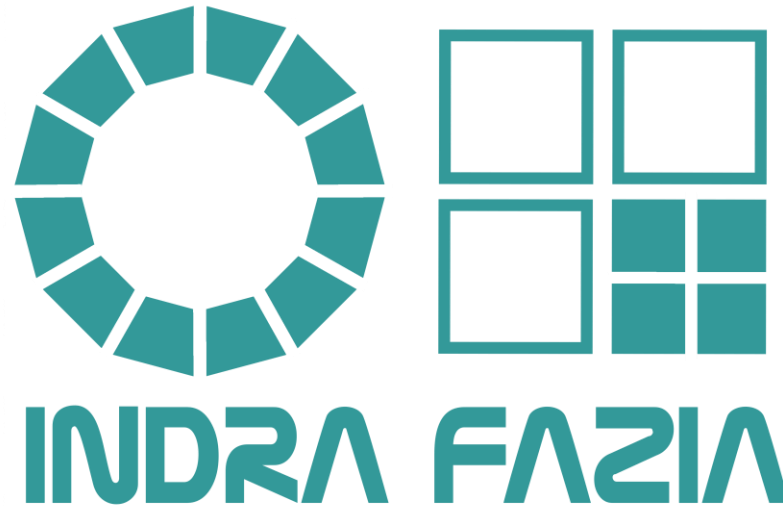


FAZIA status, March 12th 2025



E881: $^{12}\text{C}+^{12}\text{C}$ à 8,75 A MeV

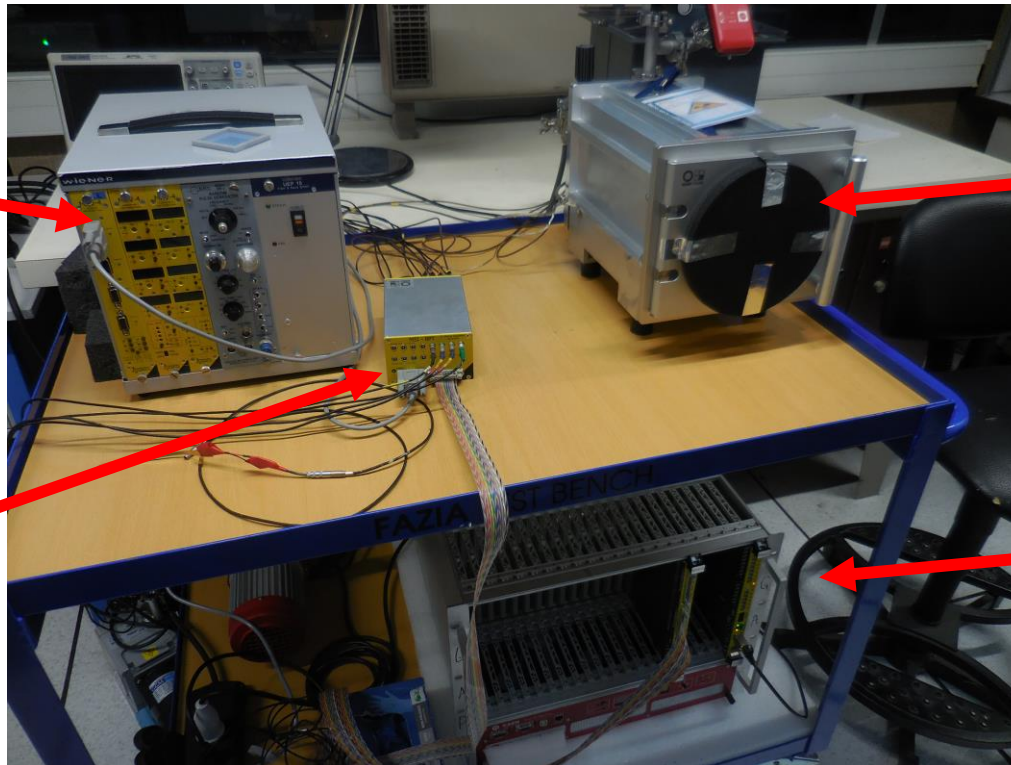
E884: $^{70}\text{Zn}+(^{27}\text{Al}, ^{70}\text{Zn}, ^{209}\text{Bi})$ à 35 A MeV

Detectors

During the tests in July-September 2024 at GANIL, many problems occurred.
Broken silicon detectors, bad photodiodes, water leaks on cooling plates, vacuum...

