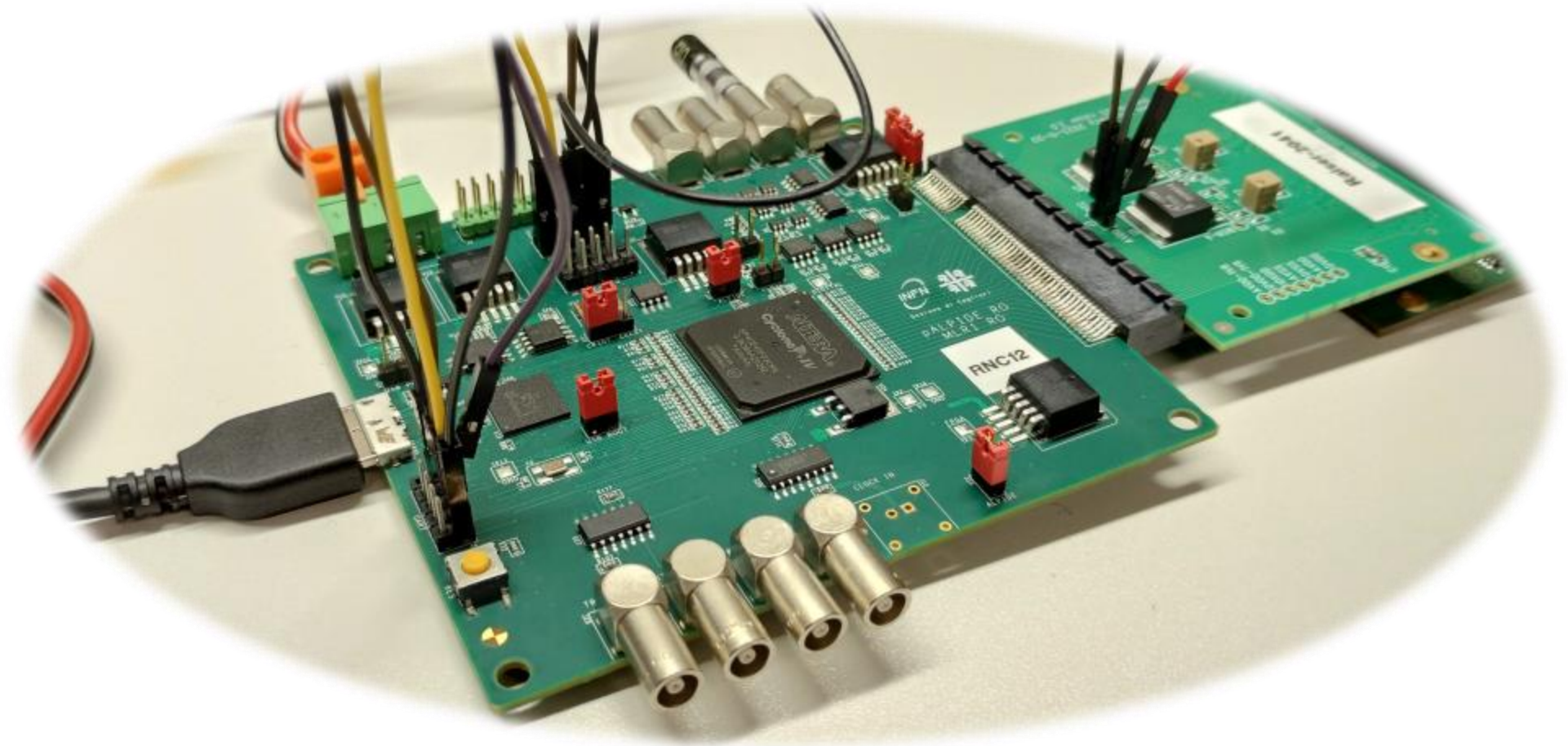


babyMOSS Test Set-up and Scans at Bari



05.02.2025

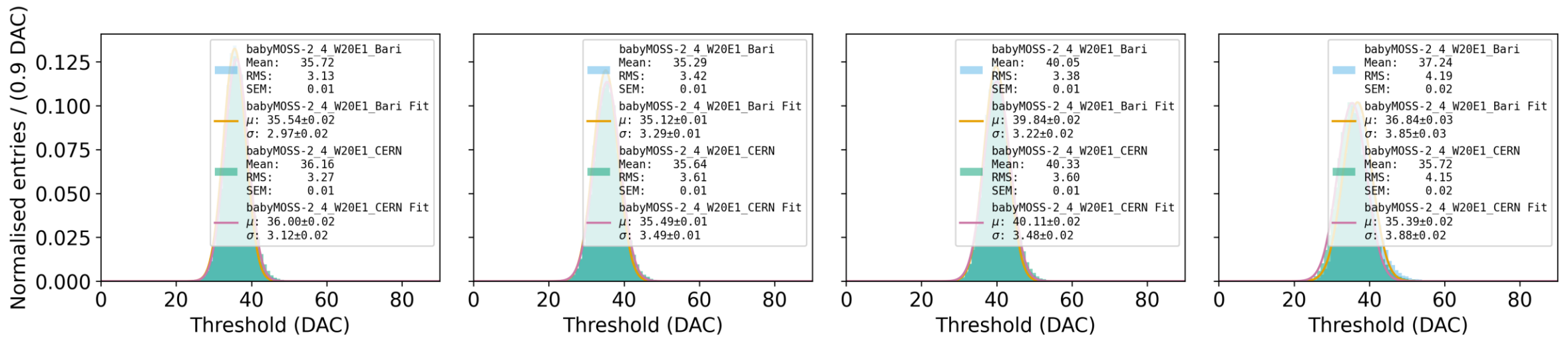
Summary of the different scans performed

	Scans	babyMOSS-2_4_W20E1
Functional tests	Power on	OK
	Register	OK
	Shift register	OK
	DAC	OK
Readout and pixel matrix tests	Digital	OK
	Analogue	OK
	FHR	OK
	Threshold	OK

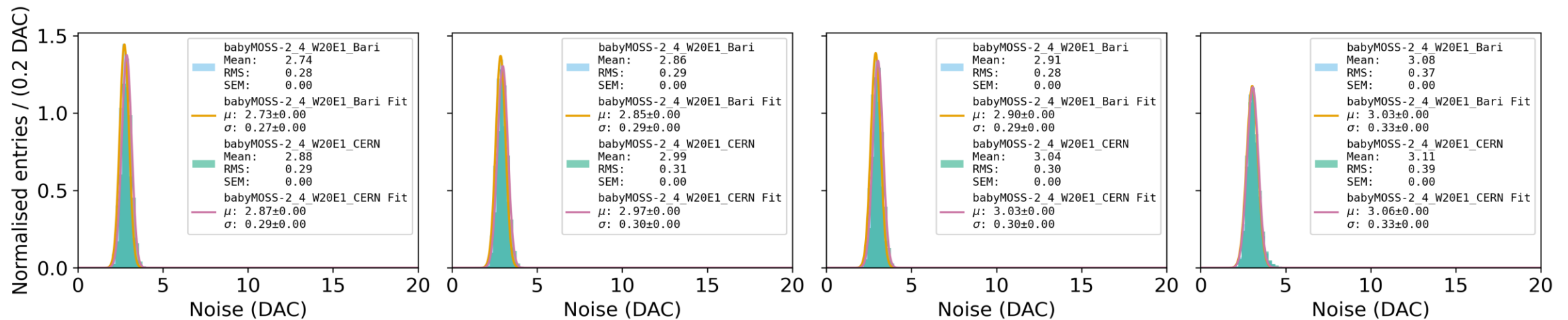
- Full region 1 of bottom half unit is found noisy, same reported by CERN tests also

Threshold scan tb: Compare with CERN tests

threshold_map_tb distribution

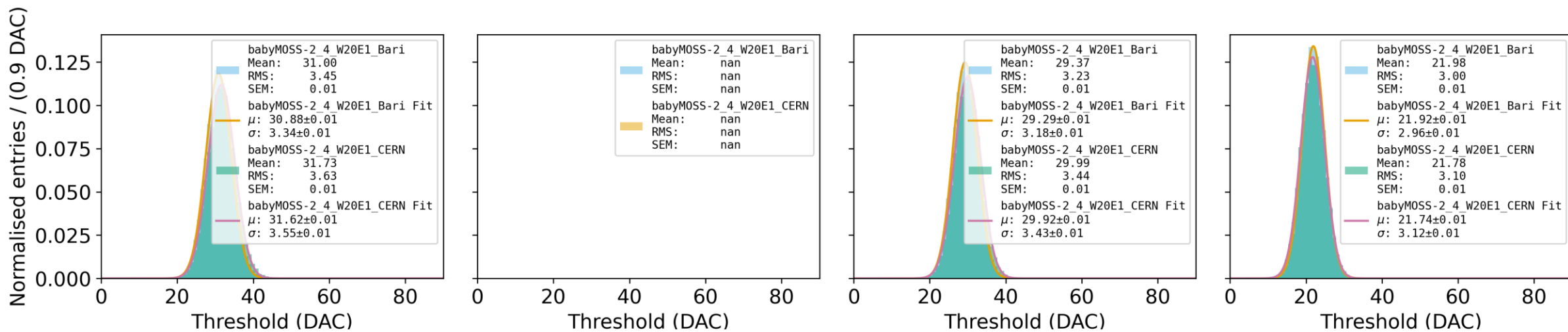


noise_map_tb distribution

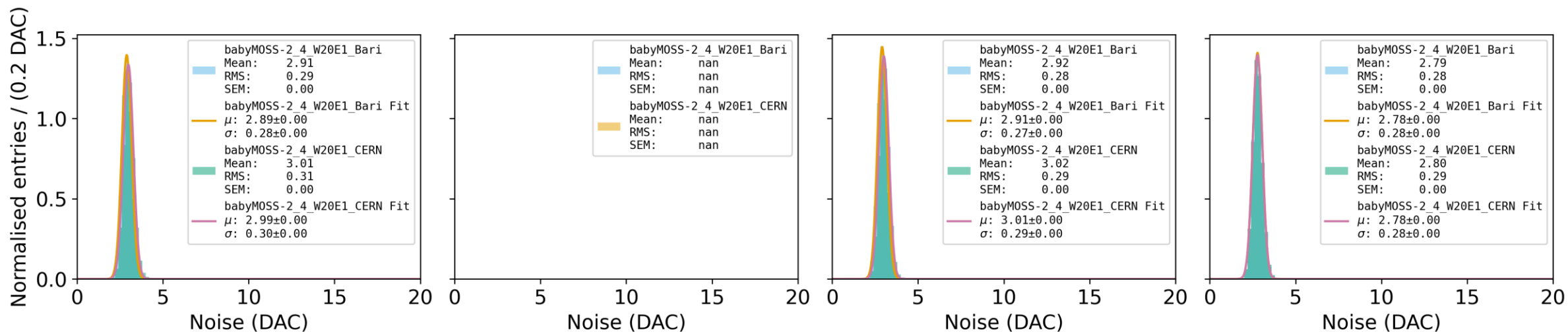


Threshold scan bb: Compare with CERN tests

threshold_map_bb distribution

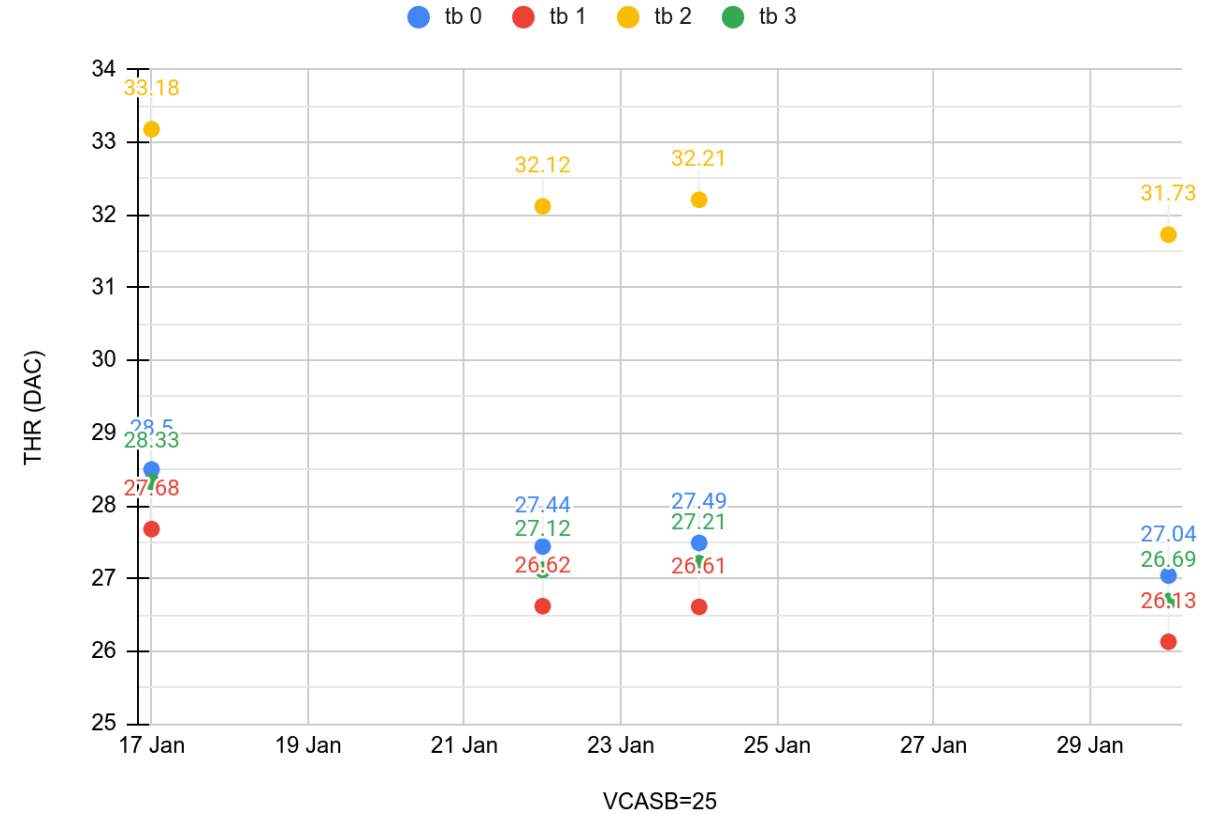
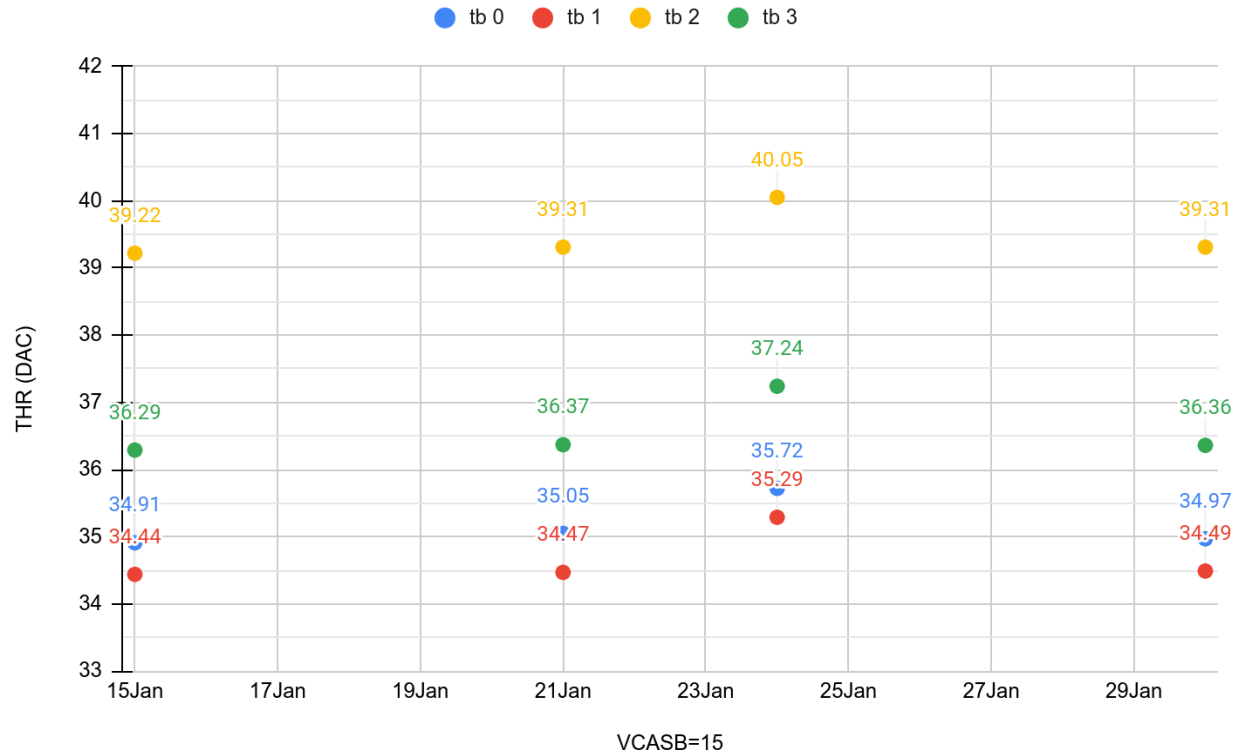


noise_map_bb distribution

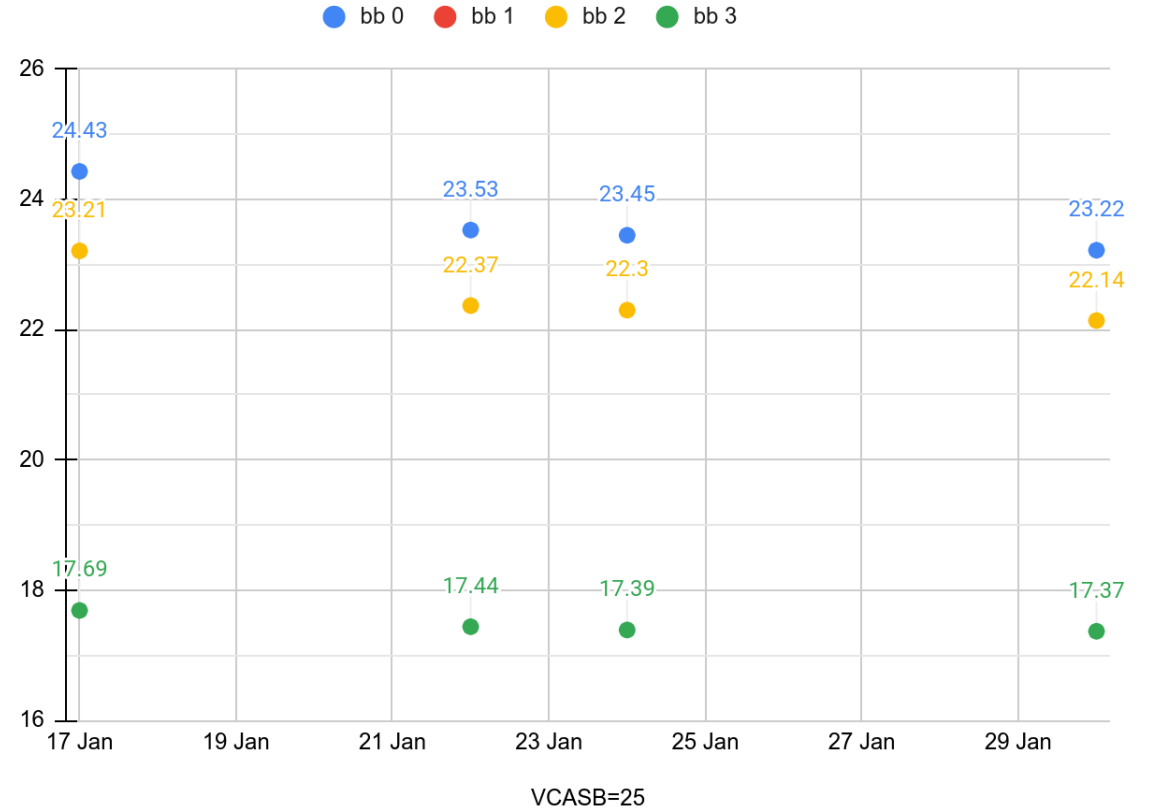
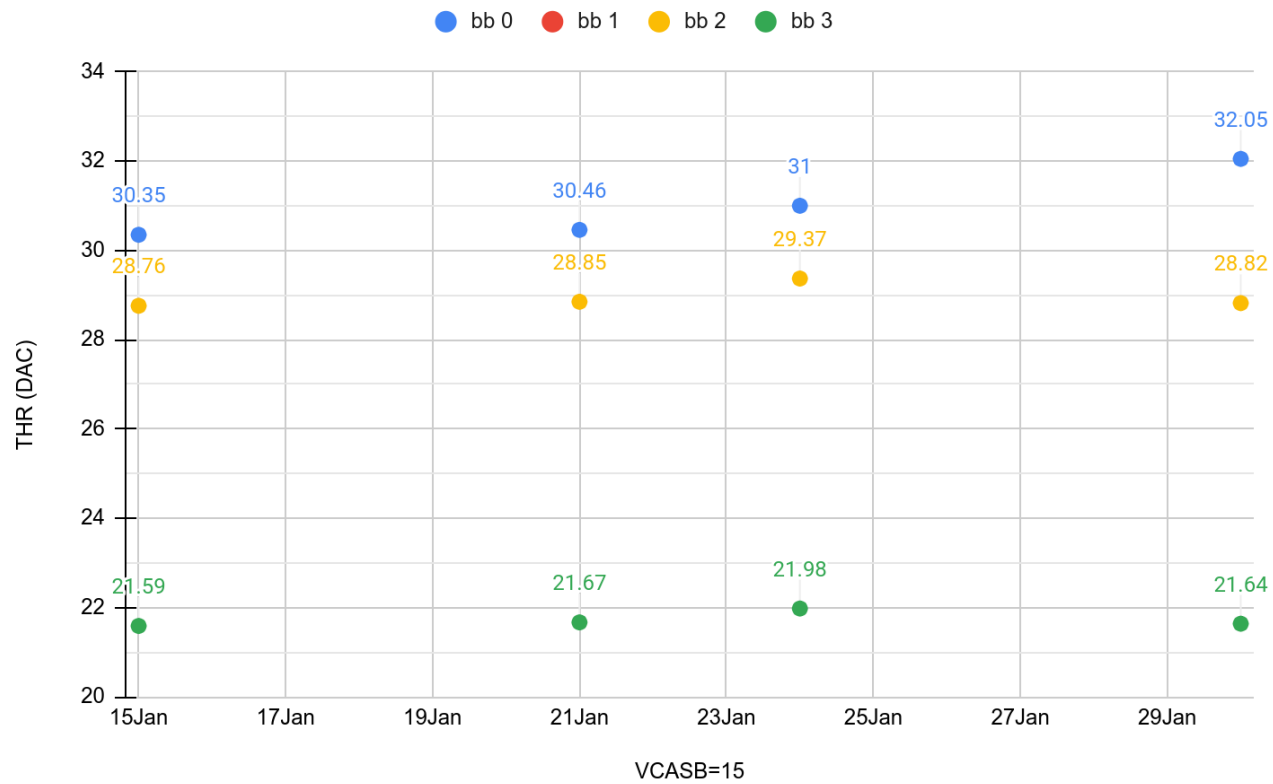


