

# AGIPD Offline Correction



## Detector group

Based on data sample: /gpfs/exfel/exp/SPB/202030/p900119/raw

Release : 2.8.3

March 15, 2020

*Extended version*

|          |  |            |
|----------|--|------------|
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|           |  |            |
|-----------|--|------------|
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## INPUT OF THE CALIBRATION PIPELINE

|                       |  |   |
|-----------------------|--|---|
| in-folder             | “/gpfs/exfel/exp/SPB/202030/-p900119/raw”      | the folder to read data from, required  |
| run                   | 96   | runs to process, required   |
| out-folder            | “/gpfs/exfel/d/proc/SPB/202030/-p900119/r0096” | the folder to output to, required   |
| calfile               | “”   | path to calibration file. Leave empty if all data should come from DB   |
| sequences             | [-1]   | sequences to correct, set to -1 for all, range allowed  |
| mem-cells             | 0  | number of memory cells used, set to 0 to automatically infer  |
| interlaced            | False  | whether data is in interlaced layout  |
| overwrite             | True   | set to True if existing data should be overwritten  |
| cluster-profile       | “noDB”   | one   |
| max-pulses            | [0, 500, 1]                                    | range list [st, end, step] of maximum pulse indices. 3 allowed maximum list input elements.   |
| local-input           | False  | one   |
| bias-voltage          | 300  | one   |
| cal-db-interface      | “tcp://max-exf016:8015#8045”                   | the database interface to use   |
| use-dir-creation-date | True   | use the creation data of the input dir for database queries   |
| sequences-per-node    | 1  | number of sequence files per cluster node if run as slurm job, set to 0 to not run SLURM parallel   |
| photon-energy         | 9.2  | photon energy in keV  |
| index-v               | 2  | version of RAW index type   |
| nodb                  | False  | if set only file-based constants will be used   |
| b1c-noise-threshold   | 5000   | above this mean signal intensity now baseline correction via noise is attempted   |
| corr-asic-diag        | False  | if set, diagonal drop offs on ASICs are corrected   |
| melt-snow             | “”   | if set to "none" snowy pixels are identified and resolved to NaN, if set to "interpolate", the value is interpolated from neighbouring pixels |

|                                  |  |   |
|----------------------------------|--|---|
| cal-db-timeout                   | 300000   | in milli seconds  |
| max-cells-db-dark                | 0  | set to a value different than 0 to use this value for dark data DB queries  |
| max-cells-db                     | 0  | set to a value different than 0 to use this value for DB queries  |
| chunk-size-idim                  | 1  | chunking size of imaging dimension, adjust if user software is sensitive to this.   |
| creation-date-offset             | “00:00:00”   | add an offset to creation date, e.g. to get different constants   |
| instrument                       | “SPB”  | the instrument the detector is installed at, required   |
| force-hg-if-below                | 1000   | set to a value other than 0 to force a pixel into high gain if it's high gain offset subtracted value is below this threshold                                 |
| force-mg-if-below                | 1000   | set to a value other than 0 to force a pixel into medium gain if it's medium gain offset subtracted value is below this threshold                             |
| mask-noisy-adc                   | 0.25   | set to a value other than 0 and below 1 to mask entire ADC if fraction of noisy pixels is above the detector acquisition rate, use 0 to try to auto-determine |
| acq-rate                         | 0.0  | the detector acquisition rate, use 0 to try to auto-determine   |
| gain-setting                     | 0.1  | the gain setting, use 0.1 to try to auto-determine  |
| h5path-ctrl                      | “/CONTROL/-<br>SPB_IRU_AGIPD1M1/MDL/-<br>FPGA_COMP_TEST” | path to control information   |
| karabo-da-control<br>only-offset | “AGIPD1MCTRL00”<br>False                                 | karabo DA for control information<br>Apply only Offset correction. if False, Offset is applied by Default. if True, Offset is only applied.                   |
| rel-gain                         | False  | do relative gain correction based on PC data  |
| xray-gain                        | False  | do relative gain correction based on xray data  |
| blc-noise                        | False  | if set, baseline correction via noise peak location is attempted  |
| blc-stripes                      | True   | if set, baseline corrected via stripes  |
| blc-hmatch                       | False  | if set, base line correction via histogram matching is attempted  |
| match-asics                      | False  | if set, inner ASIC borders are matched to the same signal level   |
| adjust-mg-baseline               | False  | adjust medium gain baseline to match highest high gain value  |
| dont-zero-nans                   | False  | do not zero NaN values in corrected data  |
| dont-zero-orange                 | False  | do not zero very negative and very large values   |
| blc-set-min                      | False  | Shift to 0 negative medium gain pixels after offset corr  |

## AGIPD OFFLINE CORRECTION, SEQUENCES = 0-3

Author: European XFEL Detector Group, Version: 1.0

Offline Calibration for the AGIPD Detector

```
Connecting to profile slurm_prof_766b6a76-c719-4b68-b085-6d9165c1a5b8_0-3
Using 2020-03-09 01:07:51+01:00 as creation time
Working in IL Mode: False. Actual cells in use are: 0
Outputting to /gpfs/exfel/d/proc/SPB/202030/p900119/r0096
Detector in use is SPB_DET_AGIPD1M-1
```

```
Gain setting: 0
```

### 2.1 Processed Files

```
Processing a total of 64 sequence files in chunks of 32
```

| #  | module                 | # module | file  |
|----|------------------------|----------|---|
| 0  | Q1M1                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00000.h5 |
| 1  |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00001.h5 |
| 2  |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00002.h5 |
| 3  |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00003.h5 |
| 4  | Q1M2                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00000.h5 |
| 5  |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00001.h5 |
| 6  |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00002.h5 |
| 7  |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00003.h5 |
| 8  | Q1M3                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00000.h5 |
| 9  |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00001.h5 |
| 10 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00002.h5 |
| 11 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00003.h5 |
| 12 | Q1M4                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00000.h5 |
| 13 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00001.h5 |
| 14 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00002.h5 |
| 15 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00003.h5 |
| 16 | Q2M1                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00000.h5 |
| 17 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00001.h5 |
| 18 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00002.h5 |
| 19 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00003.h5 |
| 20 | Q2M2                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00000.h5 |
| 21 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00001.h5 |
| 22 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00002.h5 |
| 23 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00003.h5 |
| 24 | Q2M3                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00000.h5 |
| 25 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00001.h5 |
| 26 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00002.h5 |
| 27 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00003.h5 |
| 28 | Q2M4                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00000.h5 |
| 29 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00001.h5 |
| 30 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00002.h5 |
| 31 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00003.h5 |
| 32 | Q3M1                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00000.h5 |
| 33 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00001.h5 |
| 34 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00002.h5 |
| 35 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00003.h5 |
| 36 | Q3M2                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00000.h5 |
| 37 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00001.h5 |
| 38 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00002.h5 |
| 39 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00003.h5 |
| 40 | Q3M3                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00000.h5 |
| 41 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00001.h5 |
| 42 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00002.h5 |
| 43 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00003.h5 |
| 44 | Q3M4                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00000.h5 |
| 45 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00001.h5 |
| 46 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00002.h5 |
| 47 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00003.h5 |
| 48 | Q4M1                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00000.h5 |
| 49 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00001.h5 |
| 50 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00002.h5 |
| 51 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00003.h5 |
| 52 | Q4M2                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00000.h5 |
| 53 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00001.h5 |
| 54 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00002.h5 |
| 55 | <b>Processed Files</b> | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00003.h5 |
| 56 | Q4M3                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00000.h5 |
| 57 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00001.h5 |
| 58 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00002.h5 |
| 59 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00003.h5 |

A range of 500 pulse indices is selected: from 0 to 500 with a step of 1  
Running 32 tasks parallel  
Running 32 tasks parallel

```
Constants were injected on:
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
```



```
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... None
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
```

```
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
```

```
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
```

```
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
```

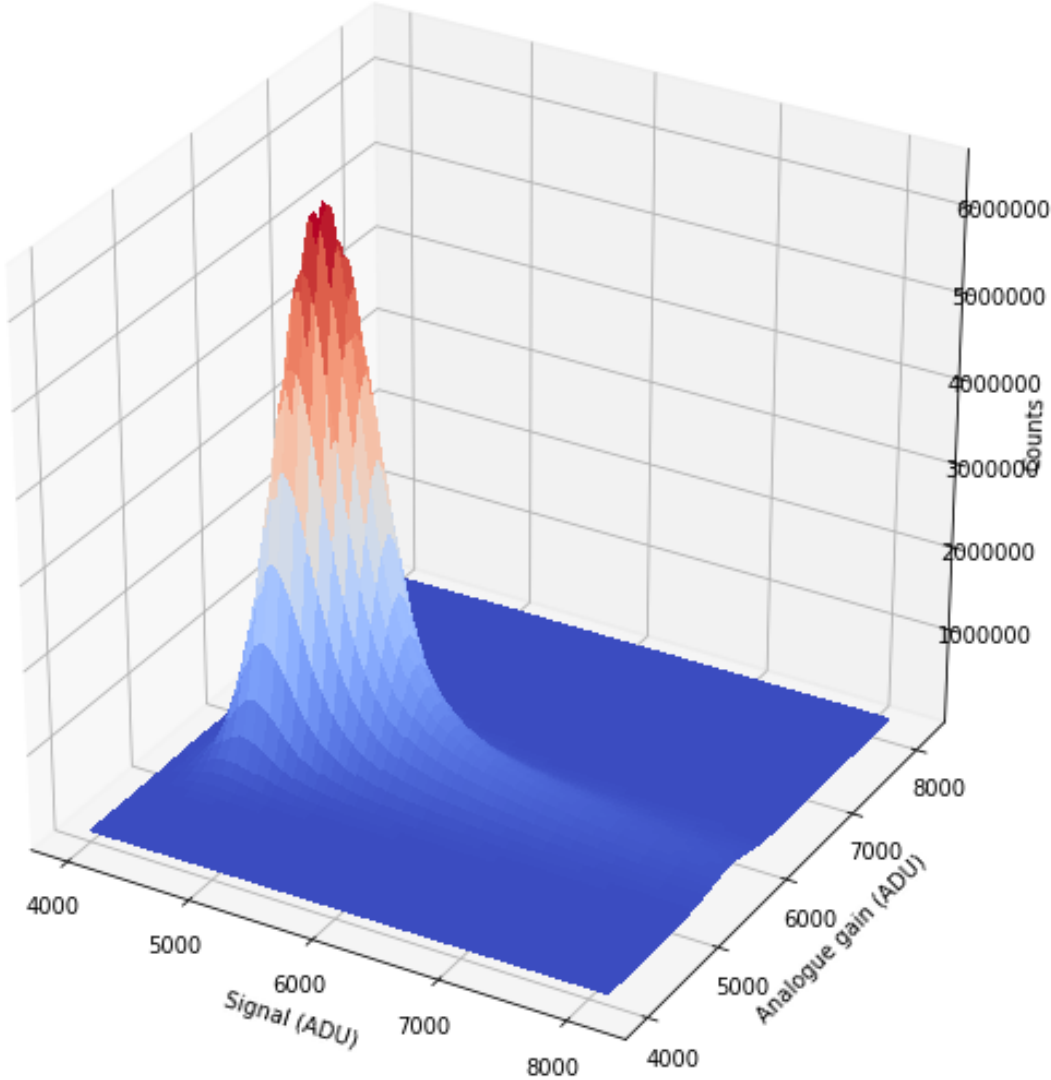
```
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
```

```
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
```

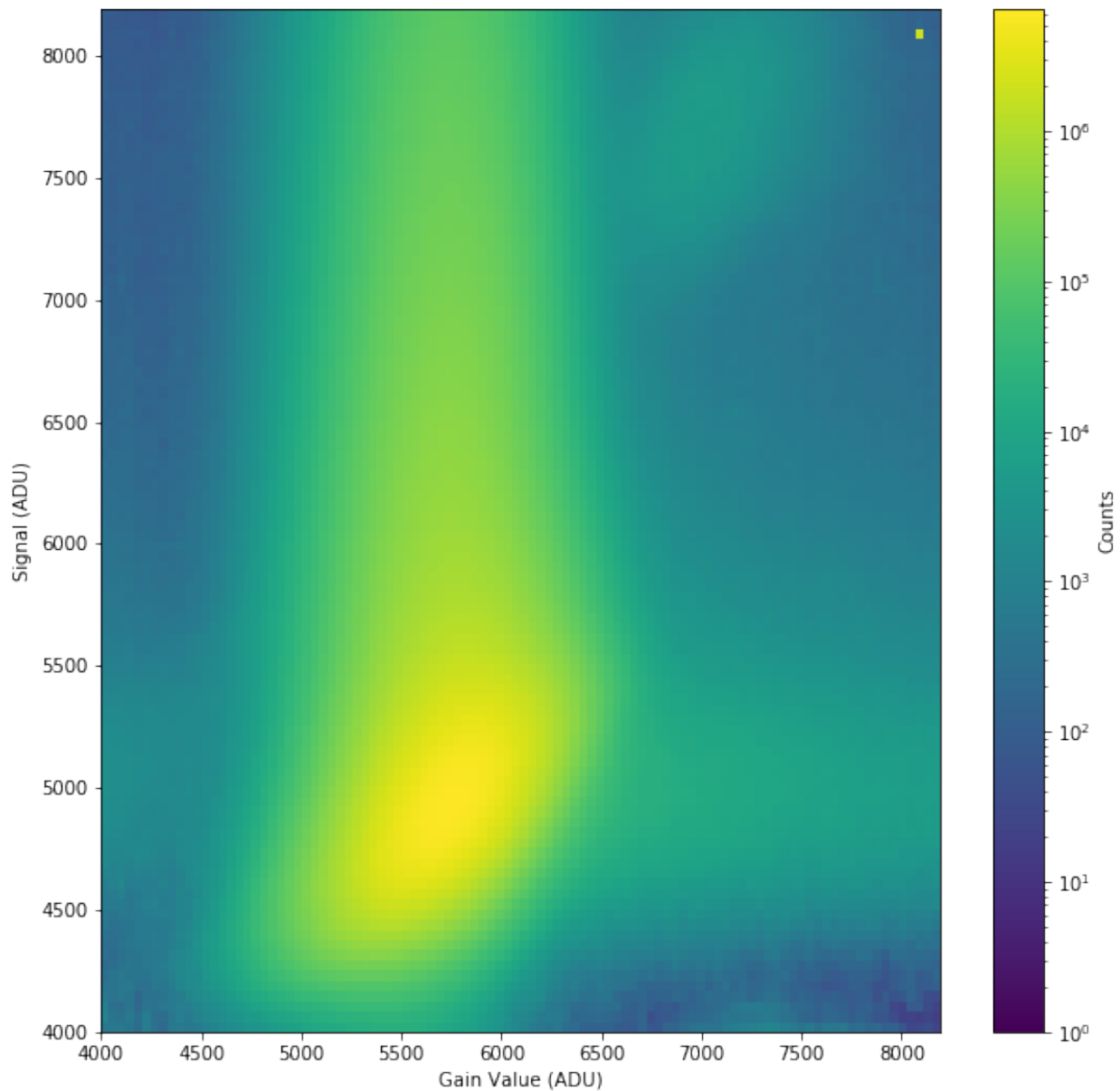
```
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
```

## 2.2 Signal vs. Analogue Gain

The following plot shows plots signal vs. gain for the first 128 images.