⇒ We decided a big refurbishment of FAZIA

We dismantled almost everything and prepared a test bench for detectors in order to test them by quartet (silicons and CsI)



Low voltage
High voltage
Pulser

Small vacuum chamber
(2 mbars in 5 mn)

Mesitech preamplifier
8 channels

Mesitech digitizer MDPP32
and MVLC for DAQ and
spectra online.

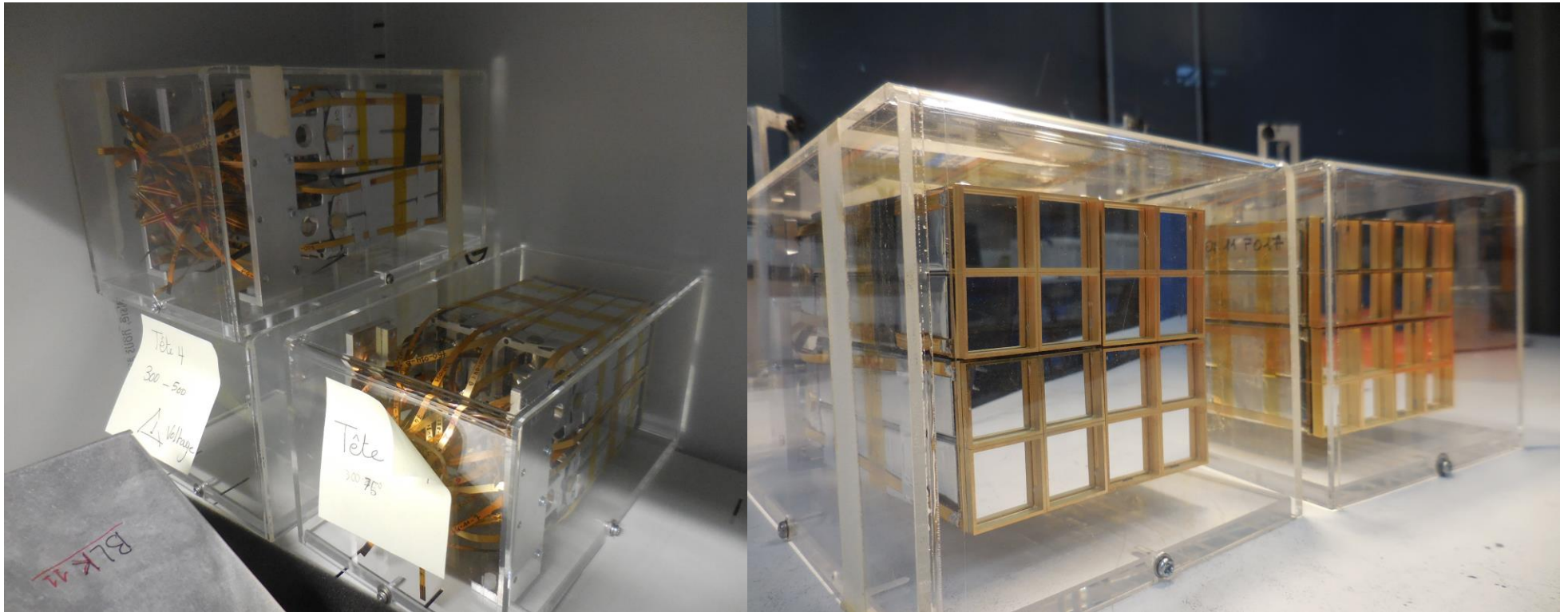
Detectors

We tested and registered every silicon detector available, 300-500-750 μm and CsI(Tl). The faulty ones were (when possible) repaired by ***Giovanni*** and LPC Caen ***J rome Perronnel*** and ***Livier Fedor***.