Threshold values are matching with CERN test results

Threshold scan: tb

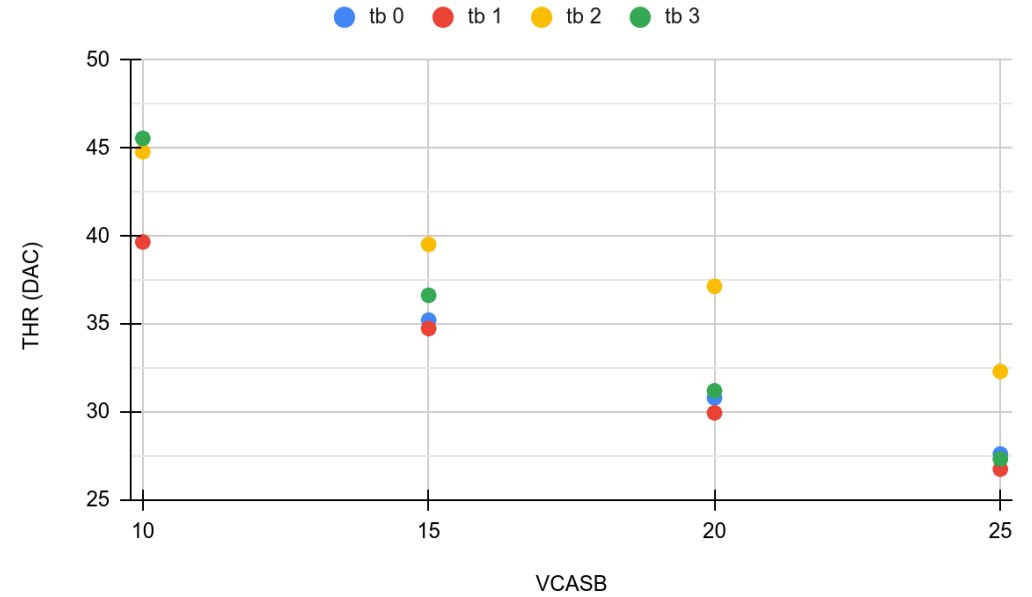
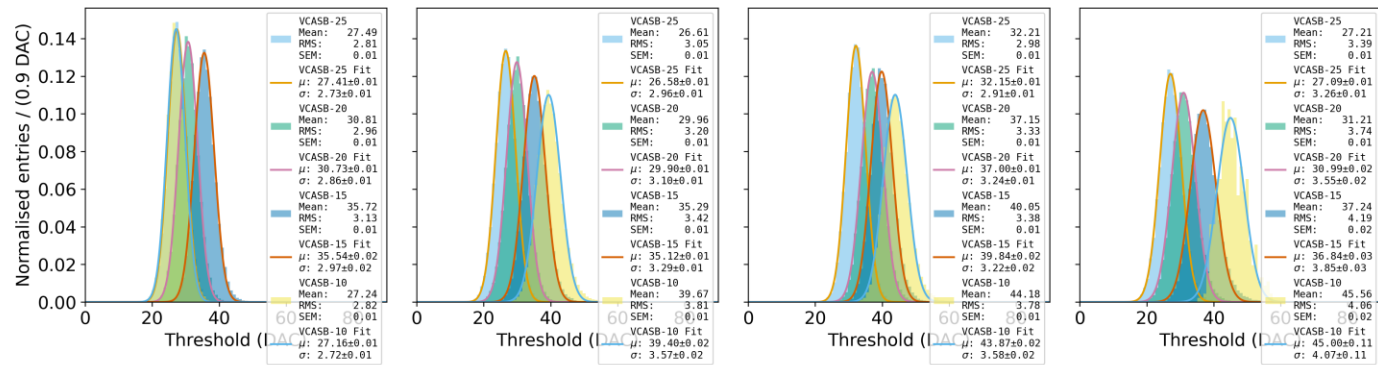


Threshold scan: bb



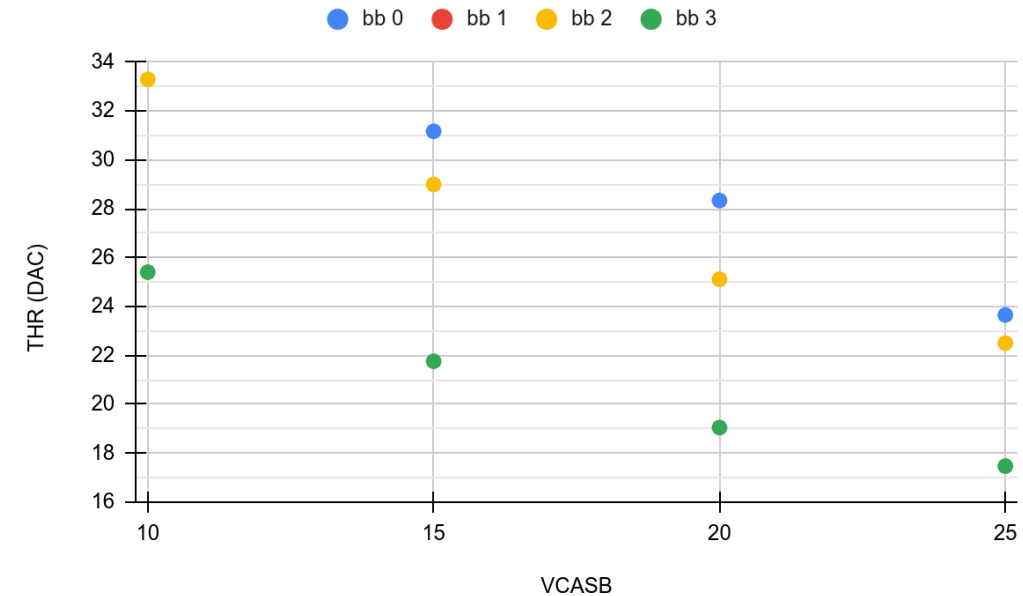
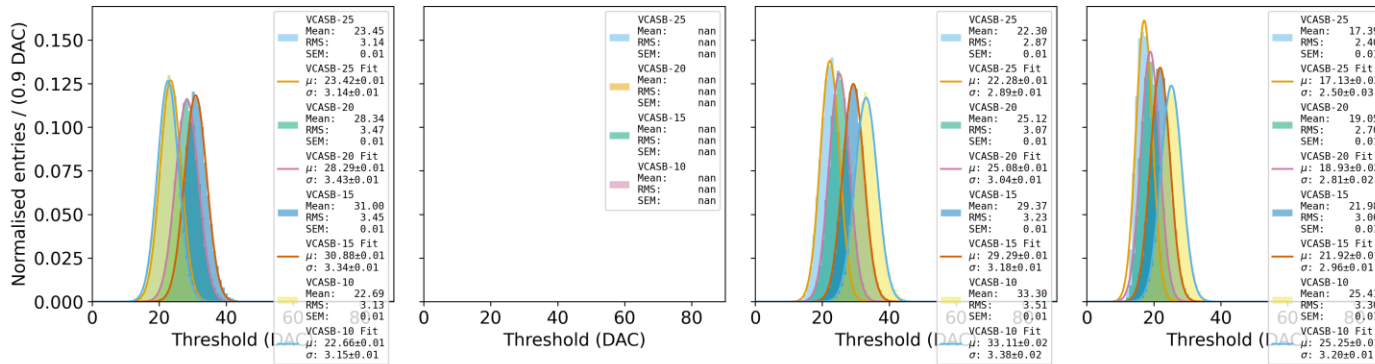
Threshold scan vs. VCASB

threshold_map_tb distribution



Threshold scan vs. VCASB

threshold_map_bb distribution



- Noise distribution in range 2.75 - 3.2

1. THR is almost same for multiple scans with same VCASB
2. THR decreases with higher VCASB

THR Scan: Different combinations of VCASB

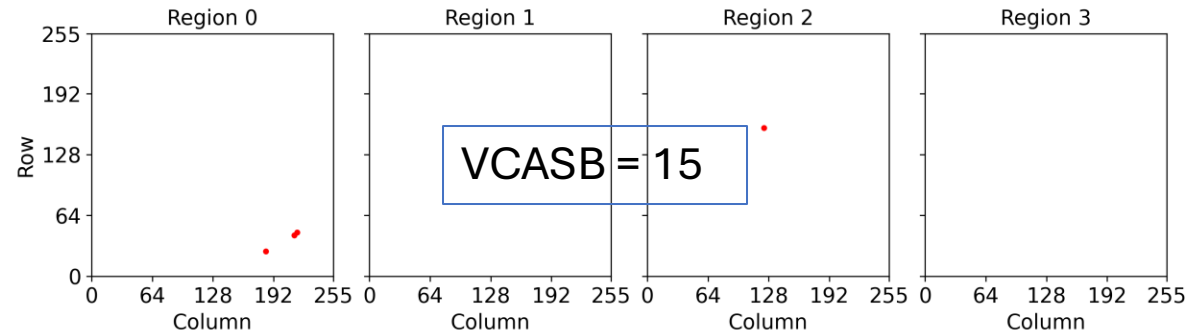
	TB 0	TB 1	TB 2	TB 3	BB 0	BB 1	BB 2	BB3	Commet
VCASB	15	15	15	15	15	15	15	15	
THR	34.97	34.49	39.31	36.36	32.05		38.82	21.64	30.01.25
THR	35.72	35.29	40.05	37.24	31		29.37	21.98	24.01.25
THR	35.48	35.03	39.77	36.92	30.85		29.16	21.89	22.01.25, start
THR	35.24	34.78	39.66	36.66	32.33		29.03	21.81	22.01.25, end
THR	35.05	34.47	39.31	36.37	30.46		28.85	21.67	21.01.25
THR	34.91	34.44	39.22	36.29	30.35		28.76	21.59	15.01.25
VCASB	20	20	20	20	20	20	20	20	
THR	30.81	29.96	37.15	31.21	28.34		25.12	19.05	30.01.25
VCASB	25	15	15	15	25	15	15	15	
THR	27.38	34.91	39.6	36.75	23.05		29.19	21.93	22.01.25
VCASB	25	10	10	10	25	10	10	10	
THR	27.24	39.67	44.8	45.56	22.69		33.3	25.41	22.01.25
VCASB	25	25	25	25	25	25	25	25	
THR	27.04	26.13	31.73	26.69	23.22		22.14	17.37	30.01.25
THR	27.49	26.61	32.21	27.21	23.22		22.14	17.37	24.01.25
THR	27.44	26.62	32.12	27.12	23.53		22.37	17.44	22.01.25
THR	28.5	27.68	33.08	28.33	24.43		23.21	17.69	17.01.25

1. THR depends on VCASB of the region and independent of the neighbouring regions VCASB

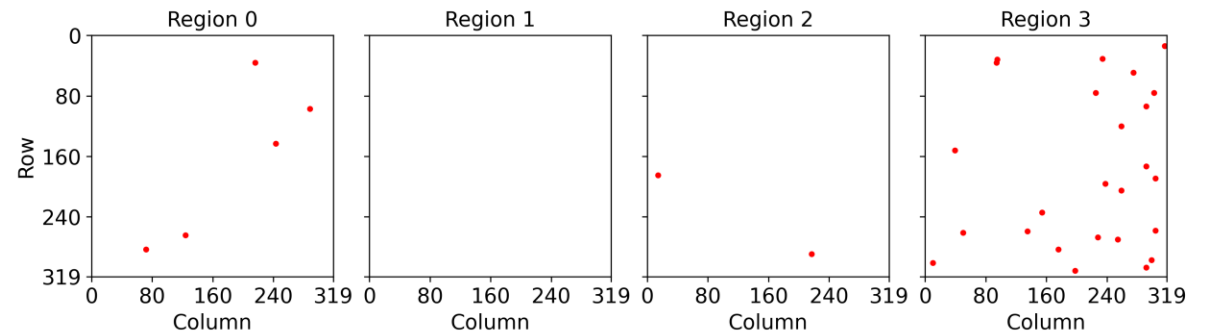
Fake Hit Rate scan

Regions	TB 0	TB 1	TB 2	TB 3	BB 0	BB 1	BB 2	BB3	Test at	Comment
FHR	4.36E-08	0	1.53E-09	0	3.54E-08		1.46E-08	3.23E-08	Bari	
FHR	6.58E-08	1.53E-10	1.07E-09	1.53E-10					CERN	bb: "No MOSS Packets in events",

babyMOSS-2_4_W20E1 | TB scatter plot | FakeHitRateAnalysis

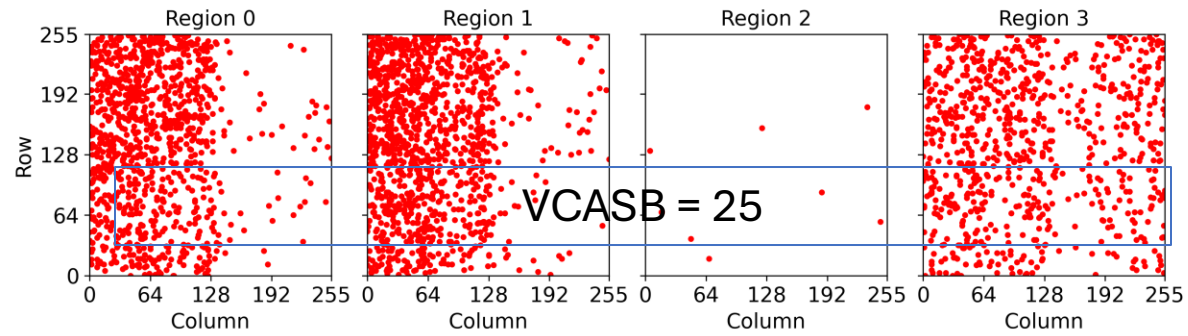


babyMOSS-2_4_W20E1 | BB scatter plot | FakeHitRateAnalysis

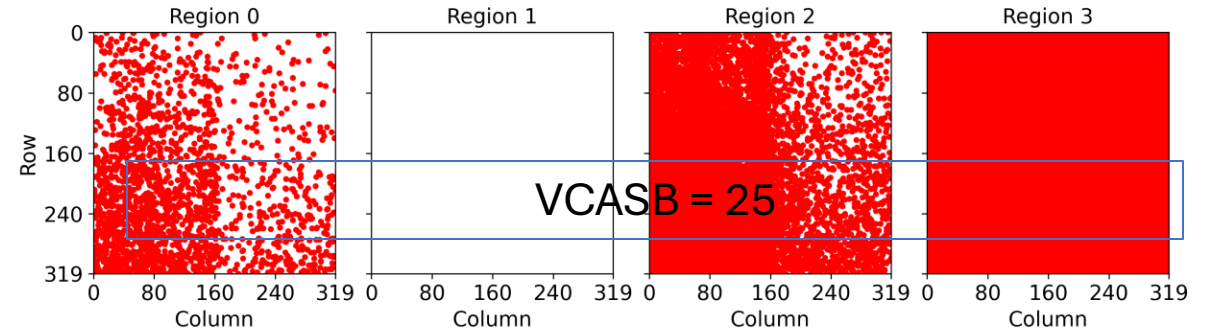


FHR Scan: Different combinations of VCASB

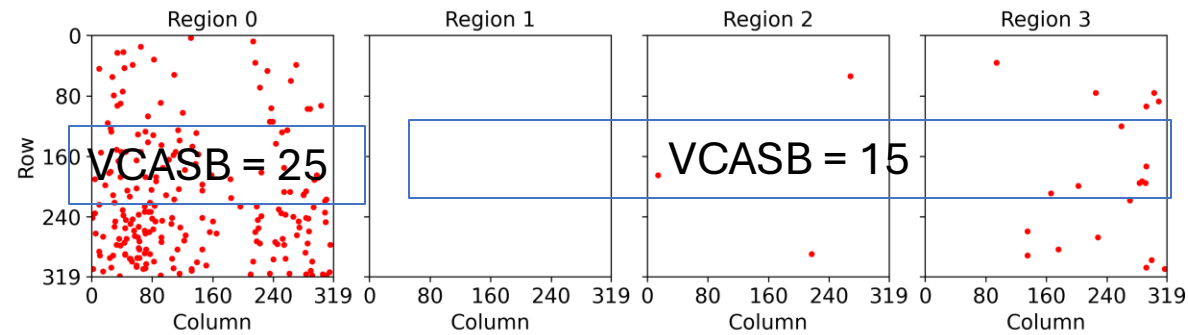
babyMOSS-2_4_W20E1 | TB scatter plot | FakeHitRateAnalysis



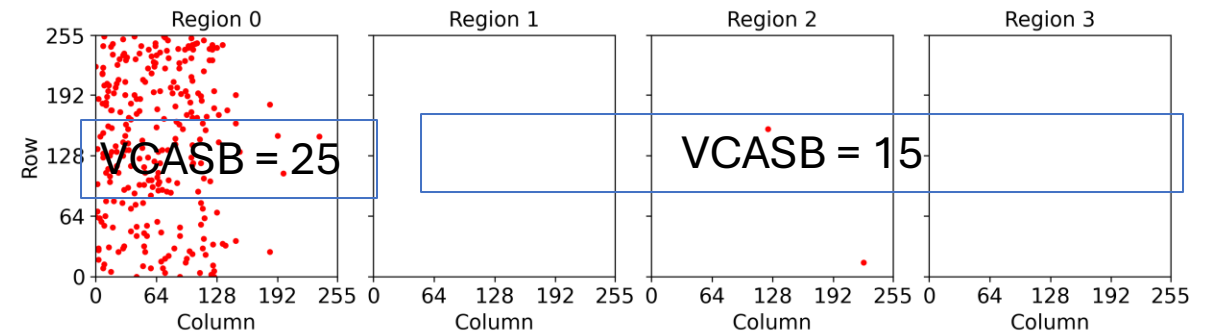
babyMOSS-2_4_W20E1 | BB scatter plot | FakeHitRateAnalysis



babyMOSS-2_4_W20E1 | BB scatter plot | FakeHitRateAnalysis



babyMOSS-2_4_W20E1 | TB scatter plot | FakeHitRateAnalysis



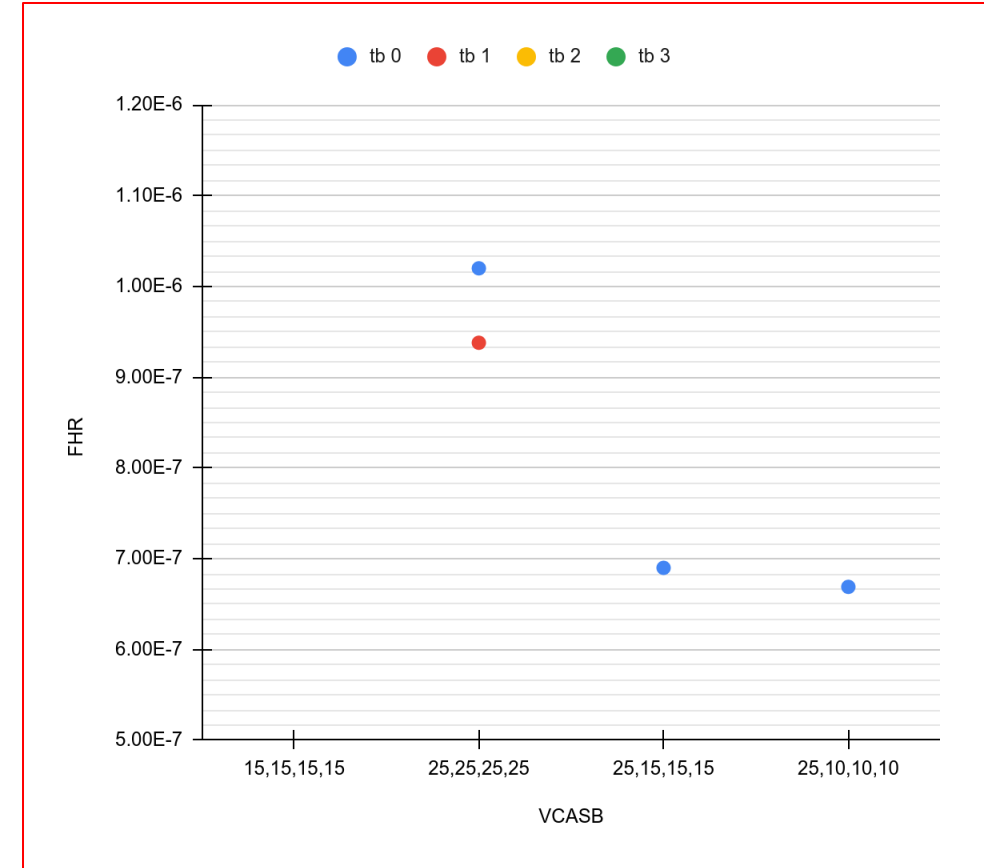
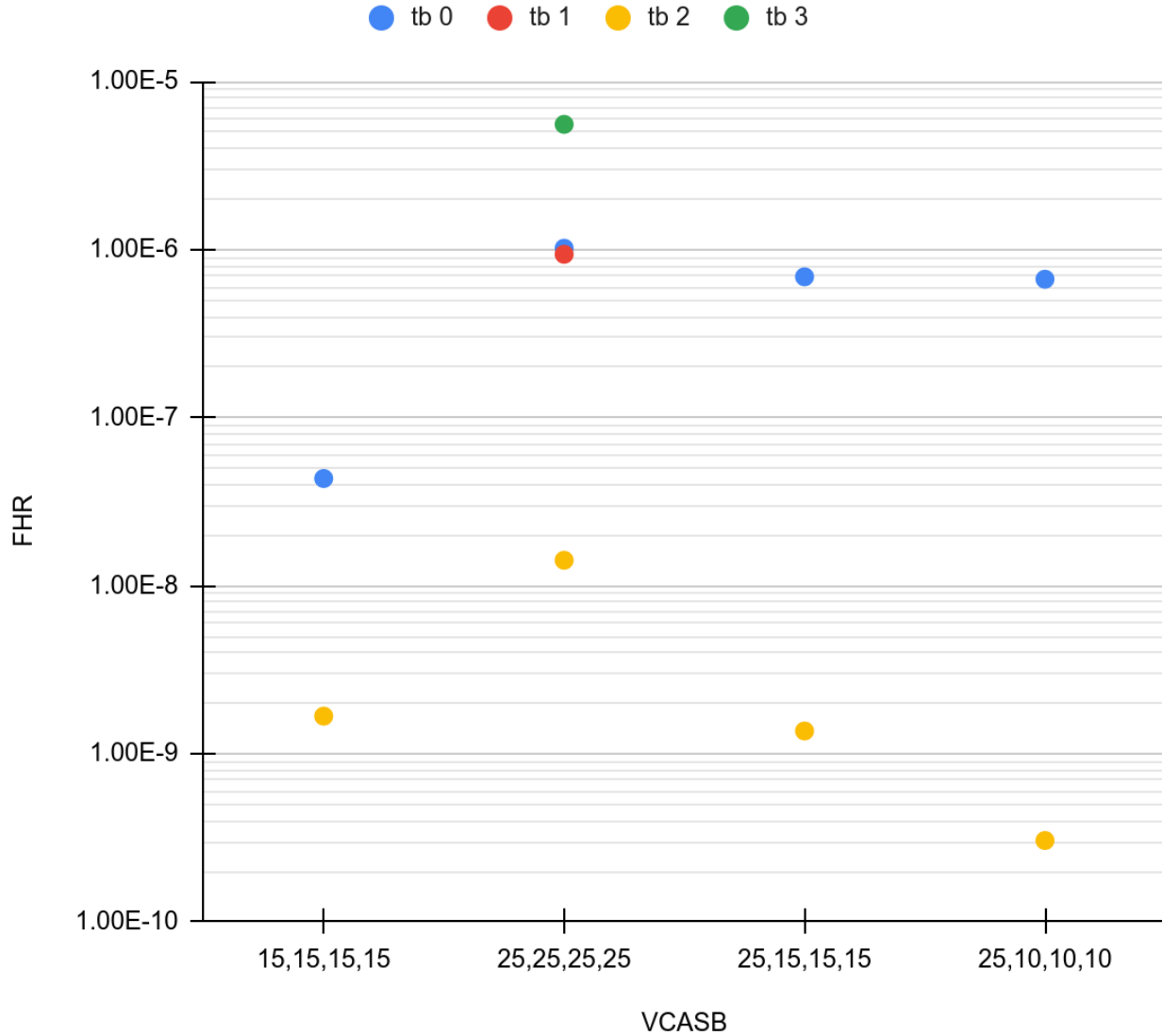
From first try, it seems that lower VCASB at neighbouring regions reduces the FHR compare to VCASB = 25 to all regions

