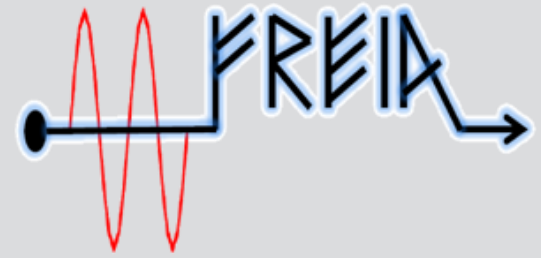




UPPSALA
UNIVERSITET



ESS weekly meeting (2021 W36)

A. Miyazaki et al.

General planning no major update



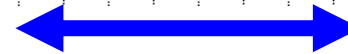
Cedric from Orsay may join us in W42 and W44



FREIA Planning	2021-08-25																												2022				
				August					September					October					November					December					January				
Equipment	Responsible			2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	6	13	20	27	1	8	15	22	29				
		week #		31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	1	2	3	4	5				
Liquefier & 2K pumps	Esat																																
RF power stations	Mykhailo																																
Cryomodule test stand	Akira																																

We are here

CM01 departure
CM03 reception



In Oct and Nov, Akira will be physically away from Sweden but remotely lead the project from Germany



W35&W36 progress



week		W35											
date		MON		TUE		WED		THU		FRI		SAT	SUN
		30-aug		31-aug		01-sep		02-sep		03-sep		04-sep	05-sep
		m	a	m	a	m	a	m	a	m	a		
present CM	CM01	2K pumping	static heat load w/ CTS	CTS test, static heat load		LFD	dynamics heat load	dynamics stop 2K heat load pumping		warming up		break insulat ion vac	warmi ng up
next CM	CM04					doorknob mounting							

week		W36											
date		MON		TUE		WED		THU		FRI		SAT	SUN
		06-sep		07-sep		08-sep		09-sep		10-sep		11-sep	12-sep
		m	a	m	a	m	a	m	a	m	a		
present CM	CM01	remove concrete blocks	disc. Pumping stations & cables	disc. Water pipes, insulation	disc. waveguide	disc. cryogenic lines	swap modules. Connect waveguide	filling dry N2		outgoing test (LEMO)			
next CM	CM04							warm test of the stepper motors		connect 1 pumping station	pump beam vacuum		

We are here



W37, 38 39 planning



Shock sensor >Felix

W37

week		Shock sensor >Felix W37											
date		MON		TUE		WED		THU		FRI		SAT	SUN
		13-sep		14-sep		15-sep		16-sep		17-sep		18-sep	19-sep
		m	a	m	a	m	a	m	a	m	a		
previous CM	CM01	doorknob dismounting, outgoing test (VNA)				close the box		waiting in the box					
present CM	CM04	connect cryogenic lines				beam vacuum connection		connect RF cables, calibrate RF, pumping beam vacuum, start RF stations					
next CM	CM03	prepared at Orsay								departure at Orsay			

week		W38													
date		MON		TUE		WED		THU		FRI		SAT	SUN		
		20-sep		21-sep		22-sep		23-sep		24-sep		25-sep	26-sep		
		m	a	m	a	m	a	m	a	m	a				
previous CM	CM01	waiting in the box		departure to ESS		preparation of documents		publish test report							
present CM	CM04	transport> Felix coupler warm conditioning												Avoid weekend	
next CM	CM03	transport via Lund						reception at UU		thermalization at UU					

transport > Felix

Avoid weekend

Theo will come to help us

W39

theo will come to help us

week		W39											
date		MON		TUE		WED		THU		FRI		SAT	SUN
		27-sep		28-sep		29-sep		30-sep		01-okt		02-okt	03-okt
		m	a	m	a	m	a	m	a	m	a		
present CM	CM04	Purging	N2 cooling	cooling down		4K filling	coupler cold conditioning	2K pumping	RF calibration at cold	MP conditioning		CTS thermalization	
next CM	CM03	reception test LEMO		reception test VNA		doorknob mounting		4					
next CM	CM06	preparation at Orsay											

We found that GHe pressure was not stable in the last results
 → We optimized valve opening and performed another set of measurement

Value name	Static	Dynamic	Dynamic	Dynamic	
Cav 1 IN	0 MV/m	9 MV/m	12 MV/m	0 MV/m	0
Cav 2 OUT	0 MV/m	9 MV/m	0 MV/m	12 MV/m	9
FT551 [m3/h]	15.37	16.34	15.32	15.47	15.14
Heat Load [W]	16.45	17.48	16.39	16.55	16.2