Detectors

Once checked the detectors were remounted in quartets and block detection head



Detectors

- Today we have completed all detectors for 12 complete blocks at 100%.
 - The resolution of all quartets and their history has been registered in a data base.
 - Their power supplies have been verified and sometimes corrected on the test bench.
 - We hope to prepare a full complete spare detection head Si1 300- Si2 500-CsI(Tl) just in case...
-
- 10 blocks have been fully mounted.
 - 5 have been tested with hexadecaLED in air and in the dark.
 - The two last heads will be mounted this afternoon
 - The remaining blocks will be tested with hexadecaLED before mounting the triplets



7 complete blocks



+2 complete blocks



+1 complete block = 10 blocks

Detectors



12 blocks configuration for E881-E884 at GANII 2025

				511	512	521	522										
				514	513	524	523										
				541	542	531	532	611	612	621	622						
				544	543	534	533	614	613	624	623						
411	412	421	422	11	12	21	22	641	642	631	632						
414	413	424	423	14	13	24	23	644	643	634	633						
441	442	431	432	41	42	31	32	111	112	121	122	711	712	721	722		
444	443	434	433	44	43	34	33	114	113	124	123	714	713	724	723		
1111	1112	1121	1122	311	312	321	322	141	142	131	132	741	742	731	732		
1114	1113	1124	1123	314	313	324	323	144	143	134	133	744	743	734	733		
1141	1142	1131	1132	341	342	331	332	211	212	221	222	811	812	821	822		
1144	1143	1134	1133	344	343	334	333	214	213	224	223	814	813	824	823		
				1011	1012	1021	1022	241	242	231	232	841	842	831	832		
				1014	1013	1024	1023	244	243	234	233	844	843	834	833		
				1041	1042	1031	1032	911	912	921	922						
				1044	1043	1034	1033	914	913	924	923						
								941	942	931	932						
								944	943	934	933						

12 blocks configuration for E881-E884 at GANII 2025

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				411	412	421	422	11	12	21	22	614	613	624	623				
				414	413	424	423	14	13	24	23	641	642	631	632				
				441	442	431	432	41	42	31	32	644	643	634	633				
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1141	1142	1131	1132	341	342	331	332					144	143	134	133	744	743	734	733
1144	1143	1134	1133	344	343	334	333	211	212	221	222	811	812	821	822				
				1011	1012	1021	1022	214	213	224	223	814	813	824	823				
				1014	1013	1024	1023	241	242	231	232	841	842	831	832				
				1041	1042	1031	1032	244	243	234	233	844	843	834	833				
				1044	1043	1034	1033	911	912	921	922								
								914	913	924	923								
								941	942	931	932								
								944	943	934	933								

Si1 300 μm - Si2 750 μm

12 blocks configuration
for E881-E884 at GANII 2025

				511	512	521	522				
				514	513	524	523				
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411	412	421	422	11	12	21	22	641	642	631	632
414	413	424	423	14	13	24	23	644	643	634	633
441	442	431	432	41	42	31	32	111	112	121	122
444	443	434	433	44	43	34	33	114	113	124	123
1111	1112	1121	1122	311	312	321	322	141	142	131	132
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1141	1142	1131	1132	341	342	331	332	211	212	221	222
1144	1143	1134	1133	344	343	334	333	811	812	821	822
				1011	1012	1021	1022	214	213	224	223
				1014	1013	1024	1023	241	242	231	232
				1041	1042	1031	1032	244	243	234	233
				1044	1043	1034	1033	911	912	921	922
								914	913	924	923
								941	942	931	932
								944	943	934	933

Si1 300 μm - Si2 500 μm

Electronics and acquisition

FAZIA Electronics:

- All 12 blocks of electronics have been tested in air (*Simone* came last week).
- Five faulty FEE cards have been changed as well as one Half Bridge and one PS card.
- We have 13 electronics blocks ready (i.e. one spare electronics block).
- + some 2/3 FEE cards available.

