

KLM Bubbler updates

Prevent overcounting of bubbles

Sayan Mitra, 11th October, 2023

- Take a rising edge
- If another rising edge found within 200 ms (nominal bubble signal length), drop it

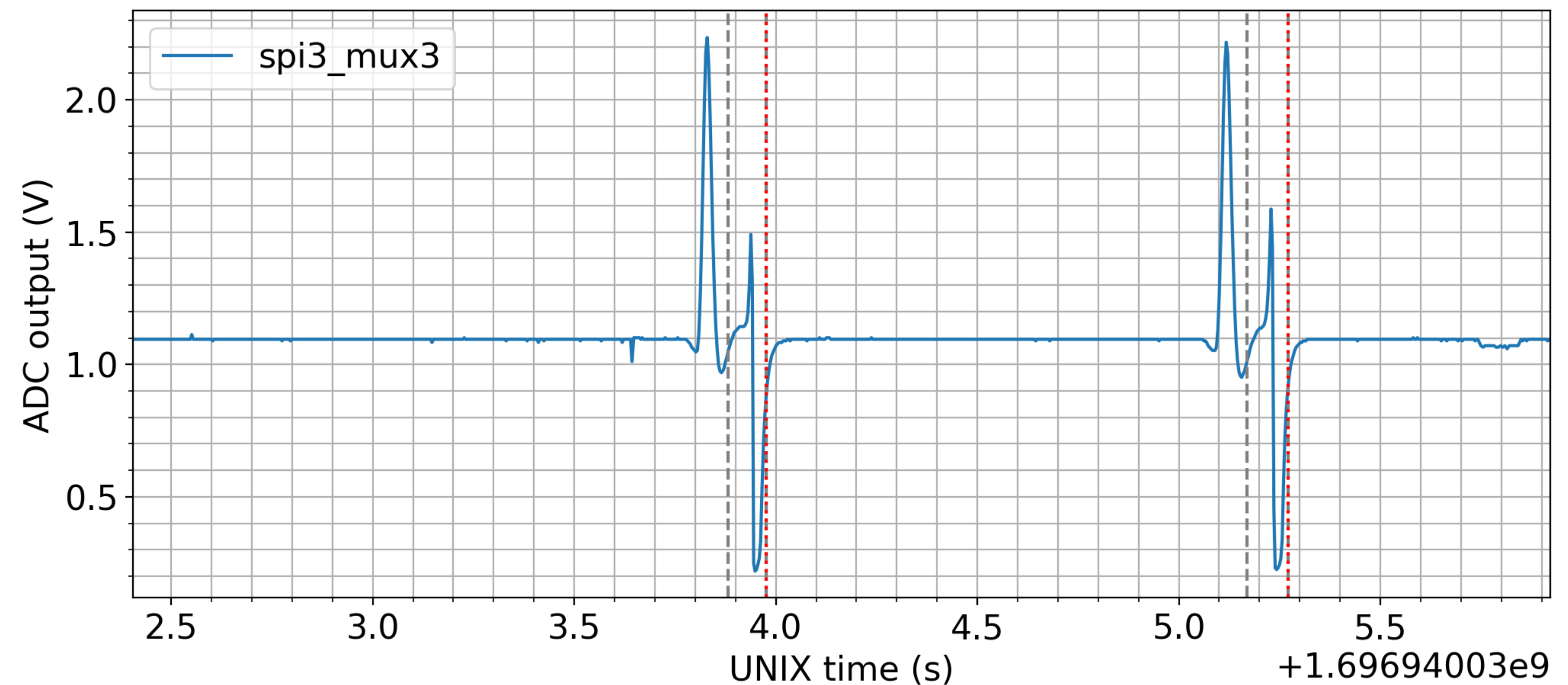
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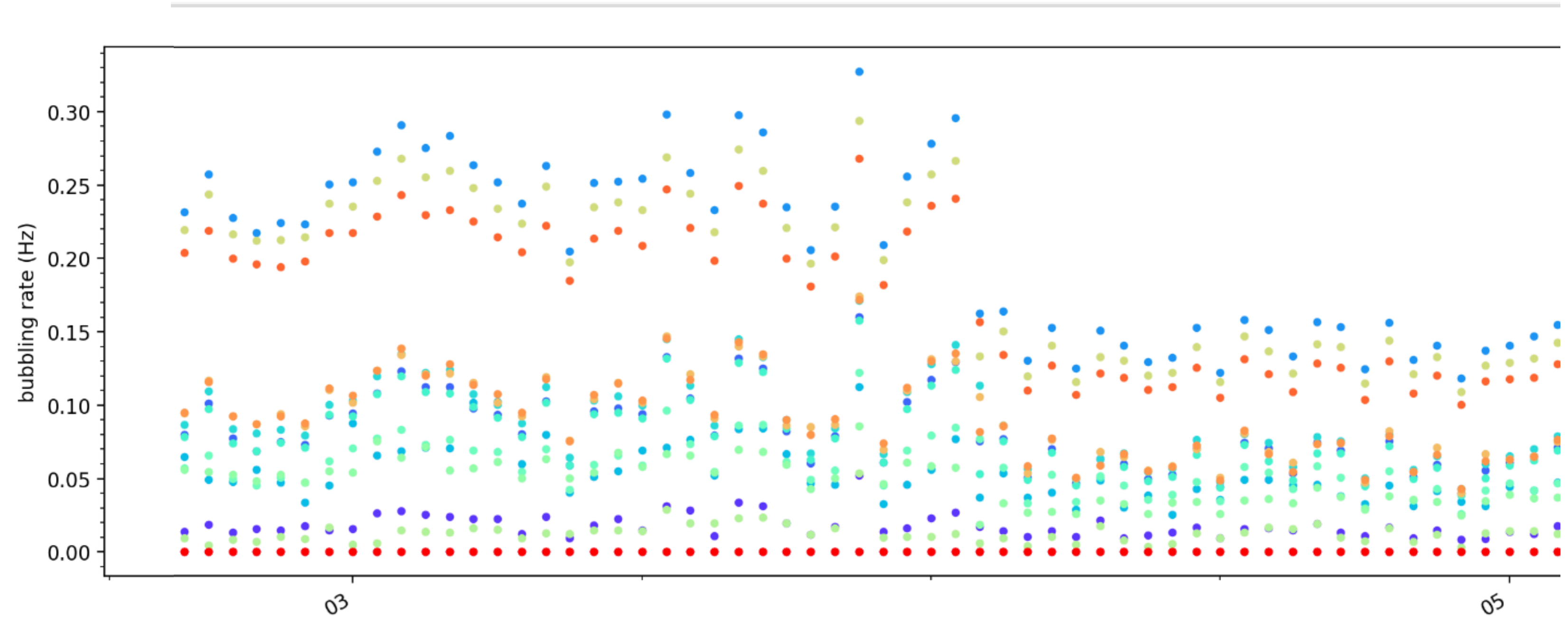
- Take a rising edge
- If another rising edge found within 200 ms (nominal bubble signal length), drop it