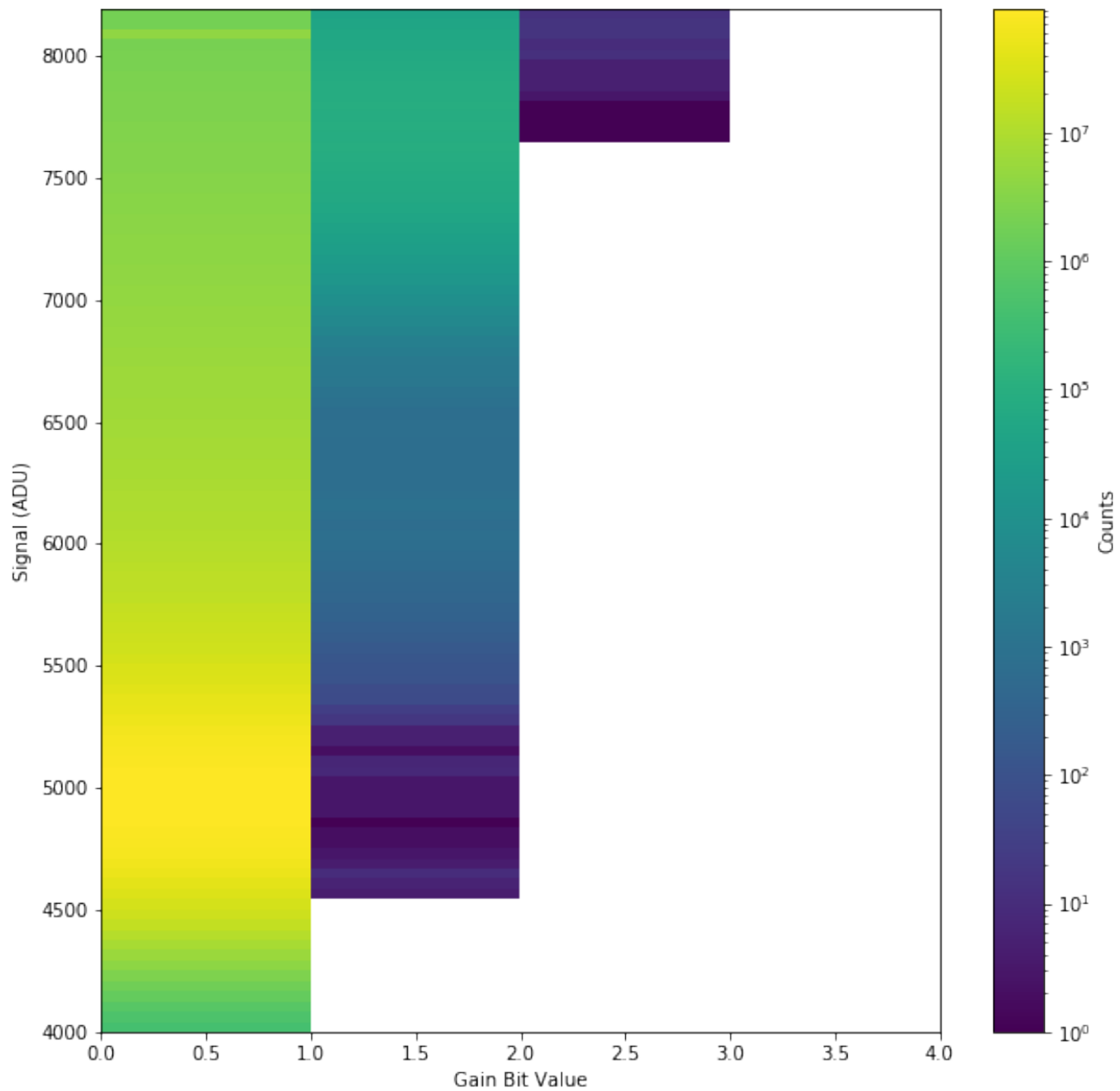


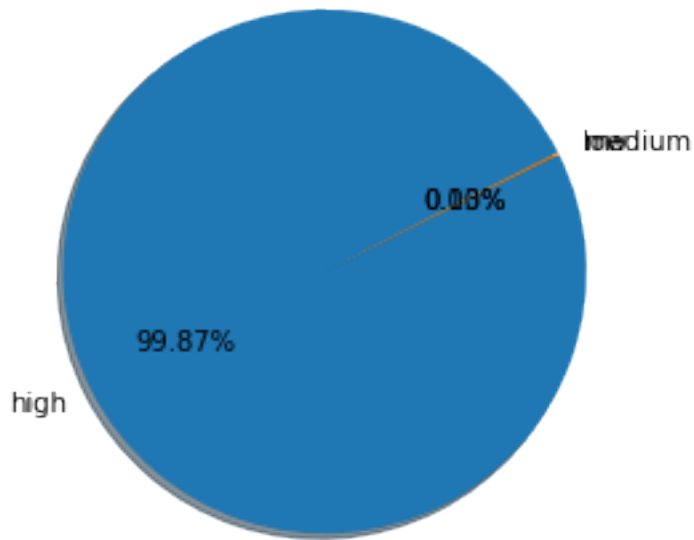




### 2.3 Signal vs. Digitized Gain

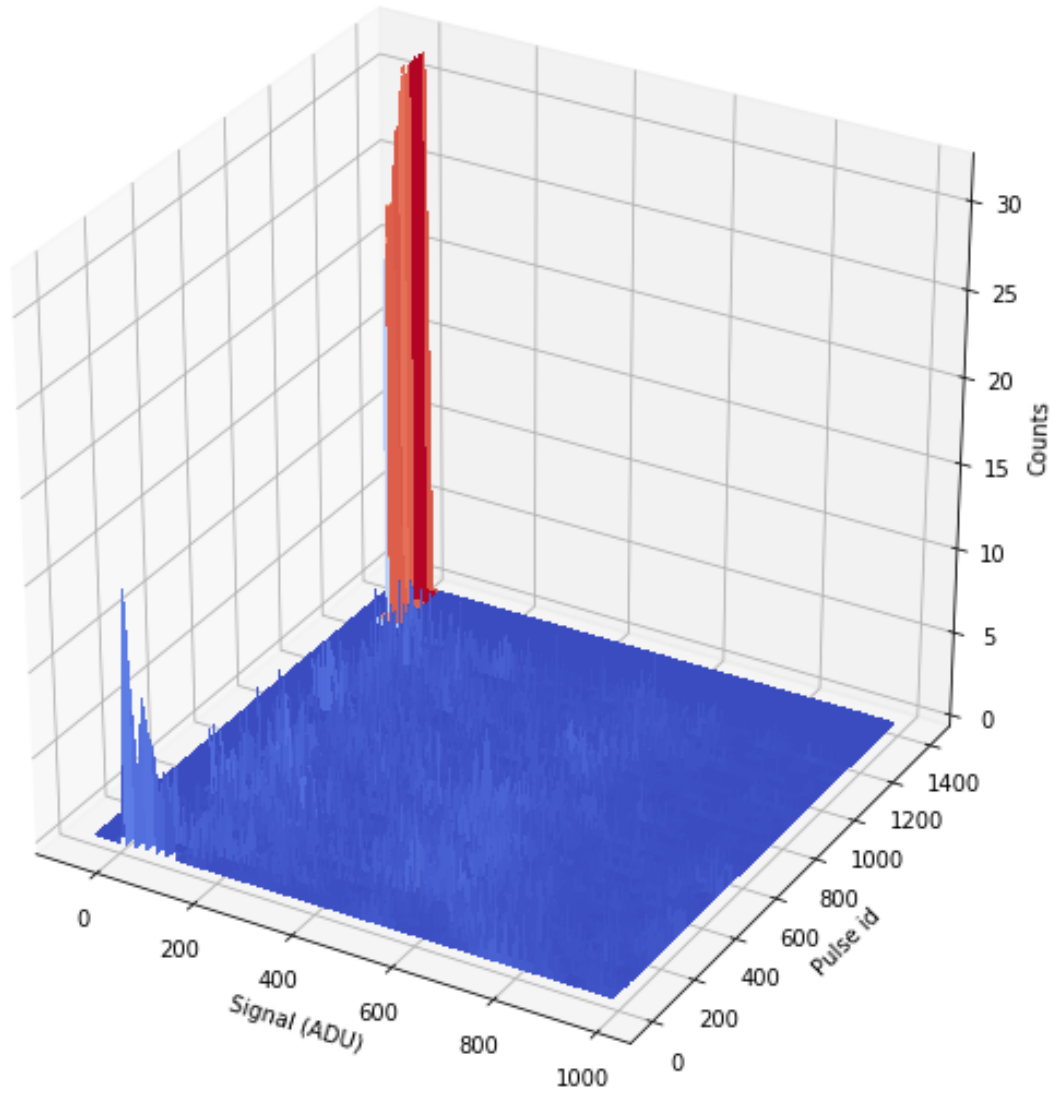
The following plot shows plots signal vs. digitized gain for the first 128 images.

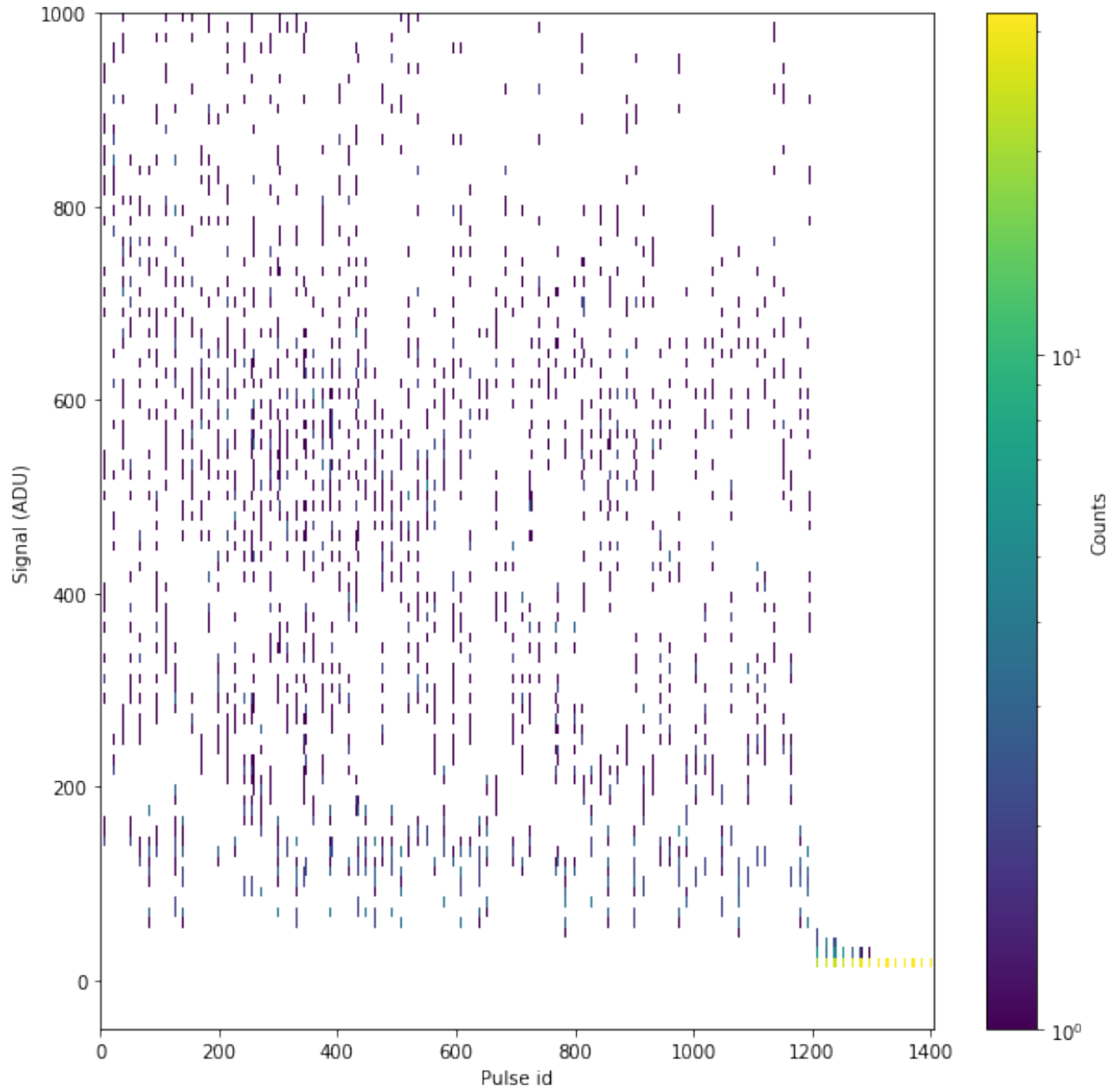


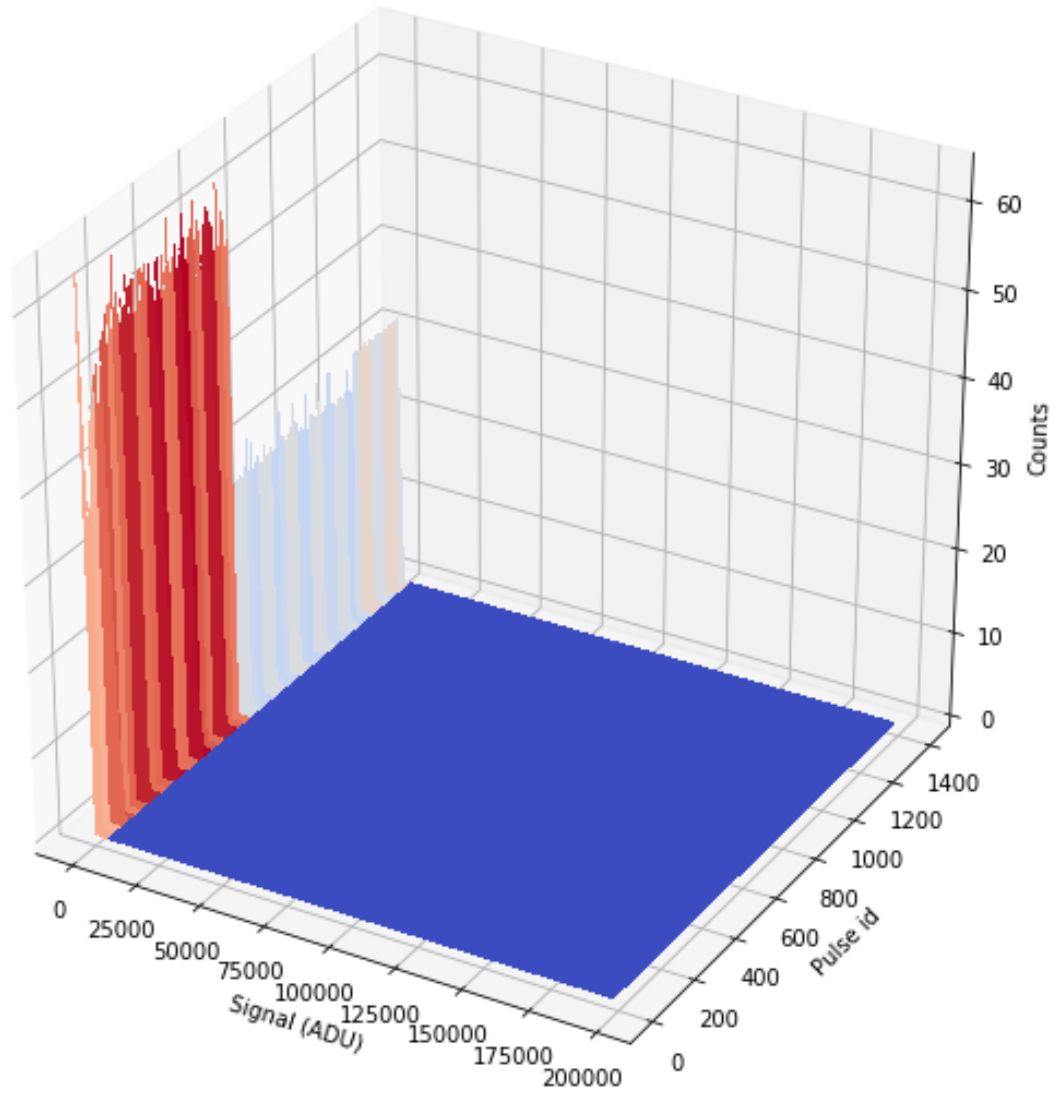


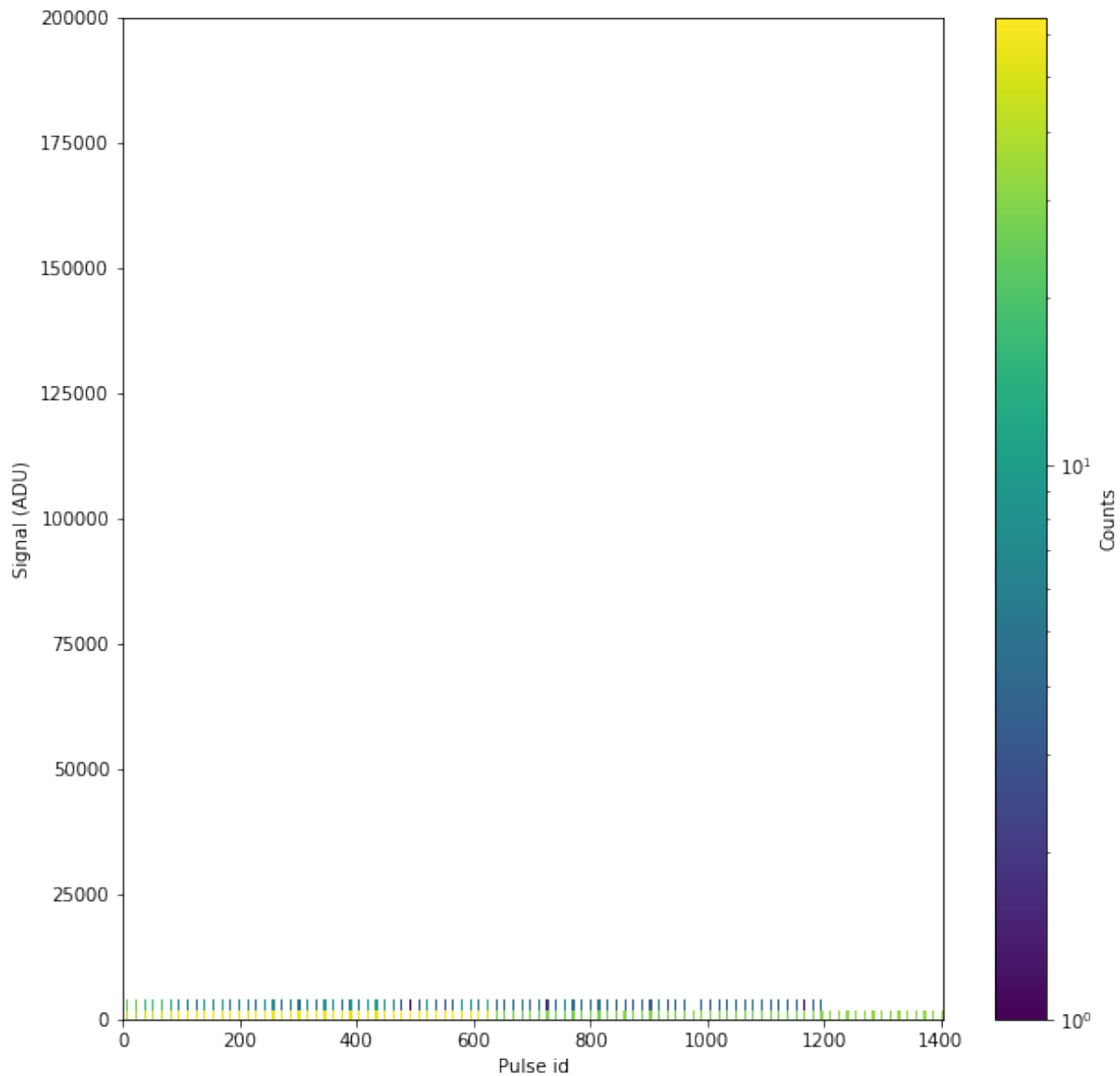
## 2.4 Mean Intensity per Pulse

The following plots show the mean signal for each pulse in a detailed and expanded intensity region.