1W for 2 cavs
 @9MV/m

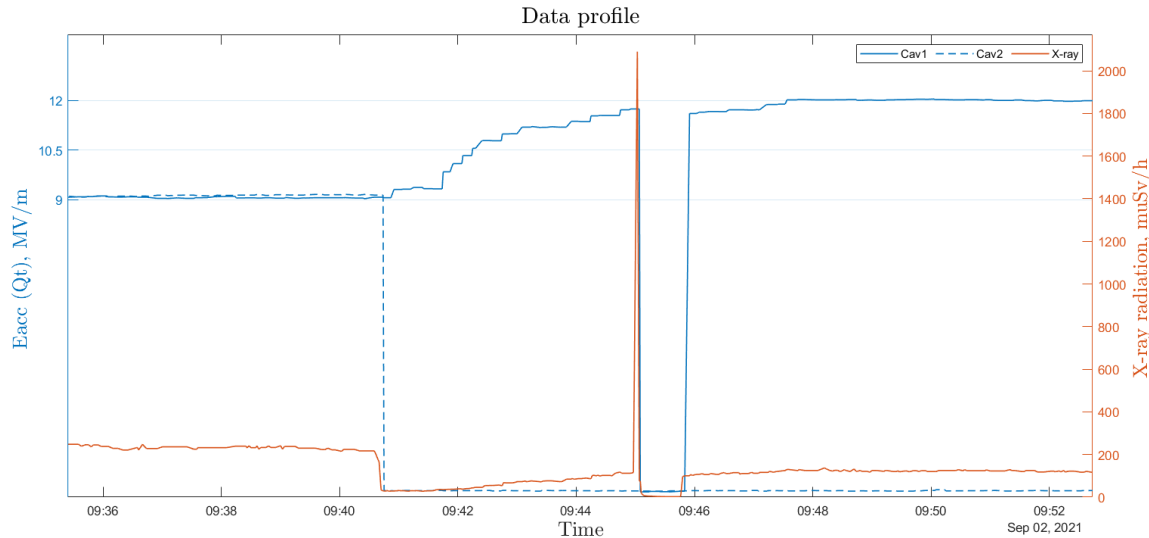
-0.06W
 CAVIN@
 12MV/m

+0.1W
 CAVIN@
 12MV/m

→ The power dissipation is invisibly good

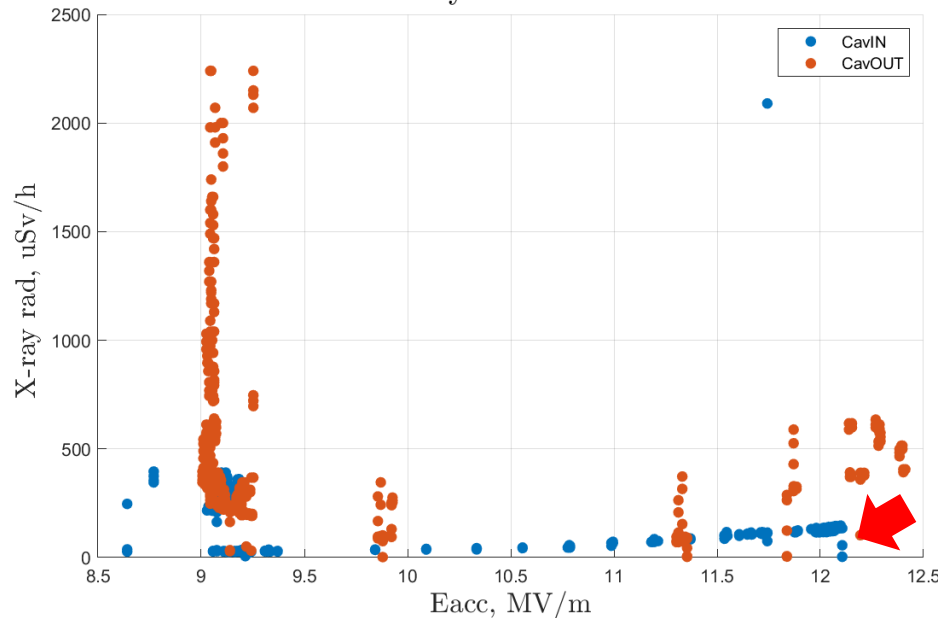
(Rough estimation of our measurement accuracy is +/-1W) 5

