Agenda of nn’ meeting today

1.Lisa - 10' - Organization and run information. Link for remote shifters.
2.Yuri - 15' - Beam performance evaluation. We are ready for tomorrow start
3.Mubi - 10' - Updates from UKY
4.Linus - 10' - Updates from LU
5.Yuri - 5' - Status update on the mu-metal prototype at UTK
6.Leah - 5' - Date of the meeting for the 2024 data paper

slack channel for on-line viewers
http://ornlneutronsciences.slack.com/

Information from Runs 142214-142216 with close shutters

From ONCAT:

Run #	Comment	Date/Time	Duration	Det.Counts
# 142,216 >	*Testing reactor off with shutters closed*	2025-09-11 15:42:28	05:15:42	6.20e+4
# 142,215 >	*Testing reactor at 10 % with shutters closed*	2025-09-11 14:06:12	00:26:21	5.48e+3
# 142,214 >	*Testing during 10 % hold*	2025-09-11 09:28:06	00:15:15	3.41e+3

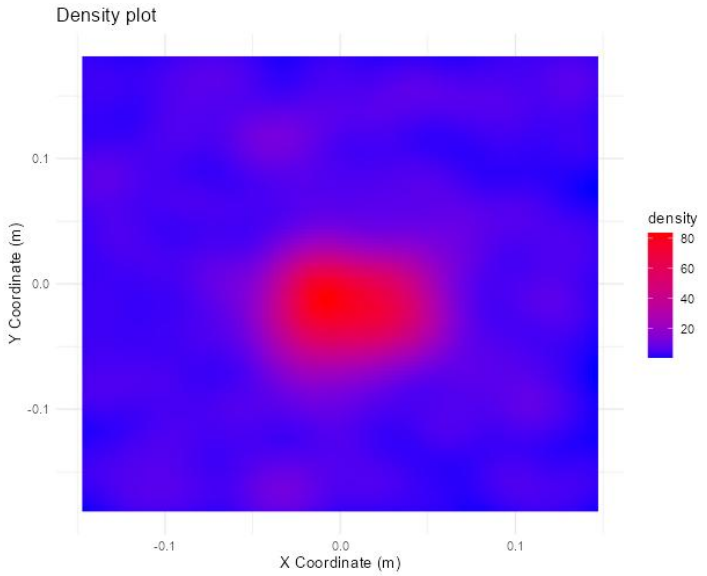
GPM at 17% of full power means shutter was open

From DATA files:

Run #	Last rec. in file	ROI counts	GPM counts	ROI/sec	Duration, s	Det. Counts
142216	1360905	6522	176	0.344	18942.4004	62021
142215	104782	639	12	0.404	1580.93225	5477
142214	60976	591	16,914,880	0.646	915.127197	3408

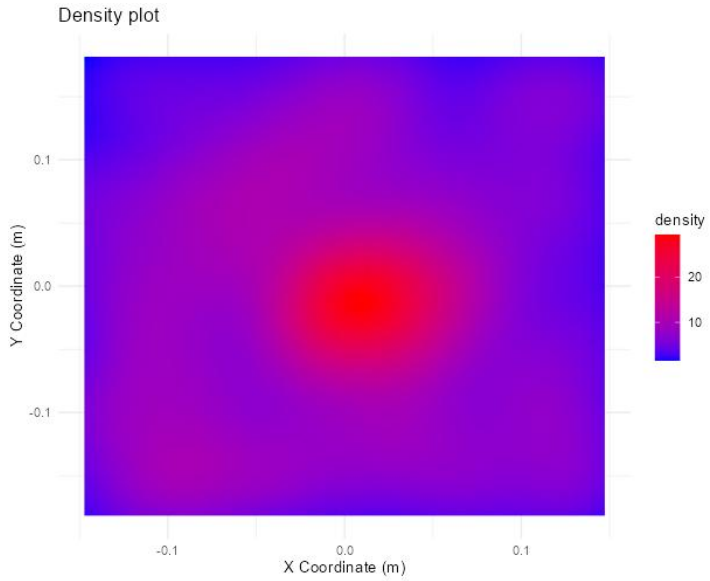
Detector Population

Reactor at 10% power
shutters open, our Cd works



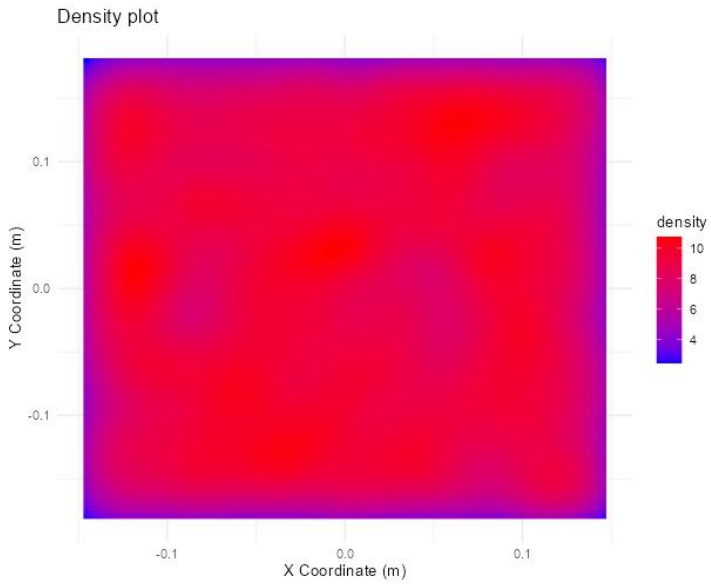
RUN 42214
15’