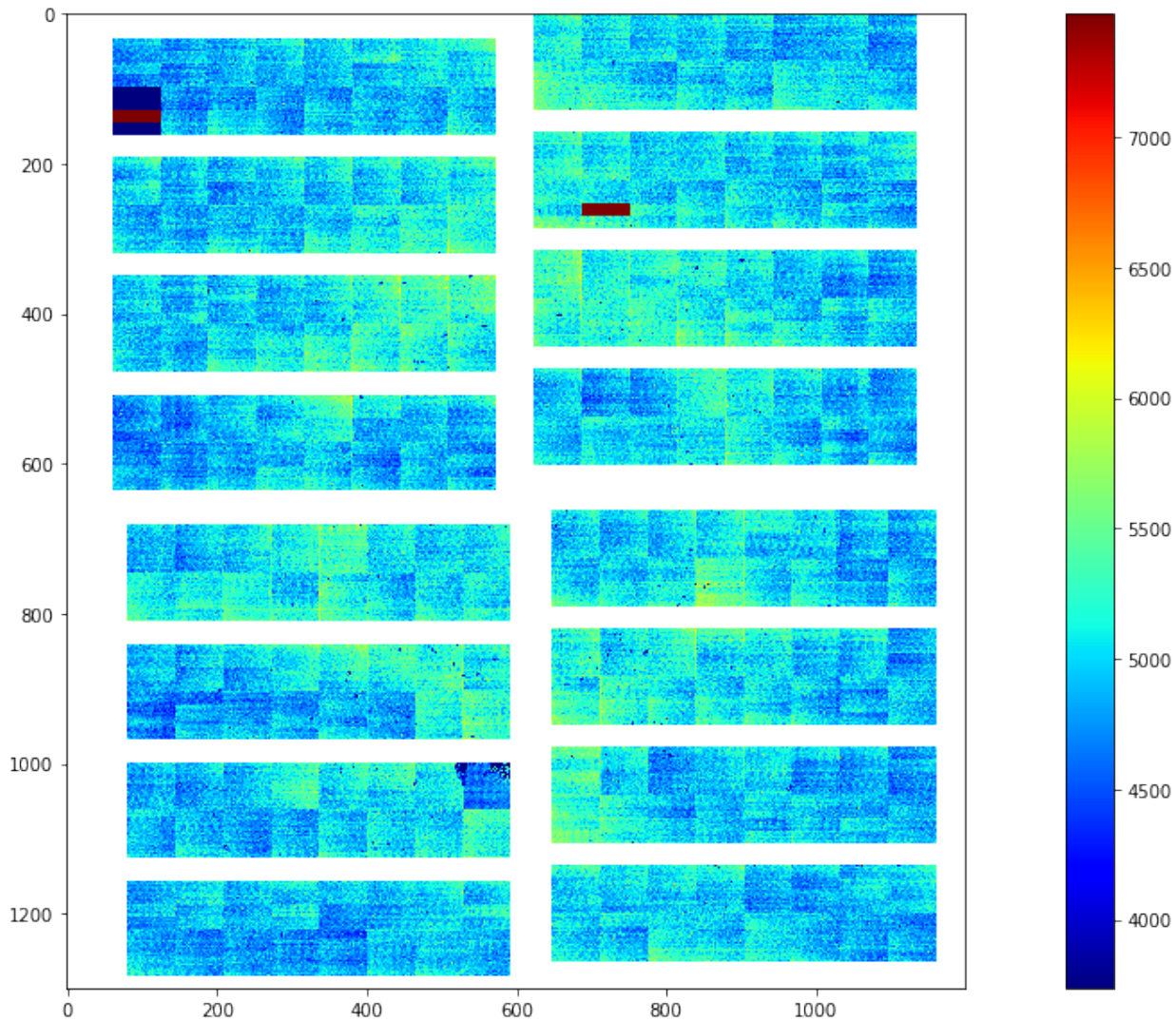






### 2.4.1 Mean RAW Preview

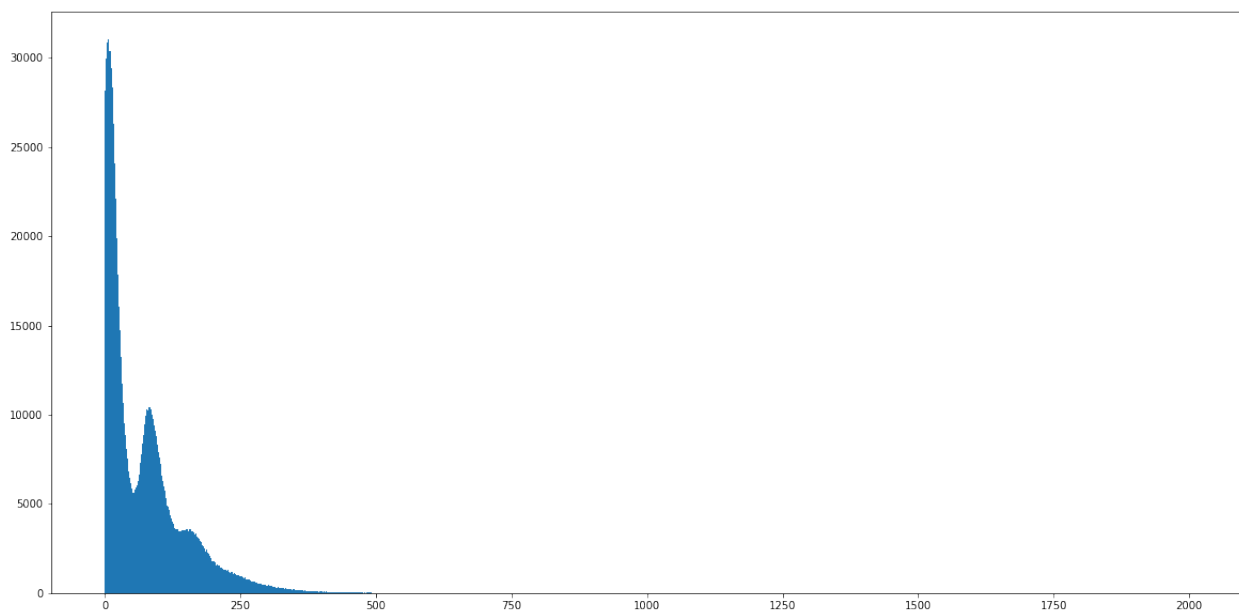
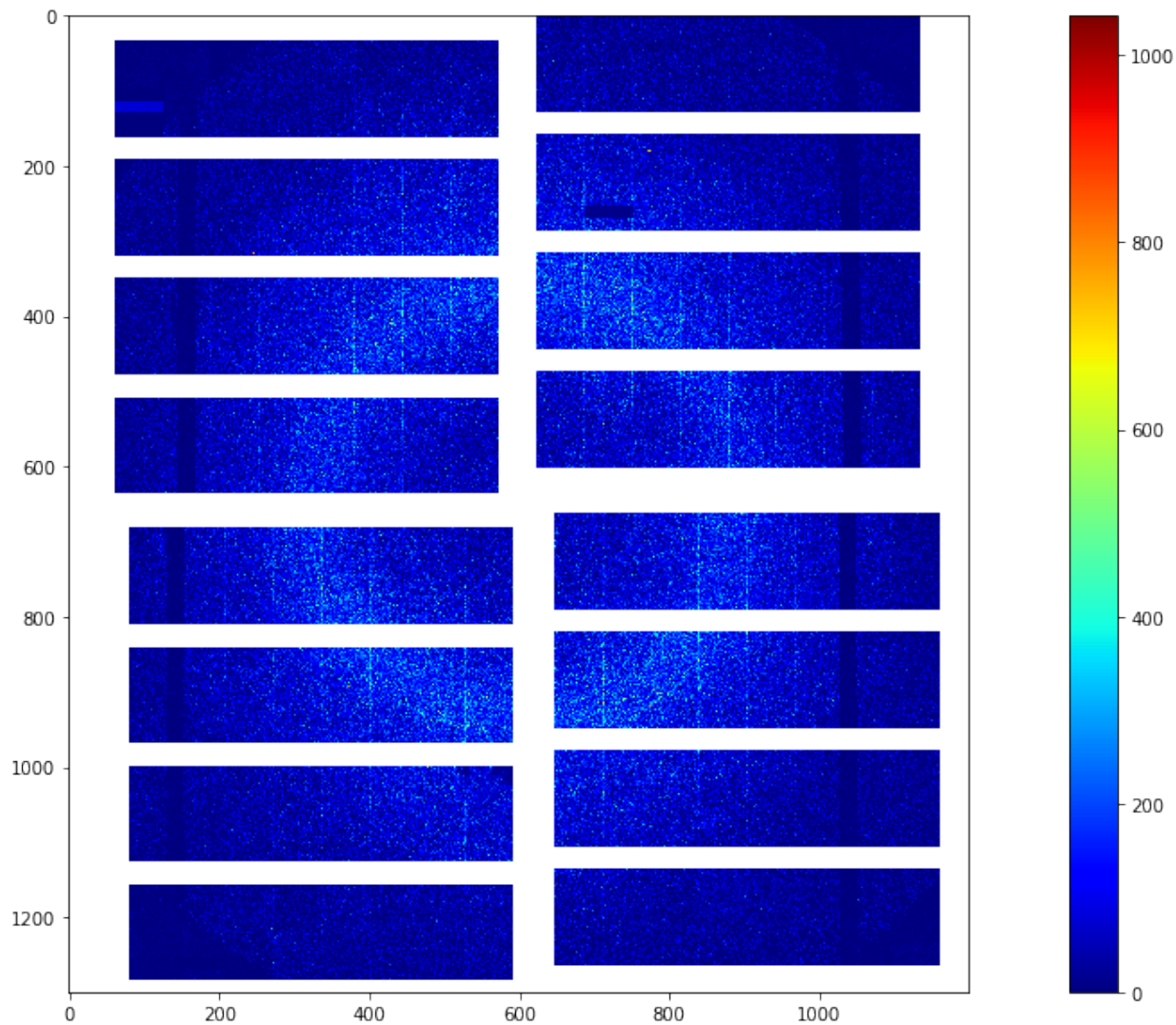
The per pixel mean of the first 128 images of the RAW data



### 2.4.2 Single Shot Preview

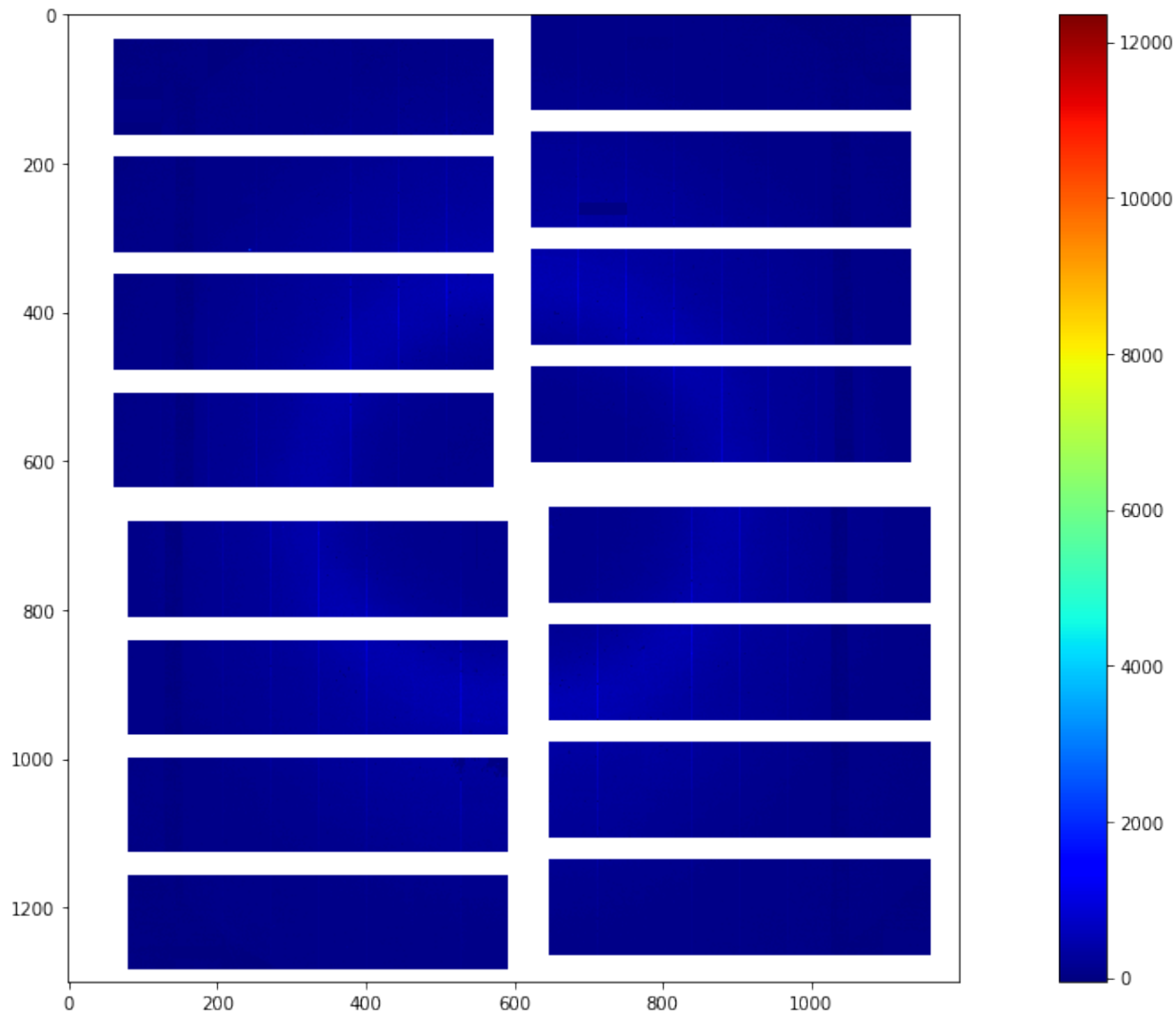
A single shot image from cell 12 of the first train

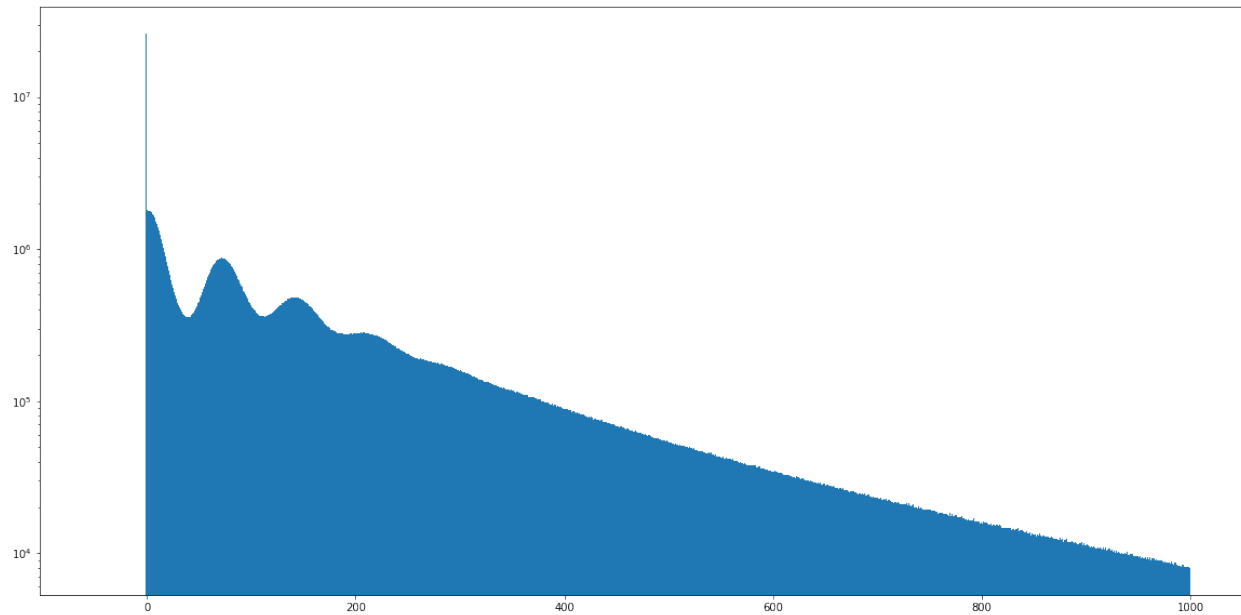




### 2.4.3 Mean CORRECTED Preview

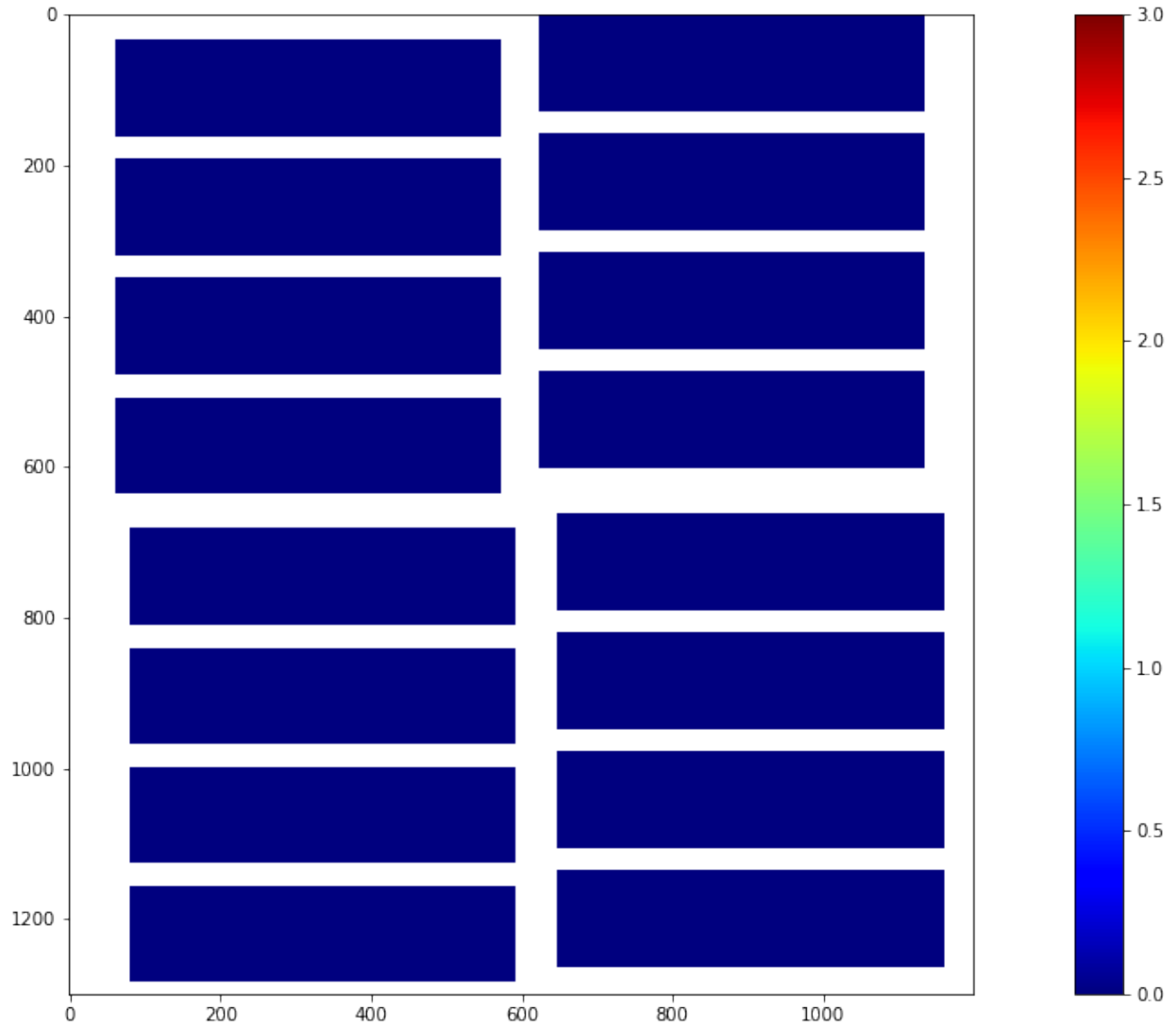
The per pixel mean of the first 128 images of the CORRECTED data