FHR Scan: Different combinations of VCASB

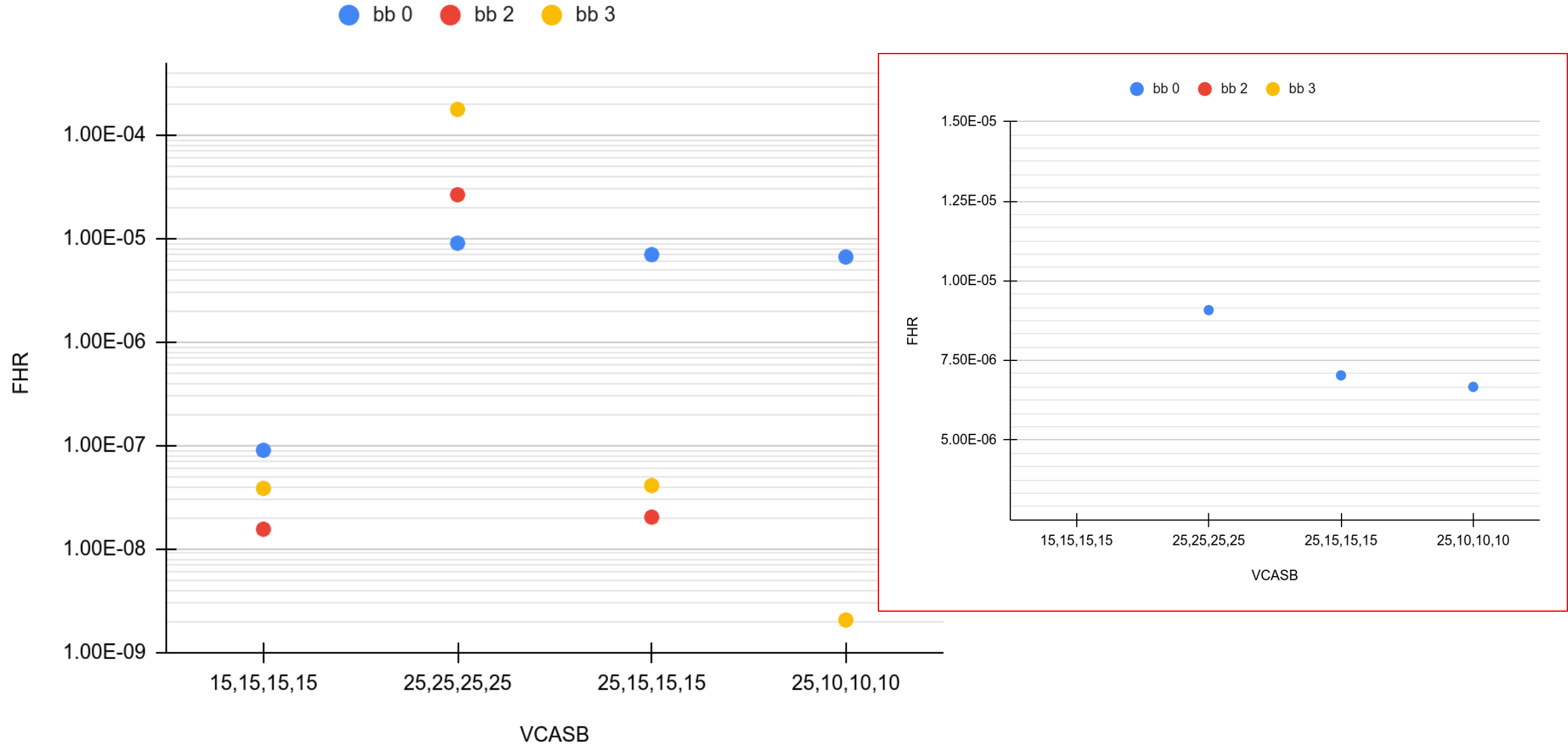
	TB 0	TB 1	TB 2	TB 3	BB 0	BB 1	BB 2	BB3	Commet
VCASB	25	25	25	25	25	25	25	25	
FHR	1.02E-6	9.38E-7	1.42E-8	5.57E-6	9.08E-6		2.67E-5	1.79E-4	22.01.25
FHR	1.24E-6	1.19E-6	1.59E-8	7.41E-6	1.13E-5		3.49E-5	2.33E-4	15.01.25
VCASB	25	15	15	15	25	15	15	15	
FHR	6.90E-7	0	1.37E-9	0	7.03E-6		2.03E-8	4.1E-8	22.01.25
FHR	2.54E-7	0	2.44E-9	0	3.11E-6		879E-10	1.38E-8	17.01.25

- However, comparing data, it seems that FHR of 17.01.25 shows lower compared to 22.01.25
- Further study performed to investigate the VCASB of neighbouring regions.

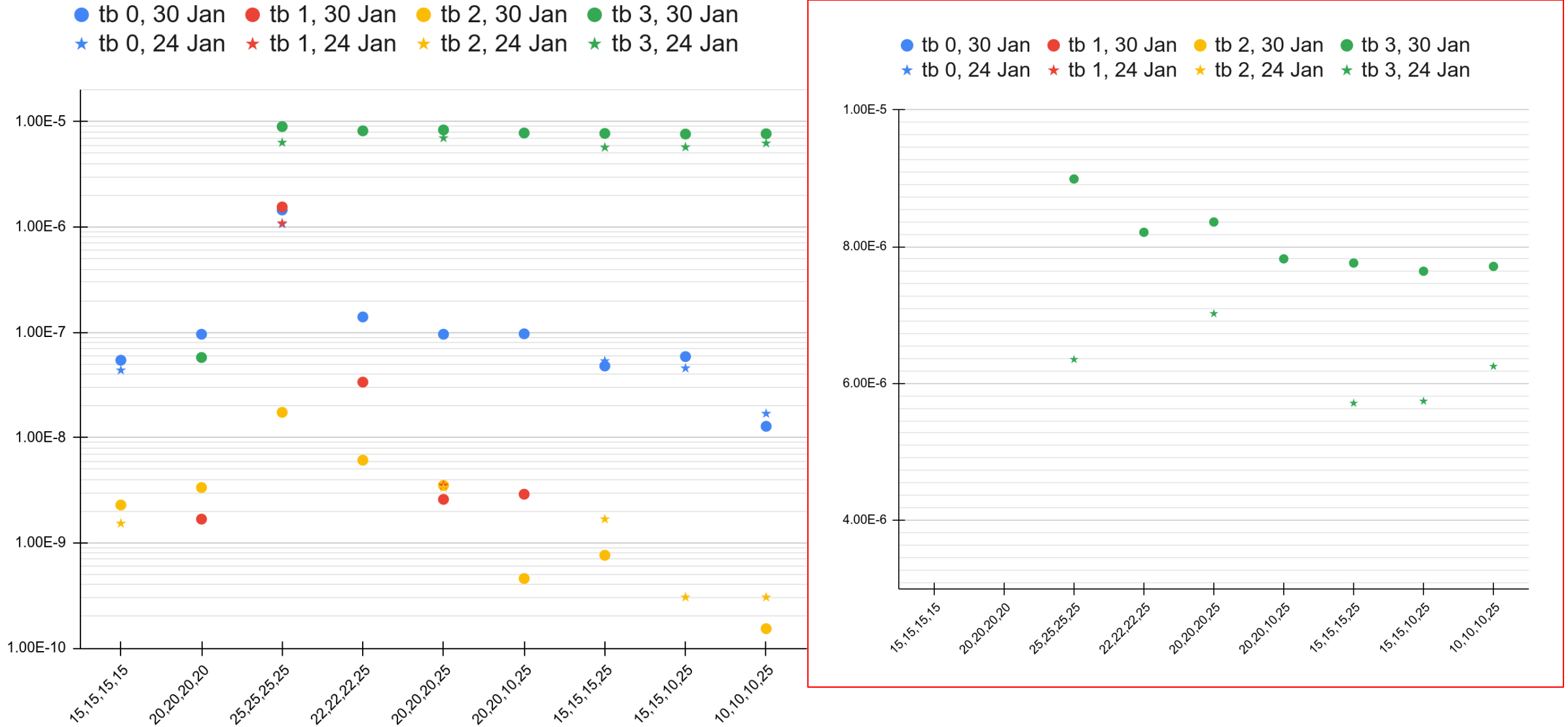
FHR Scan: Different combinations of VCASB on 22.01.2025



FHR Scan: Different combinations of VCASB on 22.01.2025

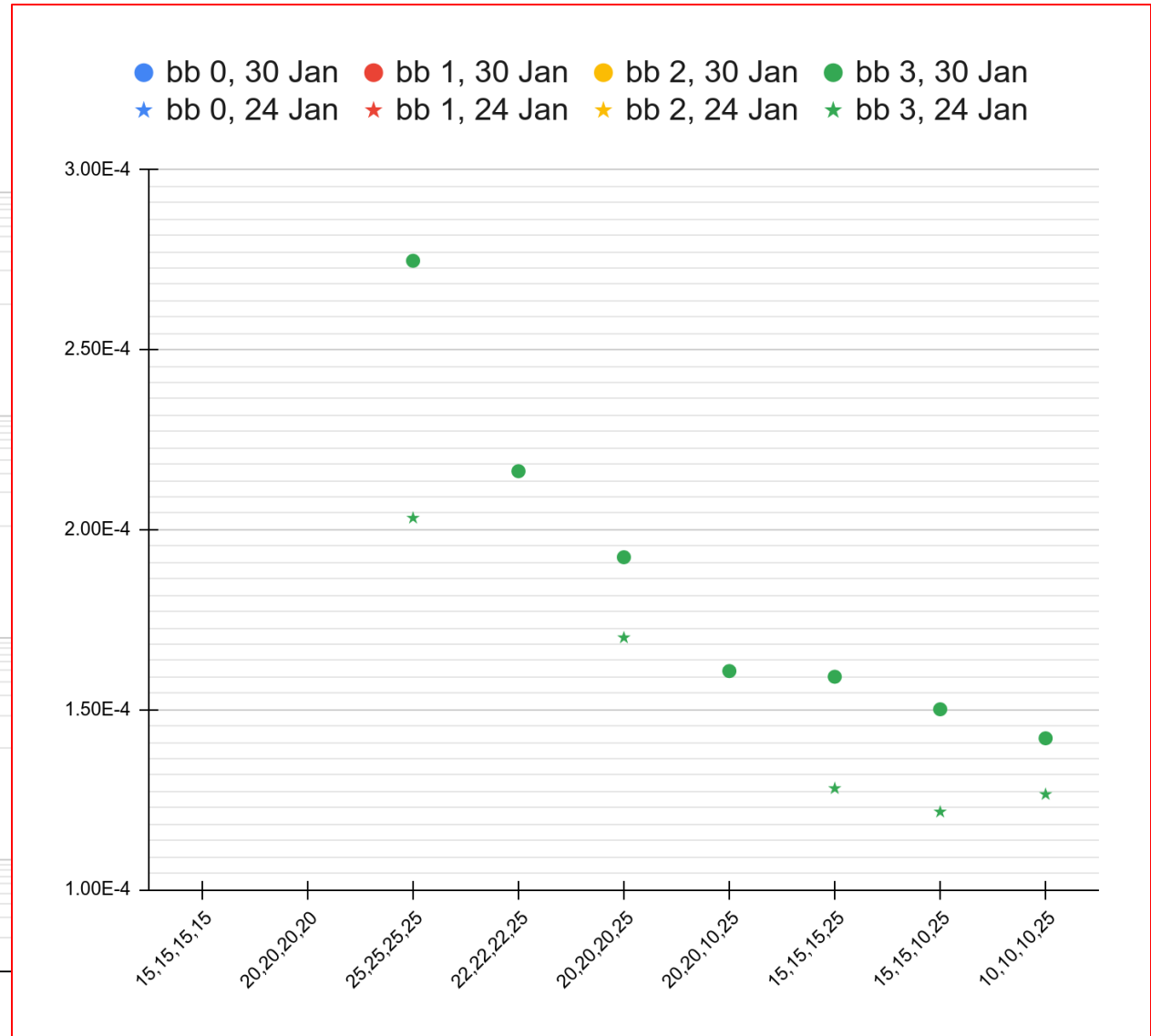
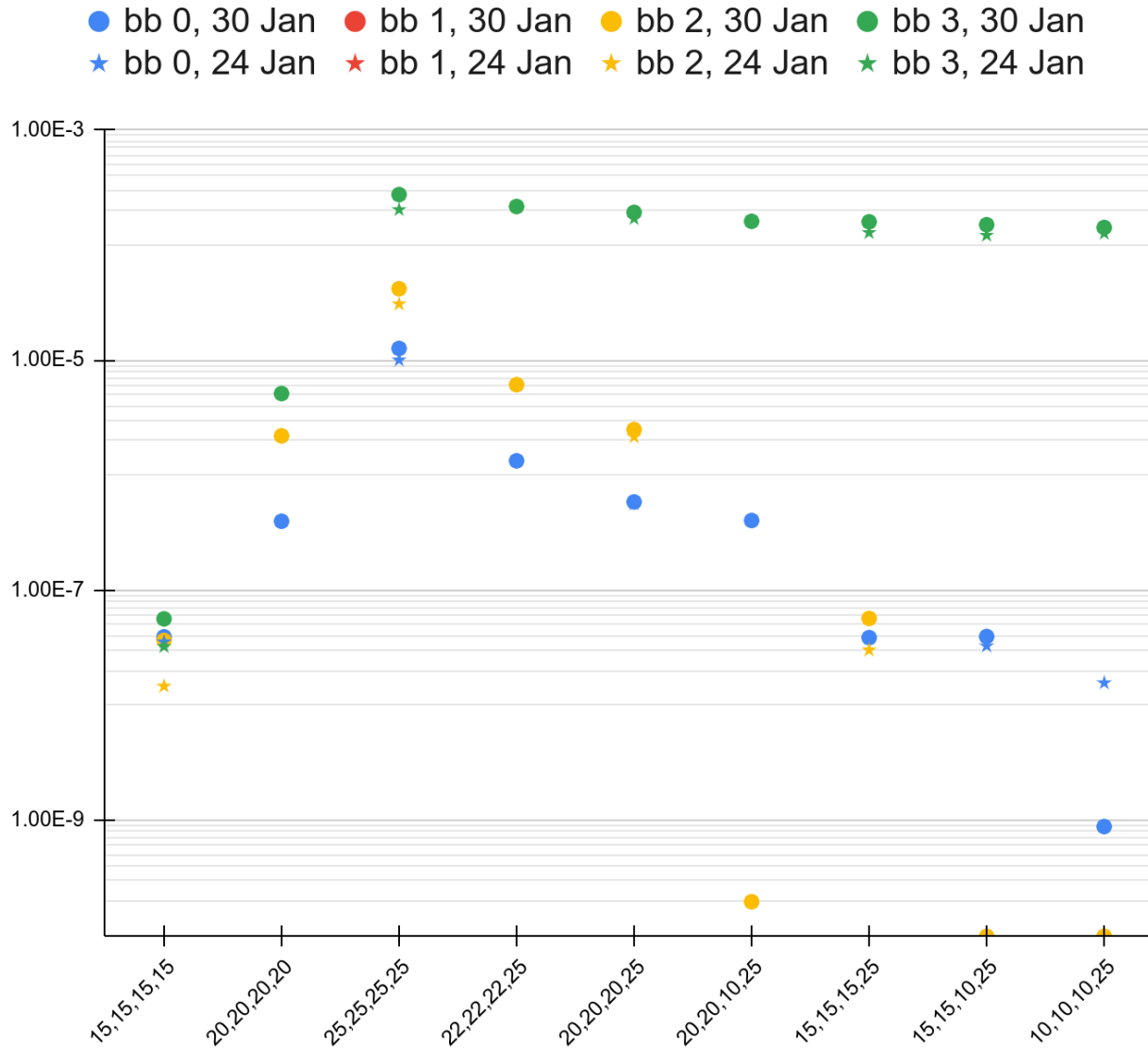


FHR Scan: Different combinations of VCASB on 24.01.2025, 30.01.2025



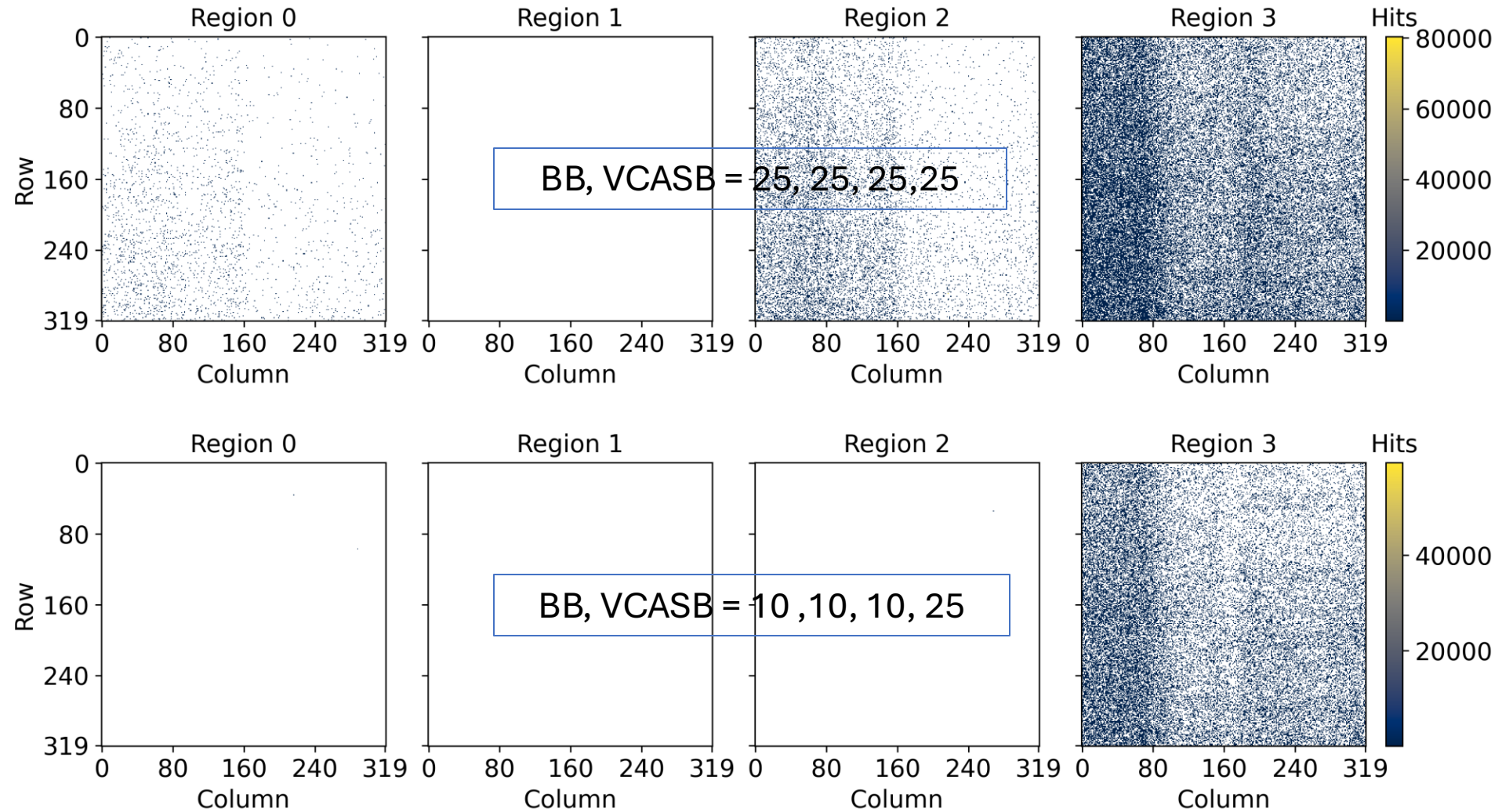
There is not much variation at tb region 3 of FHR for different VCASB setting among regions

FHR Scan: Different combinations of VCASB on 24.01.2025, 30.01.2025



FHR Scan: Different combinations of VCASB on 24.01.2025

babyMOSS-2_4_W20E1 | BB hitmap | FakeHitRateAnalysis



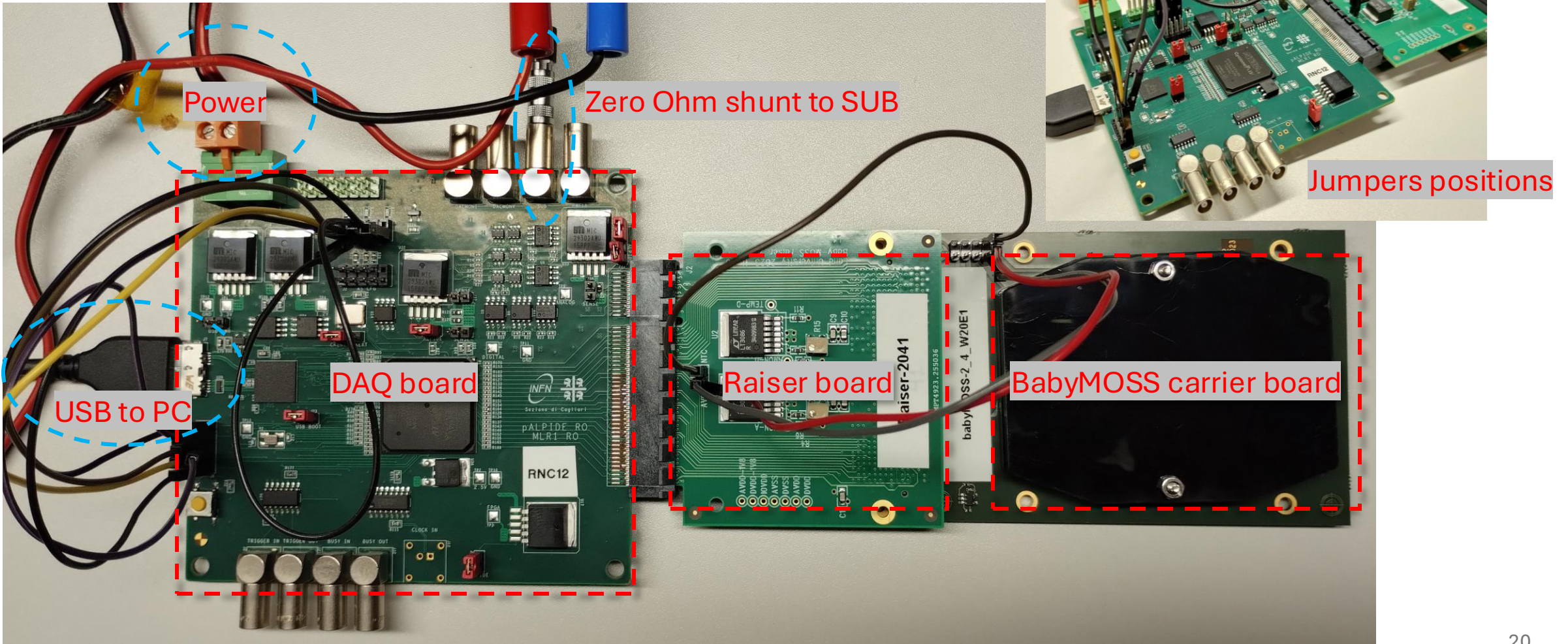
From the hit map, it can be seen that FHR reduced in bb region 3 at VCASB = [10, 10, 10, 25] compared to VCASB = [25, 25, 25, 25]

Summary

- BabyMOSS test set-up has assembled in Bari and first QA scans are performed at $V_{SUB} = 0\text{ V}$
- The chip passed all functional tests and readout and pixel matrix scans except bottom region 1, which is a noisy one
- Threshold scan, FHR scan are studied at different V_{CASB} at $V_{SUB} = 0\text{ V}$
- Their might have neighbouring regions influence in FHR