Red: signals after dropping fakes
Gray: signals before dropping fakes



Prevent overcounting of bubbles

Sayan



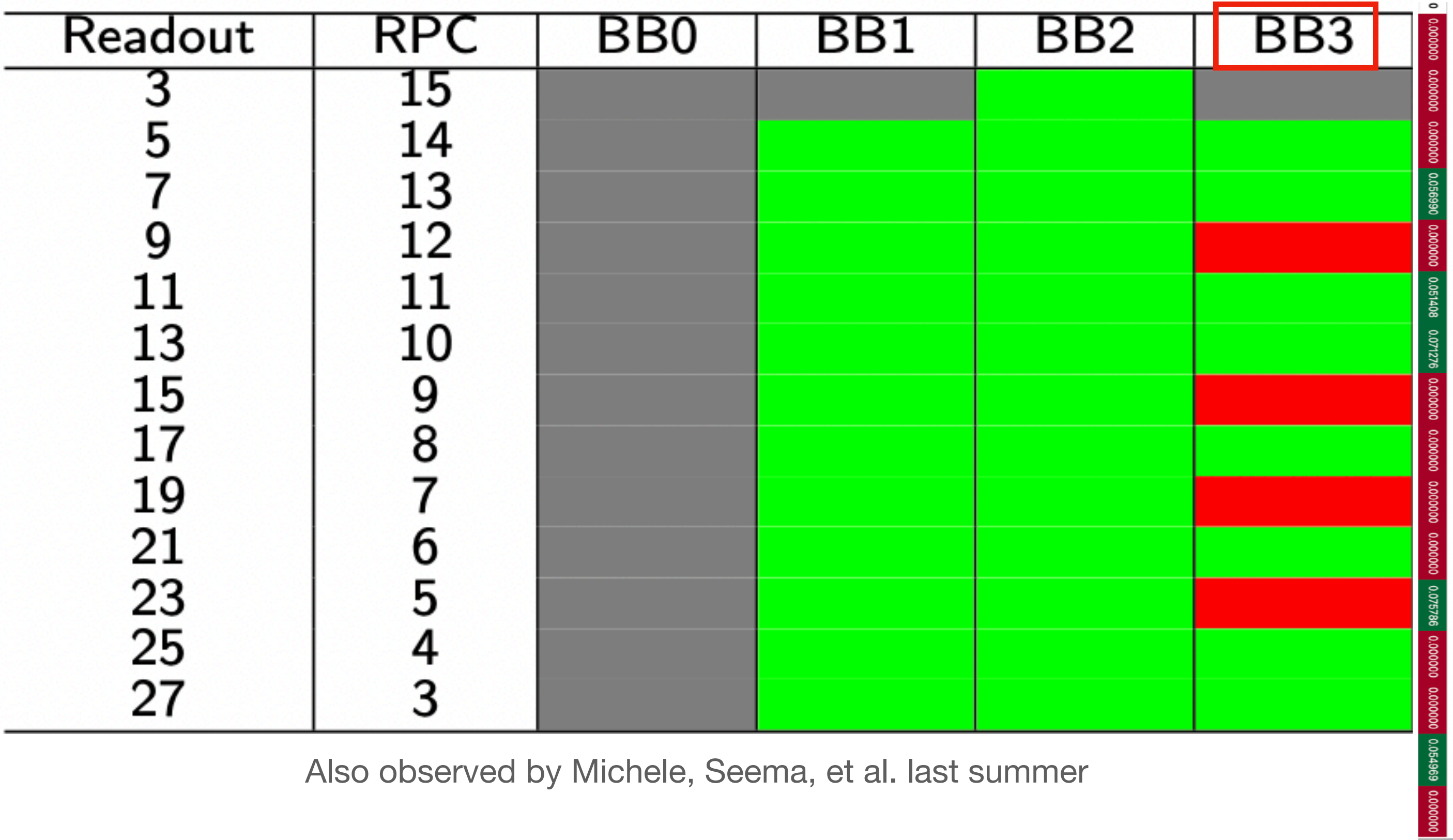
| | 1 day average | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----|----|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Pi1 connected to BKLM B3 inner RPC return side bubbler | <table><tr><th></th><th>1</th><th>3</th><th>5</th><th>7</th><th>9</th><th>11</th><th>13</th><th>15</th><th>17</th><th>19</th><th>21</th><th>23</th><th>25</th><th>27</th><th>29</th><th>31</th></tr><tr><th>time</th><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2023-10-06 00:00:00</td><td>0.000000</td><td>0.000000</td><td>0.000000</td><td>0.056990</td><td>0.000000</td><td>0.051408</td><td>0.071276</td><td>0.000000</td><td>0.000000</td><td>0.000000</td><td>0.000000</td><td>0.075786</td><td>0.000000</td><td>0.000000</td><td>0.054969</td><td>0.000000</td></tr><tr><td>2023-10-07 00:00:00</td><td>0.000000</td><td>0.000000</td><td>0.000000</td><td>0.062326</td><td>0.000000</td><td>0.052268</td><td>0.071855</td><td>0.000000</td><td>0.000000</td><td>0.000000</td><td>0.000000</td><td>0.063355</td><td>0.000000</td><td>0.000000</td><td>0.055174</td><td>0.000000</td></tr><tr><td>2023-10-08 00:00:00</td><td>0.000000</td><td>0.000000</td><td>0.000000</td><td>0.068252</td><td>0.000000</td><td>0.059245</td><td>0.079906</td><td>0.000000</td><td>0.000000</td><td>0.000000</td><td>0.000000</td><td>0.011712</td><td>0.000014</td><td>0.000000</td><td>0.063403</td><td>0.000000</td></tr><tr><td>2023-10-09 00:00:00</td><td>0.000000</td><td>0.000000</td><td>0.000000</td><td>0.064511</td><td>0.000000</td><td>0.063617</td><td>0.083277</td><td>0.000000</td><td>0.000000</td><td>0.000234</td><td>0.000000</td><td>0.000000</td><td>0.000617</td><td>0.000000</td><td>0.069085</td><td>0.000000</td></tr></table> | | 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | time | | | | | | | | | | | | | | | | | 2023-10-06 