#### 2.4.4 Maximum GAIN Preview

The per pixel maximum of the first 128 images of the digitized GAIN data



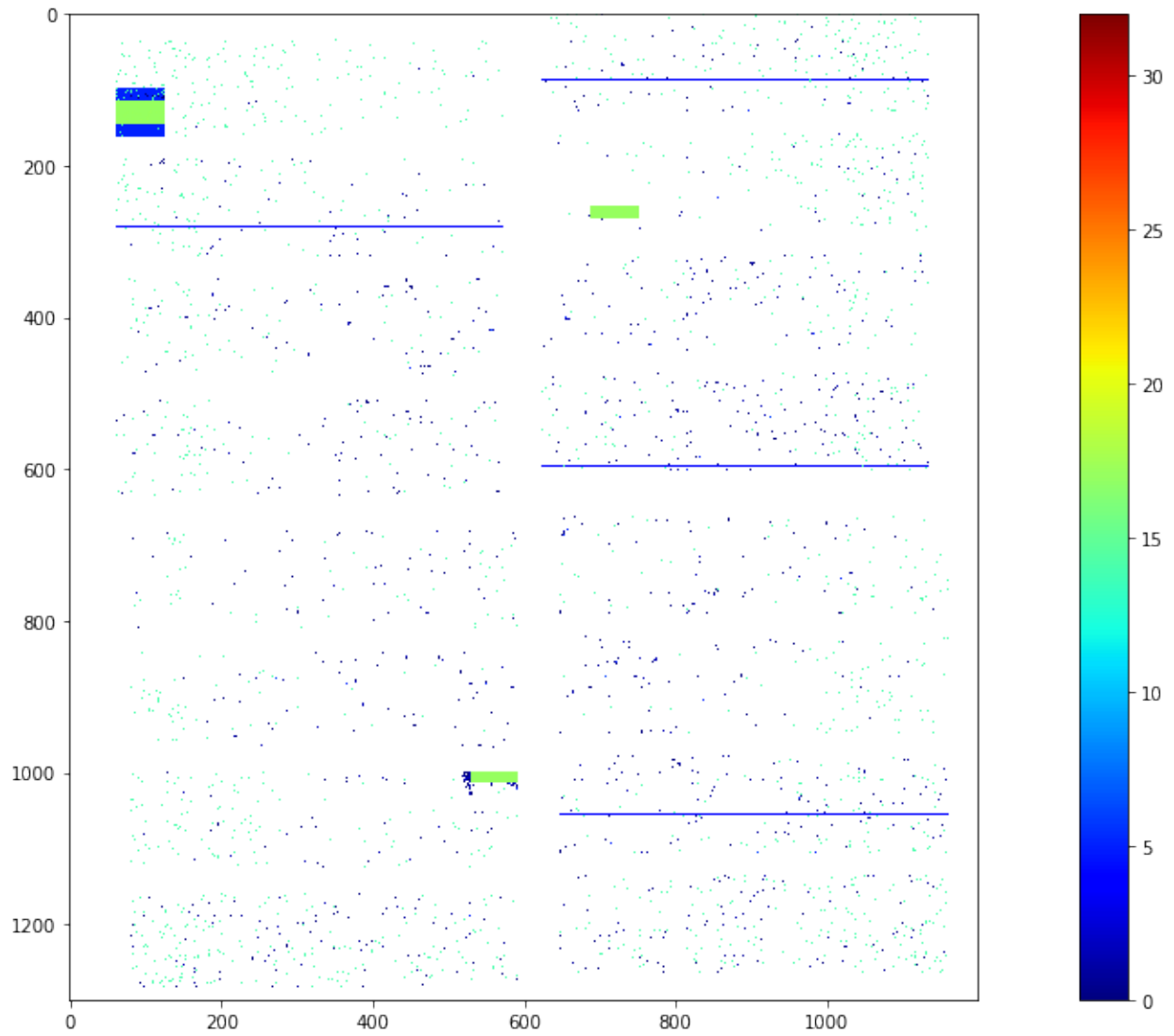
## 2.5 Bad Pixels

The mask contains dedicated entries for all pixels and memory cells as well as all three gains stages. Each mask entry is encoded in 32 bits as:

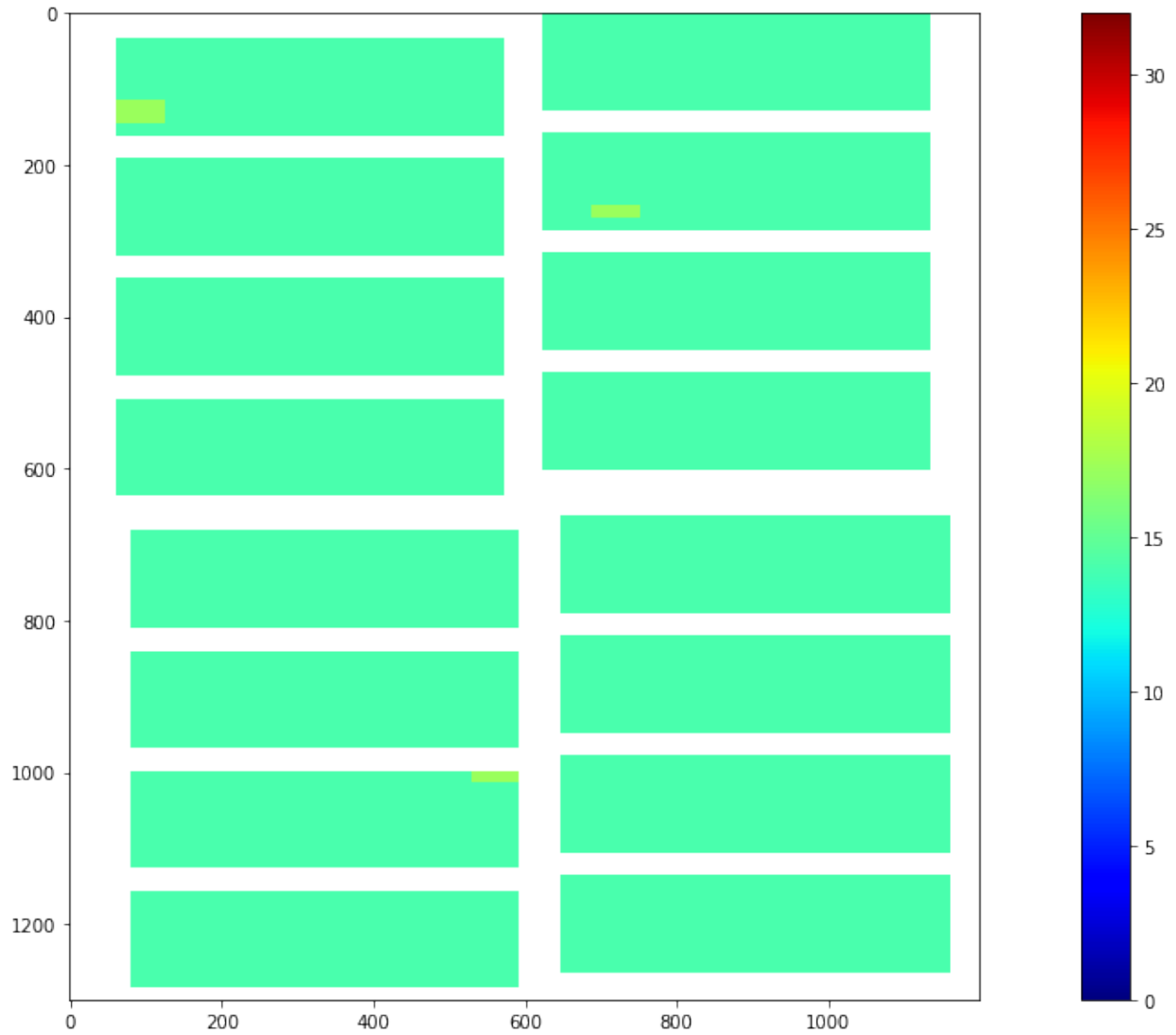
| Bad pixel type          | Bit mask         |
|-------------------------|------------------|
| OFFSET_OUT_OF_THRESHOLD | 0000000000000001 |
| NOISE_OUT_OF_THRESHOLD  | 0000000000000010 |
| OFFSET_NOISE_EVAL_ERROR | 0000000000000100 |
| NO_DARK_DATA            | 0000000000001000 |
| CI_GAIN_OF_OF_THRESHOLD | 0000000000010000 |
| CI_LINEAR_DEVIATION     | 000000000100000  |
| CI_EVAL_ERROR           | 000000001000000  |
| FF_GAIN_EVAL_ERROR      | 000000010000000  |
| FF_GAIN_DEVIATION       | 000000100000000  |
| FF_NO_ENTRIES           | 000001000000000  |
| CI2_EVAL_ERROR          | 000010000000000  |
| VALUE_IS_NAN            | 000010000000000  |
| VALUE_OUT_OF_RANGE      | 000100000000000  |
| GAIN_THRESHOLDING_ERROR | 001000000000000  |
| DATA_STD_IS_ZERO        | 010000000000000  |
| ASIC_STD_BELOW_NOISE    | 100000000000000  |
| INTERPOLATED            | 100000000000000  |
| NOISY_ADC               | 100000000000000  |
| OVERSCAN                | 100000000000000  |
| NON_SENSITIVE           | 100000000000000  |
| NON_LIN_RESPONSE_REGION | 100000000000000  |

### 2.5.1 Single Shot Bad Pixels

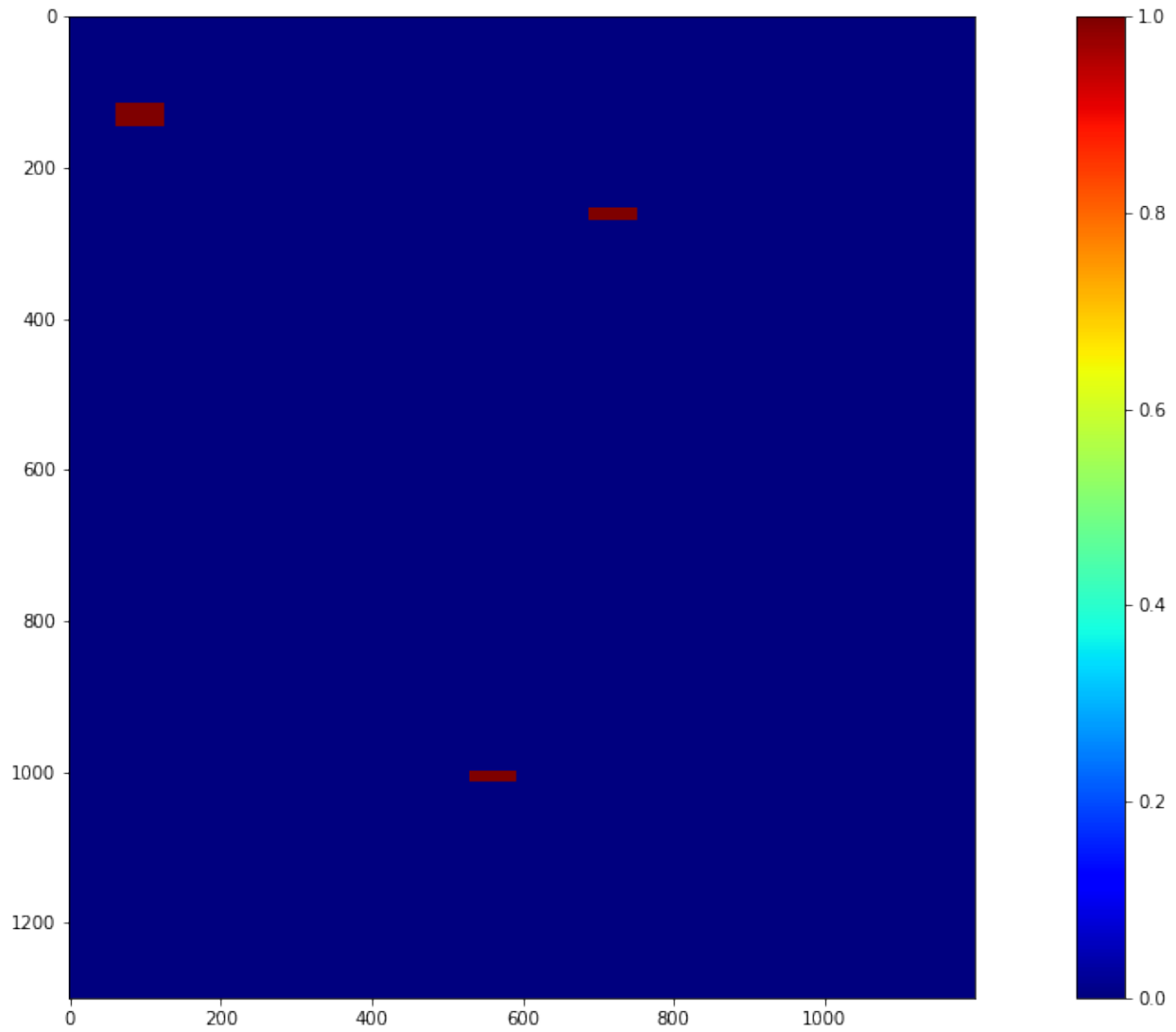
A single shot bad pixel map from cell 4 of the first train



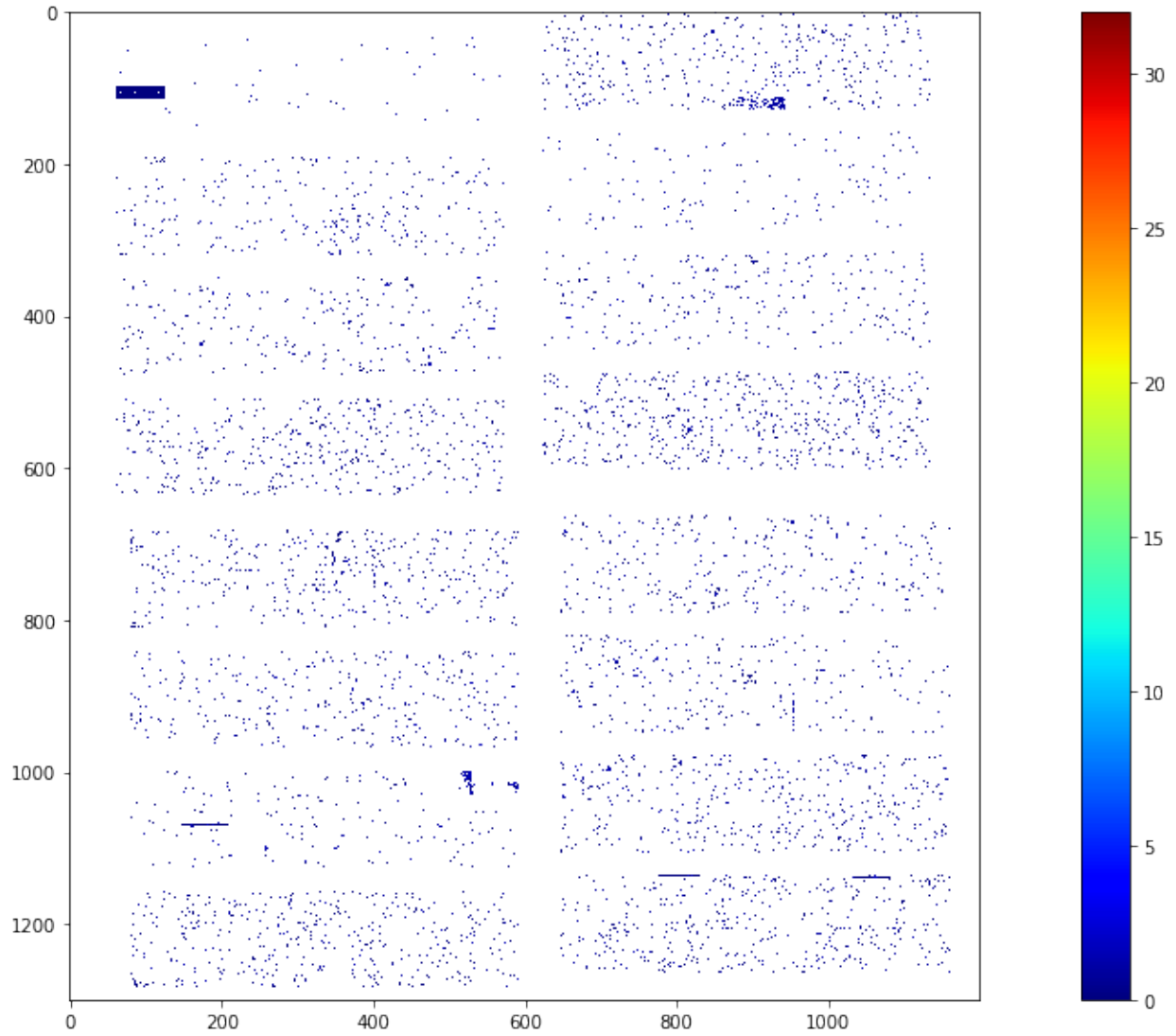
## 2.5.2 Full Train Bad Pixels



### 2.5.3 Full Train Bad Pixels - Only Dark Char. Related







## AGIPD OFFLINE CORRECTION, SEQUENCES = 4-7

```
Connecting to profile slurm_prof_766b6a76-c719-4b68-b085-6d9165c1a5b8_4-7
Using 2020-03-09 01:07:51+01:00 as creation time
Working in IL Mode: False. Actual cells in use are: 0
Outputting to /gpfs/exfel/d/proc/SPB/202030/p900119/r0096
Detector in use is SPB_DET_AGIPD1M-1
```

```
Gain setting: 0
```