Reactor at 10% power
+ shutters closed



RUN 42215
26’

Reactor is OFF
+ shutters closed

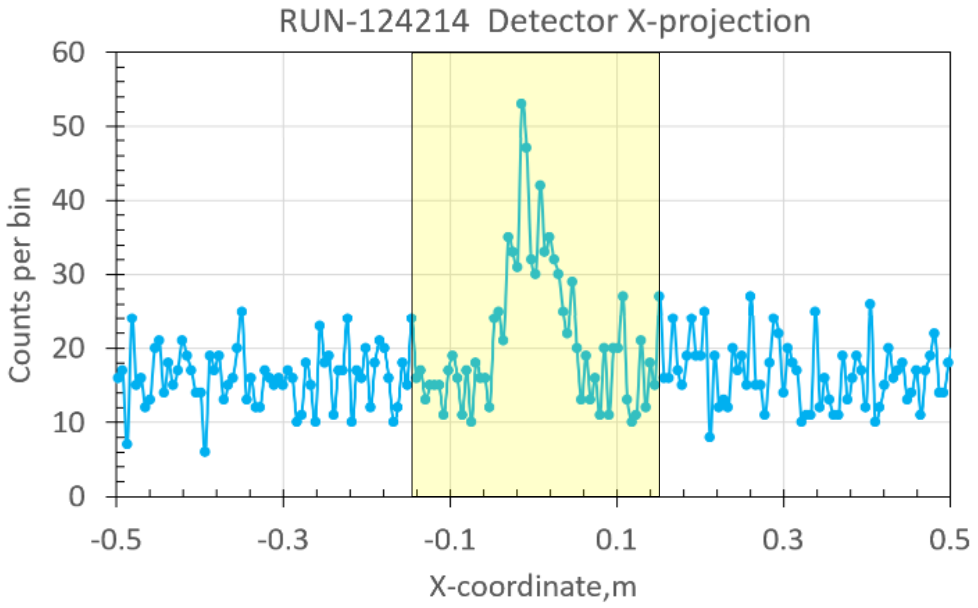


Long RUN 42216
5h 15’

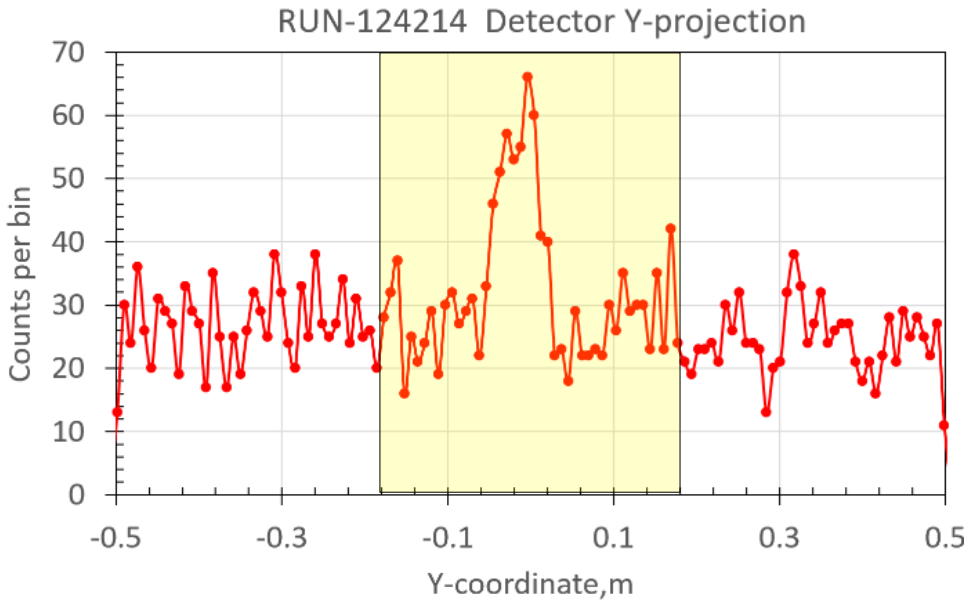
Plots by Alina M

RUN # 124214 – 15.25 minutes [Reactor 10%, shutters open]