Mysha pointed out possible mild field emission



- No impact to the power dissipation
- No real problem

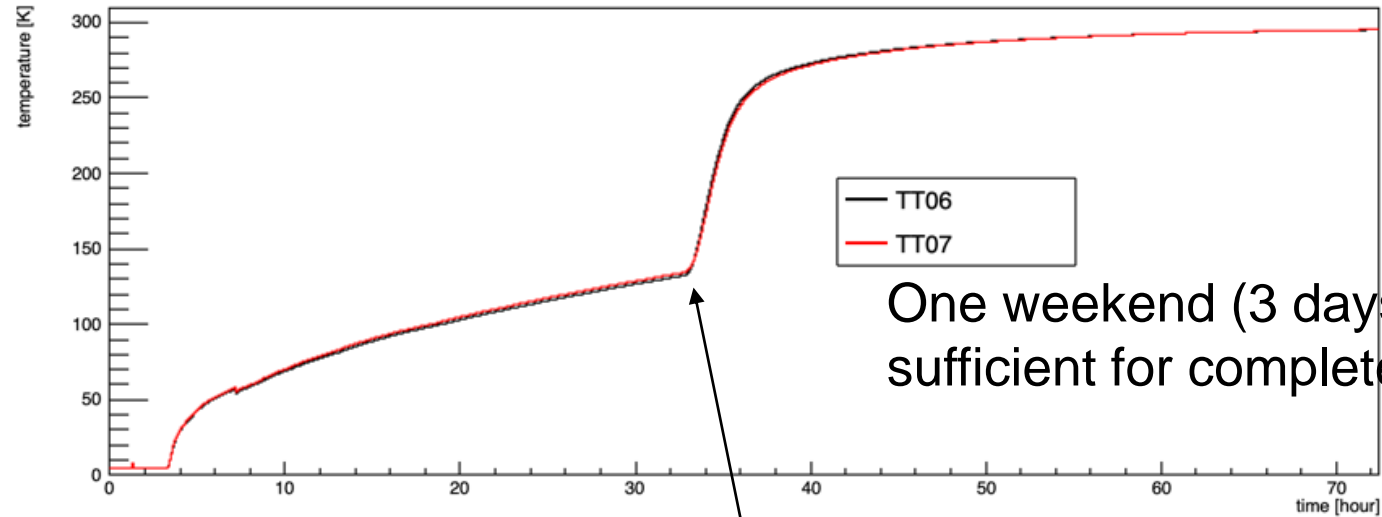
CM01: X-ray vs Eacc RAW data



We are fooled by the absolute value of X-ray dose because the ion chamber is closer to CAV OUT

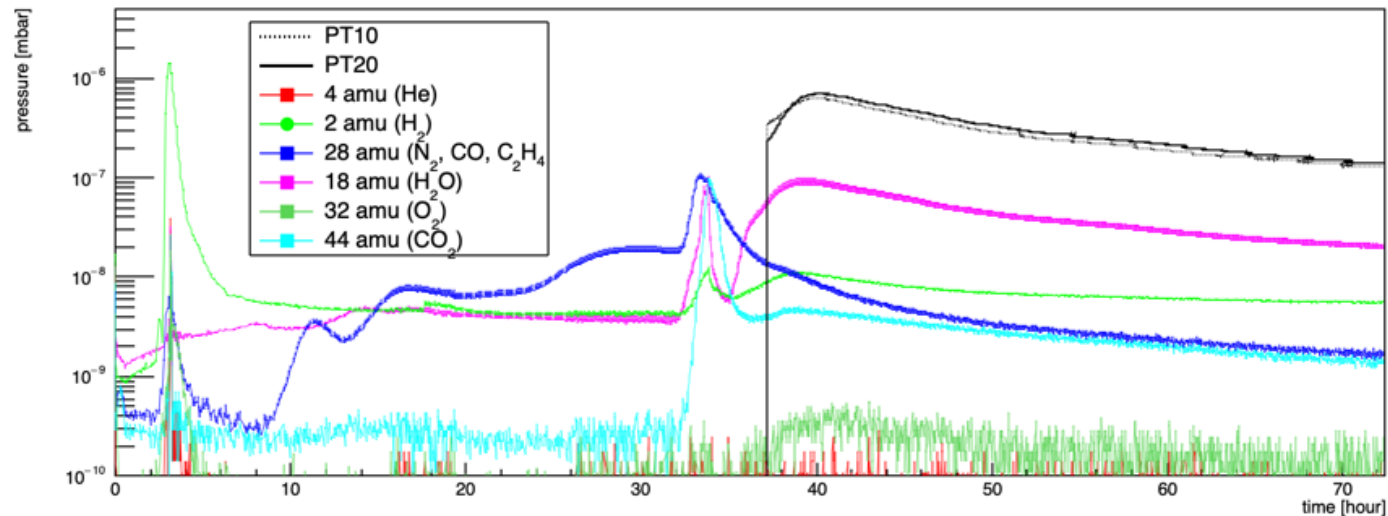
→ From next tests, we move the sensor in between CAVIN and CAVOUT

