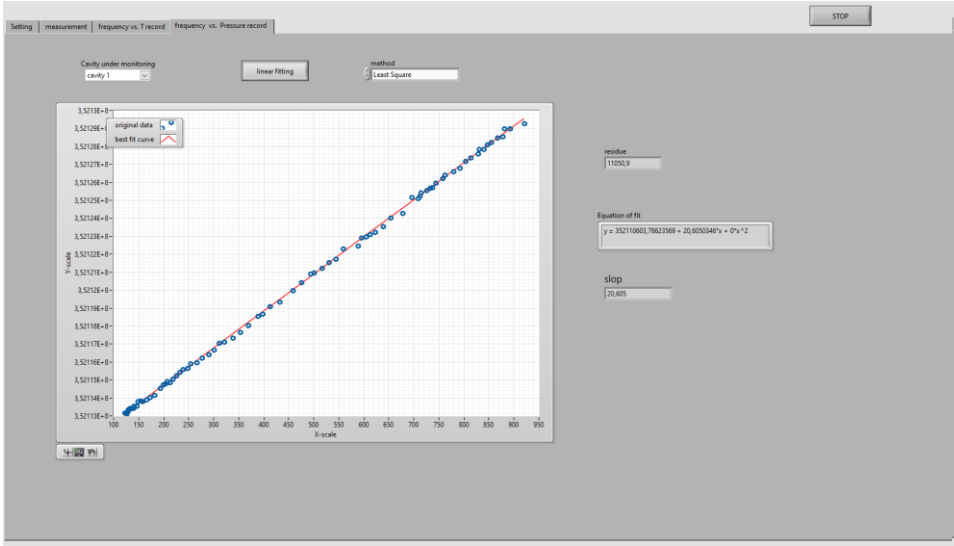
Coupler cold conditioning



Esys tripped by anode alarm and G2 over current

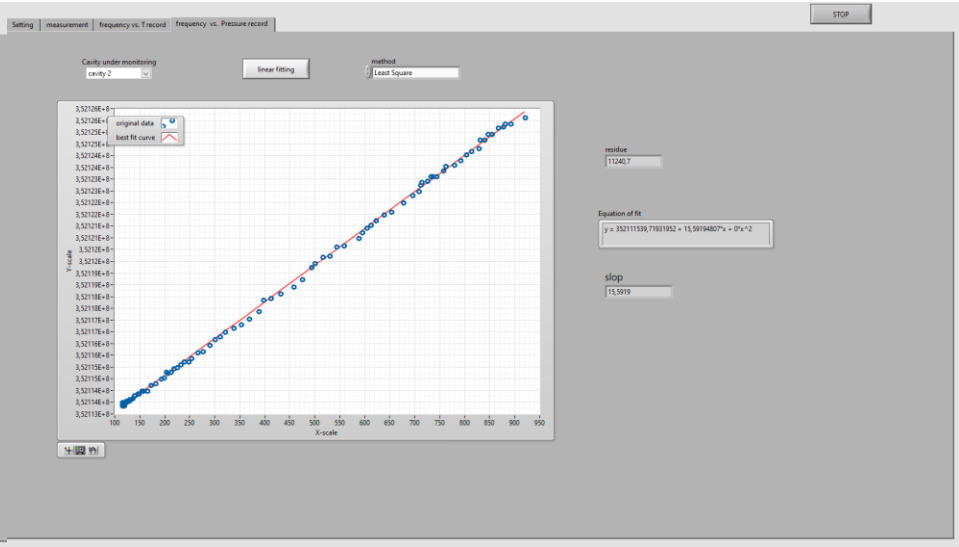
f vs p during 2K pumping