00:00:00 | 0.000000 | 0.000000 | 0.000000 | 0.056990 | 0.000000 | 0.051408 | 0.071276 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.075786 | 0.000000 | 0.000000 | 0.054969 | 0.000000 | 2023-10-07 00:00:00 | 0.000000 | 0.000000 | 0.000000 | 0.062326 | 0.000000 | 0.052268 | 0.071855 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.063355 | 0.000000 | 0.000000 | 0.055174 | 0.000000 | 2023-10-08 00:00:00 | 0.000000 | 0.000000 | 0.000000 | 0.068252 | 0.000000 | 0.059245 | 0.079906 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.011712 | 0.000014 | 0.000000 | 0.063403 | 0.000000 | 2023-10-09 00:00:00 | 0.000000 | 0.000000 | 0.000000 | 0.064511 | 0.000000 | 0.063617 | 0.083277 | 0.000000 | 0.000000 | 0.000234 | 0.000000 | 0.000000 | 0.000617 | 0.000000 | 0.069085 | 0.000000 |
| | 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| time | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023-10-06 00:00:00 | 0.000000 | 0.000000 | 0.000000 | 0.056990 | 0.000000 | 0.051408 | 0.071276 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.075786 | 0.000000 | 0.000000 | 0.054969 | 0.000000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023-10-07 00:00:00 | 0.000000 | 0.000000 | 0.000000 | 0.062326 | 0.000000 | 0.052268 | 0.071855 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.063355 | 0.000000 | 0.000000 | 0.055174 | 0.000000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023-10-08 00:00:00 | 0.000000 | 0.000000 | 0.000000 | 0.068252 | 0.000000 | 0.059245 | 0.079906 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.011712 | 0.000014 | 0.000000 | 0.063403 | 0.000000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023-10-09 00:00:00 | 0.000000 | 0.000000 | 0.000000 | 0.064511 | 0.000000 | 0.063617 | 0.083277 | 0.000000 | 0.000000 | 0.000234 | 0.000000 | 0.000000 | 0.000617 | 0.000000 | 0.069085 | 0.000000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Red: no signals
green: signals