Acquisition and coupling:

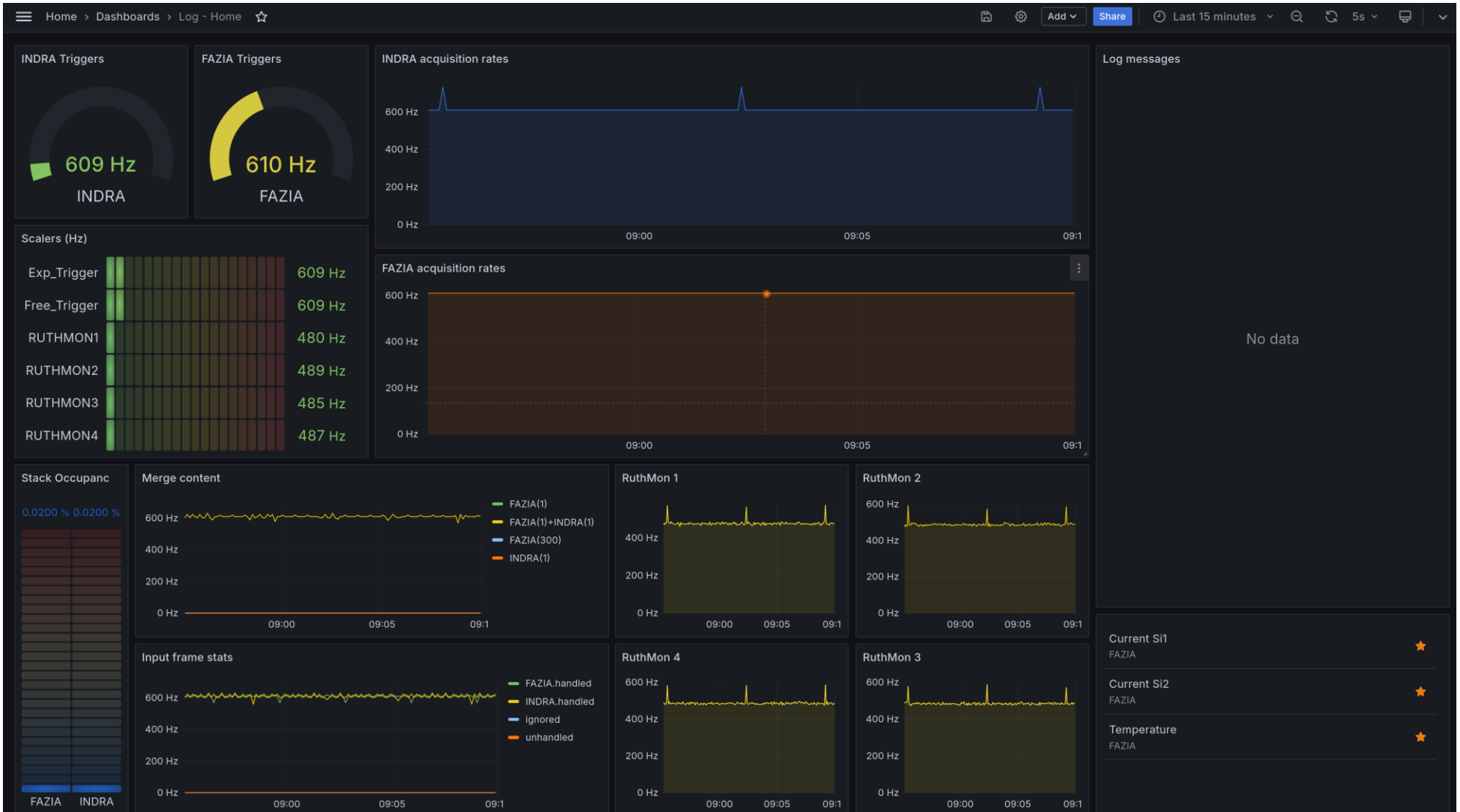
- All good, we recovered the time stamps lost in September 2024.
- INDRA and FAZIA DAQ are running all together.
- Control and visualization panels are in good way too.