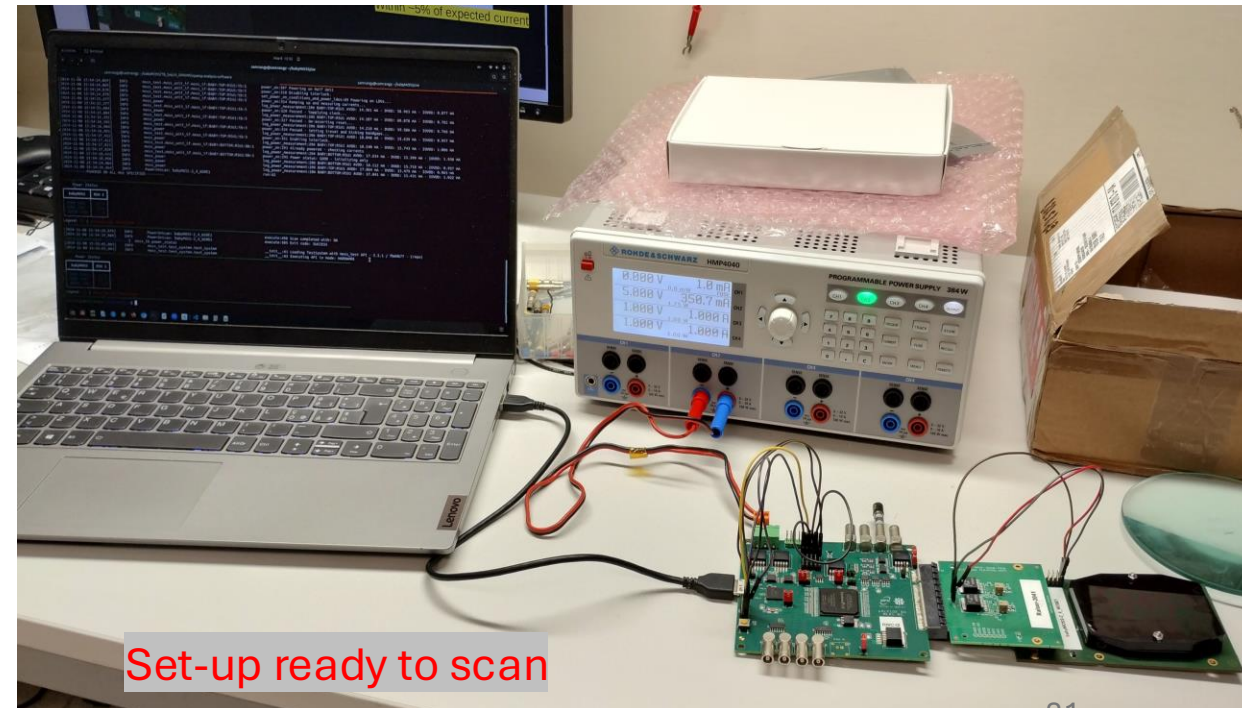
Back-up

babyMOSS components and connections

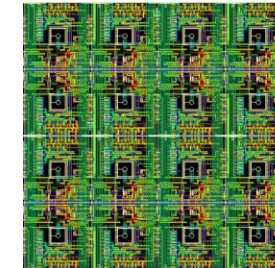
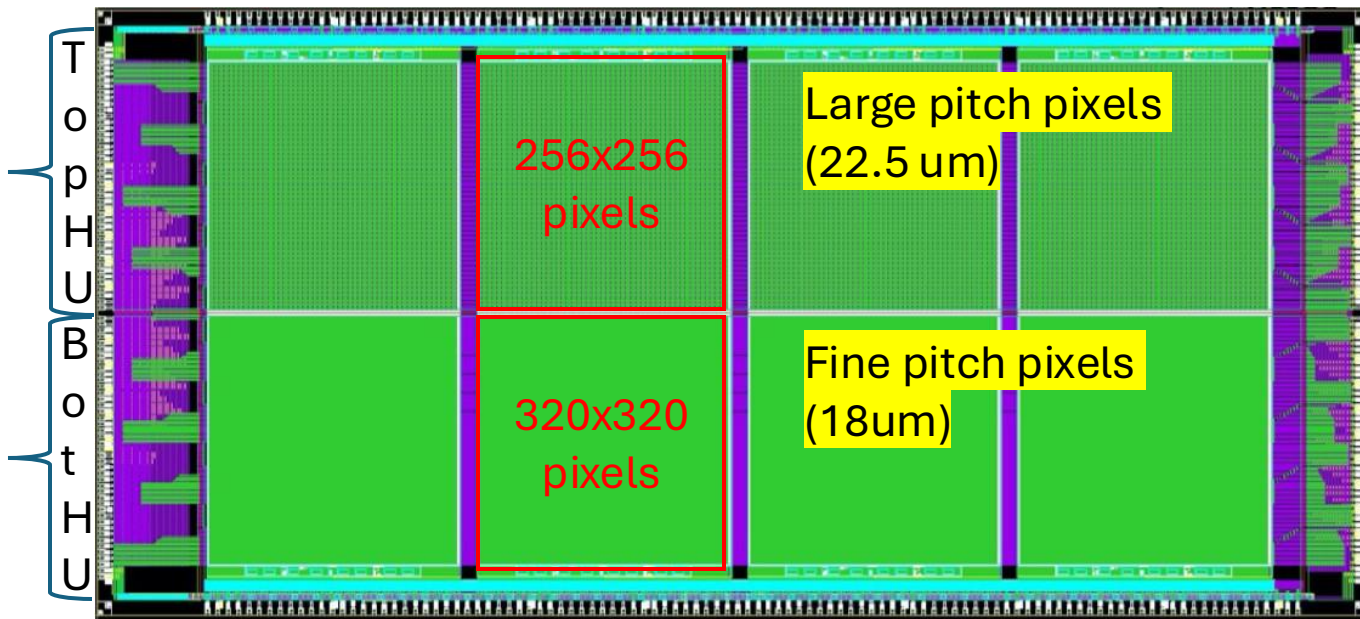
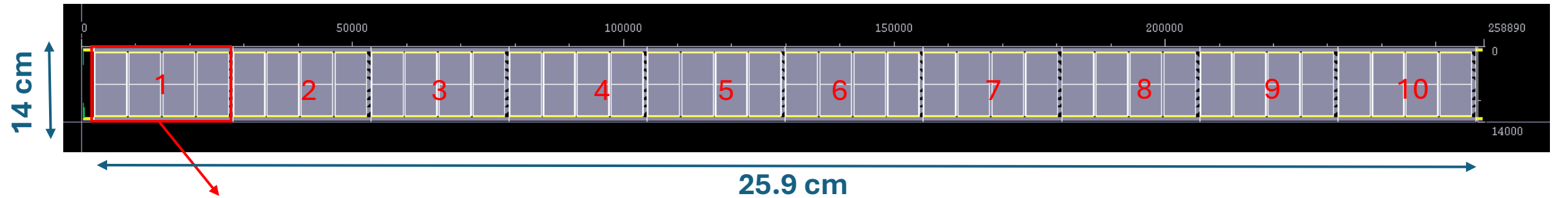


Set-up configuration

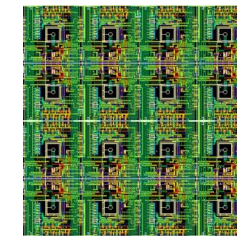
- DAQ board ID: DAQ-0009012905D1273D, Raiser board ID: Raiser-2041, Chip ID: babyMOSS-2_4_W20E1
- Zero-ohm shunt resistor in SUB at VBB = 0 V
- No Temperature control



babyMOSS Prototype summary



Pitch 22.5 μm
 Conservative layout
 7 mW/cm² (analog FE)
 1 μs peaking time



Pitch 18 μm
 Compact layout
 11 mW/cm² (analog FE)
 1 μs peaking time

- MOnolithic Stched Sensor (MOSS) is made of ten **repeated sensor units (RSUs)**. **babyMOSS** is equivalent to pixel matrix of the One RSU.
- Each RSU is composed of two **half-units (HUs)**, labeled **top** and **bottom**. Each half-unit contains four **matrices**, also referred to as **regions**.

babyMOSS Prototype summary

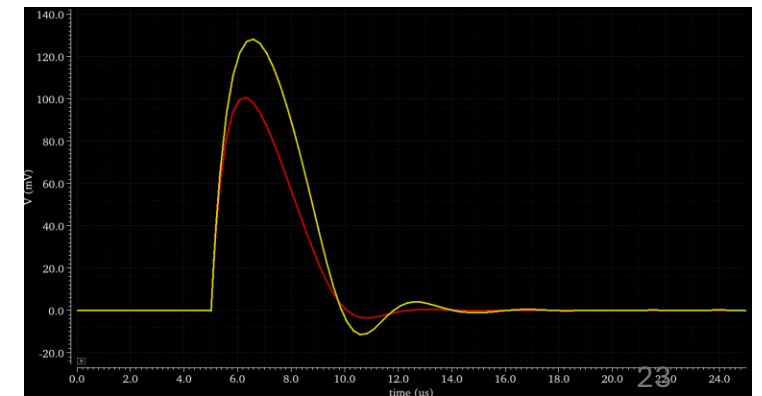
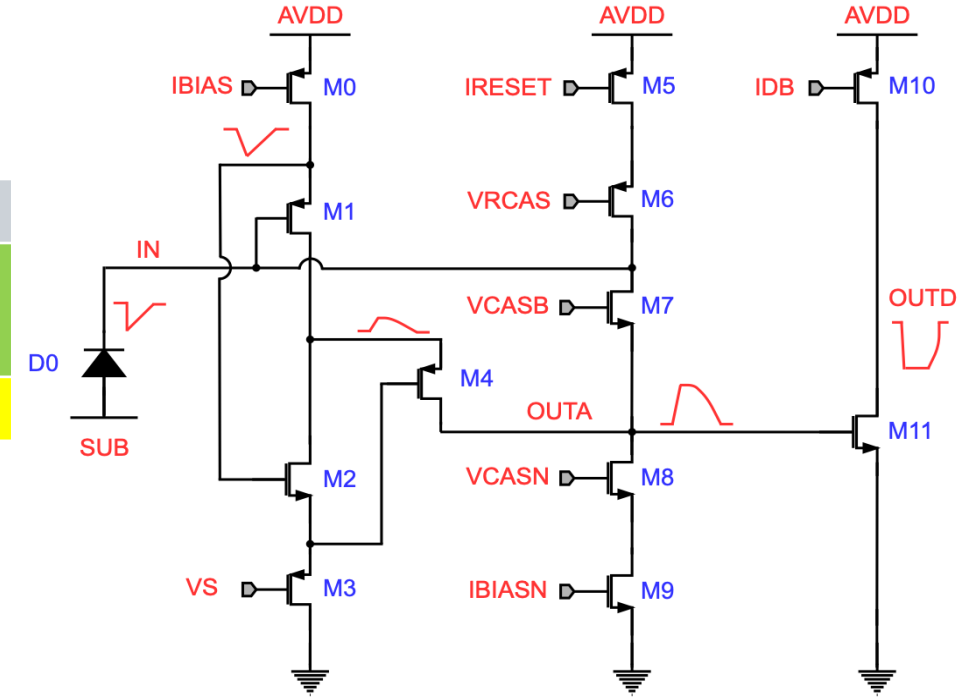
- There are different front-end variants within a HU:

	Region 0	Region 1	Region 2	Region 3
TOP	Standard	Larger input transistor (M1)	Larger discriminator input transistor (M11)	Larger common-source transistor (M2)
BOTTOM	Standard	Standard	Standard	Slightly different layout

- For nominal settings with p_{well}/p_{sub} at 0V and $C_{in} = 5$ fF, simulated thresholds are:

Thresholds	Region 0	Region 1	Region 2	Region 3
TOP	104 e	108 e	130 e	106 e
BOTTOM	104 e	104 e	104 e	85 e

- In "**standard layout**" a parasitic capacitance added to improves the stability of the circuit. This capacitance, however, also reduces the front-end gain (**red curve**).
- In "**slightly different layout**" parasitic capacitance was slightly reduced, so front-end gain increases (**yellow curve**).



Software installation and scans

- The software can be installed in any linux PC.
- The steps to install the software are summarised in wiki page [babyMOSS Lab test setup](#)
- The scan history can be found in the [logbook](#).

Configuration files

ts_config_raiser.json

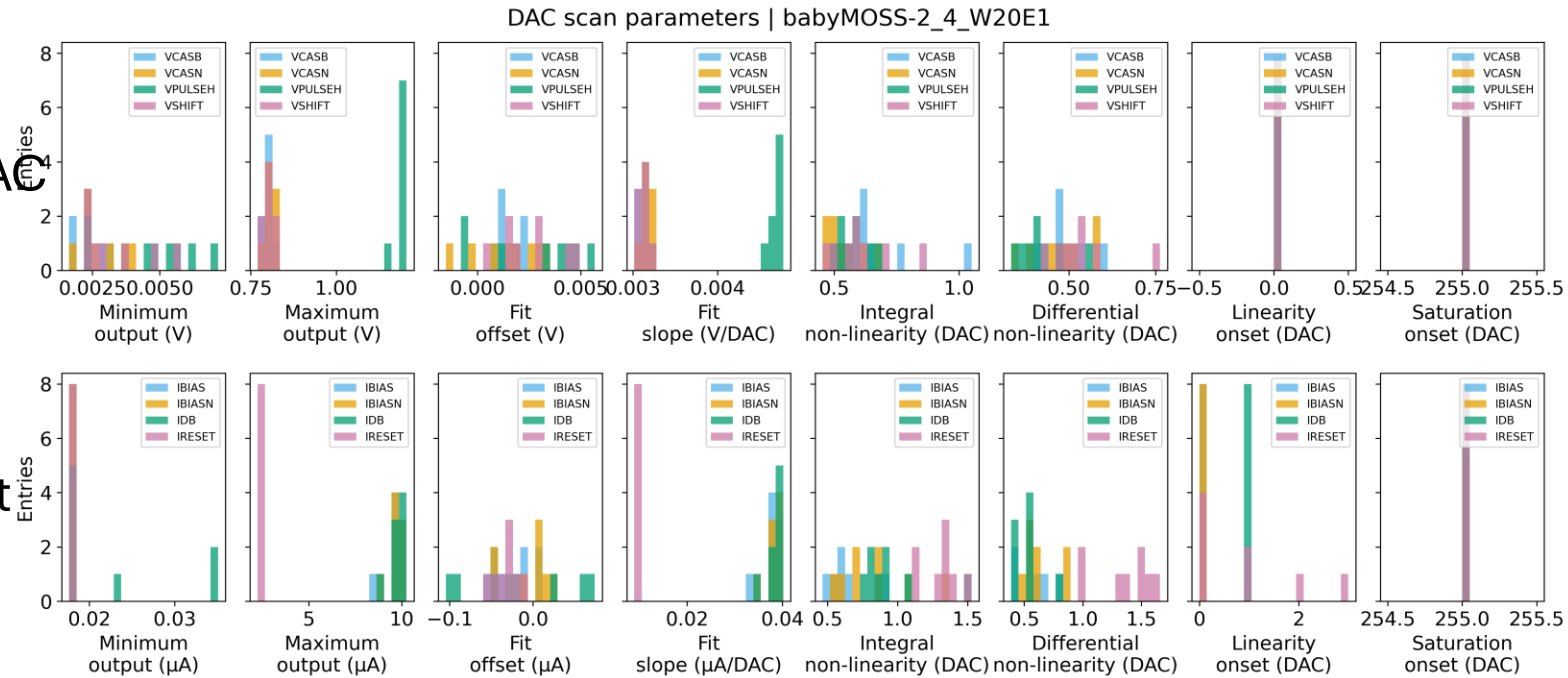
```
1 {
2   "moss_chip_id": "babyMOSS-2_4_W20E1",
3   "fw_hash": "0x6e00d1dd",
4   "mode": "hardware",
5   "power_config": "config/power_config_raiser.json5",
6   "power_off_when_done": false,
7   "disable_power_interlock": false,
8   "boards": [
9     {
10      "location": "baby",
11      "usb": {
12        "idVendor": 5462,
13        "product": "ALPIDE-DAQ",
14        "manufacturer": "CERN/INFN-CA",
15        "serial_number": "DAQ-0009012905D1273D"
16      }
17    }
18  ]
19 }
```

scan_config_raiser.json

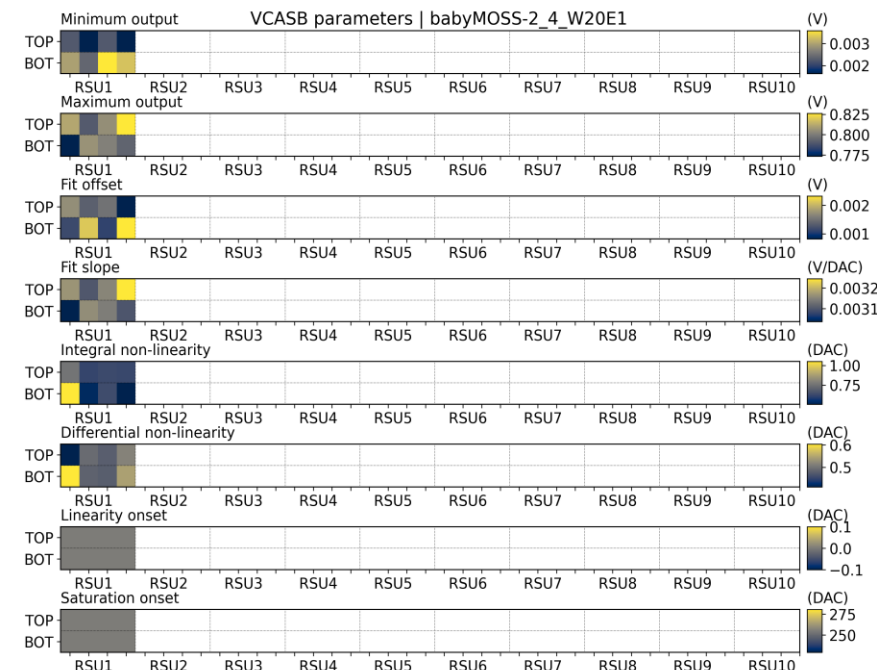
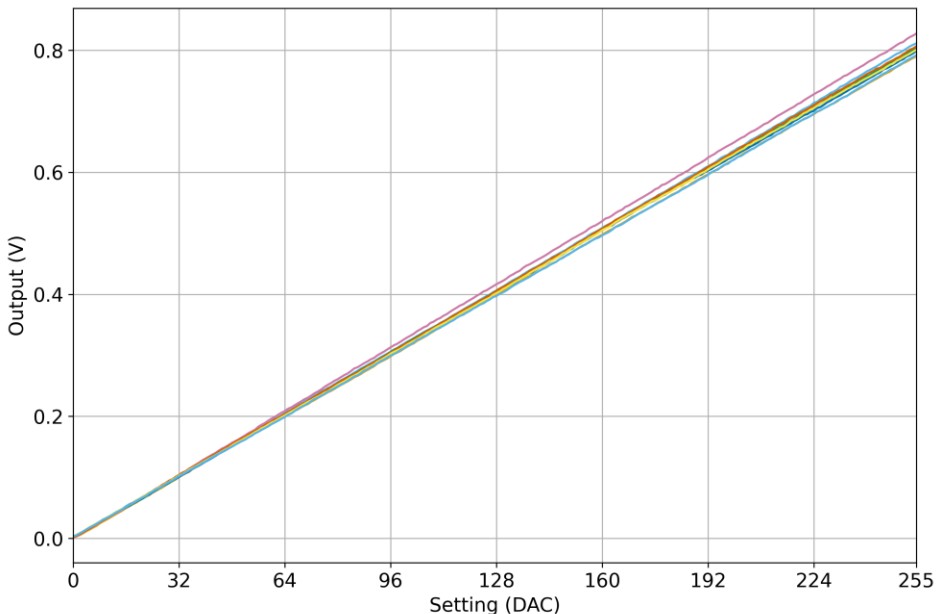
```
1 {
2   "ts_config": "config/ts_config_raiser.json5",
3   // For baby-moss use "tby" (top) and "bby" (bottom)
4   "enabled_units": ["tby", "bby"],
5   // "enabled_units": ["bby"],
6   "region_readout_enable_masks": {
7     "bb": 0xD,
8   },
9   "seed": "random",
10  "moss_dac_settings": {
11    "*": {
12      // "IRESET": 30,
13      "VCASB": [
14        25,
15        25,
16        25,
17        25
18      ]
19    }
20  }
21 }
```


DAC scans

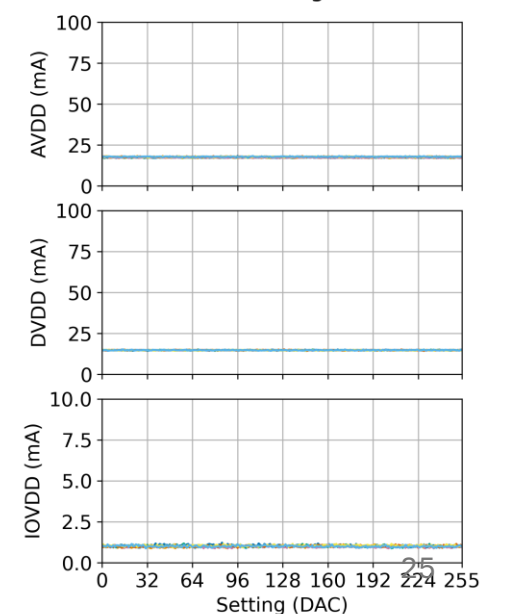
- DAC scan: performances of different DAC parameters VCASB, VCASN, VPULSEH, VSHIFT, IBIAS, IBIASN, IDB, IRESET
- Each parameter is scanned with changing DAC values 0 - 255
- DAC Scan produces 20 plots of different combination of the dac parameters
- Few of the DAC scan results are shown



babyMOSS-2_4_W20E1 | VCASB all units and regions | DacAnalysis

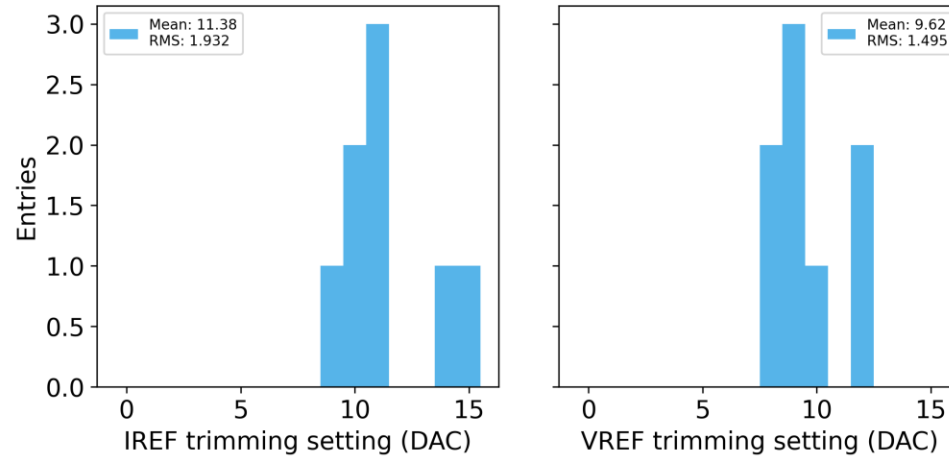


babyMOSS-2_4_W20E1 | DacAnalysis VCASN all units and regions currents

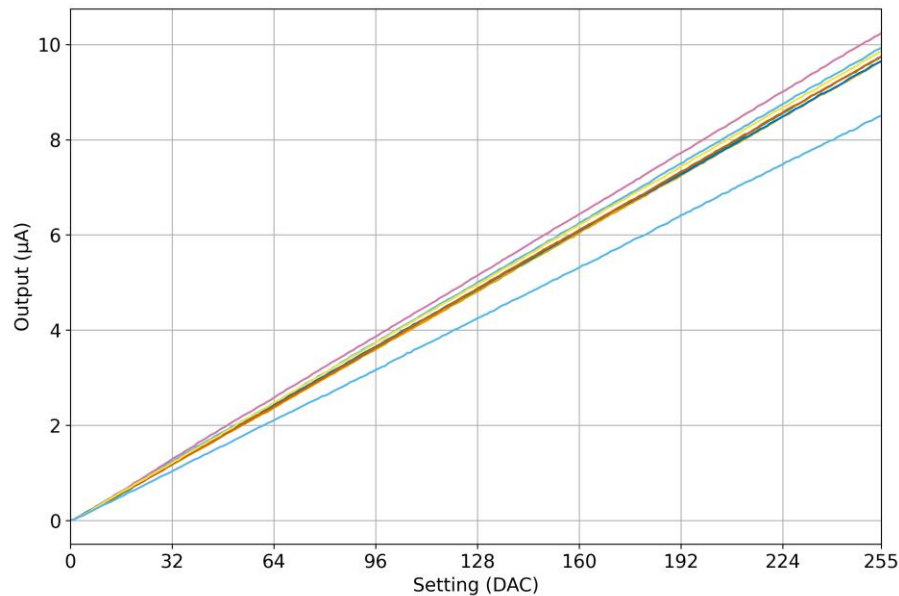


DAC Scan

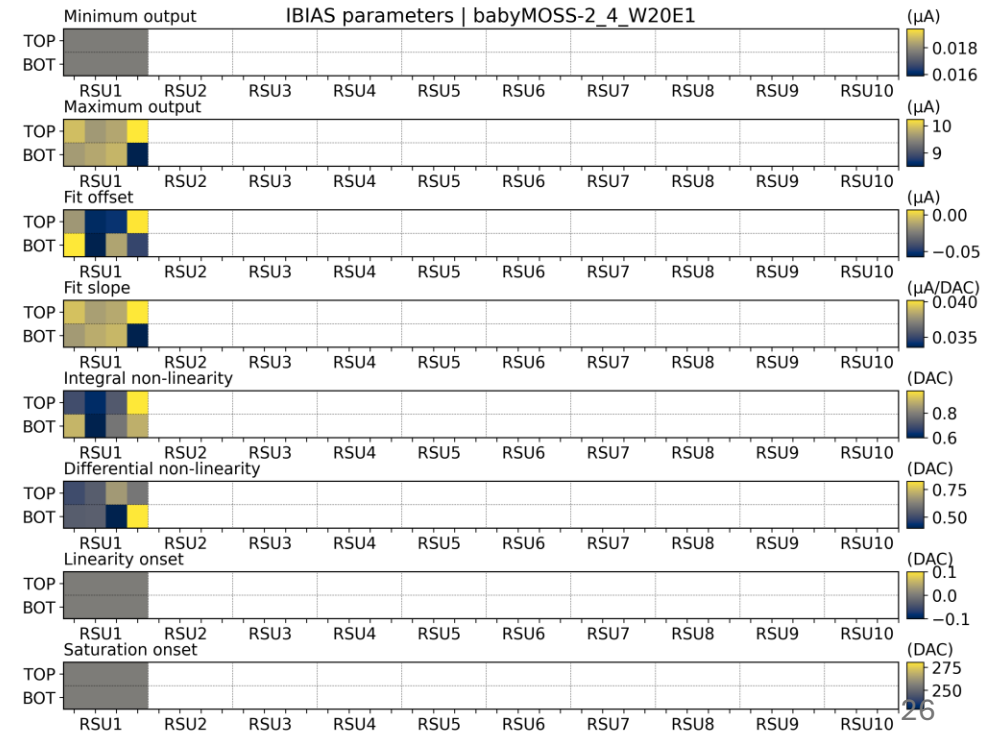
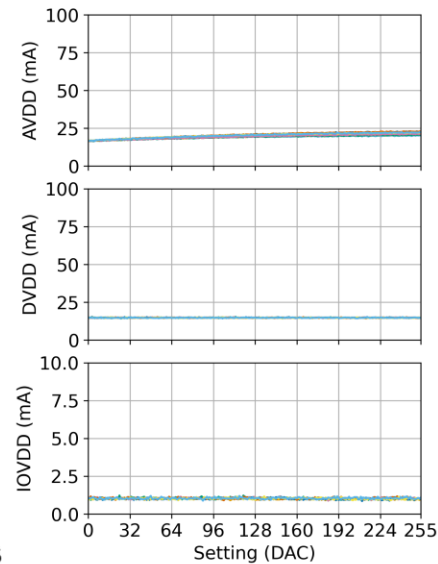
Bandgap trimming settings | babyMOSS-2_4_W20E1