CAV IN



~~df/dp = -20.61 Hz/mbar~~

CAV OUT

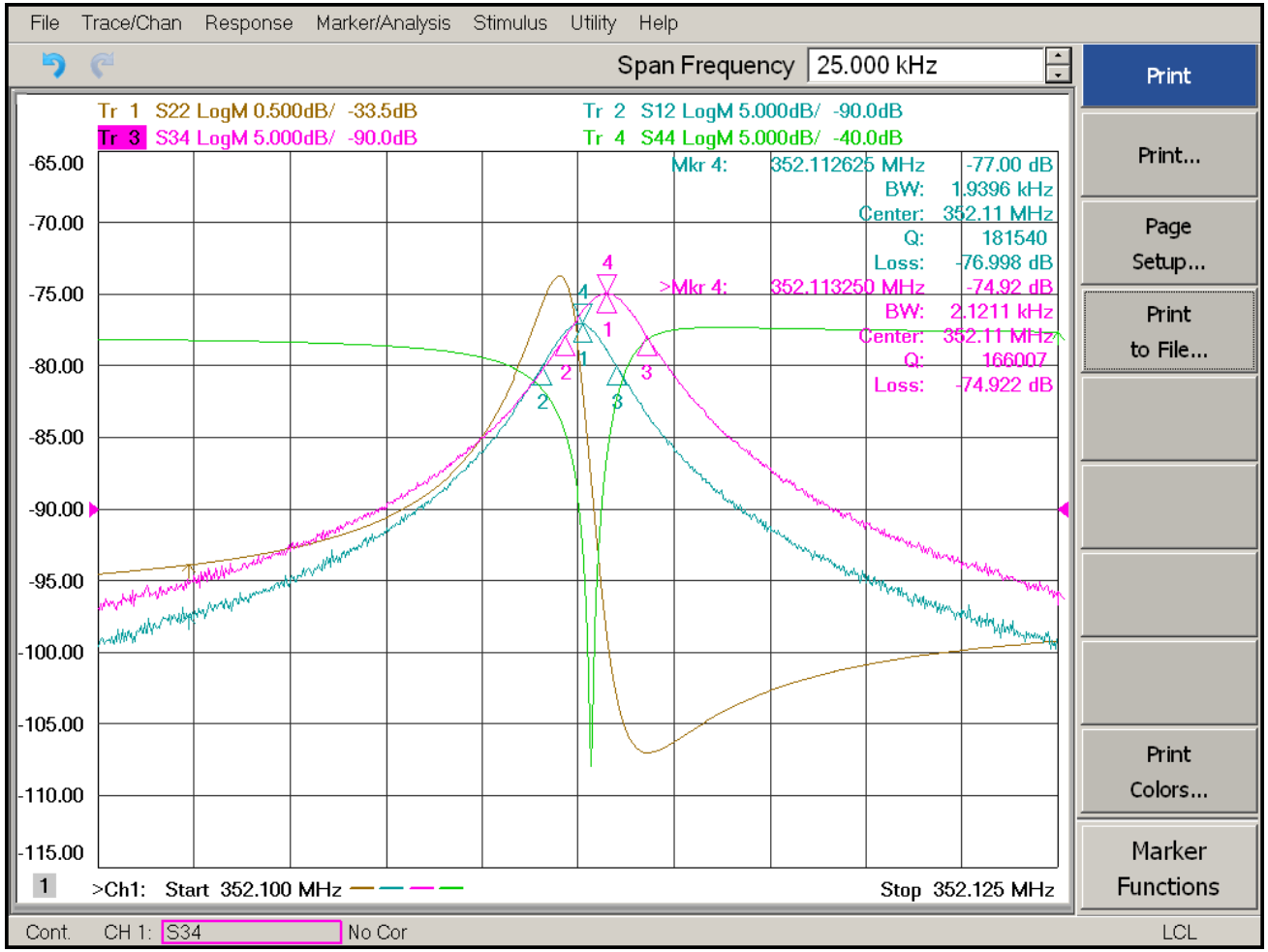


~~df/dp = -15.59 Hz/mbar~~

We found an offset in GHe pressure reading (PT03)