### 3.1 Processed Files

```
Processing a total of 64 sequence files in chunks of 32
```

| #  | module                 | # module | file  |
|----|------------------------|----------|---|
| 0  | Q1M1                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00004.h5 |
| 1  |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00005.h5 |
| 2  |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00006.h5 |
| 3  |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00007.h5 |
| 4  | Q1M2                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00004.h5 |
| 5  |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00005.h5 |
| 6  |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00006.h5 |
| 7  |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00007.h5 |
| 8  | Q1M3                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00004.h5 |
| 9  |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00005.h5 |
| 10 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00006.h5 |
| 11 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00007.h5 |
| 12 | Q1M4                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00004.h5 |
| 13 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00005.h5 |
| 14 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00006.h5 |
| 15 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00007.h5 |
| 16 | Q2M1                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00004.h5 |
| 17 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00005.h5 |
| 18 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00006.h5 |
| 19 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00007.h5 |
| 20 | Q2M2                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00004.h5 |
| 21 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00005.h5 |
| 22 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00006.h5 |
| 23 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00007.h5 |
| 24 | Q2M3                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00004.h5 |
| 25 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00005.h5 |
| 26 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00006.h5 |
| 27 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00007.h5 |
| 28 | Q2M4                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00004.h5 |
| 29 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00005.h5 |
| 30 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00006.h5 |
| 31 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00007.h5 |
| 32 | Q3M1                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00004.h5 |
| 33 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00005.h5 |
| 34 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00006.h5 |
| 35 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00007.h5 |
| 36 | Q3M2                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00004.h5 |
| 37 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00005.h5 |
| 38 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00006.h5 |
| 39 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00007.h5 |
| 40 | Q3M3                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00004.h5 |
| 41 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00005.h5 |
| 42 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00006.h5 |
| 43 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00007.h5 |
| 44 | Q3M4                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00004.h5 |
| 45 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00005.h5 |
| 46 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00006.h5 |
| 47 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00007.h5 |
| 48 | Q4M1                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00004.h5 |
| 49 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00005.h5 |
| 50 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00006.h5 |
| 51 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00007.h5 |
| 52 | Q4M2                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00004.h5 |
| 53 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00005.h5 |
| 54 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00006.h5 |
| 55 | <b>Processed Files</b> | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00007.h5 |
| 56 | Q4M3                   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00004.h5 |
| 57 |                        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00005.h5 |
| 58 |                        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00006.h5 |
| 59 |                        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00007.h5 |

```
A range of 500 pulse indices is selected: from 0 to 500 with a step of 1
Running 32 tasks parallel
Running 32 tasks parallel
```

```
Constants were injected on:
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
```

```
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
```

```
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
```

```
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
```

```
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
```



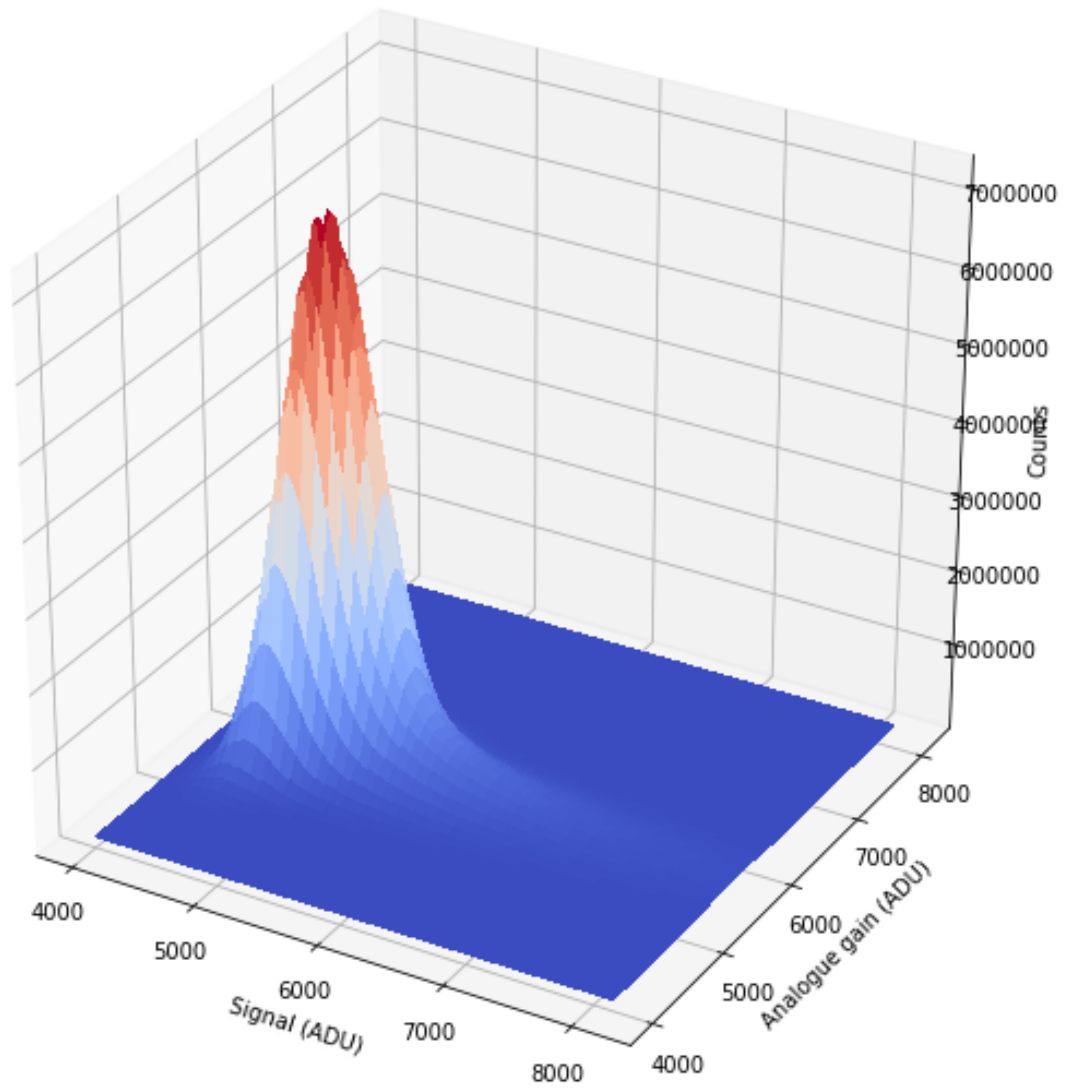
```
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
```

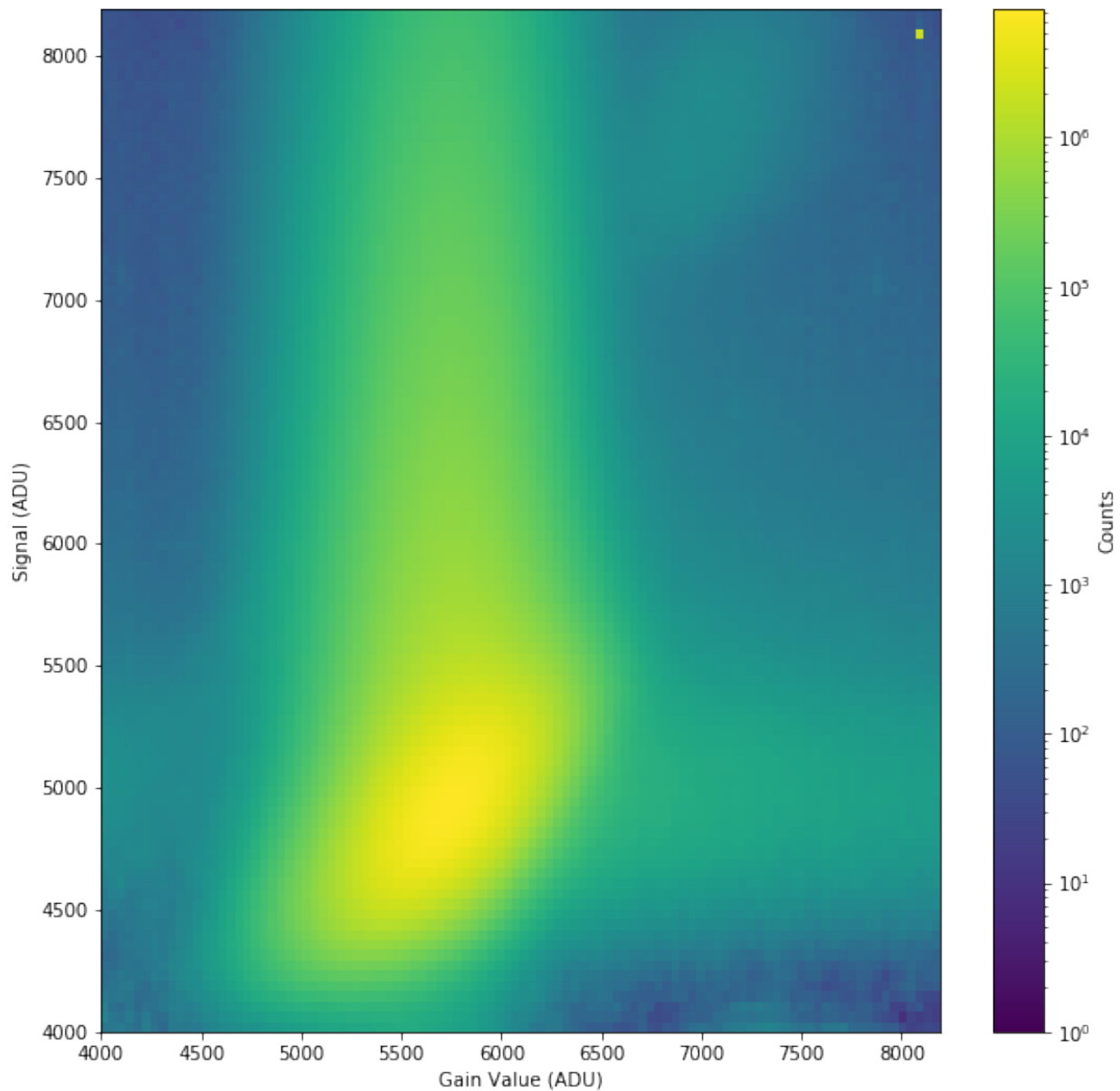
```
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
```

```
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
```

## 3.2 Signal vs. Analogue Gain

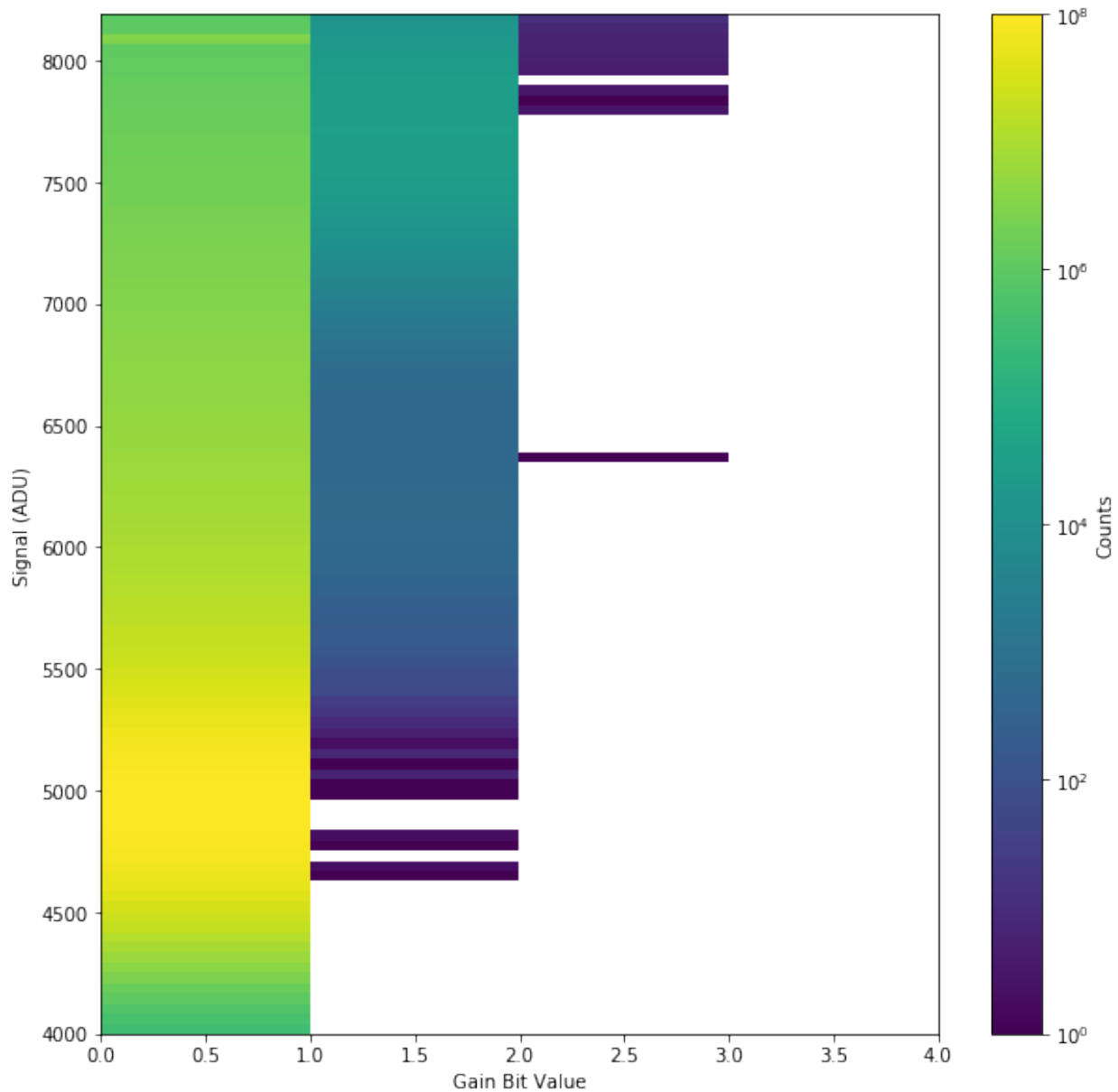
The following plot shows plots signal vs. gain for the first 128 images.