Central peak is due to fast neutrons punch through

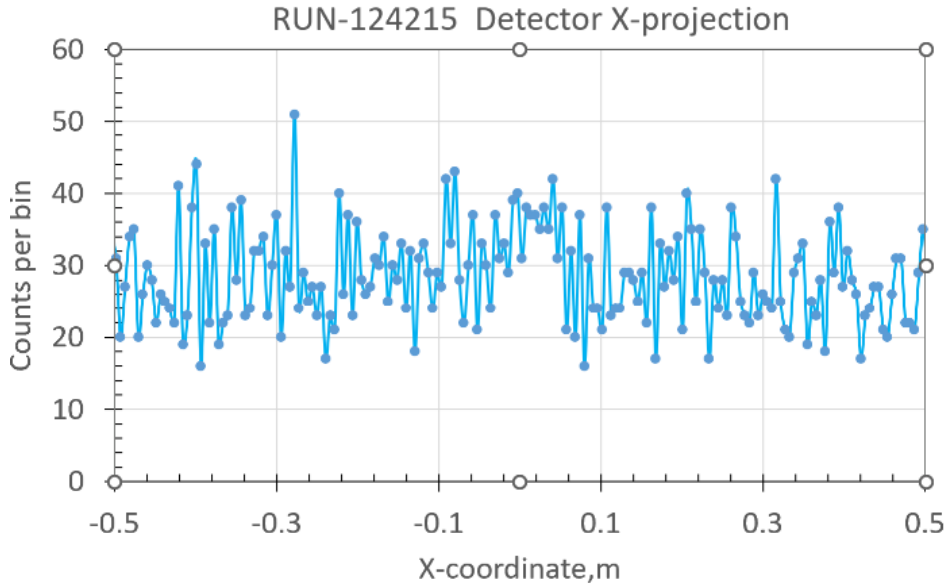


X



Y

RUN # 124215 – 26.3 minutes [Reactor 10% + shutters]



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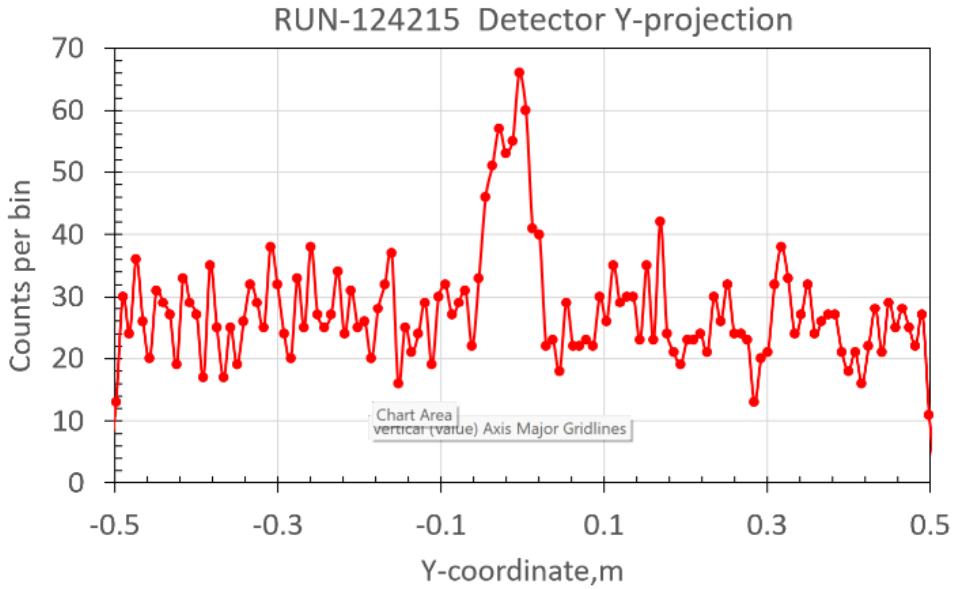
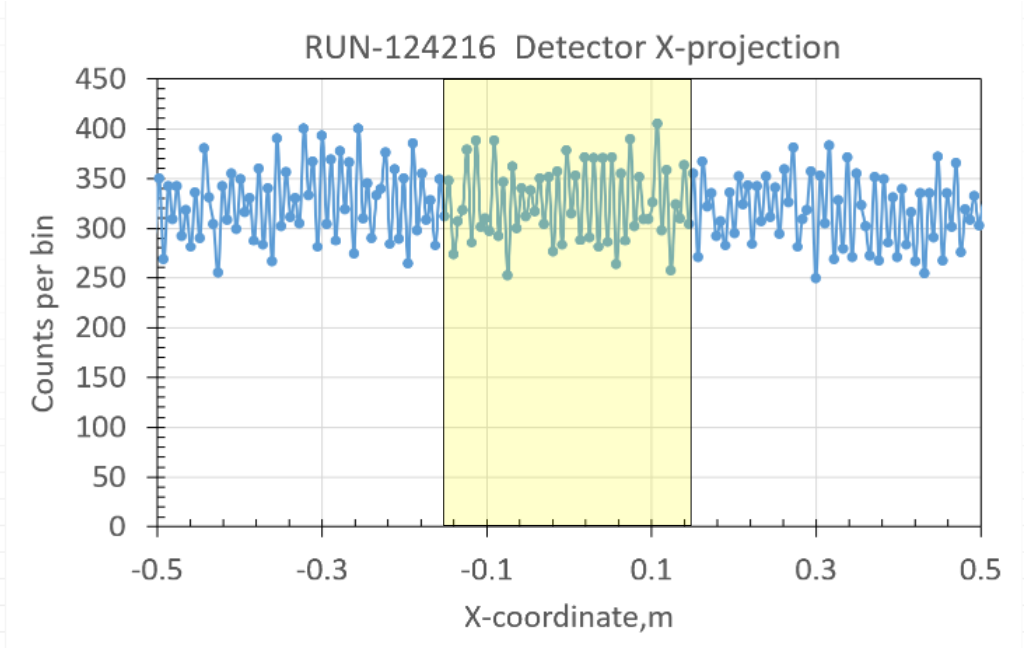