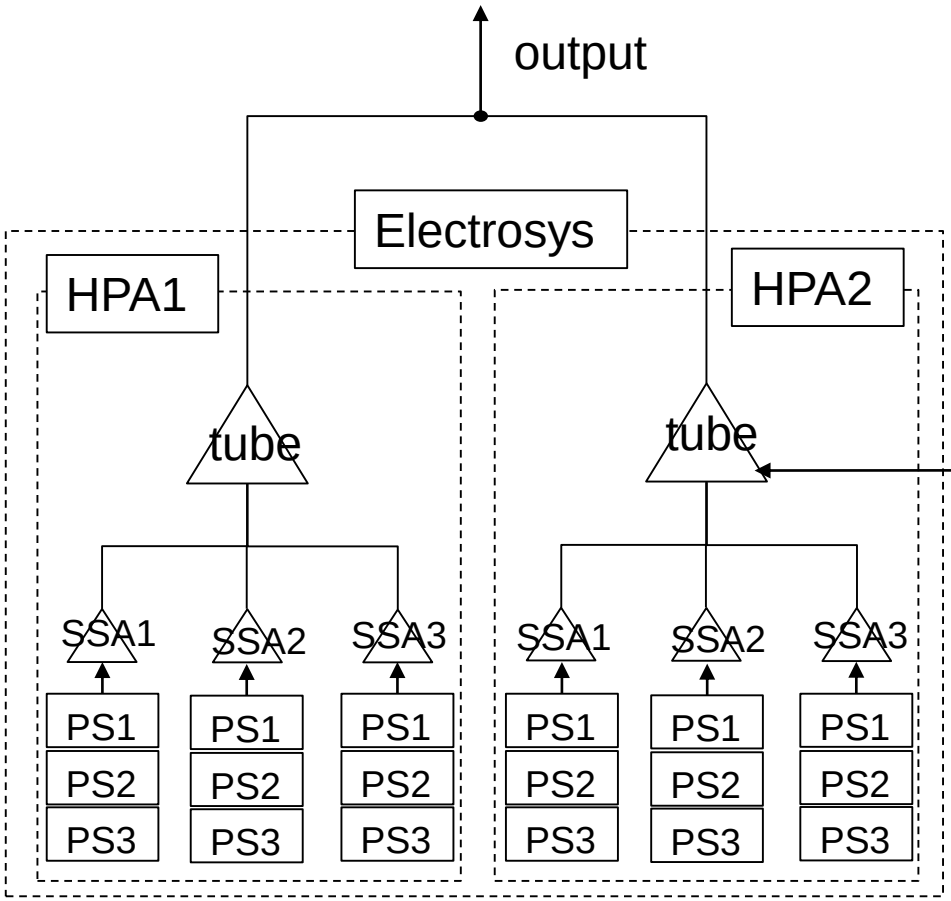
- We have used MKS to read PT03 and control CV551
- Before CM08, we added Siemens PLC ADC read-out of PT03 to control CV04 and improve static heat load measurement
- Input impedance issue in MKS and PLC made an offset in pressure value
- The real pressure drop was higher so df/dp must be lower → to be checked