| | | | | | | | | | | | | | | | | | |
|--|---------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 1 day average | | | | | | | | | | | | | | | | |
| Pi1 connected to BKLM B3 inner RPC return side bubbler | | | | | | | | | | | | | | | | | |
| | | 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 |
| | time | | | | | | | | | | | | | | | | |
| | 2023-10-06 00:00:00 | 0.000000 | 0.000000 | 0.000000 | 0.056990 | 0.000000 | 0.051408 | 0.071276 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.075786 | 0.000000 | 0.000000 | 0.054969 | 0.000000 |
| | 2023-10-07 00:00:00 | 0.000000 | 0.000000 | 0.000000 | 0.062326 | 0.000000 | 0.052268 | 0.071855 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.063355 | 0.000000 | 0.000000 | 0.055174 | 0.000000 |
| | 2023-10-08 00:00:00 | 0.000000 | 0.000000 | 0.000000 | 0.068252 | 0.000000 | 0.059245 | 0.079906 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.011712 | 0.000014 | 0.000000 | 0.063403 | 0.000000 |
| | 2023-10-09 00:00:00 | 0.000000 | 0.000000 | 0.000000 | 0.064511 | 0.000000 | 0.063617 | 0.083277 | 0.000000 | 0.000000 | 0.000234 | 0.000000 | 0.000000 | 0.000617 | 0.000000 | 0.069085 | 0.000000 |