Y

LONG RUN # 124216 – 5.26 hours [Reactor OFF + shutters]



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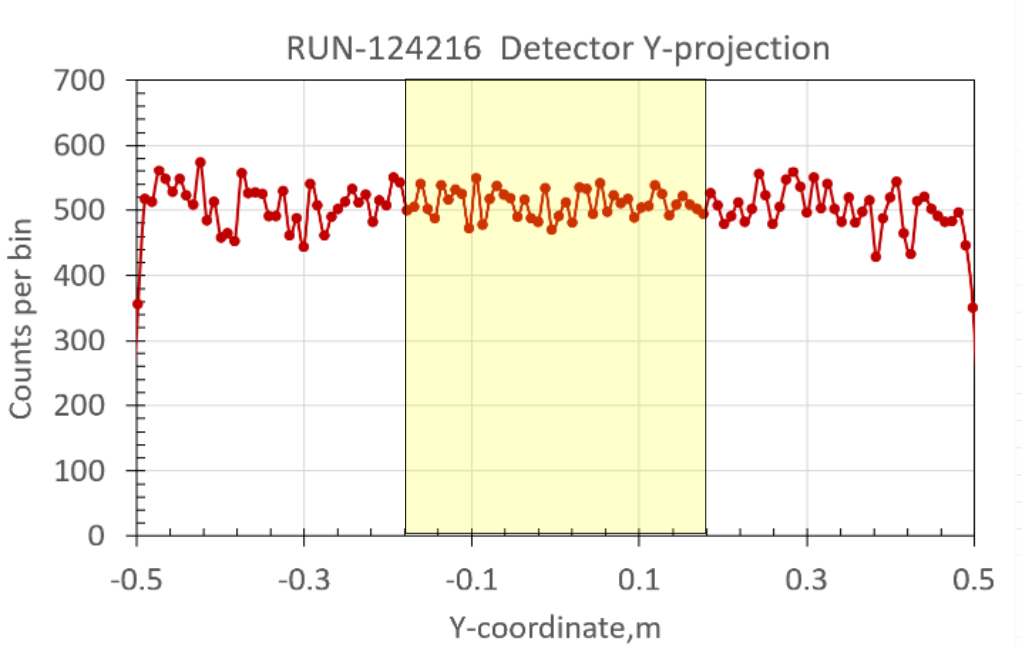
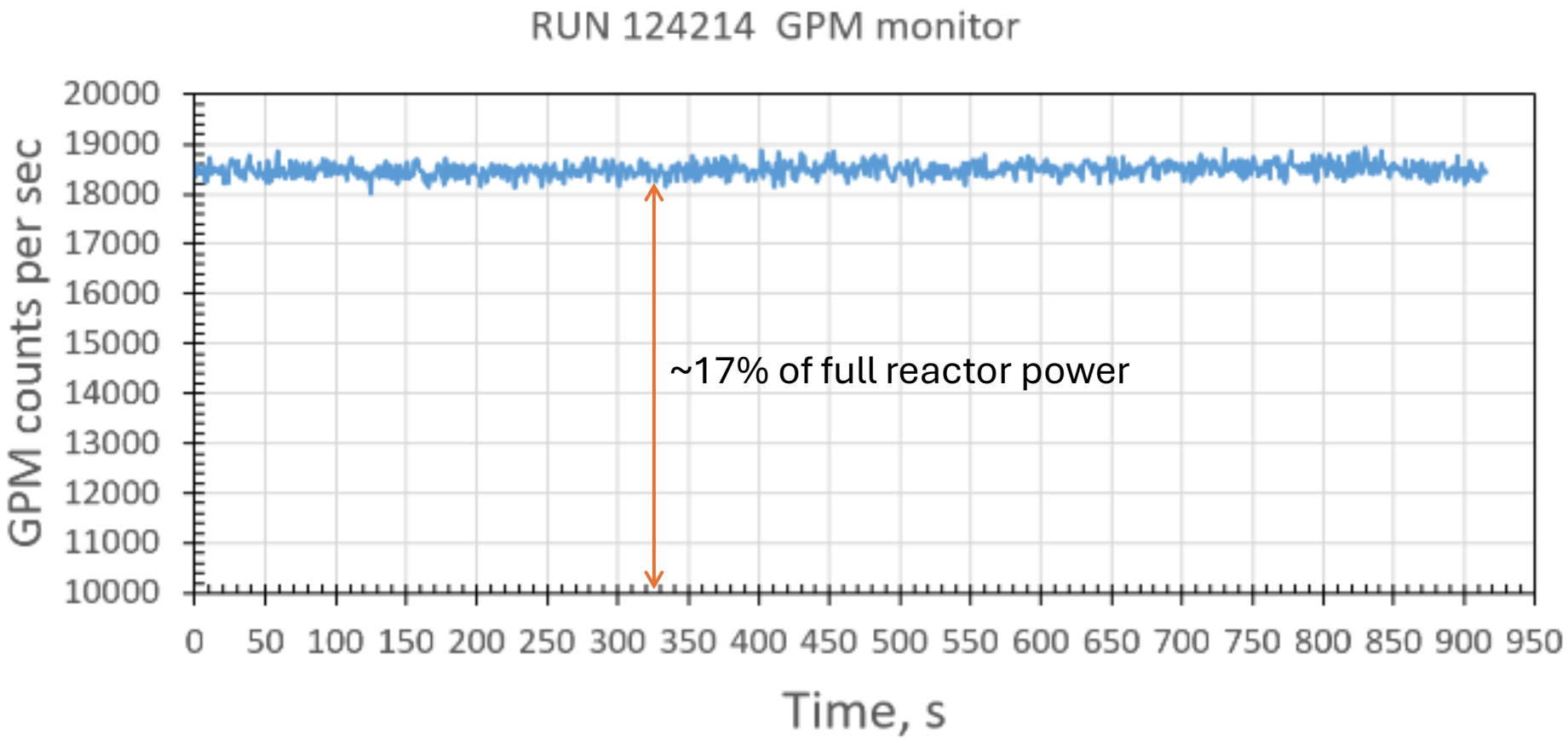