Acquisition room

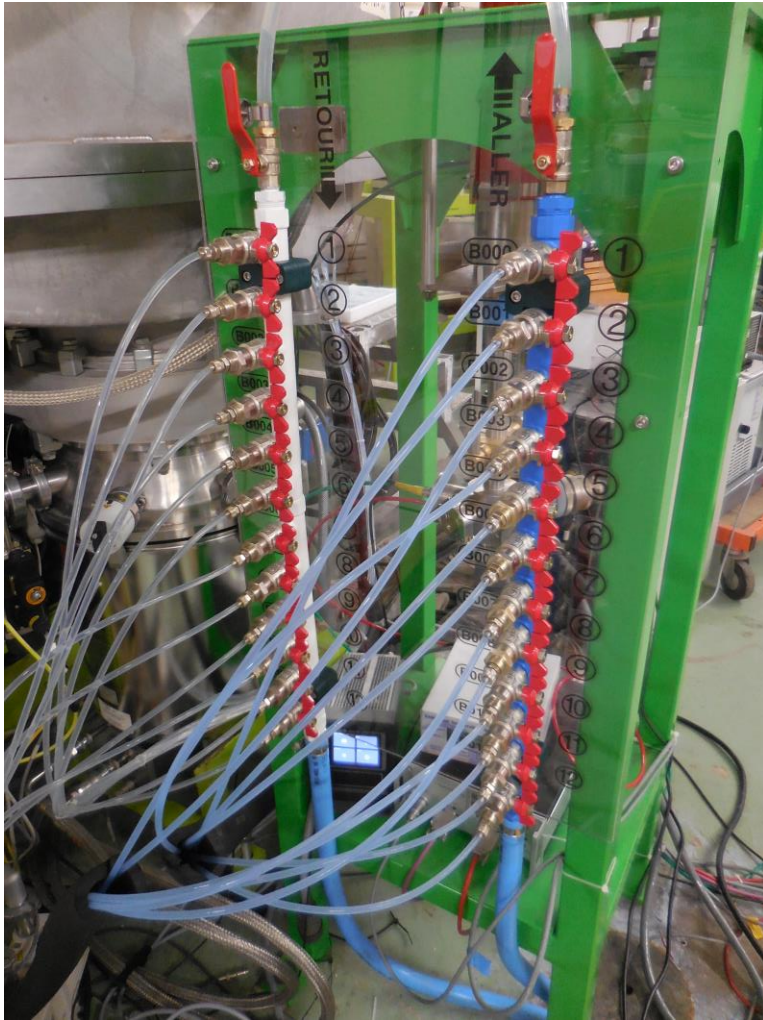


Acquisition room



Experimental room

New cooling system tested in vacuum without blocks

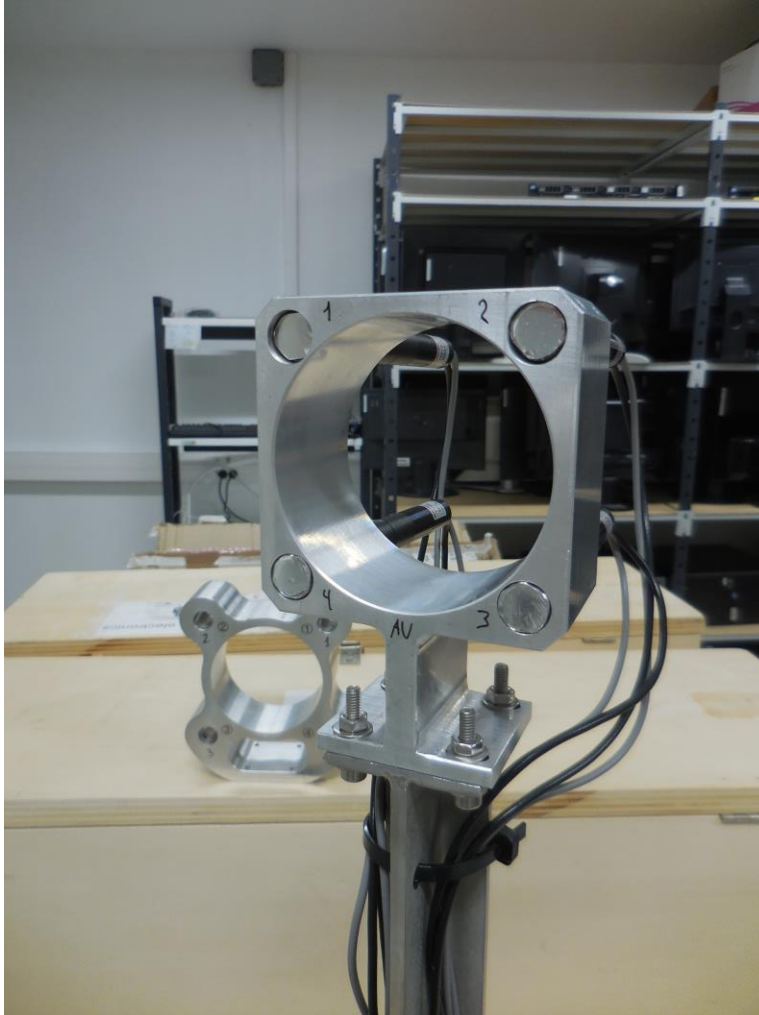


In the next few days, after tested the whole blocks with hexadecaled, we will test the blocks by triplet in vacuum, with cooling and sources.
All blocks equipped with new design cooling plate