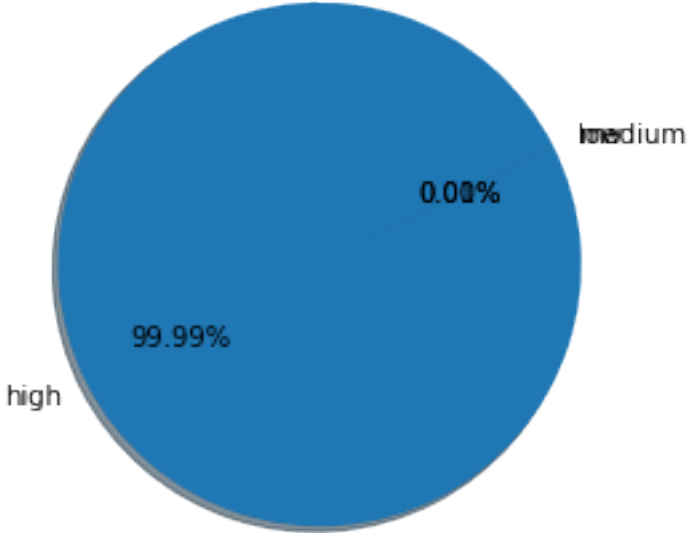




### 3.3 Signal vs. Digitized Gain

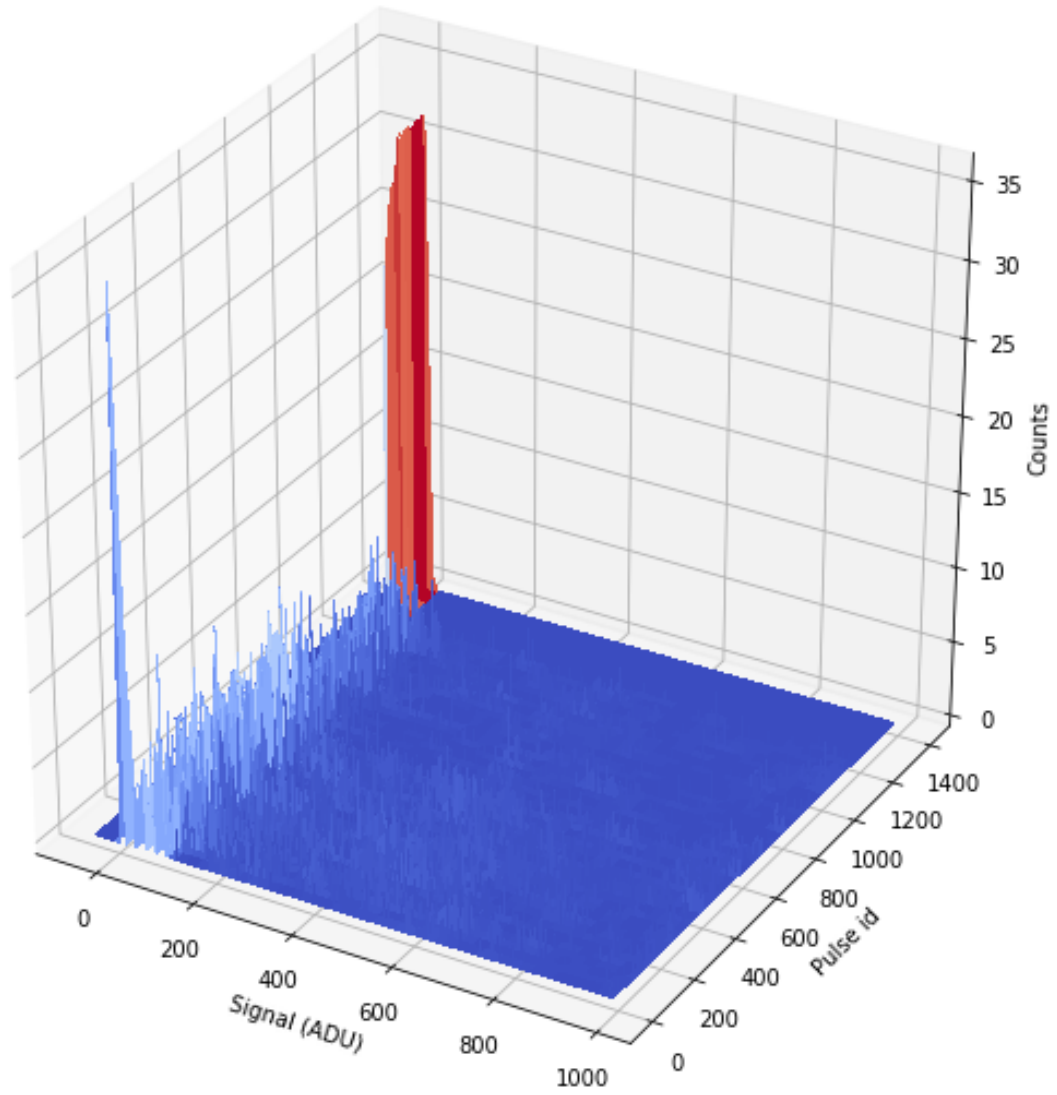
The following plot shows plots signal vs. digitized gain for the first 128 images.



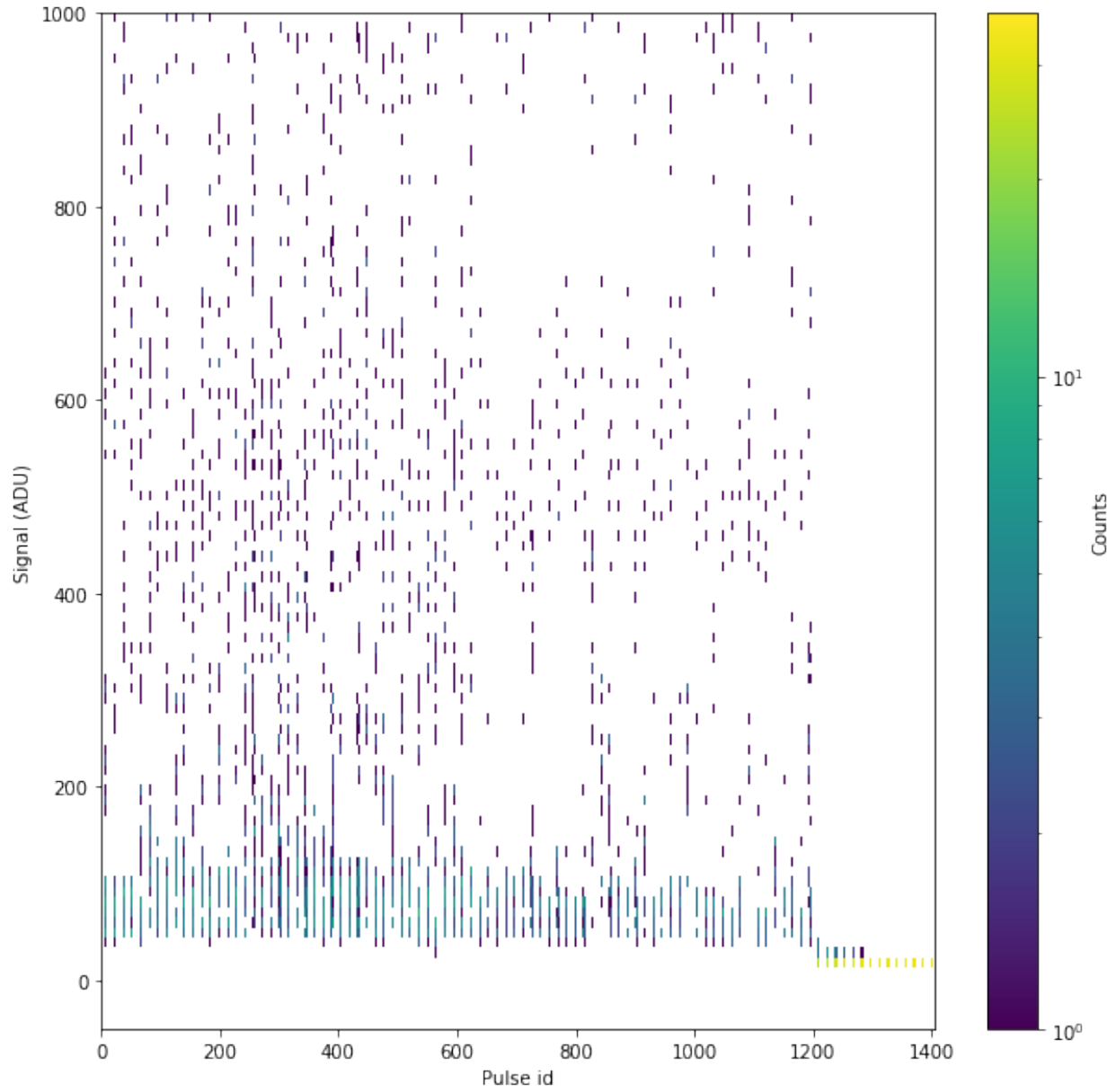


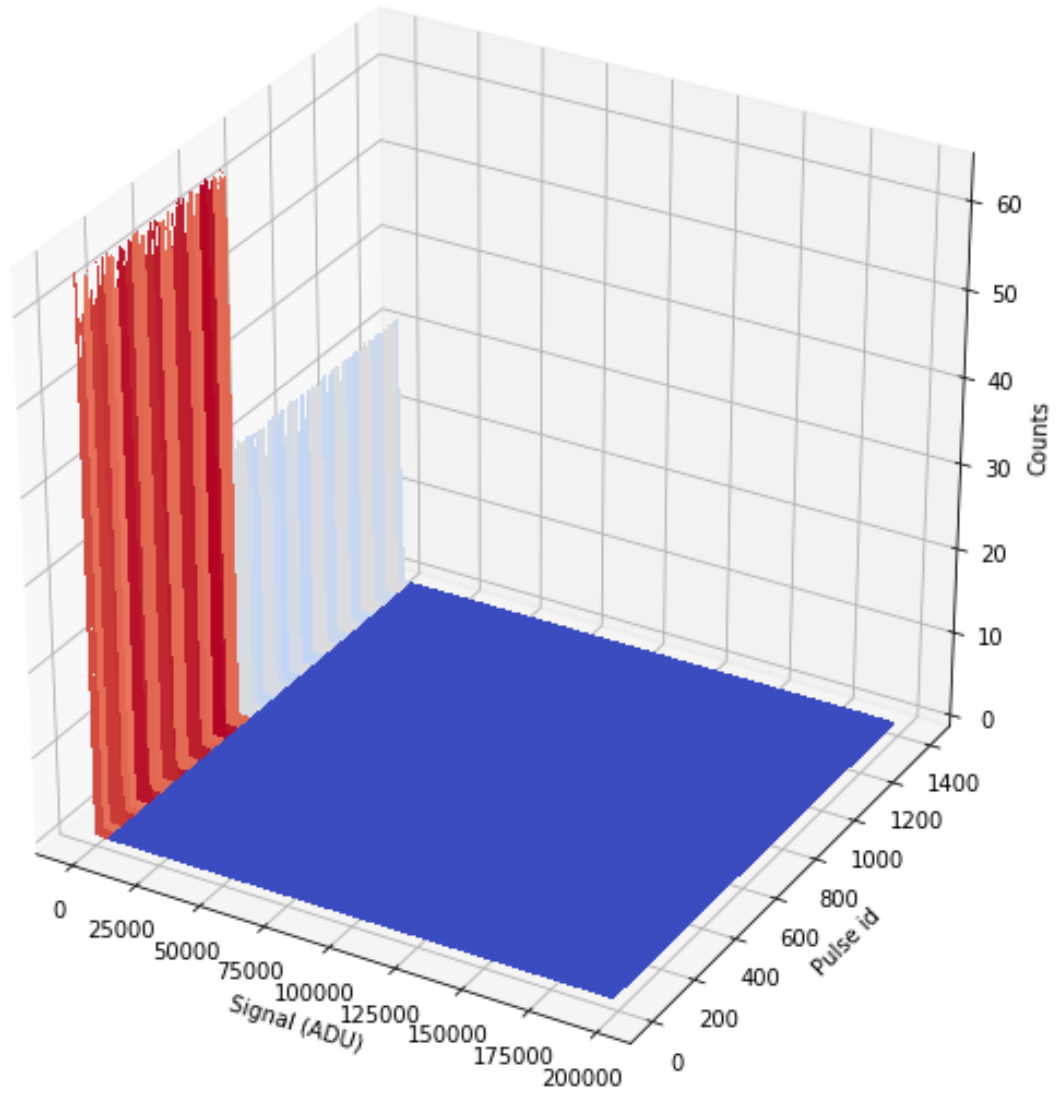
### 3.4 Mean Intensity per Pulse

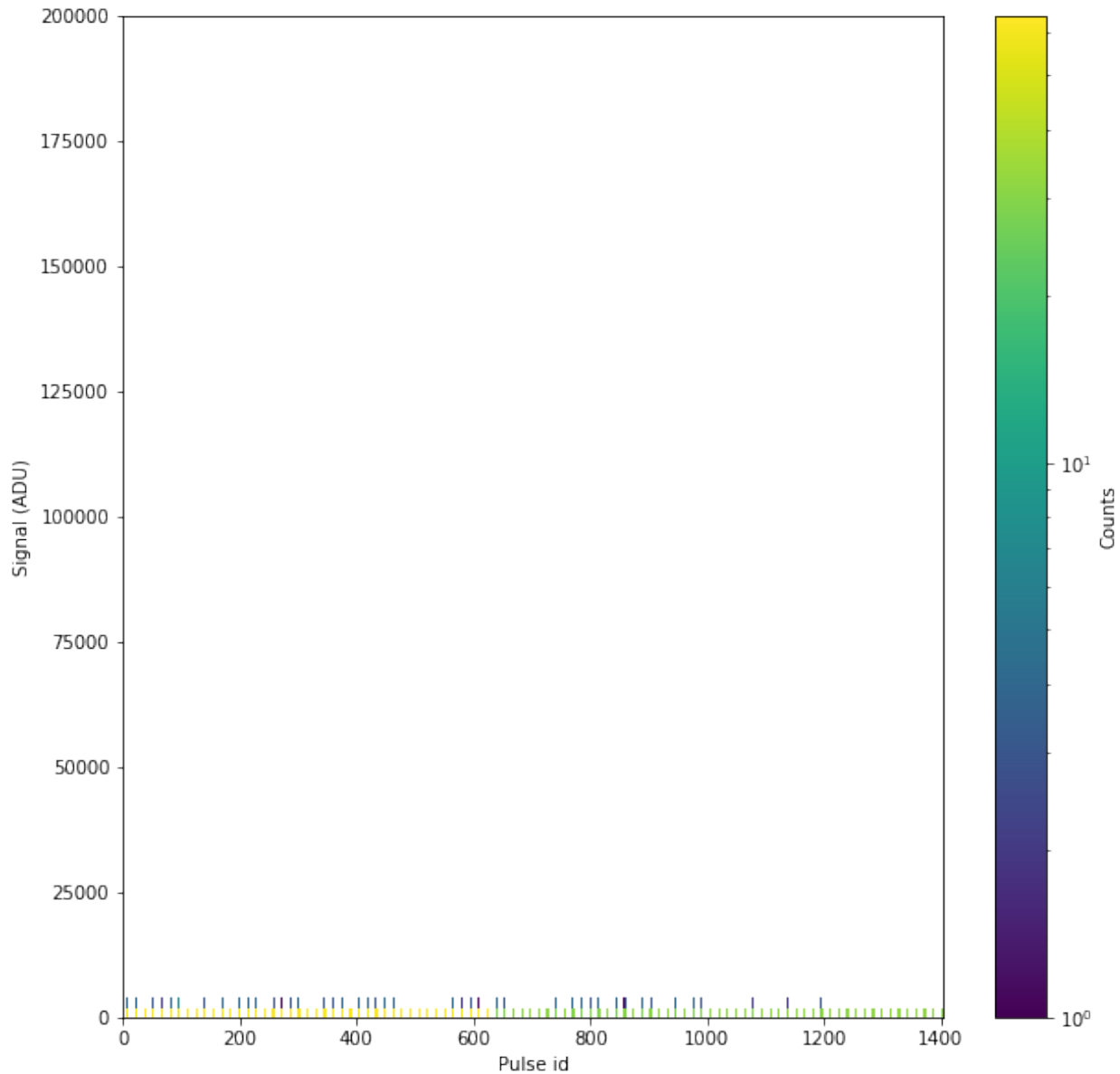
The following plots show the mean signal for each pulse in a detailed and expanded intensity region.