Y

RUN # 124214 – 15.25 minutes [Reactor 10%, shutters open]
GPM counts vs time



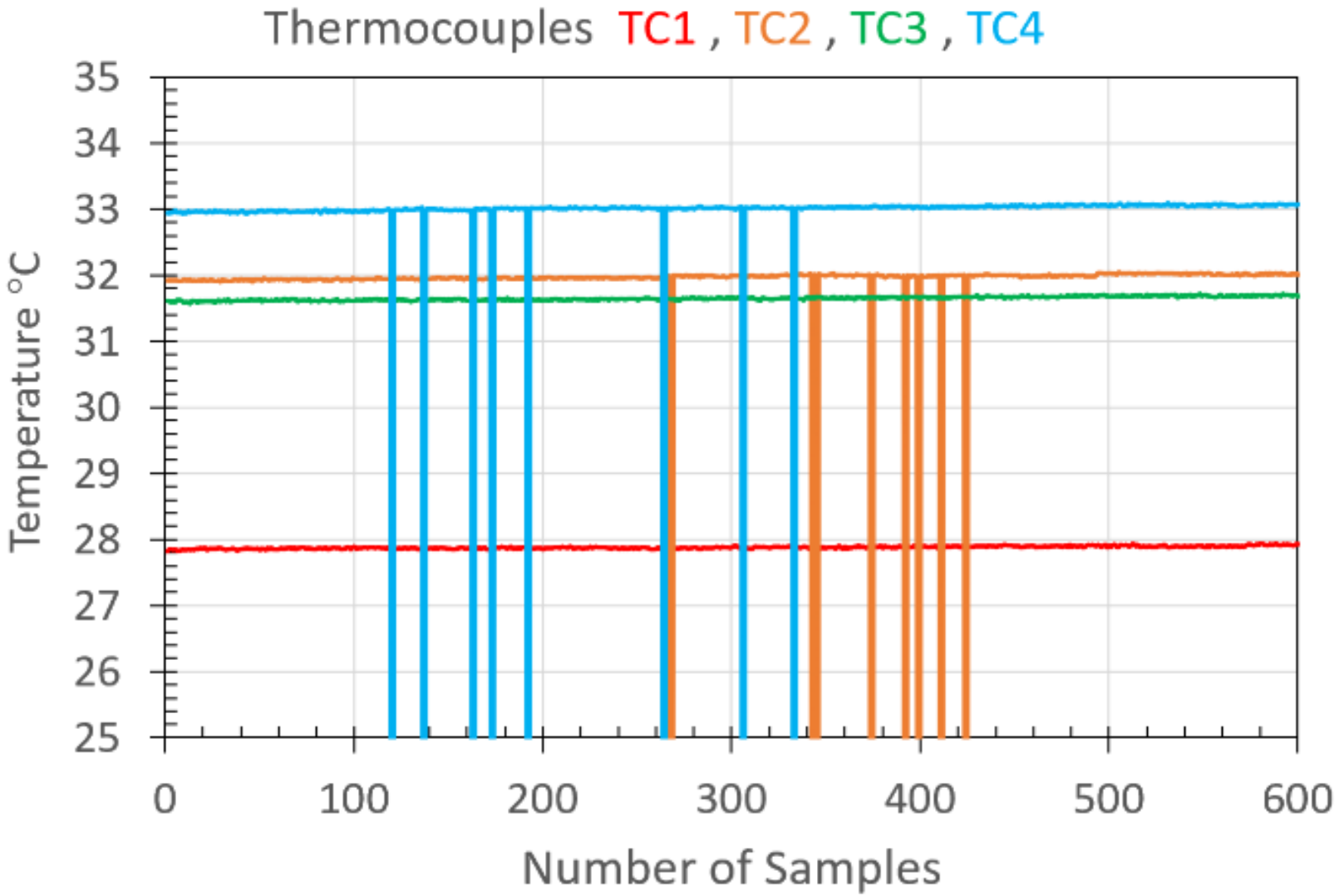
Readout Frequency of IDs of the Detectors in Data Files in Herz