babyMOSS-2_4_W20E1 | IBIAS all units and regions | DacAnalysis

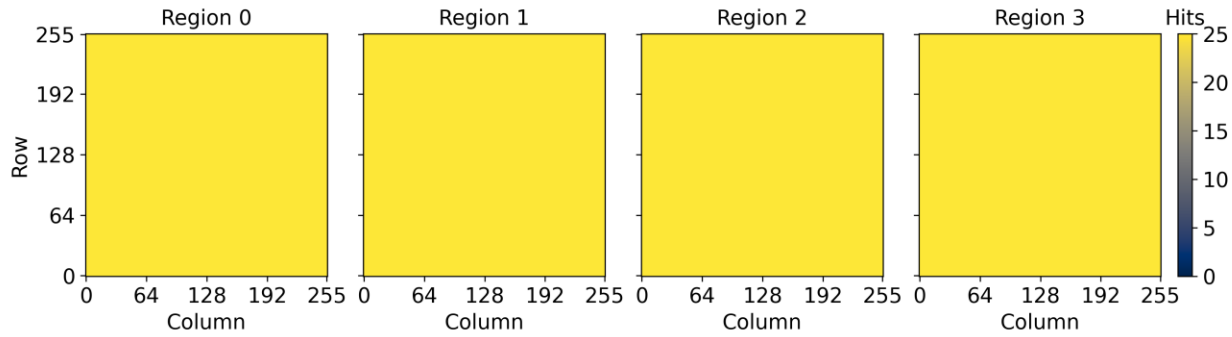


babyMOSS-2_4_W20E1 | DacAnalysis
IBIAS all units and regions currents

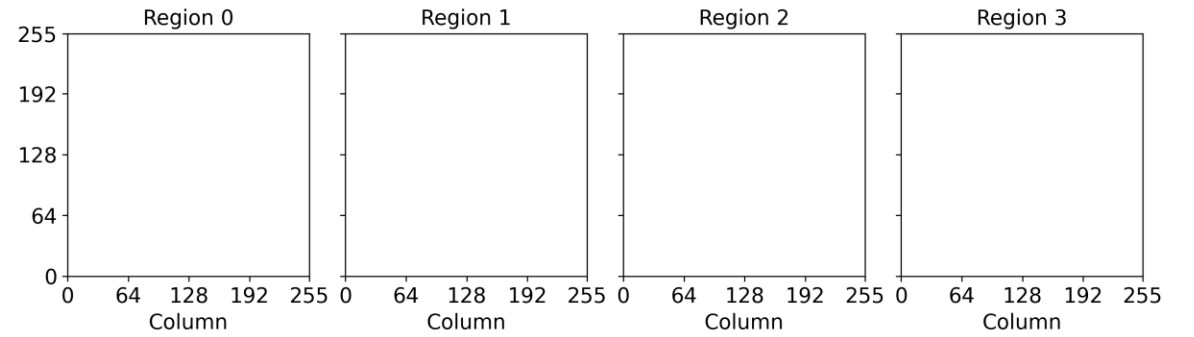


Digital scan: tb

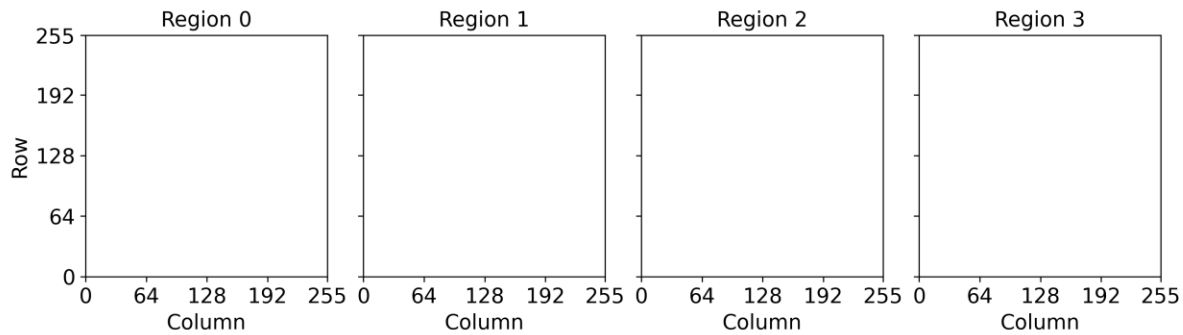
babyMOSS-2_4_W20E1 | tb hitmap | DigitalAnalogScanAnalysis



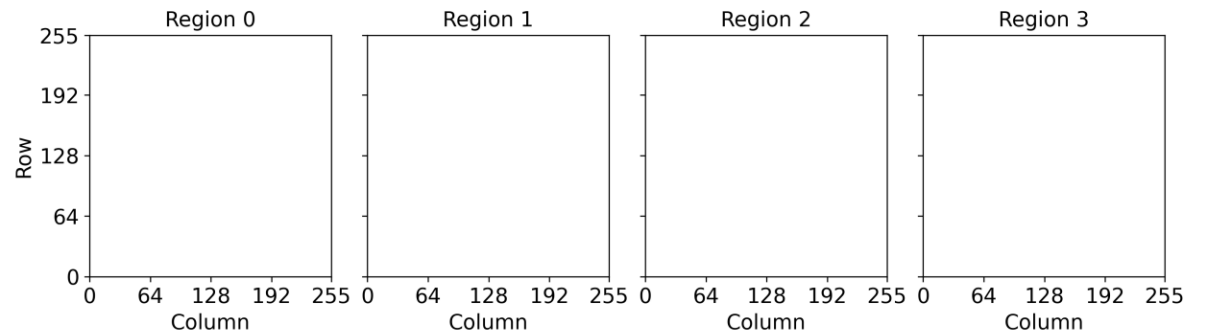
babyMOSS-2_4_W20E1 | tb inefficient pixels | DigitalAnalogScanAnalysis



babyMOSS-2_4_W20E1 | tb noisy pixels | DigitalAnalogScanAnalysis

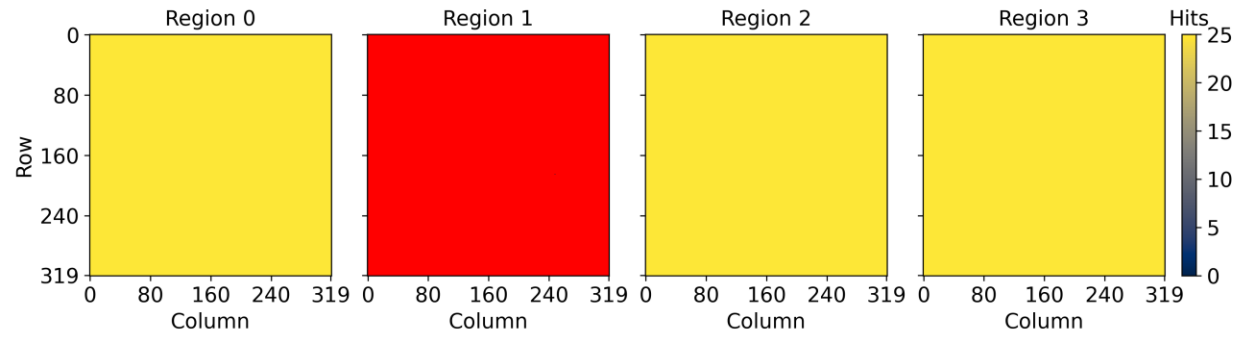


babyMOSS-2_4_W20E1 | tb dead pixels | DigitalAnalogScanAnalysis

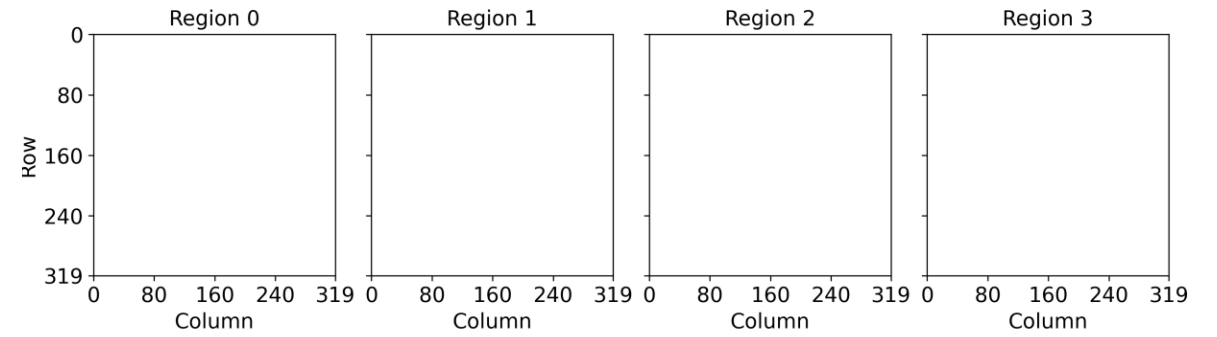


Digital scan: bb

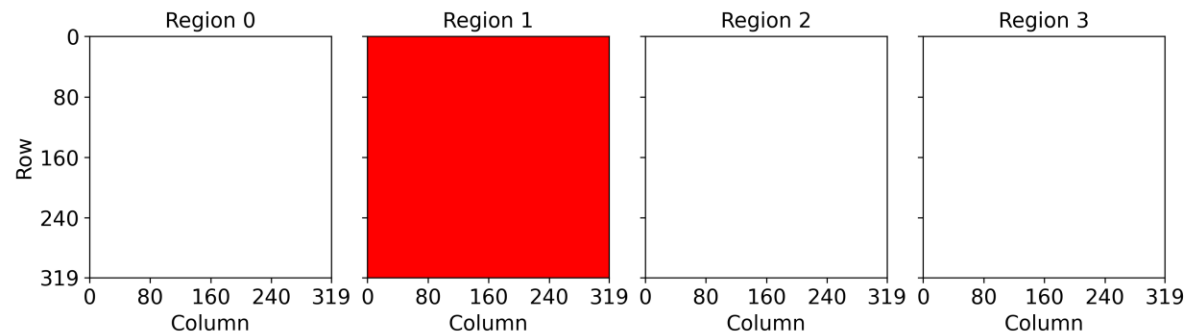
babyMOSS-2_4_W20E1 | bb hitmap | DigitalAnalogScanAnalysis



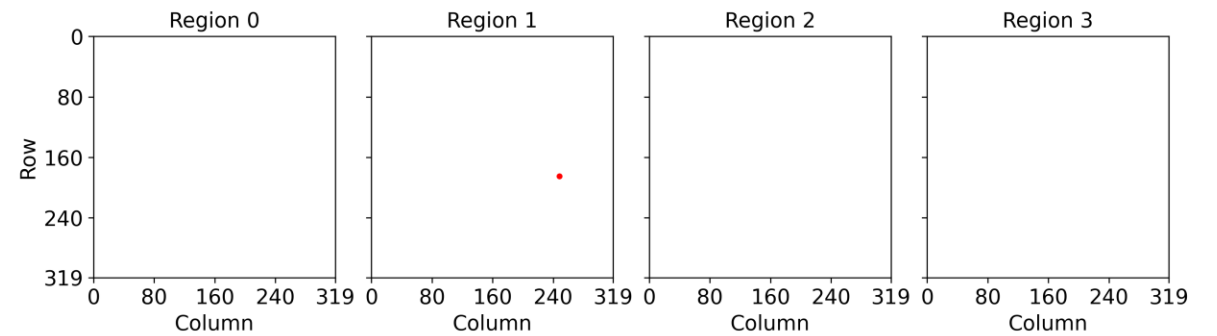
babyMOSS-2_4_W20E1 | bb inefficient pixels | DigitalAnalogScanAnalysis



babyMOSS-2_4_W20E1 | bb noisy pixels | DigitalAnalogScanAnalysis



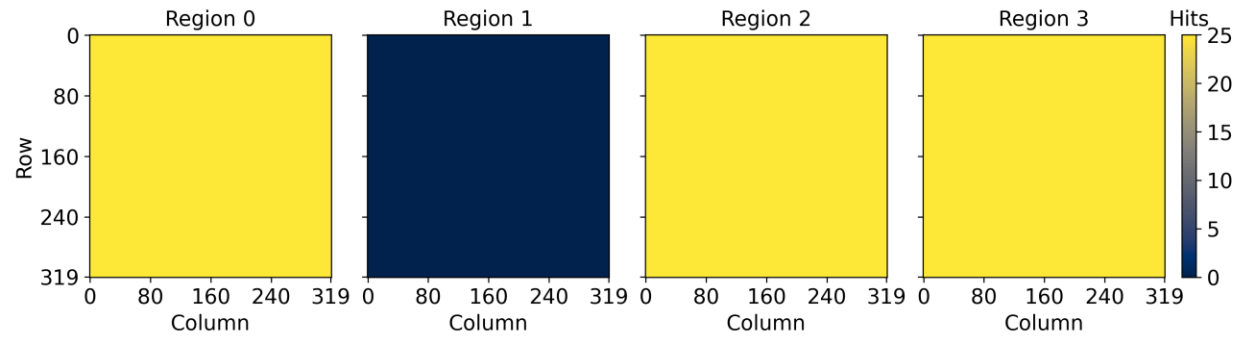
babyMOSS-2_4_W20E1 | bb dead pixels | DigitalAnalogScanAnalysis



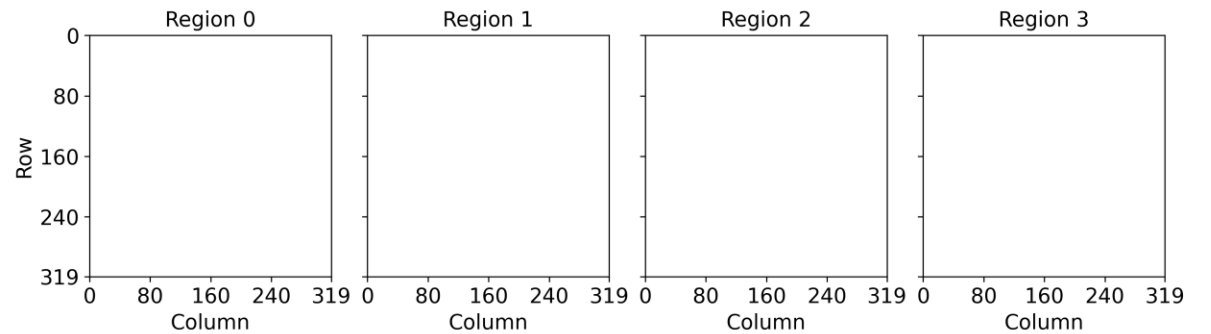
- Bb region 1 is noisy.

Digital scan: bb

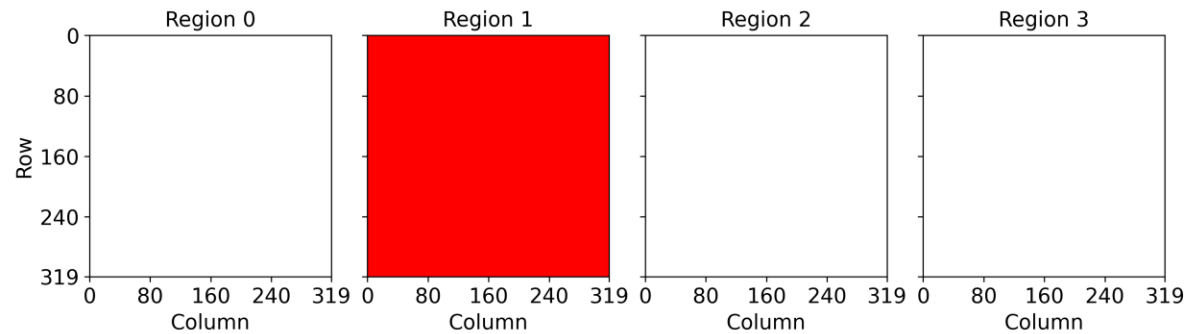
babyMOSS-2_4_W20E1 | bb hitmap | DigitalAnalogScanAnalysis



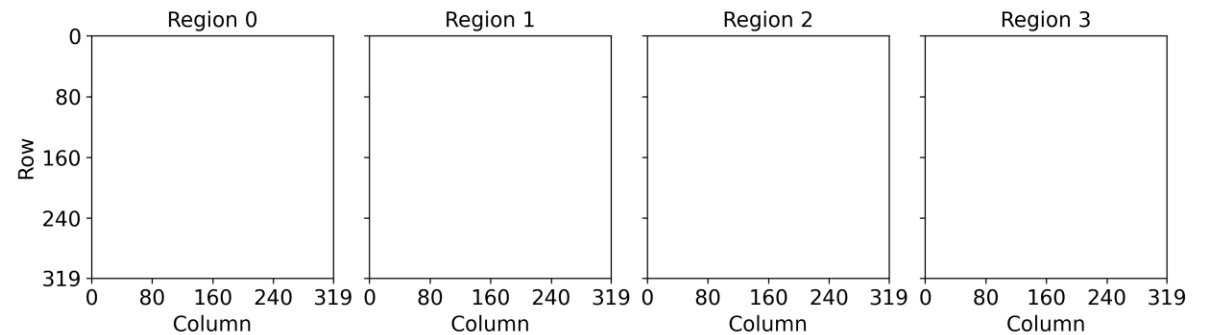
babyMOSS-2_4_W20E1 | bb noisy pixels | DigitalAnalogScanAnalysis



babyMOSS-2_4_W20E1 | bb dead pixels | DigitalAnalogScanAnalysis



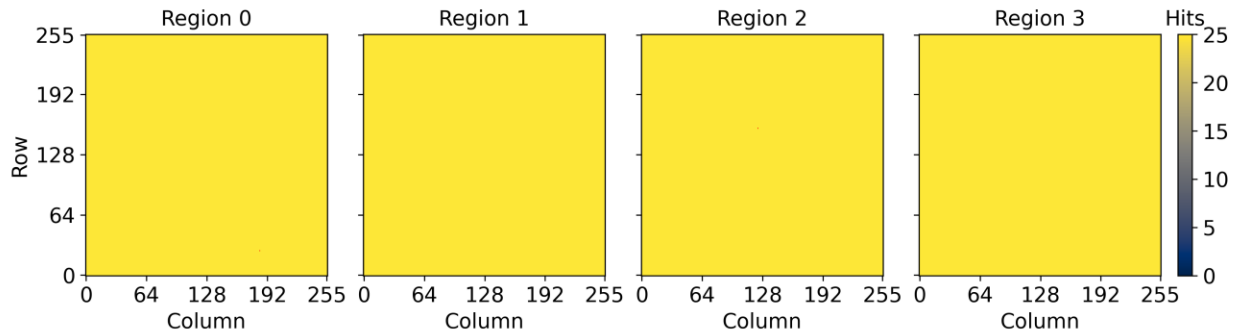
babyMOSS-2_4_W20E1 | bb inefficient pixels | DigitalAnalogScanAnalysis



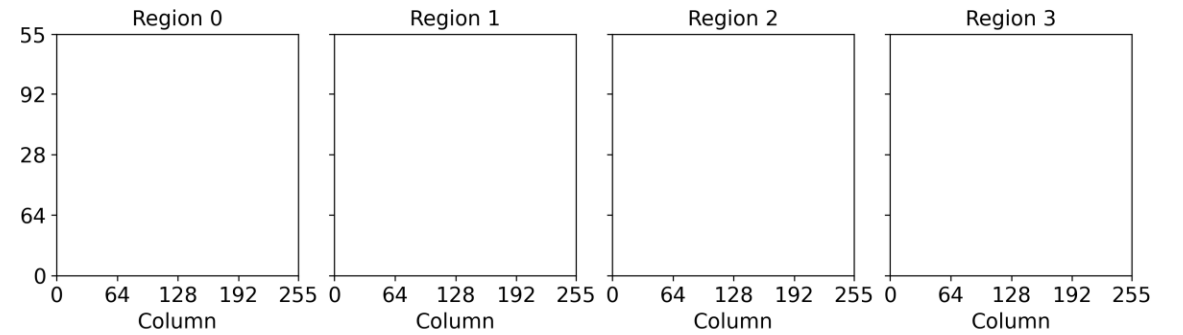
- Digital Scan test performed after masking the noisy region.