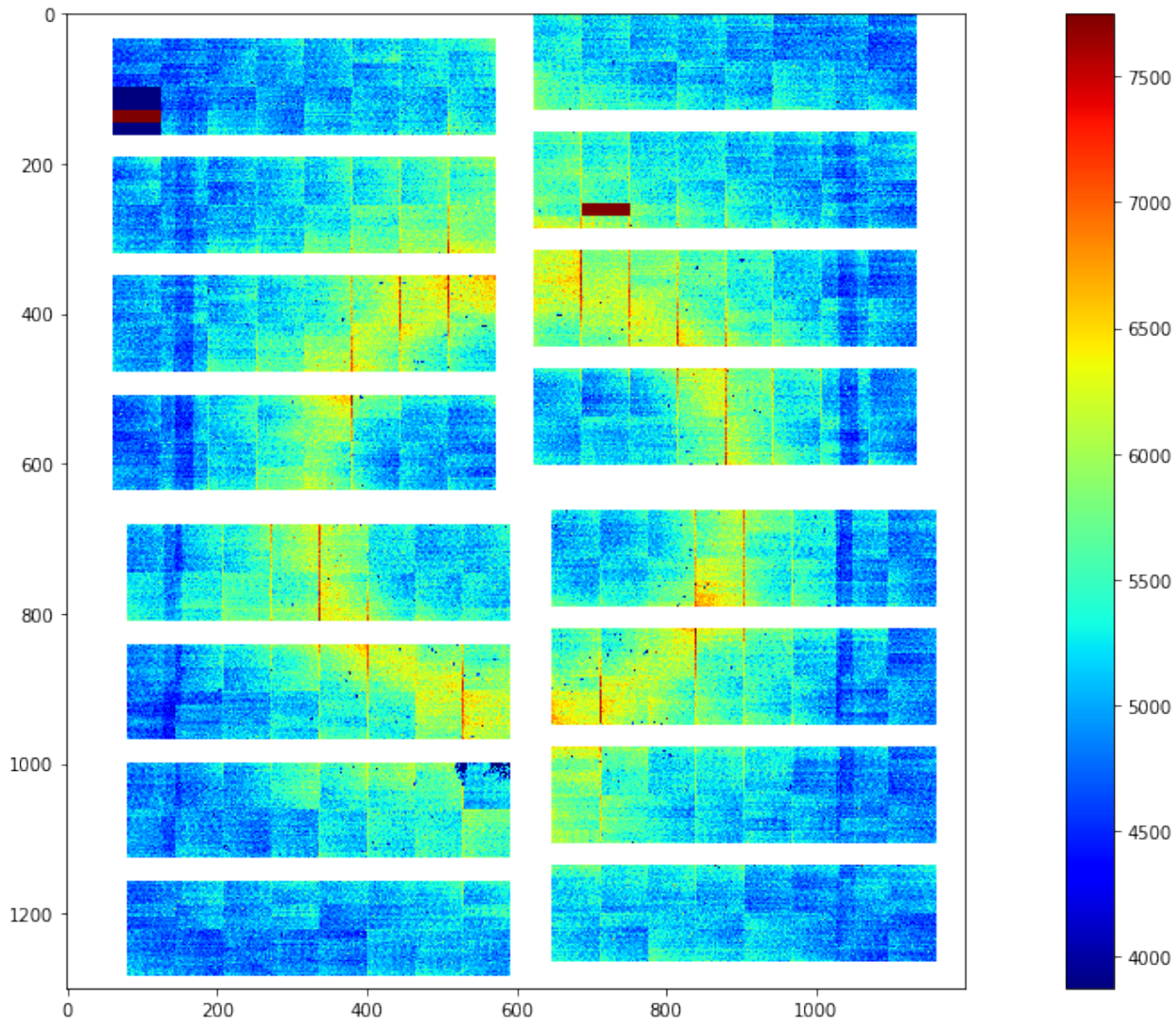






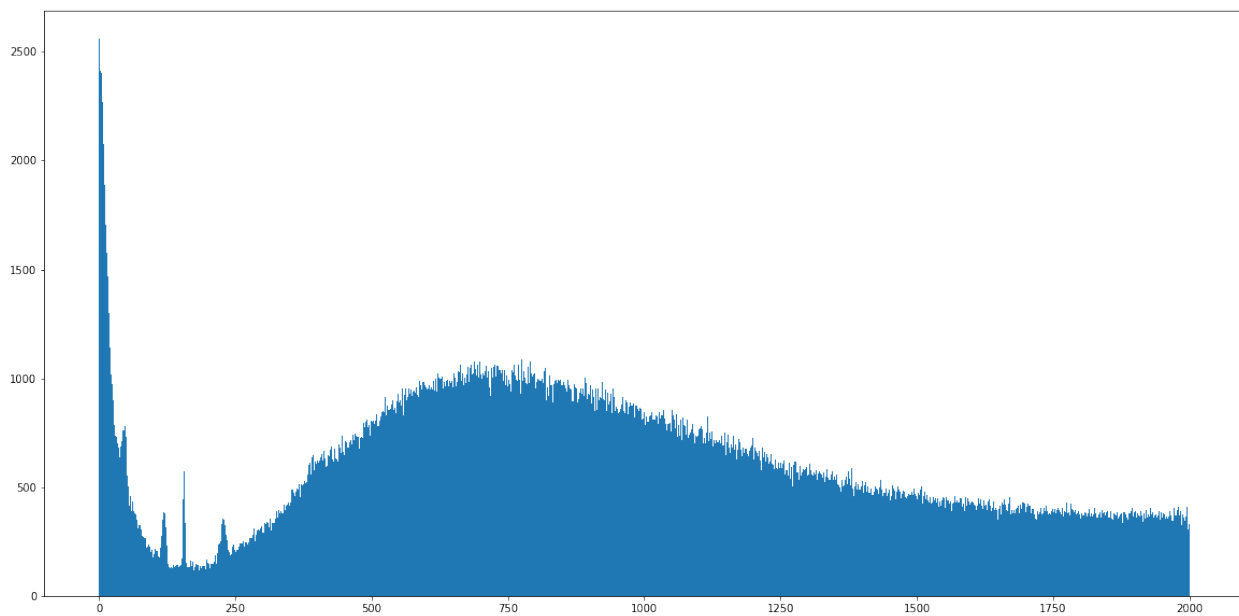
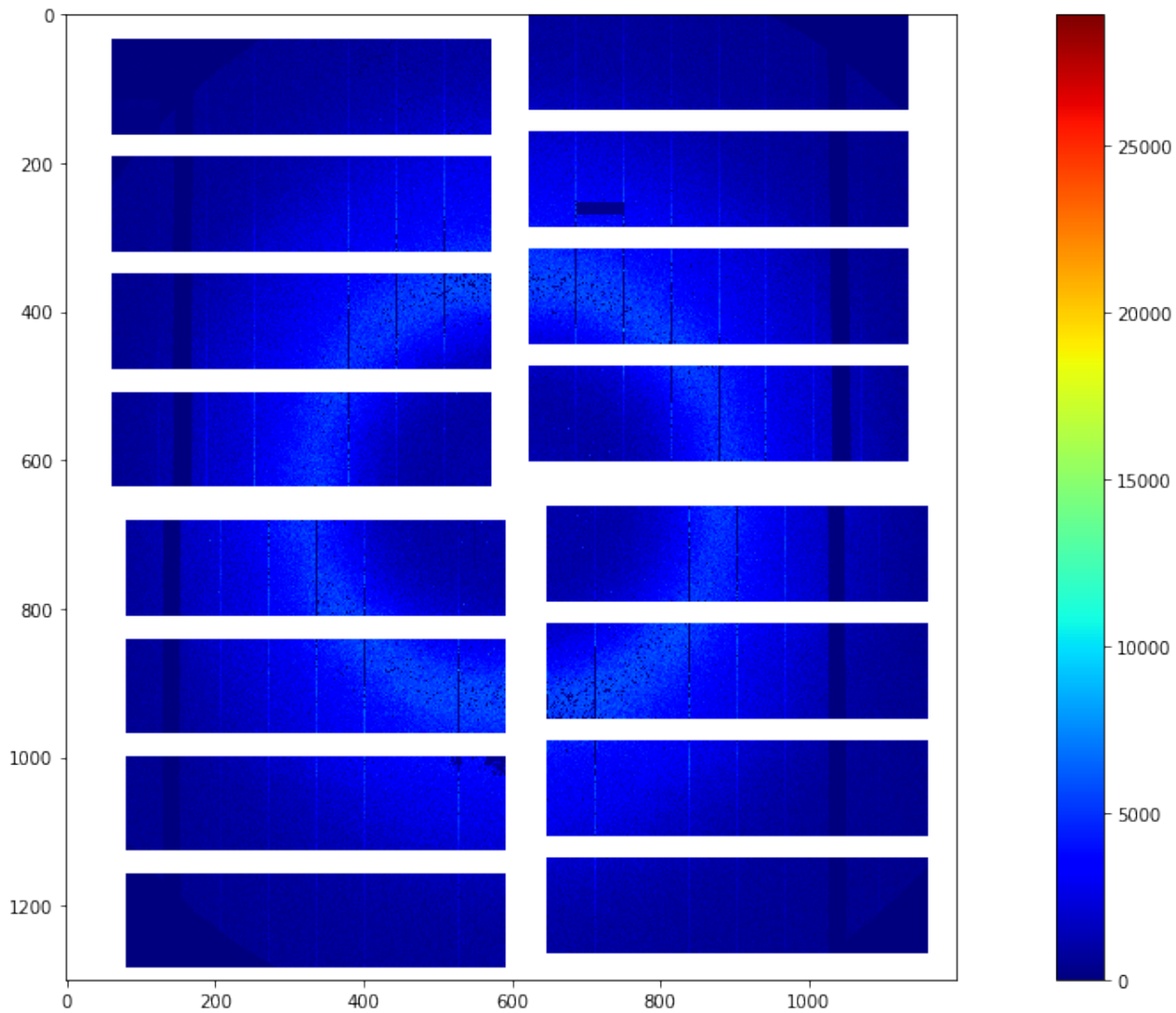
### 3.4.1 Mean RAW Preview

The per pixel mean of the first 128 images of the RAW data



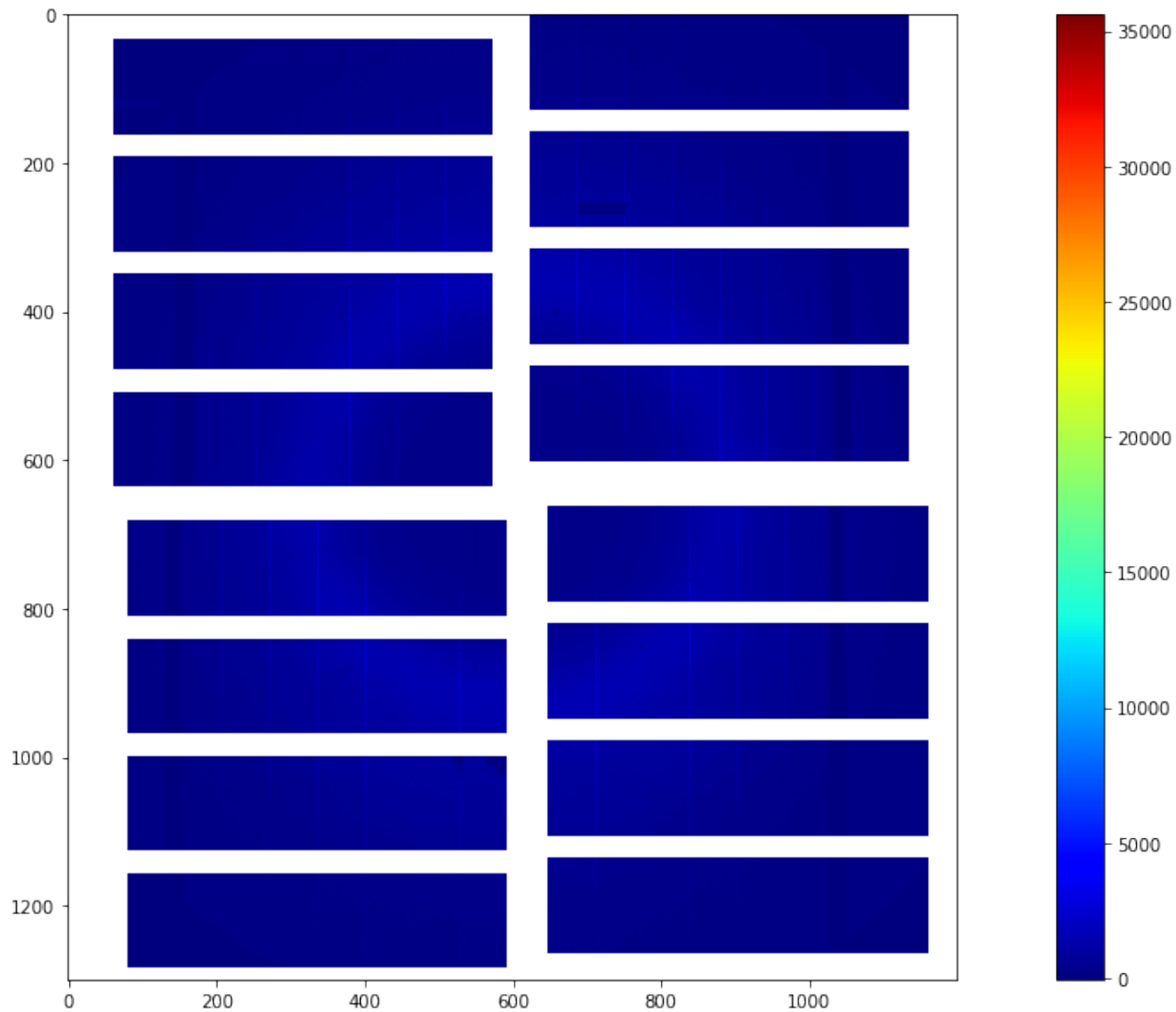
### 3.4.2 Single Shot Preview

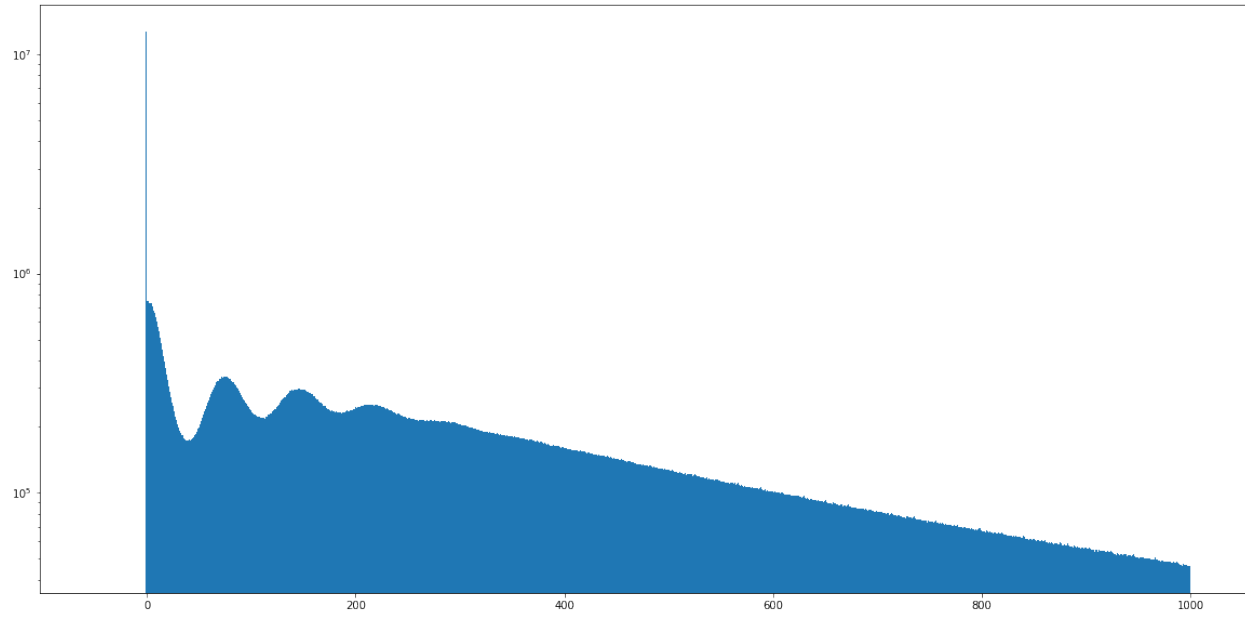
A single shot image from cell 12 of the first train



### 3.4.3 Mean CORRECTED Preview

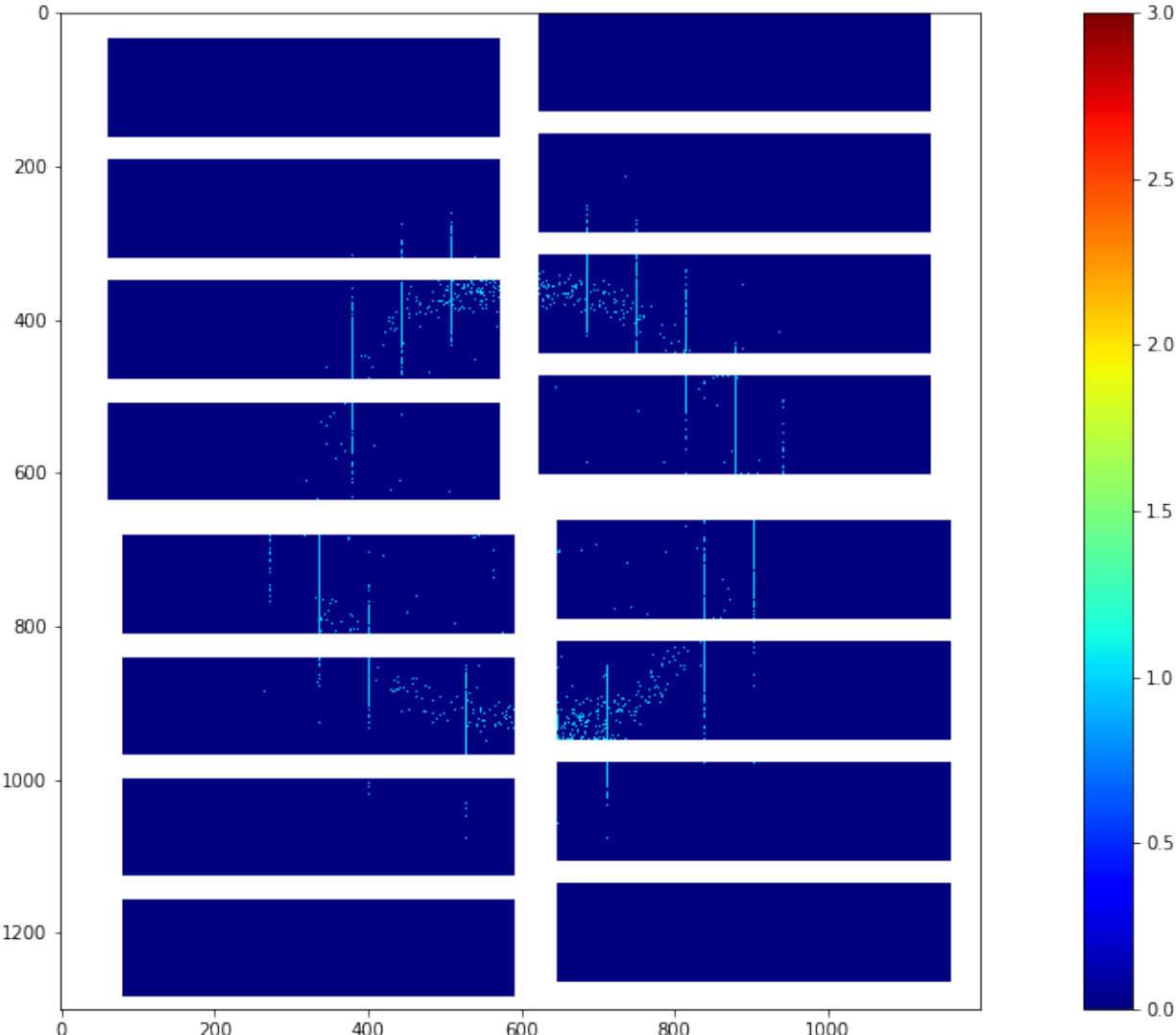
The per pixel mean of the first 128 images of the CORRECTED data