Detector ID	Detector	RUN 142214	RUN 142215	RUN 142216	Desirable
2048	GPMon	60	60	60	60
2049	BioMon	0	0	0	0
2050	MAG-H	1	1	1	0
2051	LEM	0	0	0	0
3001	TC-1	0.28848	0.28906	0.28797	0.28848
3002	TC-2	0.28848	0.28906	0.28797	0.28848
3003	TC-3	0.28848	0.28906	0.28776	0.28848
3004	TC-4	0.28848	0.28906	0.28776	0.28848
3011	Mag-1 Bx	0.001	0.107531488	0.978	1.0
3012	Mag-1 By	0.001	0.107531488	0.979	1.0
3013	Mag-1 Bz	0.001	0.107531488	0.983	1.0
3014	Mag-2 Bx	0.001	6.33E-04	0.977	1.0
3015	Mag-2 By	0.001	6.33E-04	0.978	1.0
3016	Mag-2 Bz	0.001	6.33E-04	0.983	1.0
3021	Voltage 1	0.3497	0.3453	0.3616	1.0
3022	Current 1	0.1475	0.1145	0.1063	1.0
3023	Voltage 2	0.3201	0.3225	0.3458	1.0
3024	Current 2	0.5037	0.4788	0.5292	1.0
3031	Pressure	0.4191	6.20E-02	0.1945	0.1945