Analogue scan: tb

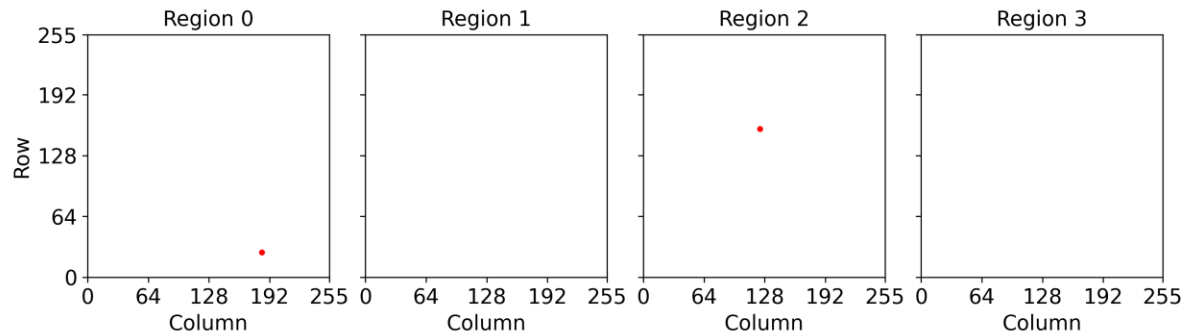
babyMOSS-2_4_W20E1 | tb hitmap | DigitalAnalogScanAnalysis



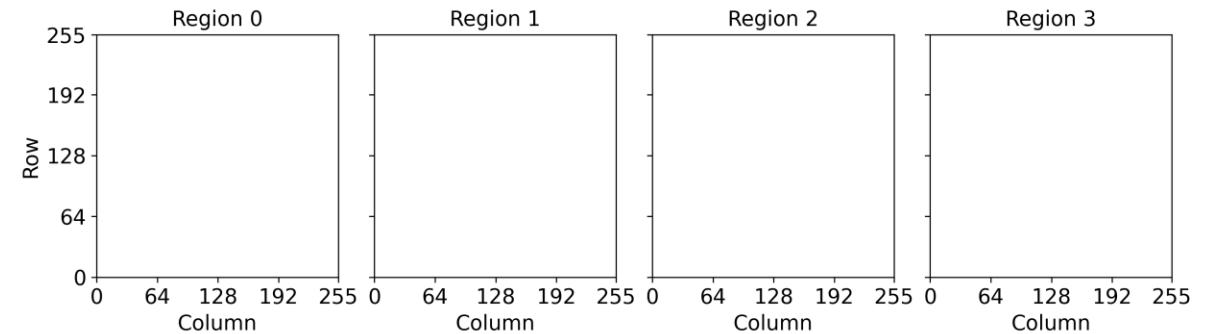
babyMOSS-2_4_W20E1 | tb inefficient pixels | DigitalAnalogScanAnalysis



babyMOSS-2_4_W20E1 | tb noisy pixels | DigitalAnalogScanAnalysis

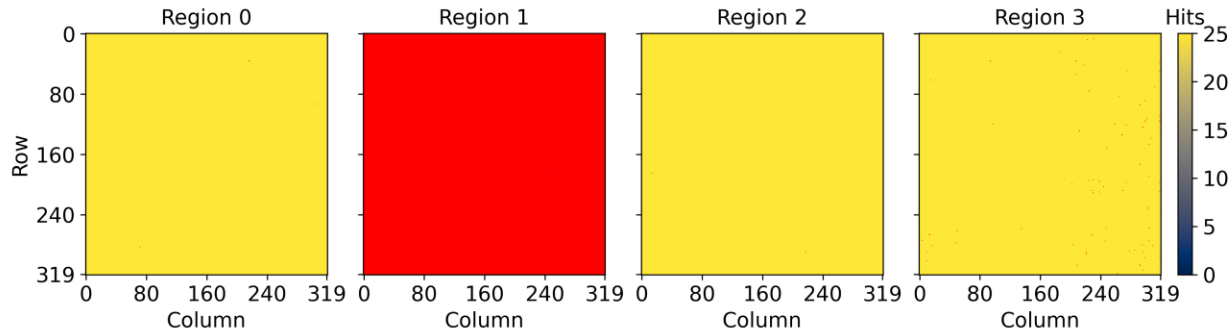


babyMOSS-2_4_W20E1 | tb dead pixels | DigitalAnalogScanAnalysis

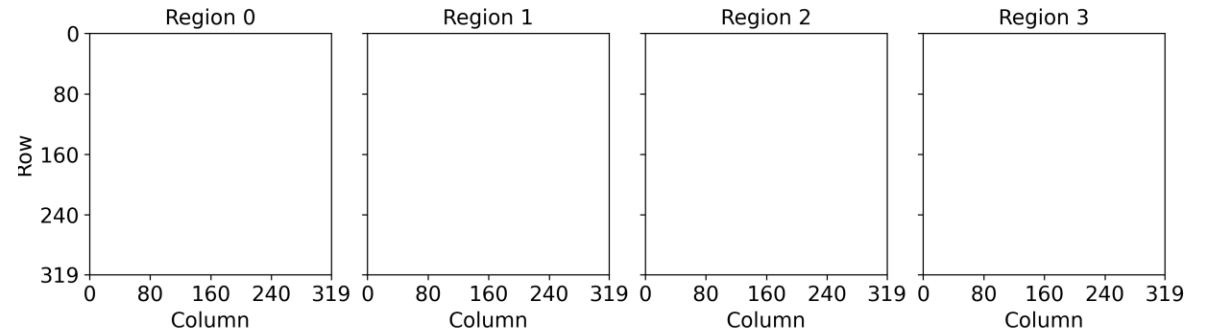


Analogue scan: bb

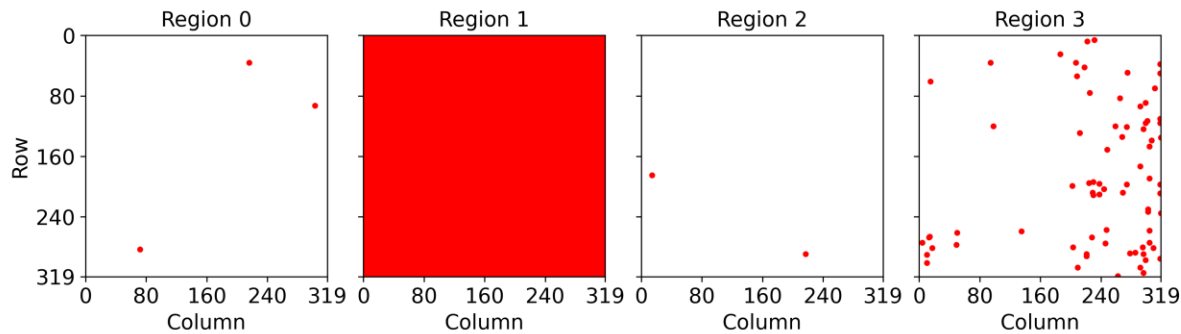
babyMOSS-2_4_W20E1 | bb hitmap | DigitalAnalogScanAnalysis



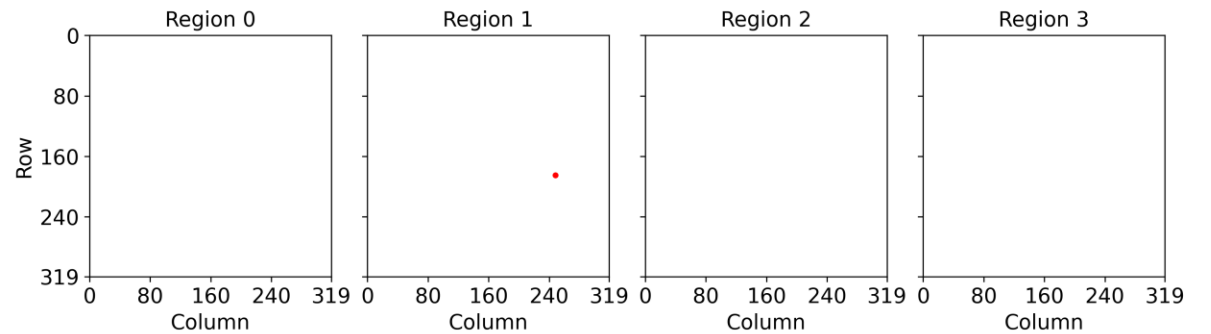
babyMOSS-2_4_W20E1 | bb inefficient pixels | DigitalAnalogScanAnalysis



babyMOSS-2_4_W20E1 | bb noisy pixels | DigitalAnalogScanAnalysis



babyMOSS-2_4_W20E1 | bb dead pixels | DigitalAnalogScanAnalysis

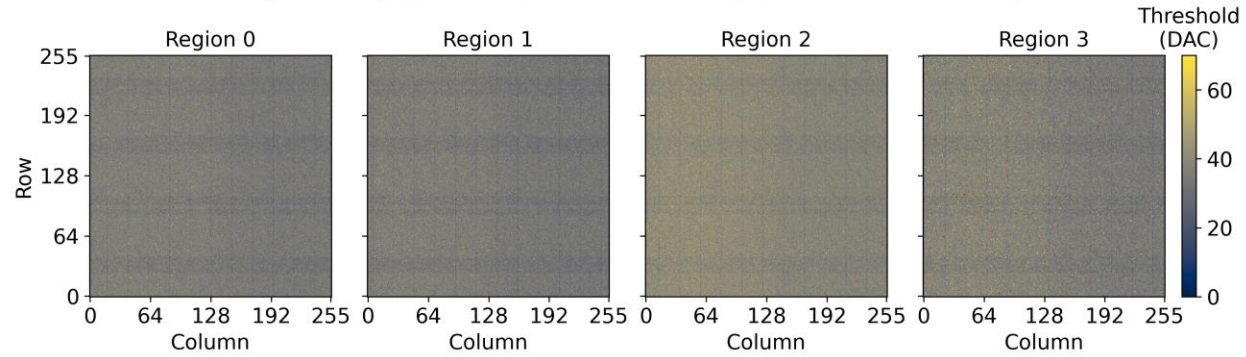


- BB region 1 is noisy

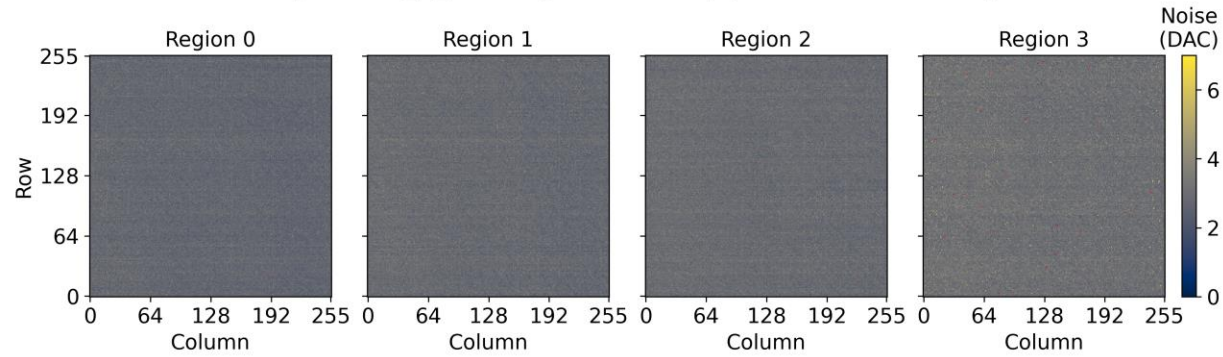
Threshold scan: tb

VCASB = 15

babyMOSS-2_4_W20E1 | tb Threshold map | ThresholdScanAnalysis

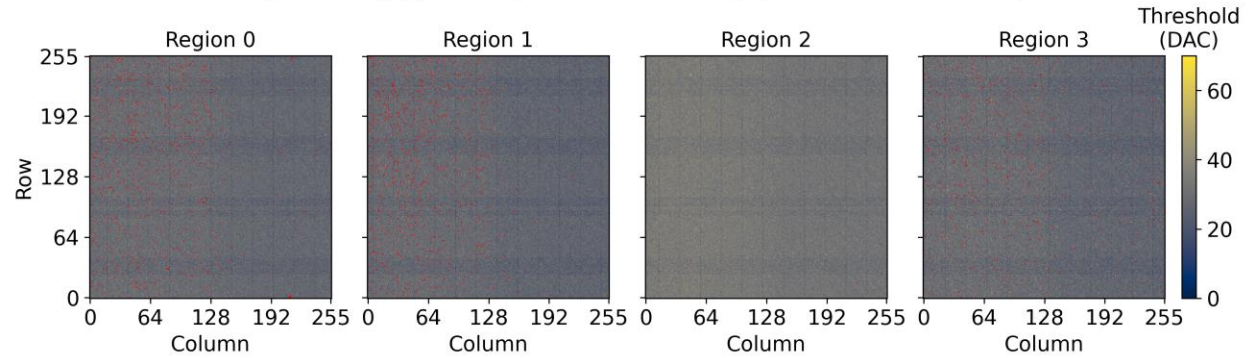


babyMOSS-2_4_W20E1 | tb Noise map | ThresholdScanAnalysis

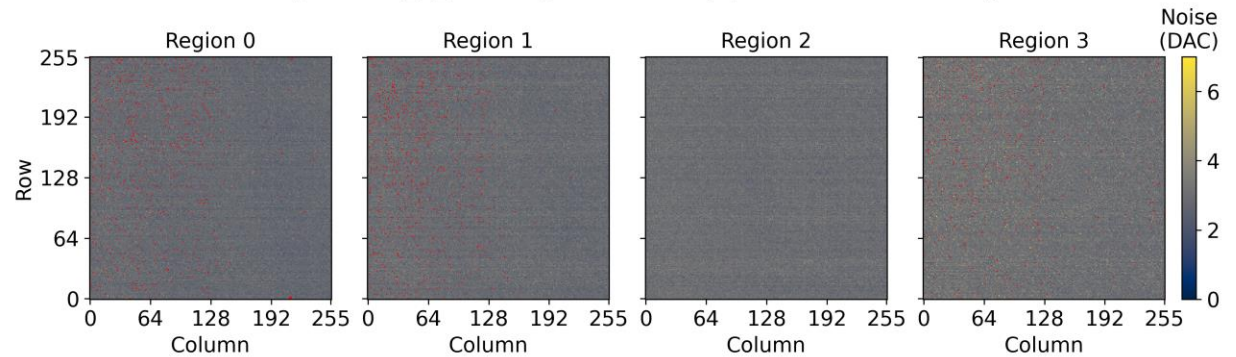


VCASB = 25

babyMOSS-2_4_W20E1 | tb Threshold map | ThresholdScanAnalysis



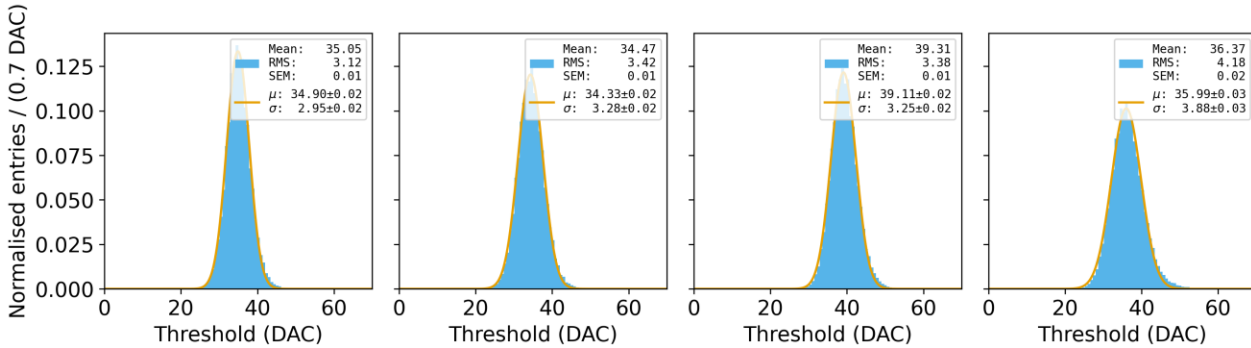
babyMOSS-2_4_W20E1 | tb Noise map | ThresholdScanAnalysis



Threshold scan: tb

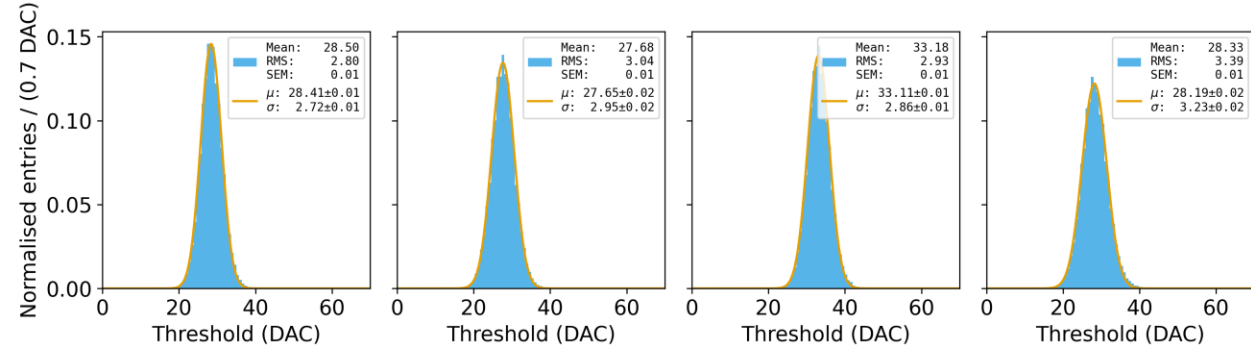
VCASB = 15

babyMOSS-2_4_W20E1 | tb Threshold distributions | ThresholdScanAnalysis

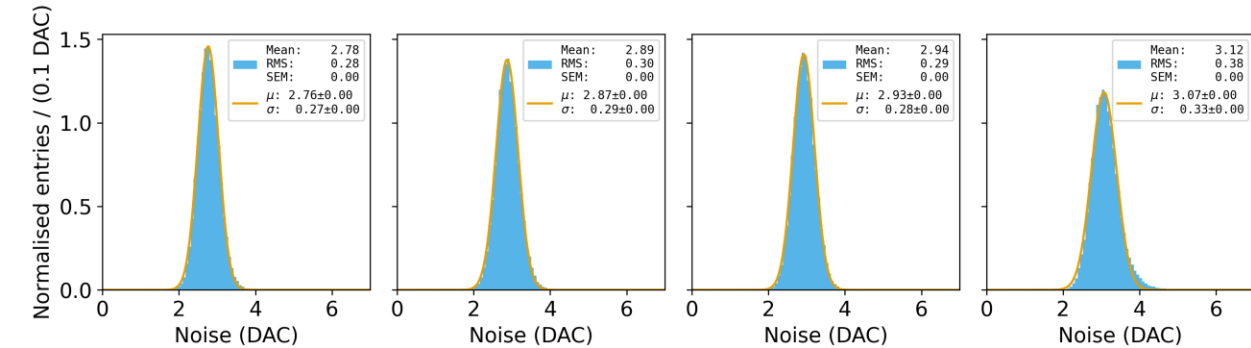


VCASB = 25

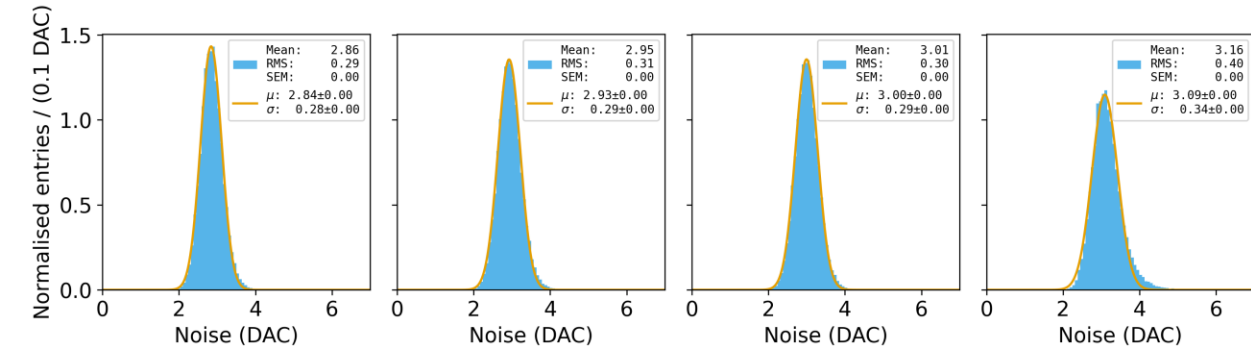
babyMOSS-2_4_W20E1 | tb Threshold distributions | ThresholdScanAnalysis



babyMOSS-2_4_W20E1 | tb Noise distributions | ThresholdScanAnalysis



babyMOSS-2_4_W20E1 | tb Noise distributions | ThresholdScanAnalysis

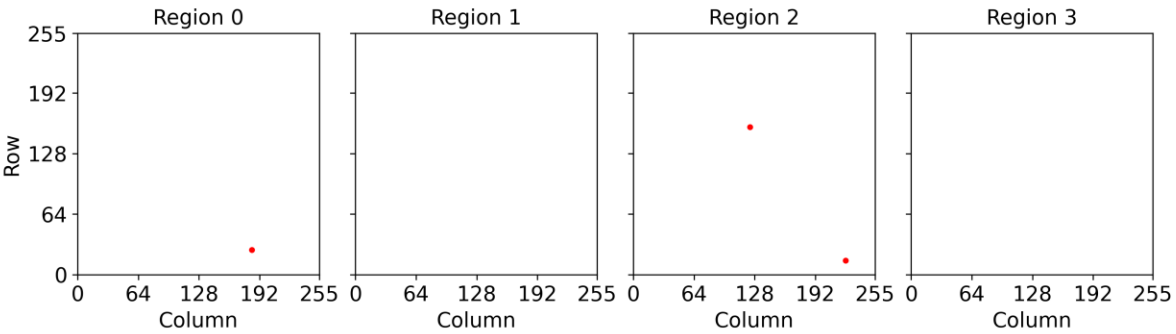


With increasing VCASB threshold value decreases.