CM08 cavities at 2K without CTS engaged



	CAV IN	CAV OUT
f0 [MHz]	352.113	352.113
QL	1.82e5	1.66e5

Electrosys died before cavity measurement



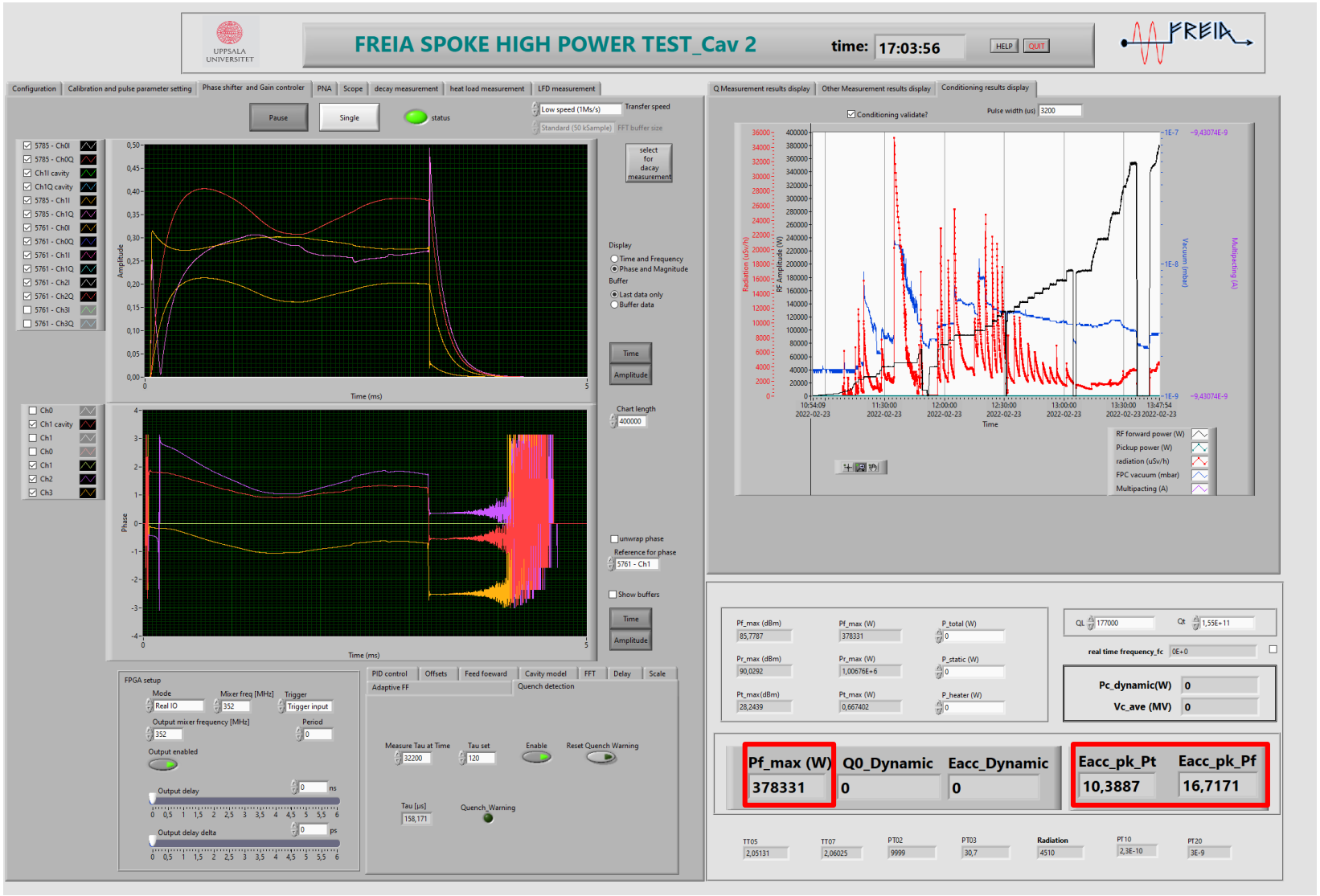
Over Voltage Limit

- This is a standard power supply for high current
- We are looking for a solution