Red: no signals
green: signals

Sayan



Also observed by Michele, Seema, et al. last summer

Observe different
inactive channels

Sayan

| | | | | | | | | | | | | | | | | |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|
| 1696843884.5076, | 1.119, | 0.039, | 0.057, | 1.113, | 0.075, | 1.119, | 1.125, | 0.039, | 0.075, | 1.113, | 0.015, | -0.003, | 1.119, | 0.039, | 1.137, | 1.143, |
| 1696843884.5096, | 1.119, | 0.039, | 0.063, | 1.113, | 0.075, | 1.125, | 1.125, | 0.039, | 0.075, | 1.113, | 0.015, | -0.003, | 1.113, | 0.039, | 1.131, | 1.137, |
| 1696843884.5116, | 1.119, | 0.039, | 0.063, | 1.107, | 0.075, | 1.119, | 1.125, | 0.039, | 0.075, | 1.113, | 0.015, | -0.003, | 1.119, | 0.039, | 1.137, | 1.143, |
| 1696843884.5136, | 1.125, | 0.033, | 0.057, | 1.113, | 0.075, | 1.119, | 1.125, | 0.039, | 0.075, | 1.113, | 0.015, | -0.003, | 1.119, | 0.039, | 1.131, | 1.119, |
| 1696843884.5157, | 1.125, | 0.039, | 0.057, | 1.113, | 0.075, | 1.119, | 1.131, | 0.039, | 0.075, | 1.113, | 0.015, | -0.003, | 1.119, | 0.039, | 1.137, | 1.143, |
| 1696843884.5176, | 1.119, | 0.033, | 0.057, | 1.113, | 0.075, | 1.125, | 1.125, | 0.039, | 0.075, | 1.113, | 0.015, | -0.003, | 1.119, | 0.039, | 1.137, | 1.143, |
| 1696843884.5196, | 1.119, | 0.033, | 0.057, | 1.113, | 0.075, | 1.119, | 1.125, | 0.039, | 0.075, | 1.113, | 0.015, | -0.003, | 1.119, | 0.039, | 1.137, | 1.143, |
| 1696843884.5216, | 1.119, | 0.033, | 0.057, | 1.113, | 0.075, | 1.125, | 1.125, | 0.039, | 0.075, | 1.113, | 0.015, | -0.003, | 1.119, | 0.039, | 1.137, | 1.131, |
| 1696843884.5236, | 1.119, | 0.033, | 0.057, | 1.113, | 0.075, | 1.119, | 1.125, | 0.039, | 0.075, | 1.113, | 0.015, | -0.003, | 1.119, | 0.039, | 1.137, | 1.143, |
| 1696843884.5256, | 1.119, | 0.033, | 0.057, | 1.113, | 0.075, | 1.125, | 1.125, | 0.039, | 0.075, | 1.113, | 0.015, | -0.003, | 1.119, | 0.039, | 1.137, | 1.143, |

Voltage from ADC

Nominally greater than 1.1 V
around 0 V, no signal