Threshold scan: tb

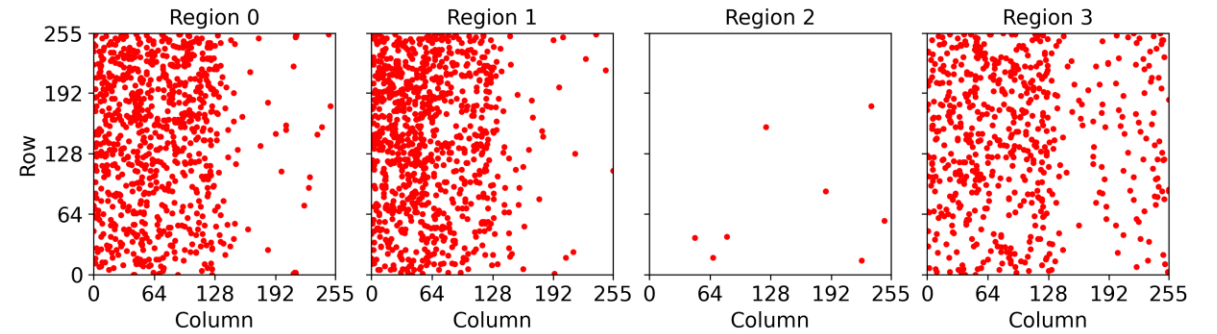
VCASB = 15

babyMOSS-2_4_W20E1 | tb noisy pixels | ThresholdScanAnalysis

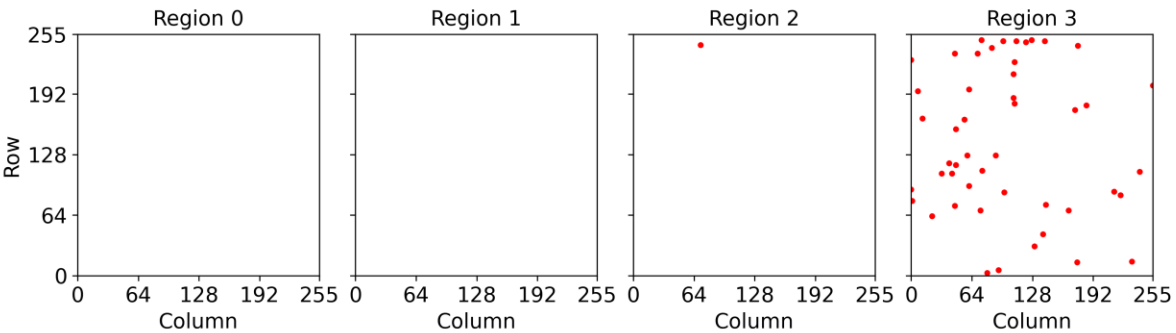


VCASB = 25

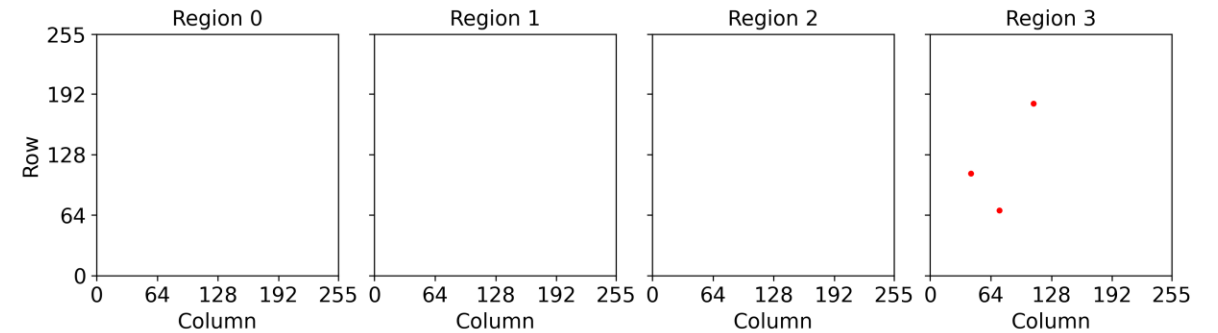
babyMOSS-2_4_W20E1 | tb noisy pixels | ThresholdScanAnalysis



babyMOSS-2_4_W20E1 | tb bad pixels | ThresholdScanAnalysis



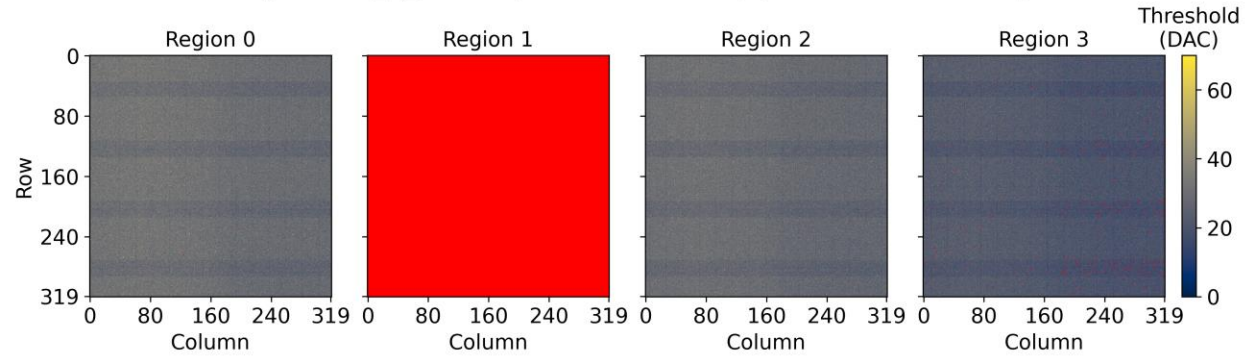
babyMOSS-2_4_W20E1 | tb bad pixels | ThresholdScanAnalysis



Threshold scan: bb

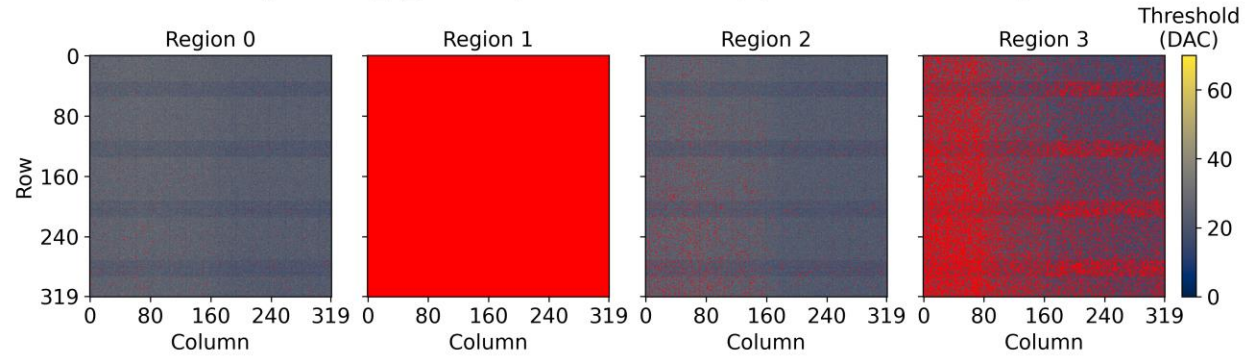
VCASB = 15

babyMOSS-2_4_W20E1 | bb Threshold map | ThresholdScanAnalysis

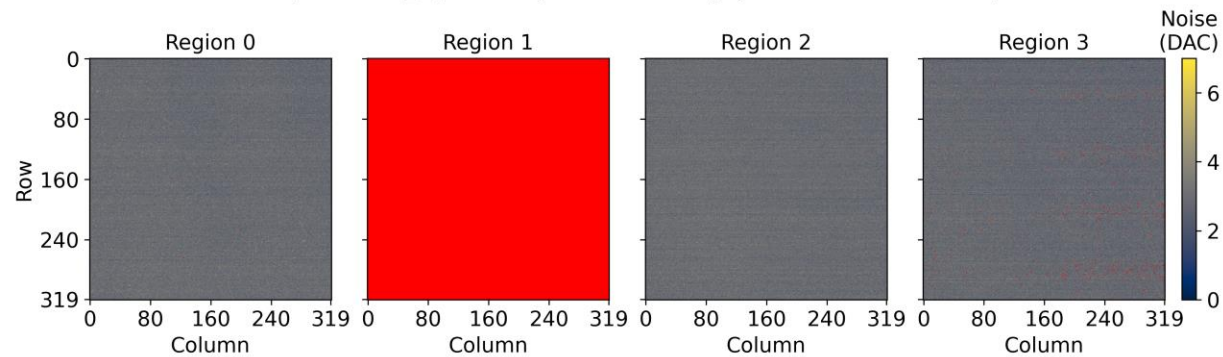


VCASB = 25

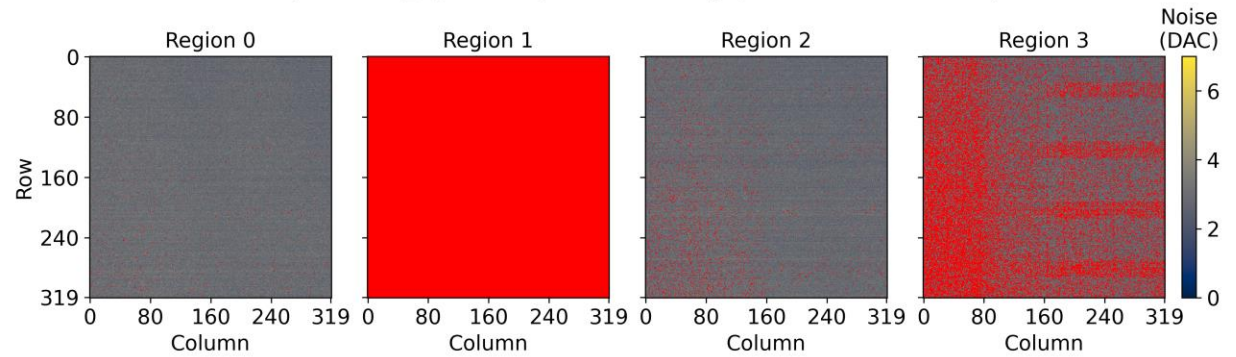
babyMOSS-2_4_W20E1 | bb Threshold map | ThresholdScanAnalysis



babyMOSS-2_4_W20E1 | bb Noise map | ThresholdScanAnalysis



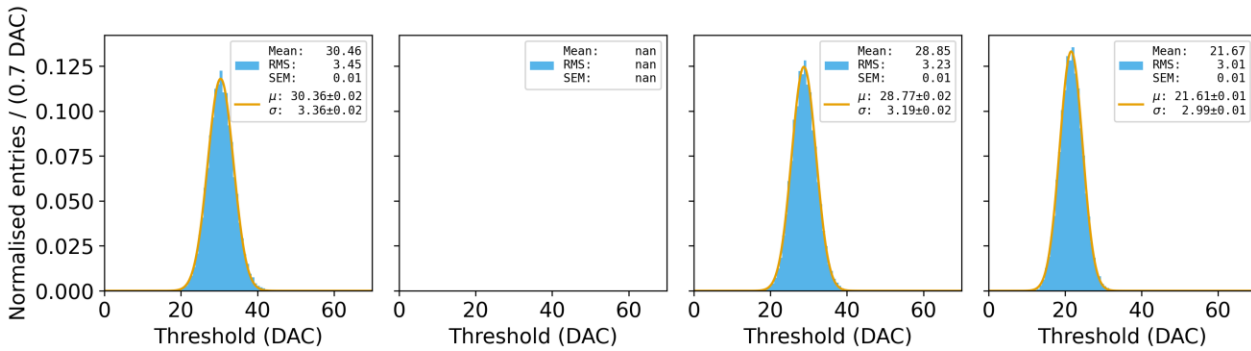
babyMOSS-2_4_W20E1 | bb Noise map | ThresholdScanAnalysis



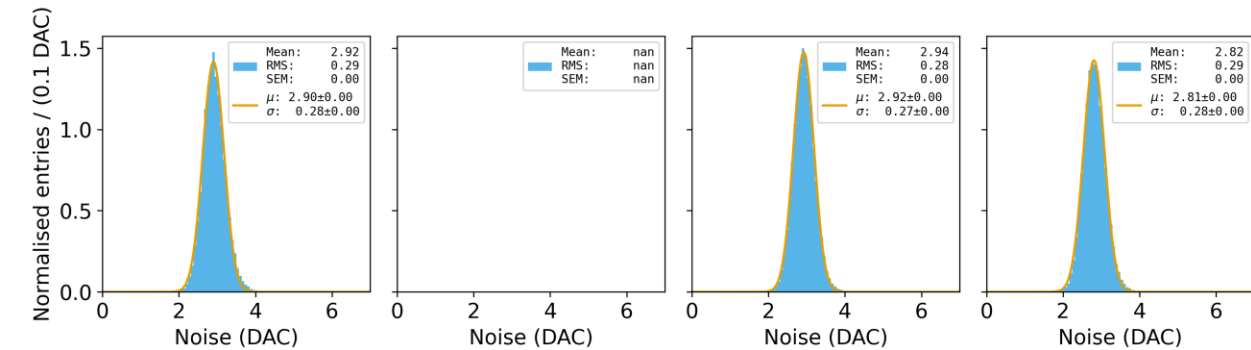
Threshold scan: bb

VCASB = 15

babyMOSS-2_4_W20E1 | bb Threshold distributions | ThresholdScanAnalysis

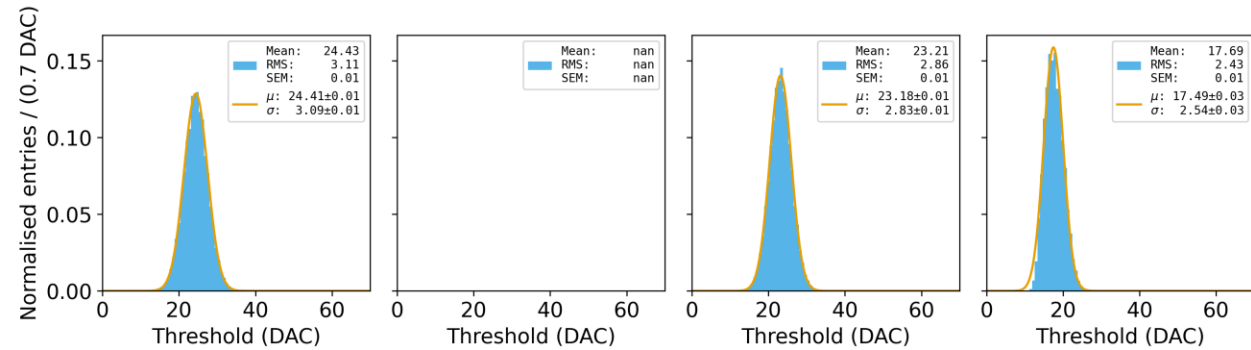


babyMOSS-2_4_W20E1 | bb Noise distributions | ThresholdScanAnalysis

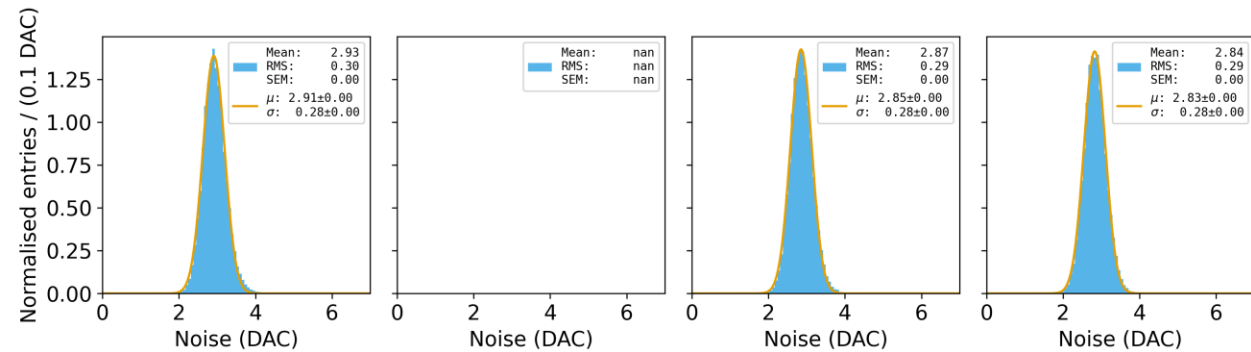


VCASB = 25

babyMOSS-2_4_W20E1 | bb Threshold distributions | ThresholdScanAnalysis



babyMOSS-2_4_W20E1 | bb Noise distributions | ThresholdScanAnalysis

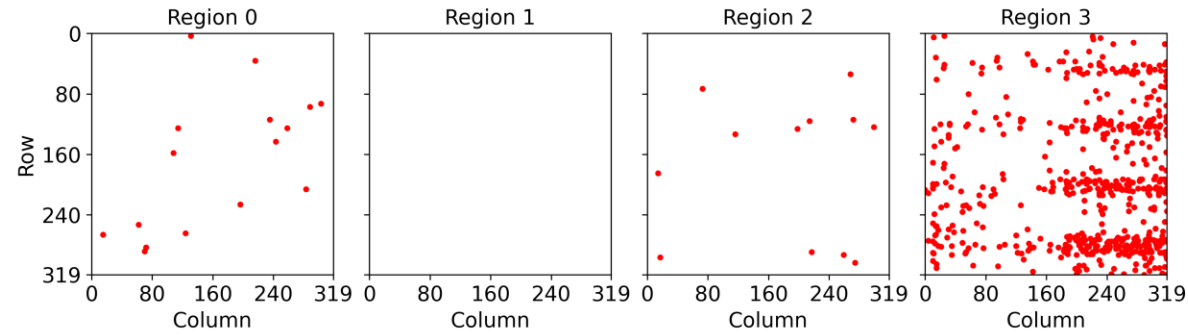


With increasing VCASB threshold value decreases.

Threshold scan: bb

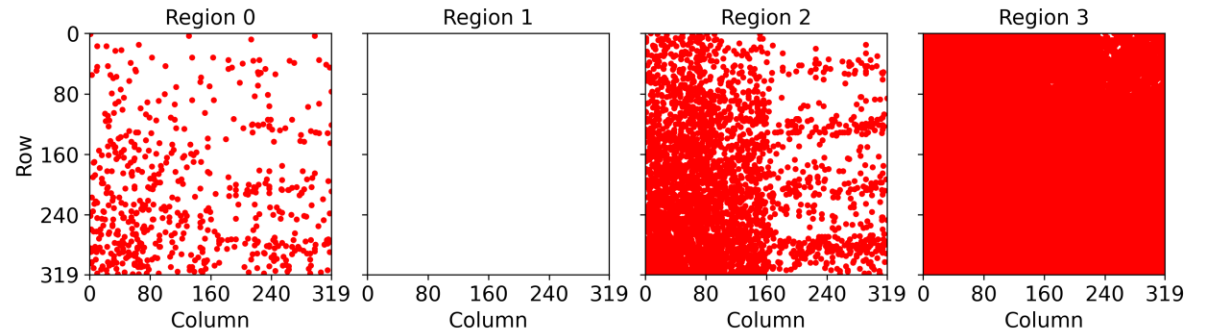
VCASB = 15

babyMOSS-2_4_W20E1 | bb noisy pixels | ThresholdScanAnalysis

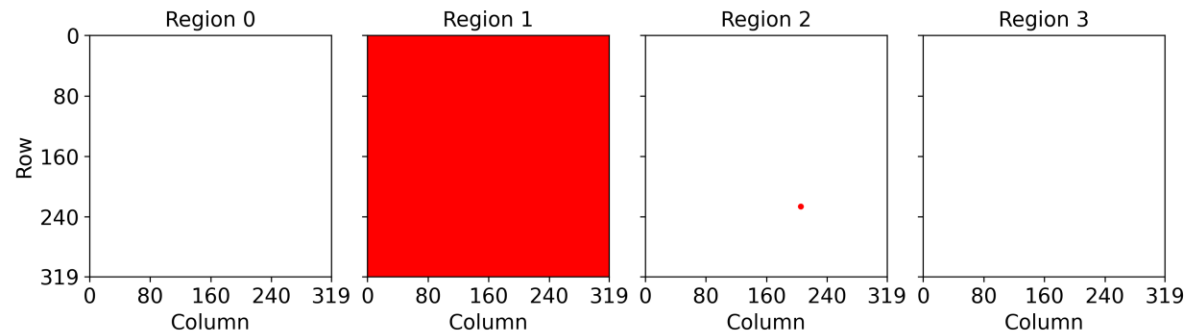


VCASB = 25

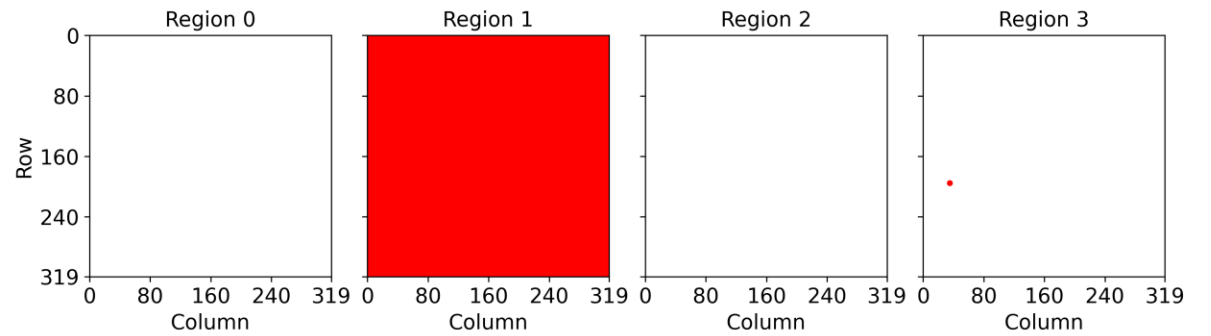
babyMOSS-2_4_W20E1 | bb noisy pixels | ThresholdScanAnalysis



babyMOSS-2_4_W20E1 | bb bad pixels | ThresholdScanAnalysis



babyMOSS-2_4_W20E1 | bb bad pixels | ThresholdScanAnalysis



Noise along the rows are probably due to the medallic lines on chips

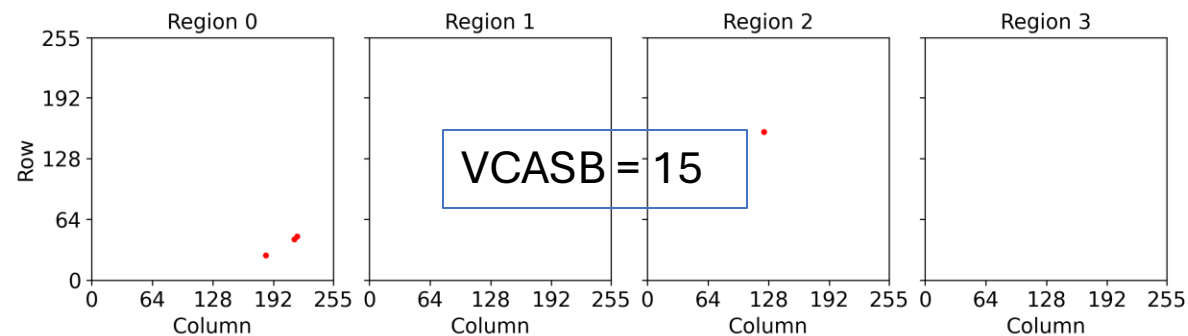
THR Scan: Different combinations of VCASB

	TB 0	TB 1	TB 2	TB 3	BB 0	BB 1	BB 2	BB3	Commet
VCASB	15	15	15	15 ¹	15	15	15	15	
THR	35.48	35.03	39.77	36.92	30.85		29.16	21.89	22.01.25, start
THR	35.24	34.78	39.66	36.66	32.33		29.03	21.81	22.01.25, end
THR	35.05	34.47	39.31	36.37	30.46		28.85	21.67	21.01.25
THR	34.91	34.44	39.22	36.29	30.35		28.76	21.59	15.01.25
VCASB	25	15	15	15	25	15 ²	15	15	
THR	27.38 ³	34.91	39.6	36.75	23.05		29.19	21.93	22.01.25
VCASB	25	10	10	10	25	10	10	10	
THR	27.24	39.67	44.8	45.56	22.69		33.3	25.41	22.01.25
VCASB	25	25	25	25	25	25	25	25	
THR	27.44	26.62	32.12	27.12	23.53		22.37	17.44	22.01.25
THR	28.5	27.68	33.08	28.33	24.43		23.21	17.69	17.01.25

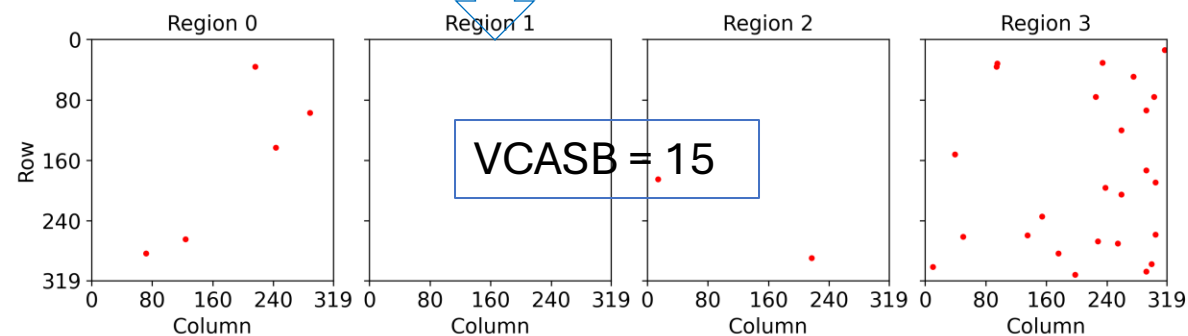
- Noise distribution in range 2.75 - 3.1
- THR is almost same for multiple scans with same VCASB
 - THR decreases with higher VCASB
 - THR depends on VCASB of the region and independent of the neighbouring regions VCASB

Fake Hit Rate scan

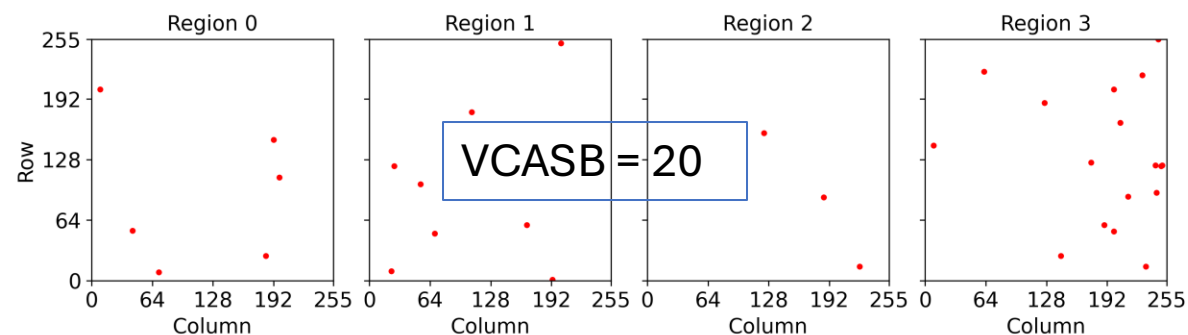
babyMOSS-2_4_W20E1 | TB scatter plot | FakeHitRateAnalysis