→ CM08 test is on-going only with DB station

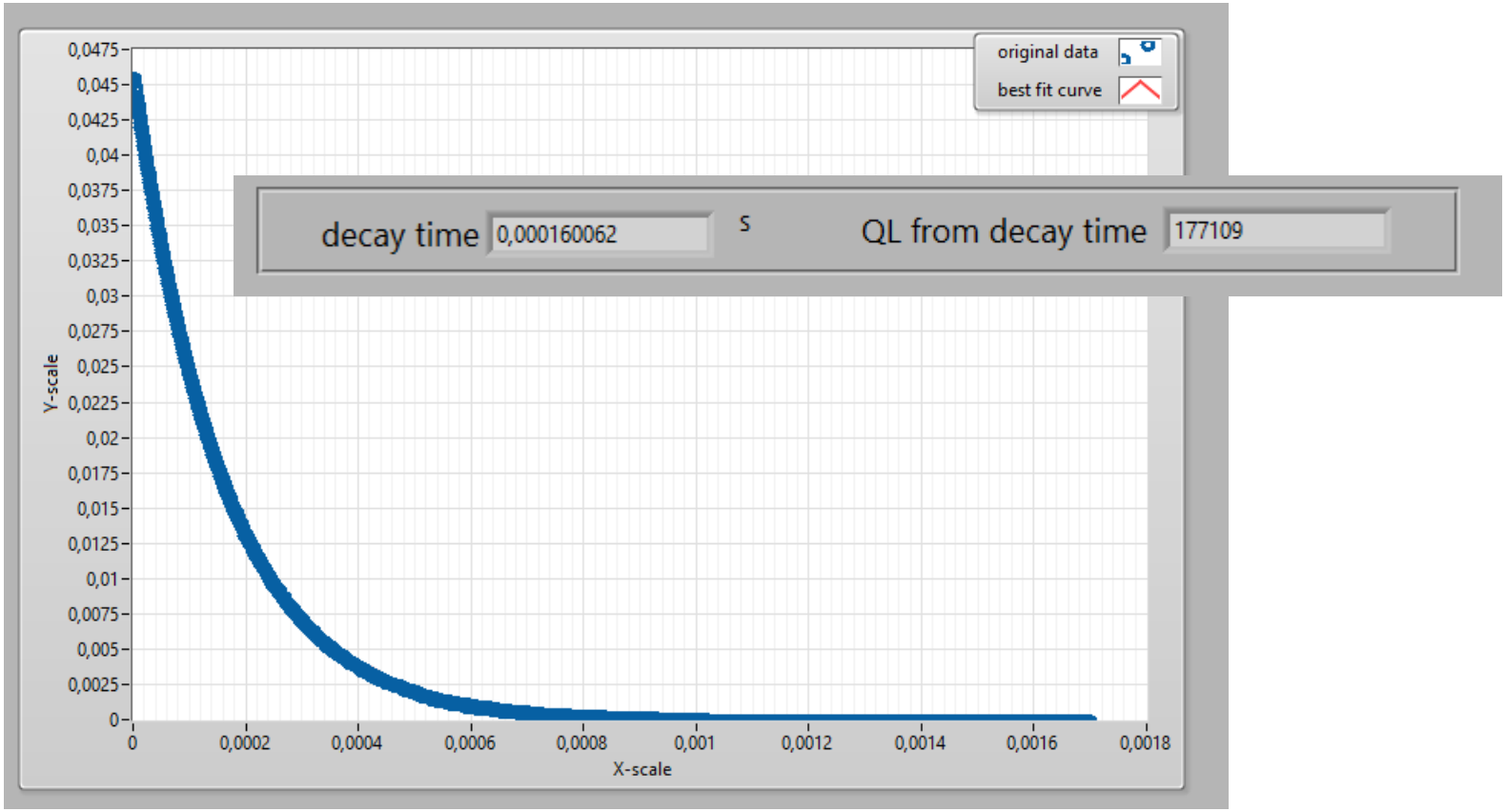
→ Twice the time for cavity measurements ☹