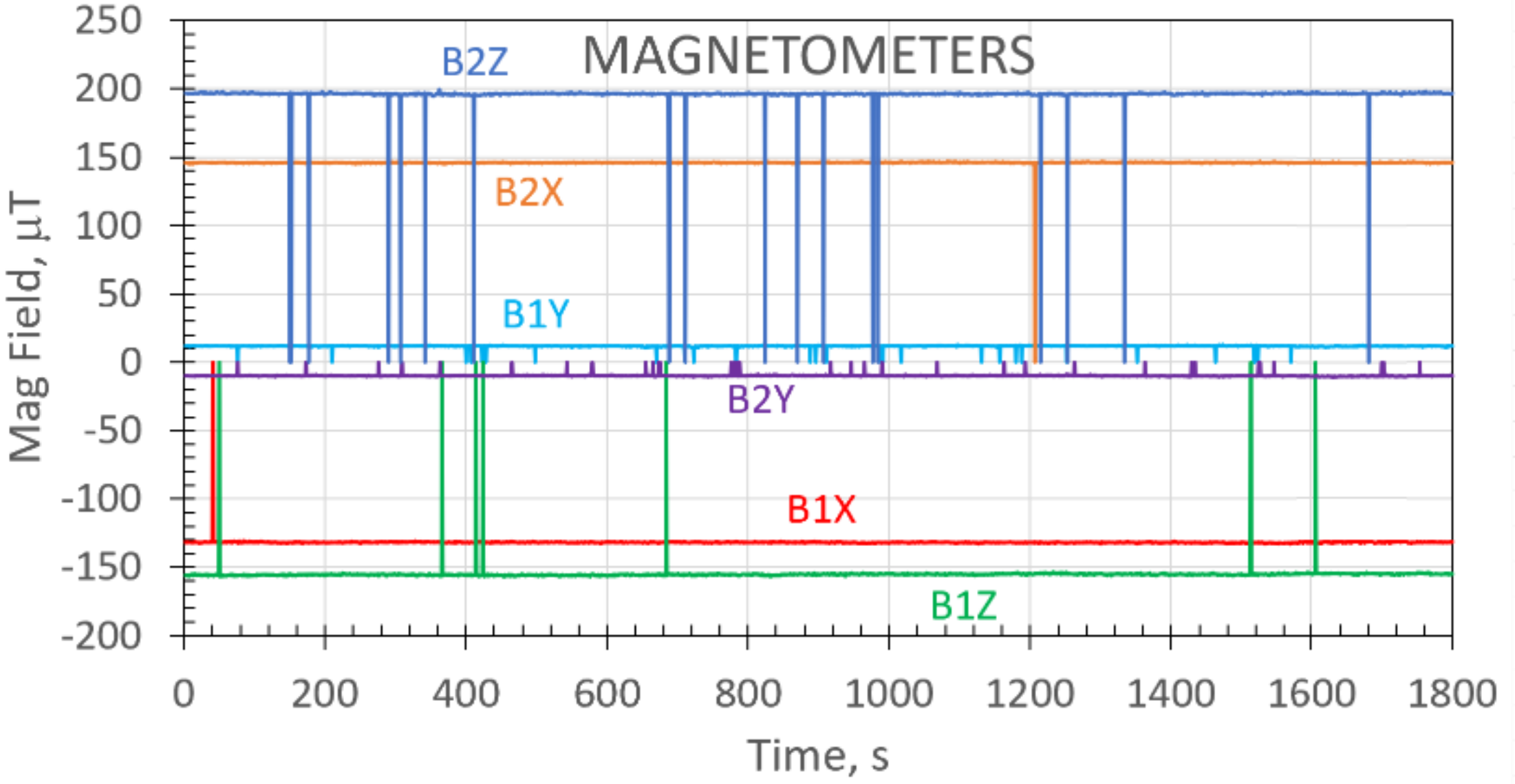
← *one time only*

why frequencies are different?

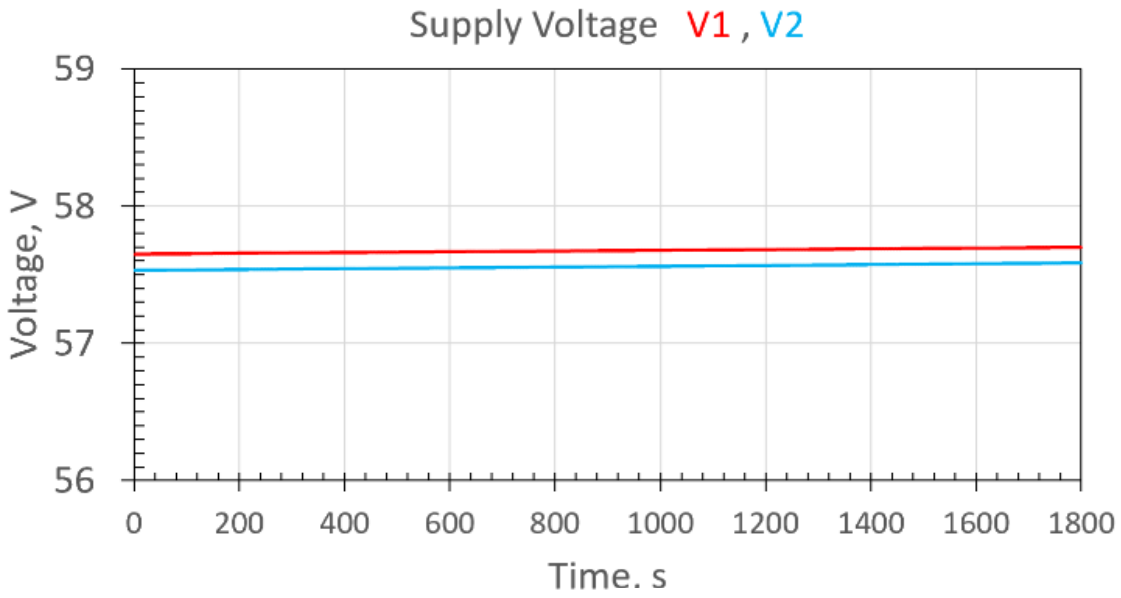
LONG RUN # 124216 – 5.26 hours [Reactor OFF + shutters]