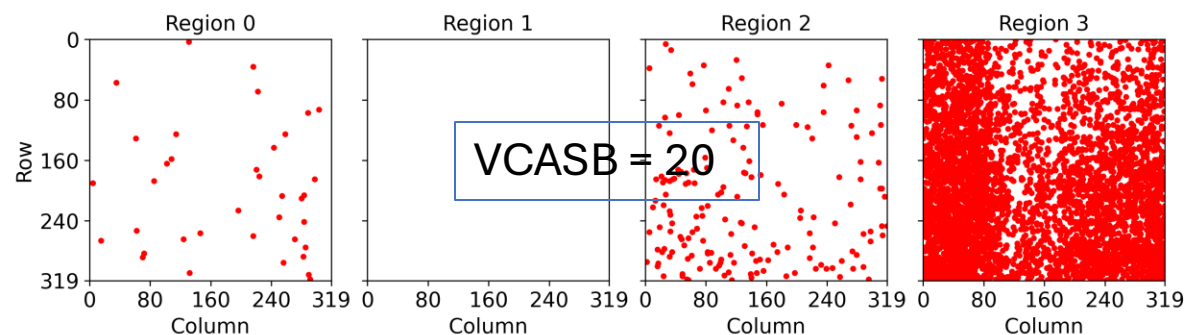
Bb region 1 masked
babyMOSS-2_4_W20E1 | BB scatter plot | FakeHitRateAnalysis



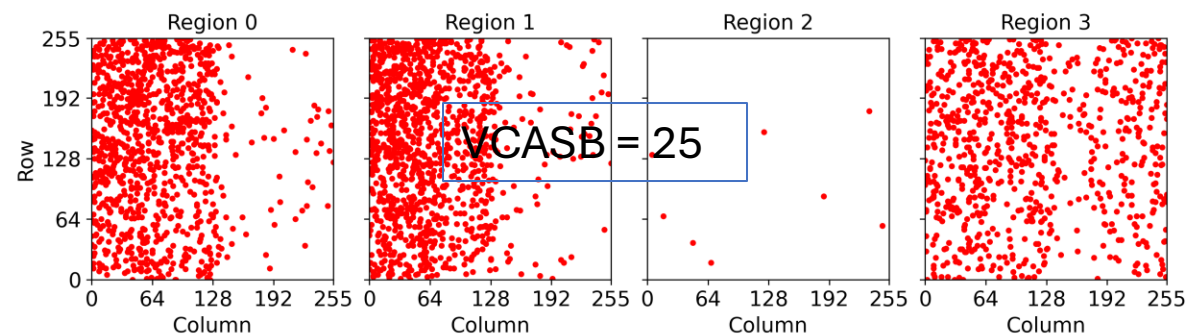
babyMOSS-2_4_W20E1 | TB scatter plot | FakeHitRateAnalysis



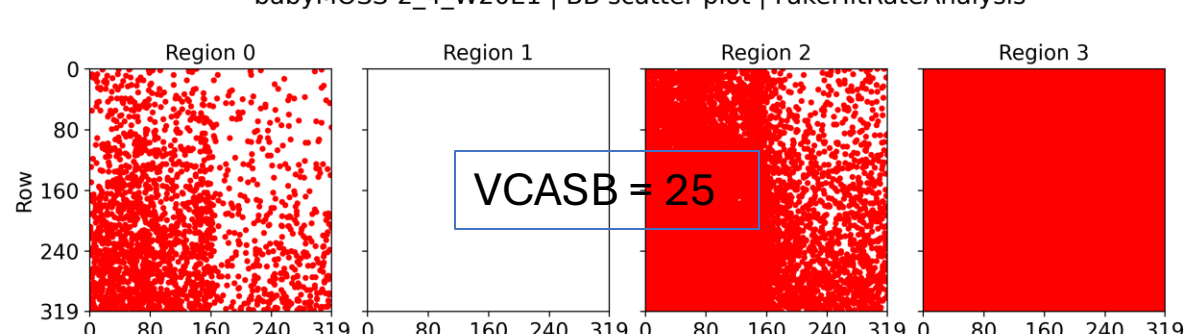
babyMOSS-2_4_W20E1 | BB scatter plot | FakeHitRateAnalysis



babyMOSS-2_4_W20E1 | TB scatter plot | FakeHitRateAnalysis



babyMOSS-2_4_W20E1 | BB scatter plot | FakeHitRateAnalysis



- With increasing VCASB the Fake Hit Rates increases
- FHR is high for the first half of the columns

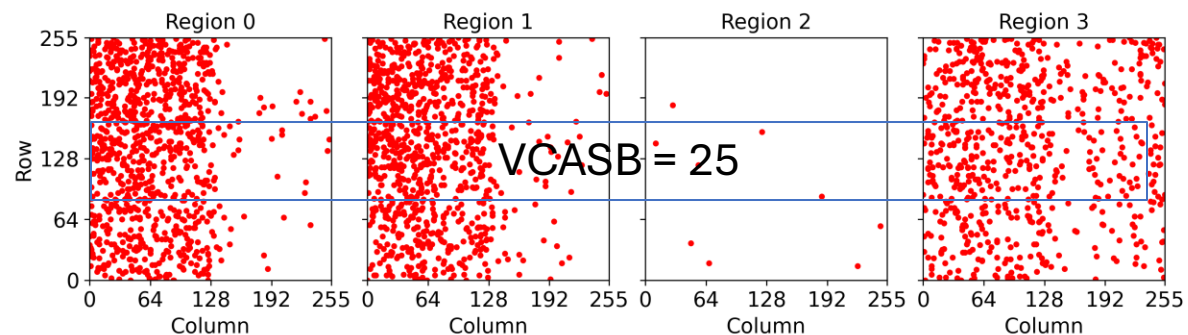
FHR Scan: Different combinations of VCASB on 22.01.2025

	TB 0	TB 1	TB 2	TB 3	BB 0	BB 1	BB 2	BB3	Commet
VCASB	25	10	10	10	25	10	10	10	
FHR	6.69E-7	0	3.05E-10	0	6.67E-6		0	2.05E-9	22.01.25
VCASB	25	15	15	15	25	15	15	15	
FHR	6.90E-7	0	1.37E-9	0	7.03E-6		2.03E-8	4.1E-8	22.01.25
VCASB	25	15	15	15	15	15	15	15	
FHR	6.43E-7	0	9.16E-10	0	9.78E-8		1.58E-8	4.1E-8	22.01.25
VCASB	25	25	25	25	25	25	25	25	
FHR	1.02E-6	9.38E-7	1.42E-8	5.57E-6	9.08E-6		2.67E-5	1.79E-4	22.01.25
VCASB	15	15	15	15	15	15	15	15	
FHR	4.35E-8	0	1.68E-9	0	8.99E-8		1.55E-8	3.85E-8	22.01.25

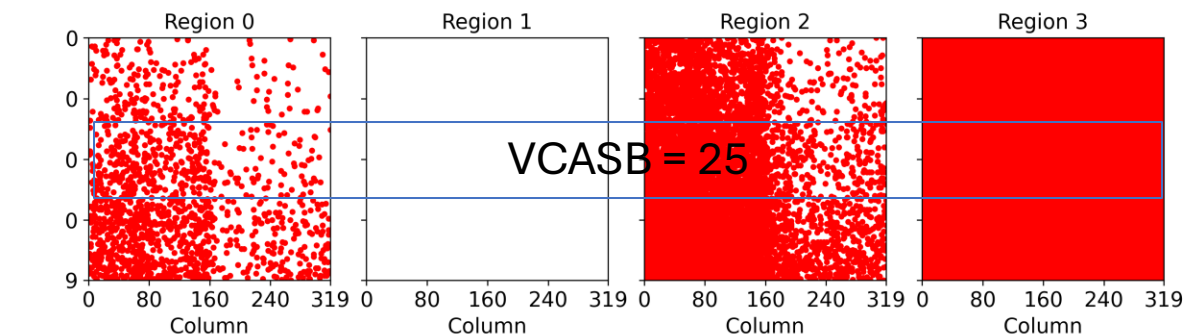
1. FHR also depends on VCASB of neighbouring regions
2. FHR increases with higher VCASB

Fake Hit Rate scan

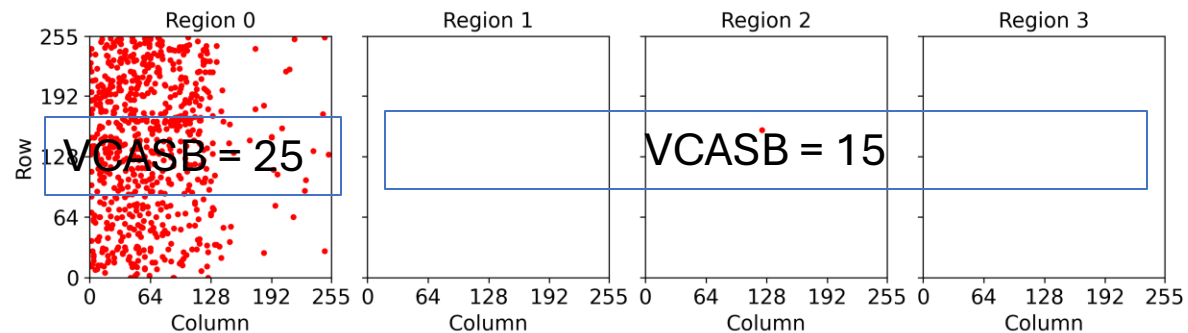
babyMOSS-2_4_W20E1 | TB scatter plot | FakeHitRateAnalysis



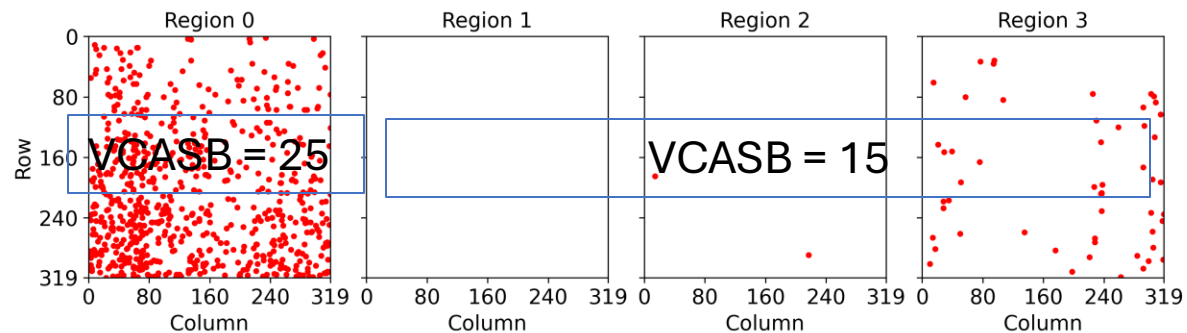
babyMOSS-2_4_W20E1 | BB scatter plot | FakeHitRateAnalysis



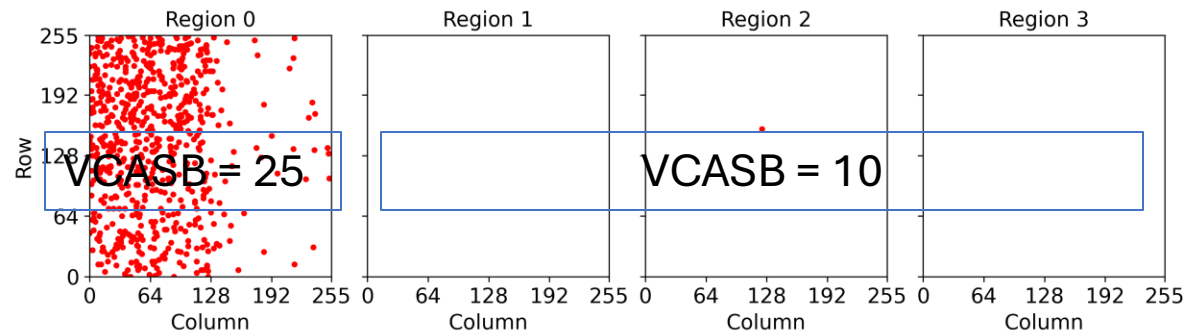
babyMOSS-2_4_W20E1 | TB scatter plot | FakeHitRateAnalysis



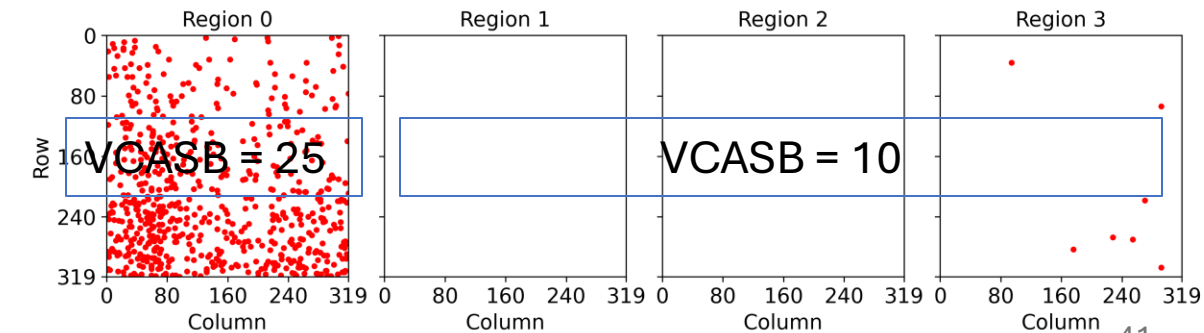
babyMOSS-2_4_W20E1 | BB scatter plot | FakeHitRateAnalysis



babyMOSS-2_4_W20E1 | TB scatter plot | FakeHitRateAnalysis



babyMOSS-2_4_W20E1 | BB scatter plot | FakeHitRateAnalysis



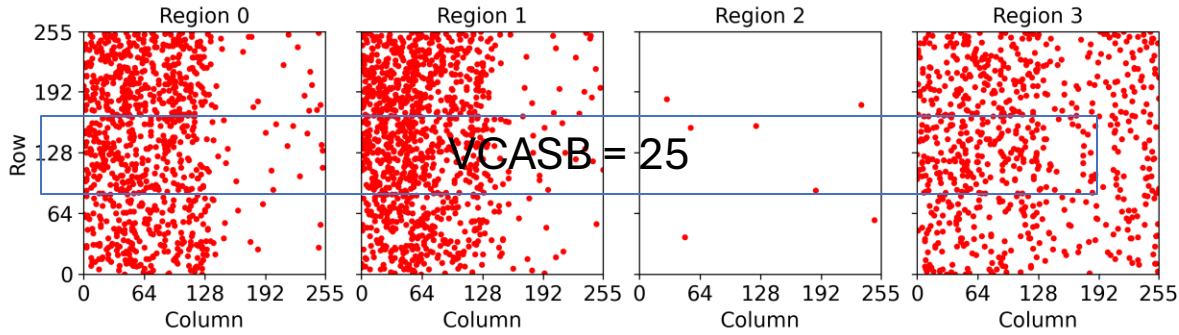
FHR Scan: Different combinations of VCASB on 24.01.2025

	TB 0	TB 1	TB 2	TB 3	BB 0	BB 1	BB 2	BB3	Commet
VCASB	10	10	10	25	10	10	10	25	
FHR	1.28E-08	0	1.53E-10	7.71E-06	8.79E-10	0	9.77E-11	0.000142064	30.01.25
FHR	1.69E-08	0	3.05E-10	6.25E-06	1.56E-08		9.77E-11	0.000126481	24.01.25
VCASB	15	15	10	25	15	15	10	25	
FHR	5.89E-08	0	0	7.64E-06	3.95E-08	0	9.77E-11	0.000150114	30.01.25
FHR	4.56E-08	0	3.05E-10	5.74E-06	3.27E-08		0	0.000121594	24.01.25
VCASB	15	15	15	15	15	15	15	25	
FHR	4.91E-08	0	1.98E-09	0	3.66E-06		3.41E-08	0.000134969	24.01.25
VCASB	15	15	15	25	15	15	15	25	
FHR	4.79E-08	0	7.63E-10	7.76E-06	3.86E-08	0	5.66E-08	0.000159155	30.01.25
FHR	5.34E-08	0	1.68E-09	5.71E-06	3.80E-08		3.01E-08	0.000128104	24.01.25
VCASB	20	20	20	25	20	20	20	25	
FHR	9.58E-08	2.59E-09	3.51E-09	8.36E-06	5.84E-07	0	2.49E-06	0.000192325	30.01.25
FHR	9.66E-08	3.51E-09	3.36E-09	7.02E-06	5.61E-07		2.15E-06	1.70E-04	24.01.25
VCASB	25	25	25	25	25	25	25	25	
FHR	1.45E-06	1.55E-06	1.74E-08	8.99E-06	1.26E-05	0	4.17E-05	0.000274743	30.01.25
FHR	1.07E-06	1.09E-06	1.74E-08	6.35E-06	1.00E-05		3.07E-05	0.000203257	24.01.25
FHR	1.02E-06	9.38E-07	1.42E-08	5.57E-06	9.08E-06		2.67E-05	1.79E-04	22.01.25
VCASB	15	15	15	15	15	15	15	15	
FHR	5.43E-08	0	2.29E-09	0	3.92E-08	0	3.65E-08	5.62E-08	30.01.25
FHR	4.36E-08	0	1.53E-09	0	3.54E-08		1.46E-08	3.23E-08	24.01.25
FHR	4.35E-08	0	1.68E-09	0	8.99E-08		1.55E-08	3.85E-08	22.01.25

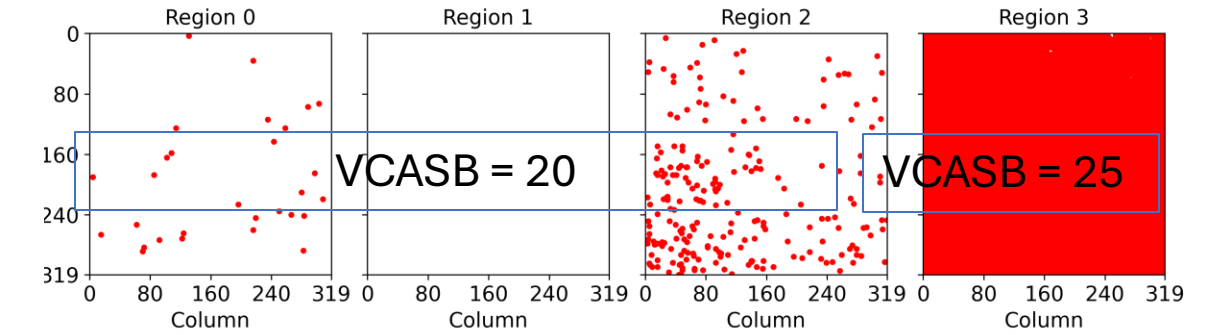
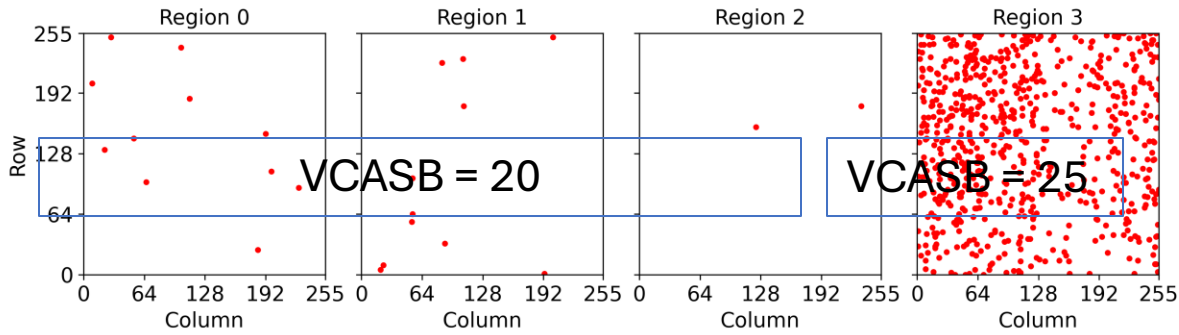
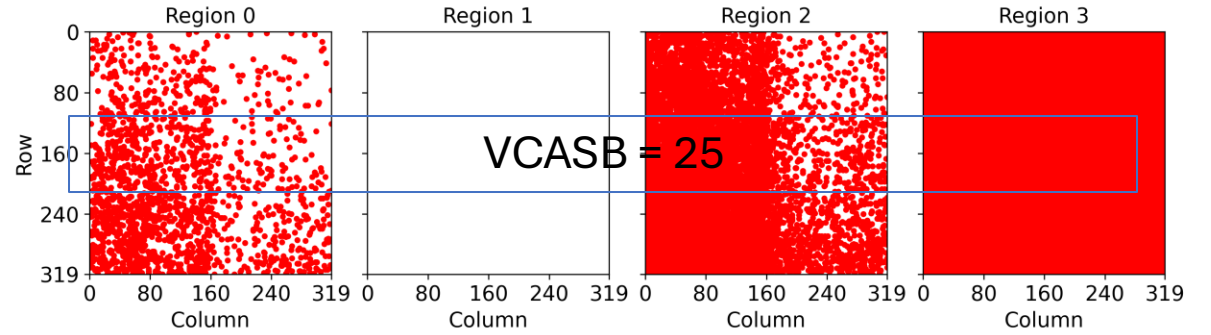
Unexpectedly different in FHR

FHR Scan: Different combinations of VCASB on 24.01.2025

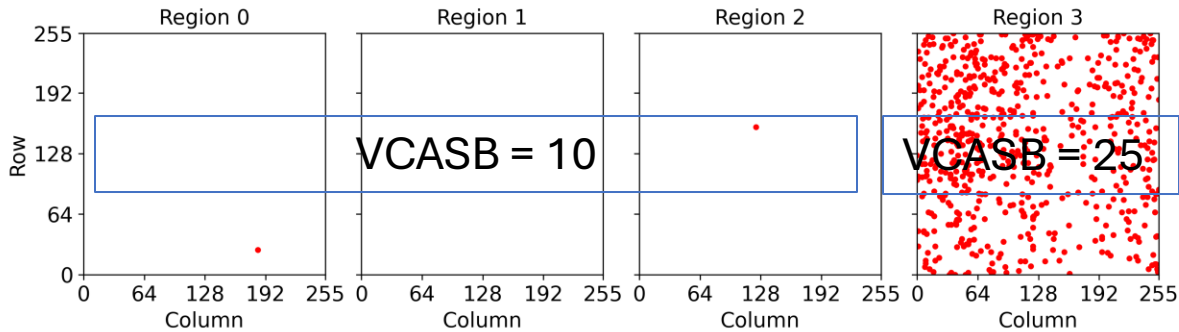
babyMOSS-2_4_W20E1 | TB scatter plot | FakeHitRateAnalysis



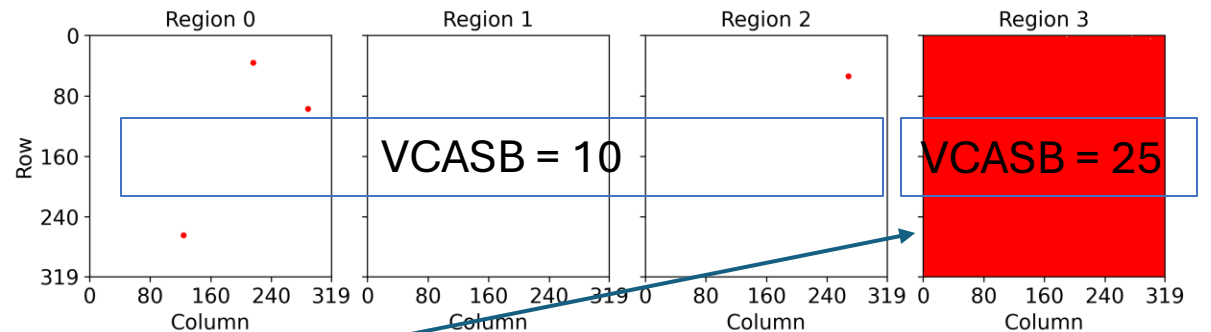
babyMOSS-2_4_W20E1 | BB scatter plot | FakeHitRateAnalysis



babyMOSS-2_4_W20E1 | TB scatter plot | FakeHitRateAnalysis



babyMOSS-2_4_W20E1 | BB scatter plot | FakeHitRateAnalysis



From the scattered plot, it is impossible to see the changes of FHR with various VCASB setting in bb region 3⁴³