CAV OUT reach 10.4 MV/m with doubt



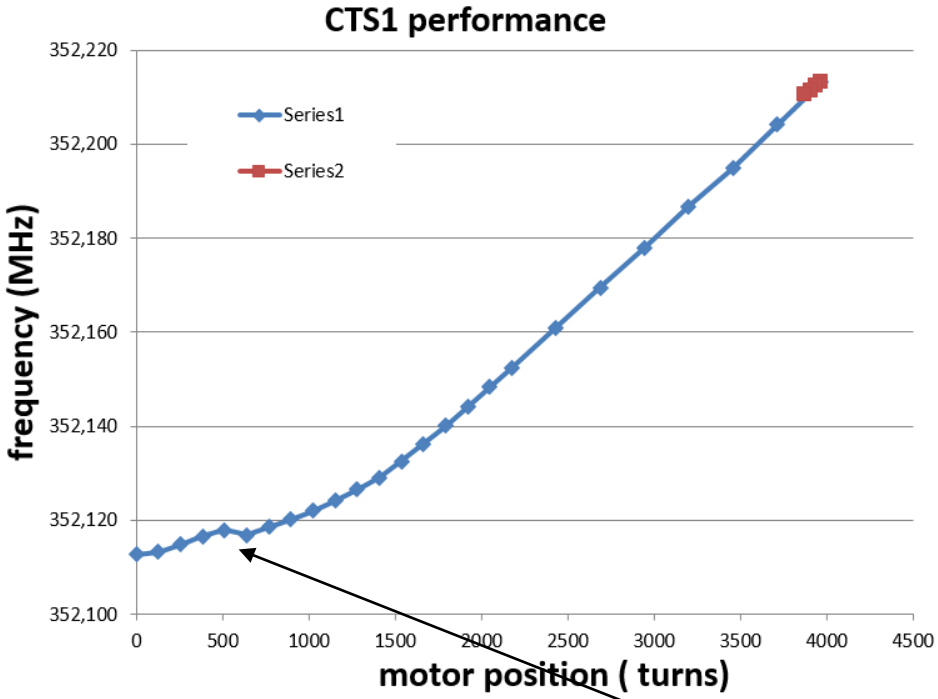
- We needed 277 kW to reach 9MV/m from Eacc estimate with Qt
- No strong field emission while VT at Orsay saw FE from 9MV/m

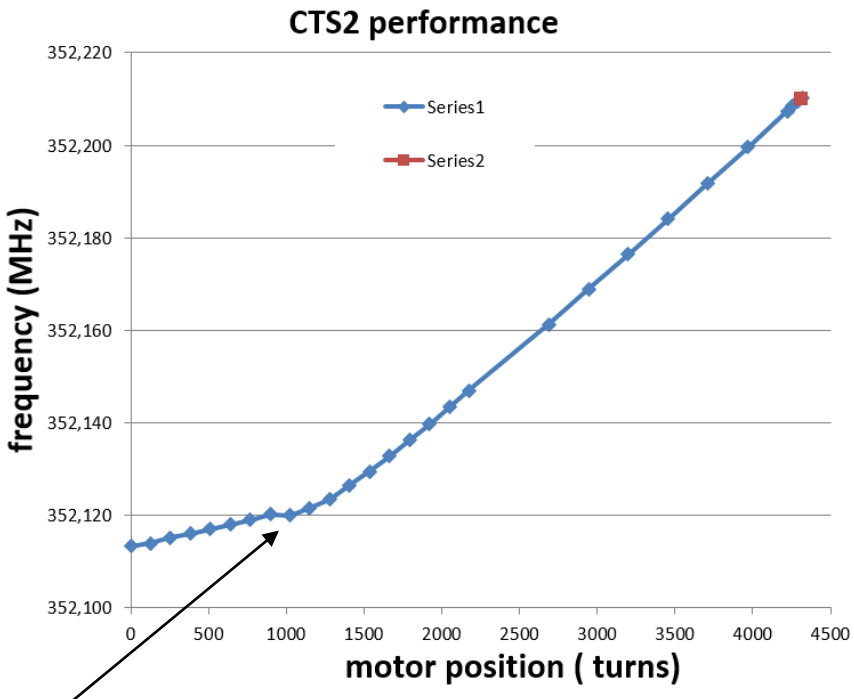
CM08 CAVOUT field decay



	CAV IN	CAV OUT
f0 [MHz]	352.113	352.113
QL (VNA)	1.82e5	1.66e5
QL (decay)	Not yet	1.77e5

CTS reached 352.210 MHz but…





Backlash before the linear zone for both CTSs

The new Beckhoff driver was used from the beginning

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If we cannot warm up this weekend

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present CM	**CM09**					connect cryogenics		connect vacuum pumps		pumping vacuum					
next CM	**CM10**	preparation at Orsay								departure from Orsay		transport			

Preparation for shipping will be not possible in W09

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