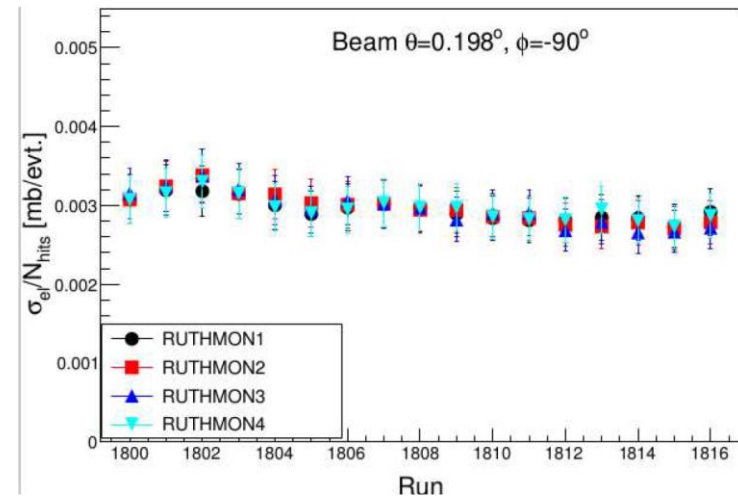
Test bench for FAZIA block with hexadecaled



New mechanical support for beam monitoring



In July-September 2024
Low counting rate at 1.8°
We reduced the diameter to 1.3°
The acquisition system was validated in 2024



$^{40}\text{Ar}+^{64}\text{Ni}$ @ 38.5 A MeV
July 2024

Planning faisceau 2025

Date	Faisceau	Cyclotron	UTs	Mode	Utilisation
9-11 avril 2025	^{129}Xe 50 A MeV	CSS1+CSS2	4 UTs	Auxiliaire	Normalisation
11-13 avril 2025	^{12}C 13,7 A MeV	CSS1	2 UTs	Pilote	Calibration
11-13 avril 2025	^{12}C 8,75 A MeV	CIME réglage	6 UTs	Pilote	Calibration
13-18 avril 2025	^{12}C 8,75 A MeV	CIME	13 UTs	Pilote	Physique
30 mai-8 juin 2025	^{70}Zn 35 A MeV	CSS1+CSS2	24 UTs	Pilote	Physique
16-17 juin 2025	^{12}C 35 A MeV	CSS1+CSS2	2 UTs	Pilote	Calibration
20-21 juin 2025	^{129}Xe 50 A MeV	CSS1+CSS2	1,5 UTs	Auxiliaire	Normalisation
5-6 juillet 2025 ??	^{129}Xe 50 A MeV	CSS1+CSS2	6 UTs	Pilote	Bonus

Liste des cibles 2025

Liste des cibles E881 (Diego)

^{12}C 100 $\mu\text{g}/\text{cm}^2$ (x4) si cette épaisseur est possible et sans backing

^{12}C 200 $\mu\text{g}/\text{cm}^2$ (x4) sans backing

^{197}Au 300 $\mu\text{g}/\text{cm}^2$ (x4) nécessaire aussi pour E884

CH 300 $\mu\text{g}/\text{cm}^2$ (x2)

Liste des cibles E884 (Caterina)

^{27}Al 300 $\mu\text{g}/\text{cm}^2$ (x4)

^{70}Zn 300 $\mu\text{g}/\text{cm}^2$ (x4)

^{209}Bi 300 $\mu\text{g}/\text{cm}^2$ (x4)

Pour le faisceau: 300 mg de ^{70}Zn reçu le 26 novembre 2024

Échange avec la poudre pour fabriquer les cibles.