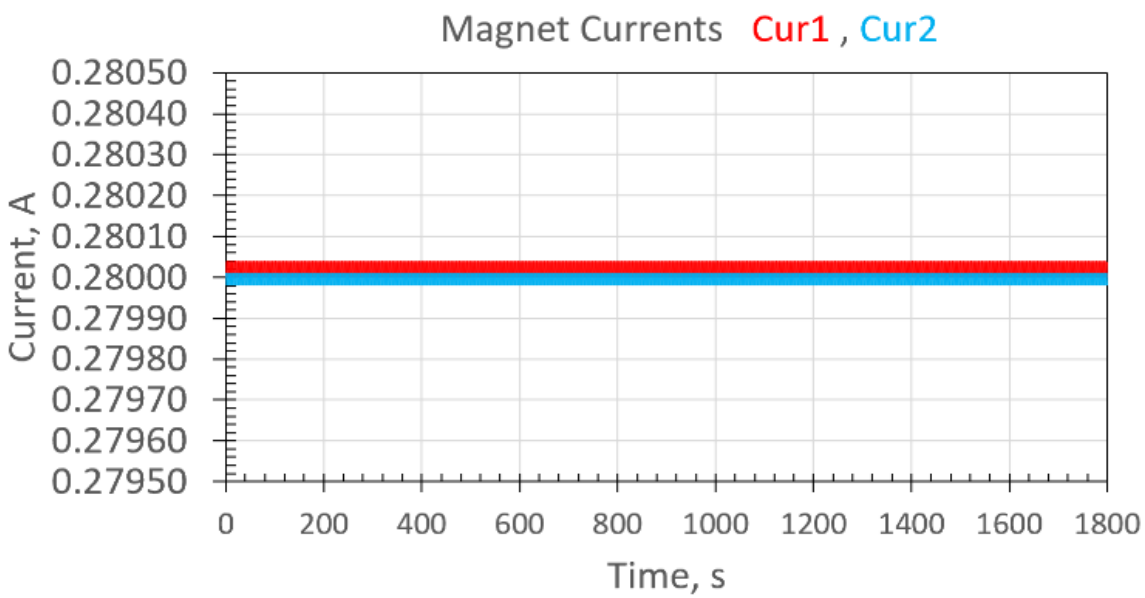


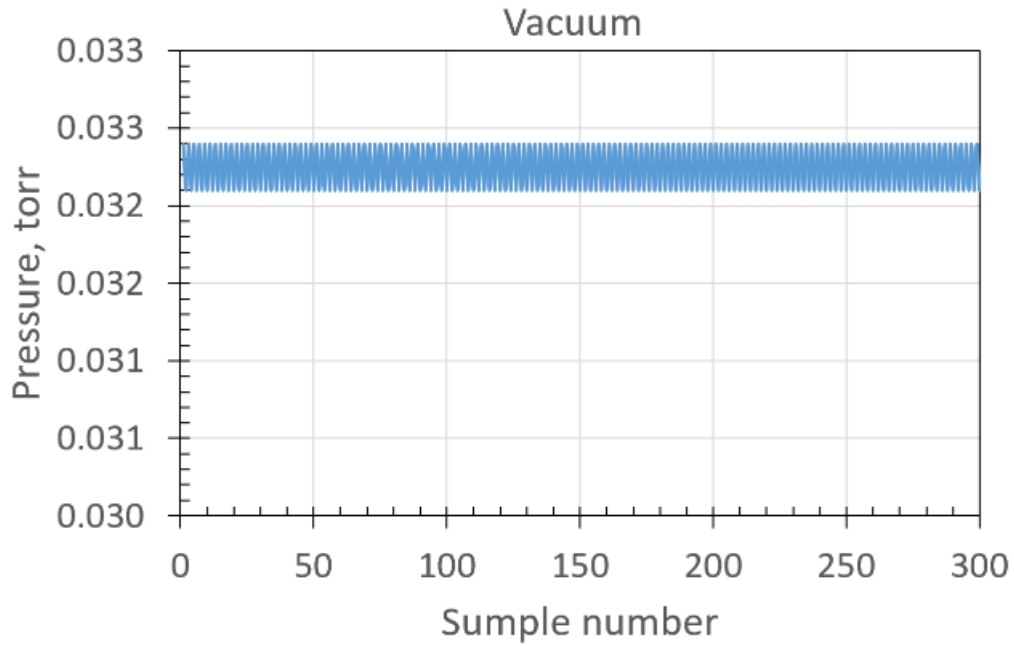
LONG RUN # 124216 – 5.26 hours [Reactor OFF + shutters]



LONG RUN # 124216 – 5.26 hours [Reactor OFF + shutters]

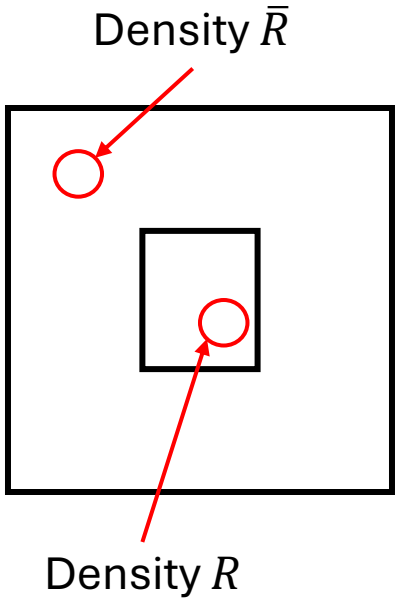






Ratio of the Density of detector hits in ROI to the density in complementary $\overline{ROI}$

	RUN	RUN	RUN
	142216	142215	142214
ROI count	6522	639	591
$\overline{ROI}$ count	49955	4380	2551
ROI area	0.108	0.108	0.108
$\overline{ROI}$ area	0.852	0.852	0.852
Dens. ROI/$\overline{ROI}$	1.03	1.15	1.83
	Reactor OFF Shutters closed	Reactor 10% Shutters closed	Reactor 10% Shutters open



- Detector hit density is slightly higher in ROI area in respect to complementary area (punch through)
- Are detector thresholds at 200 reading (recheck)