Warming up and gas released



One weekend (3 days) is sufficient for complete warming up

(if one volunteer passes by the lab and vent the insulation vacuum by N₂)





FREIA

Department of Physics and Astronomy
Uppsala University

Summary of CM01

From this time, the FREIA members will fill in their responsible parts, Akira will check it, and Lars will approve it at the end

Akira will still take care of the datasheet to be uploaded to Atrium@Orsay

(Everything is in elogbook...just fill in the form only)

Performances		ATRIUM-433624				
		Date : 31/05/2021				
CM01 Configuration						
IN		OUT				
In cavity	SPIK-DSPK-13	Out cavity :	SPIK-DSPK-14			
Coupler	SPIK-CPL-10	Coupler	SPIK-CPL-12			
Double wall tube	SPIK-DWT-12	Double wall tube	SPIK-DWT-14			
Tuning System	SPIK-TUN-02	Tuning System	SPIK-TUN-03			
		Specification or measured value @ Orsay (before shipping)	Measured values @ UU	C / NC	Measured values @ Lund	C / NC
External Q						
Cavity "IN"		1.75E+05< QL<2.85E+05		To be completed		To be completed
Cavity "OUT"		1.75E+05< QL<2.85E+05		To be completed		To be completed
Frequency min @ 2K (tuning system OFF)						
Cavity "IN"	MHz	>352.089 <352.175		To be completed		To be completed
Cavity "OUT"	MHz	>352.089 <352.175		To be completed		To be completed
Eacc max						
Cavity "IN"	MV/m	≤12		To be completed		To be completed
Cavity "OUT"	MV/m	≤12		To be completed		To be completed

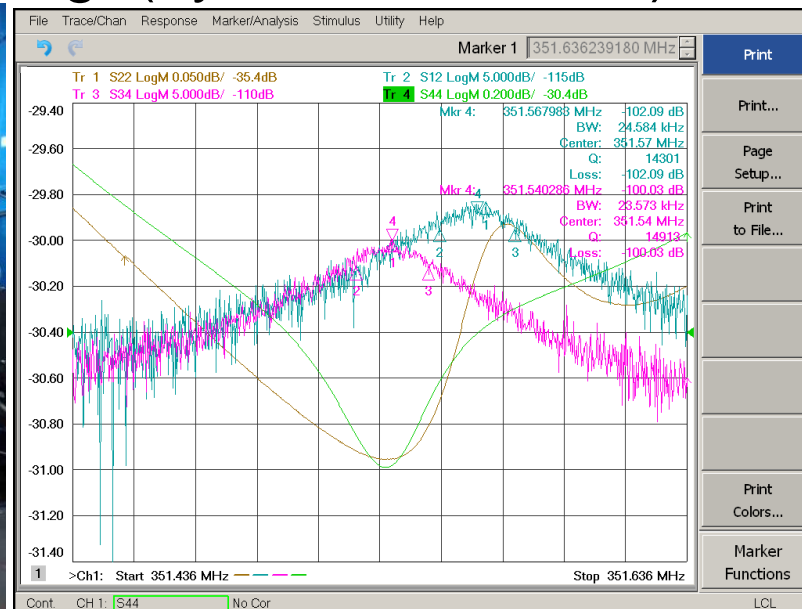
Progress of CM04 preparation



Disconnect CM01
→ 2 ½ days

Swap CM01 &
CM04 → ½ days

Connect everything (by mid next week)



New tests

Stepper motor test
at warm

→ Nicolas, please
send us instruction
and your results at
Orsay that we will
reproduce ☺