### 3.4.4 Maximum GAIN Preview

The per pixel maximum of the first 128 images of the digitized GAIN data





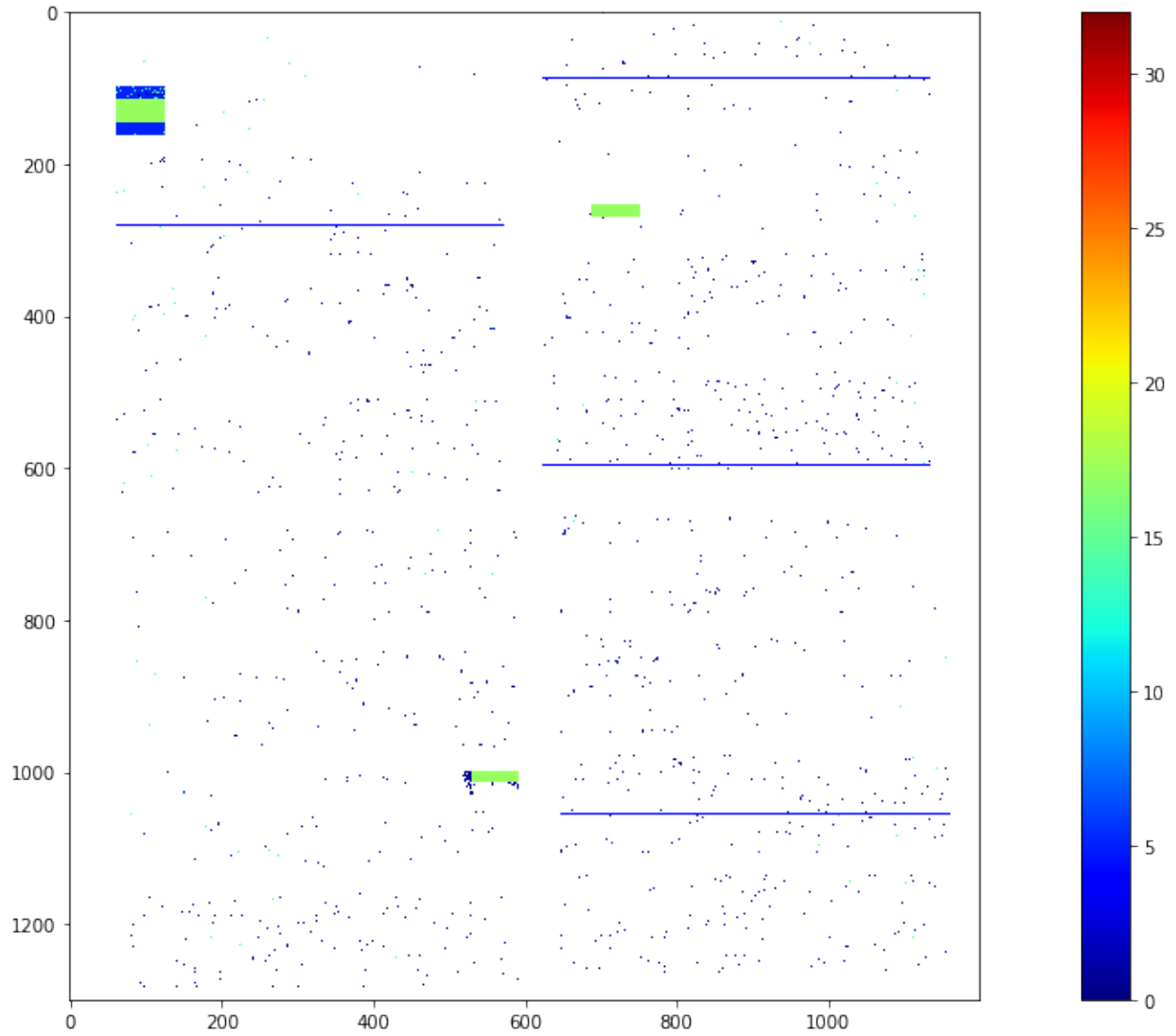
## 3.5 Bad Pixels

The mask contains dedicated entries for all pixels and memory cells as well as all three gains stages. Each mask entry is encoded in 32 bits as:

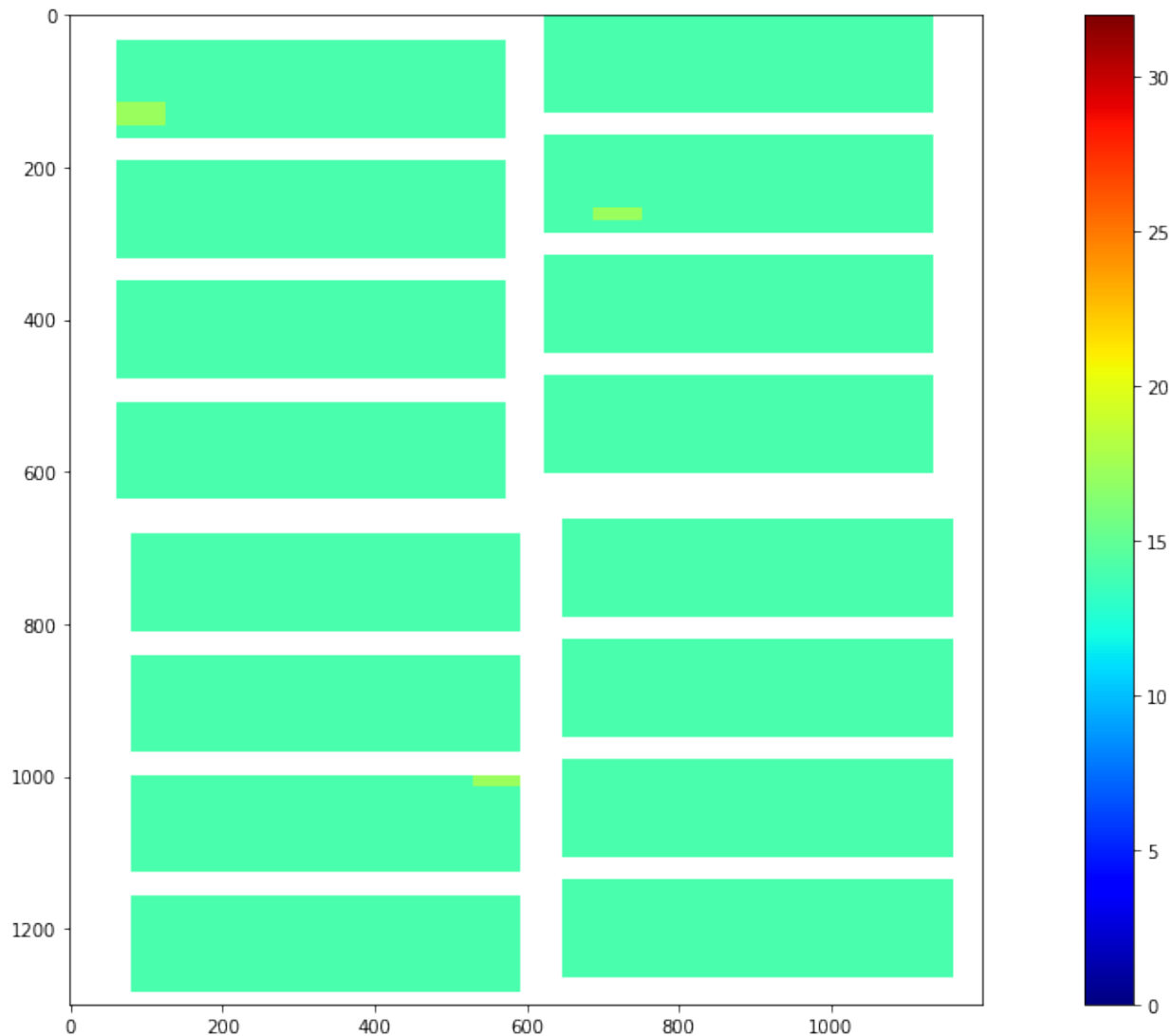
| Bad pixel type          | Bit mask         |
|-------------------------|------------------|
| OFFSET_OUT_OF_THRESHOLD | 0000000000000001 |
| NOISE_OUT_OF_THRESHOLD  | 0000000000000010 |
| OFFSET_NOISE_EVAL_ERROR | 0000000000000100 |
| NO_DARK_DATA            | 0000000000001000 |
| CI_GAIN_OF_OF_THRESHOLD | 0000000000010000 |
| CI_LINEAR_DEVIATION     | 000000000100000  |
| CI_EVAL_ERROR           | 000000001000000  |
| FF_GAIN_EVAL_ERROR      | 000000010000000  |
| FF_GAIN_DEVIATION       | 000000100000000  |
| FF_NO_ENTRIES           | 000001000000000  |
| CI2_EVAL_ERROR          | 000010000000000  |
| VALUE_IS_NAN            | 000010000000000  |
| VALUE_OUT_OF_RANGE      | 000100000000000  |
| GAIN_THRESHOLDING_ERROR | 001000000000000  |
| DATA_STD_IS_ZERO        | 010000000000000  |
| ASIC_STD_BELOW_NOISE    | 100000000000000  |
| INTERPOLATED            | 100000000000000  |
| NOISY_ADC               | 100000000000000  |
| OVERSCAN                | 100000000000000  |
| NON_SENSITIVE           | 100000000000000  |
| NON_LIN_RESPONSE_REGION | 100000000000000  |

### 3.5.1 Single Shot Bad Pixels

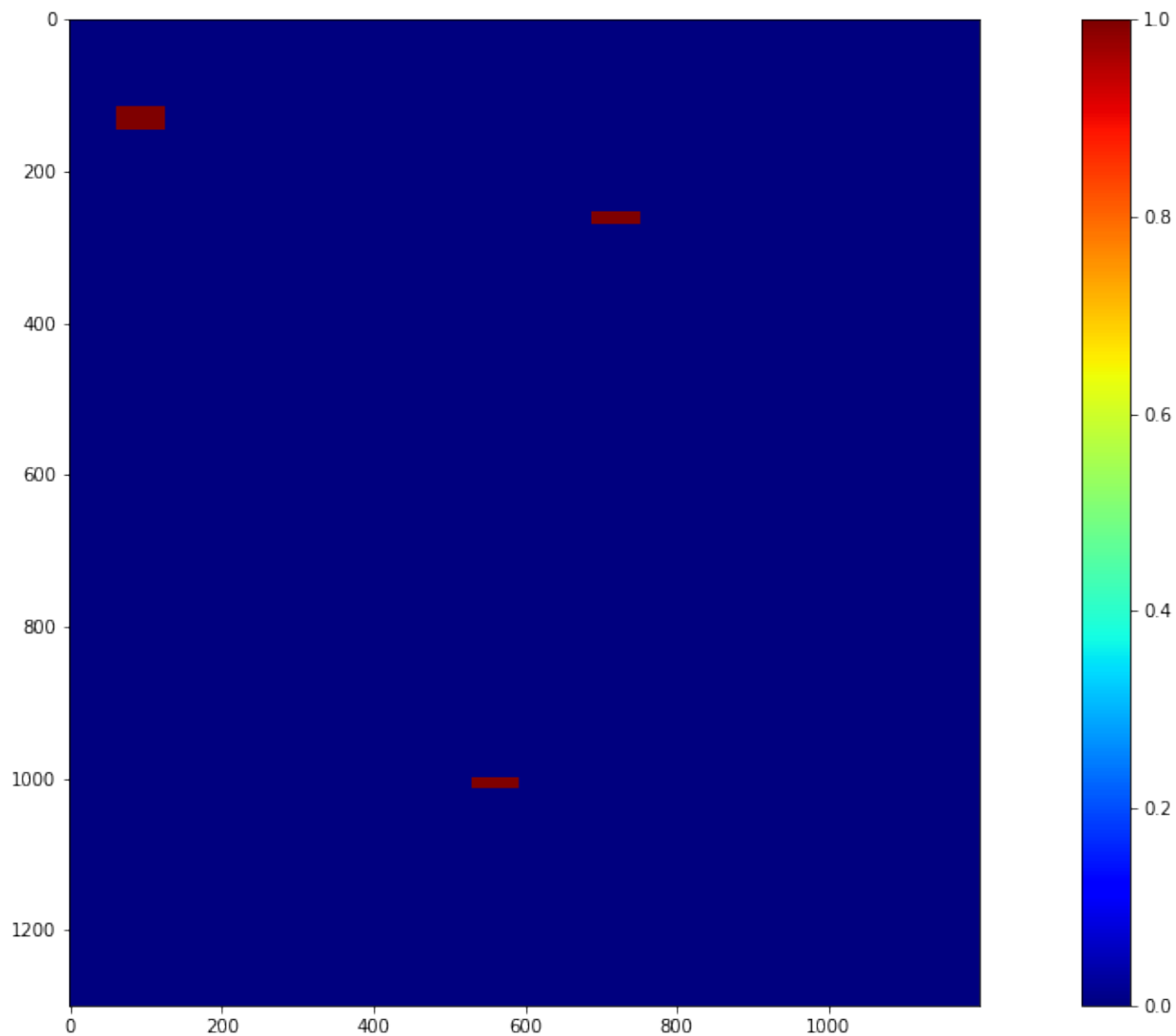
A single shot bad pixel map from cell 4 of the first train

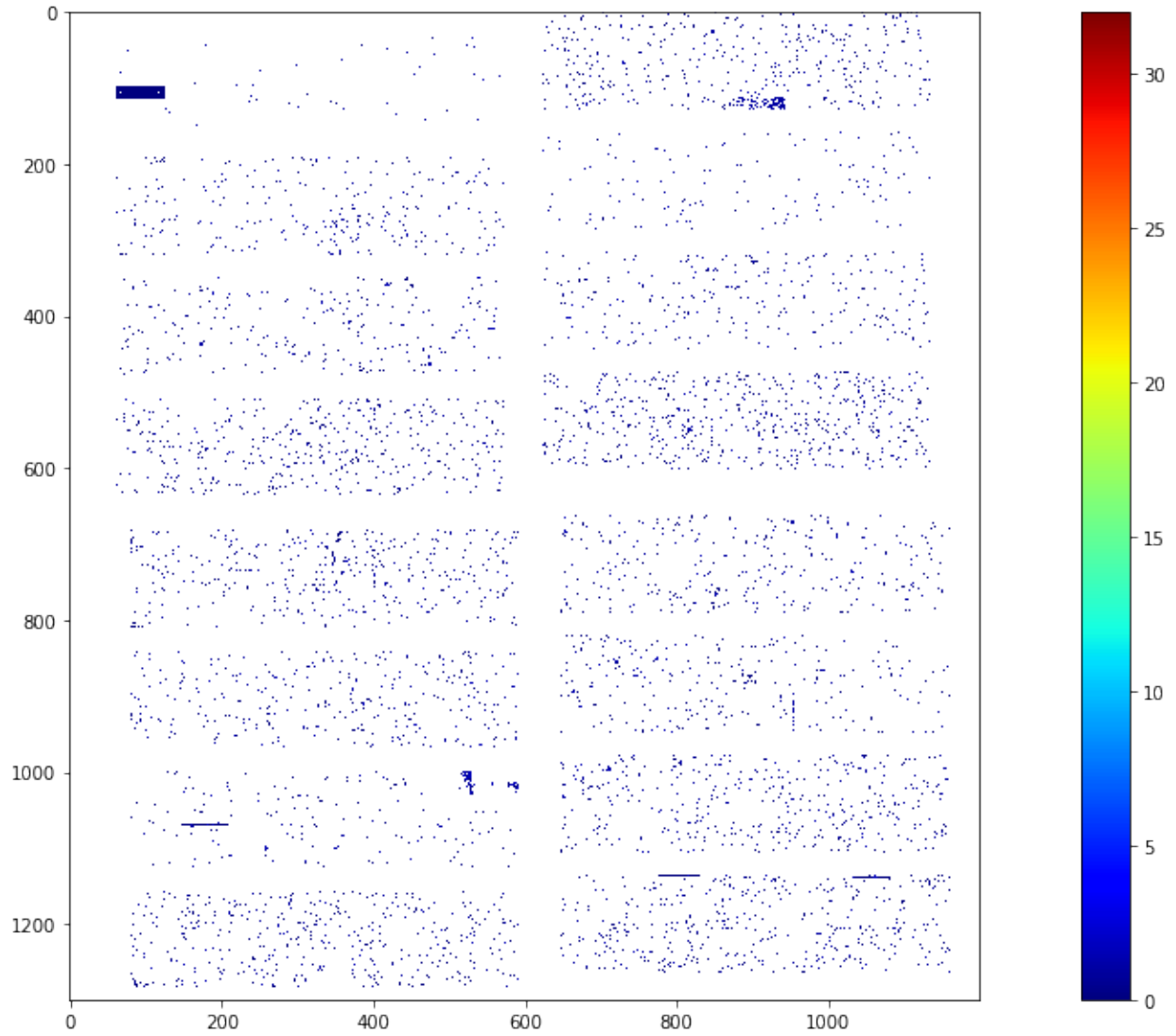


### 3.5.2 Full Train Bad Pixels



### 3.5.3 Full Train Bad Pixels - Only Dark Char. Related





## AGIPD OFFLINE CORRECTION, SEQUENCES = 8-11

```
Connecting to profile slurm_prof_766b6a76-c719-4b68-b085-6d9165c1a5b8_8-11
Using 2020-03-09 01:07:51+01:00 as creation time
Working in IL Mode: False. Actual cells in use are: 0
Outputting to /gpfs/exfel/d/proc/SPB/202030/p900119/r0096
Detector in use is SPB_DET_AGIPD1M-1
```

```
Gain setting: 0
```

### 4.1 Processed Files

```
Processing a total of 64 sequence files in chunks of 32
```

| #  | module | # module | file  |
|----|--------|----------|---|
| 0  | Q1M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00008.h5 |
| 1  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00009.h5 |
| 2  |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00010.h5 |
| 3  |        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00011.h5 |
| 4  | Q1M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00008.h5 |
| 5  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00009.h5 |
| 6  |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00010.h5 |
| 7  |        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00011.h5 |
| 8  | Q1M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00008.h5 |
| 9  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00009.h5 |
| 10 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00010.h5 |
| 11 |        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00011.h5 |
| 12 | Q1M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00008.h5 |
| 13 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00009.h5 |
| 14 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00010.h5 |
| 15 |        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00011.h5 |
| 16 | Q2M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00008.h5 |
| 17 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00009.h5 |
| 18 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00010.h5 |
| 19 |        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00011.h5 |
| 20 | Q2M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00008.h5 |
| 21 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00009.h5 |
| 22 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00010.h5 |
| 23 |        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00011.h5 |
| 24 | Q2M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00008.h5 |
| 25 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00009.h5 |
| 26 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00010.h5 |
| 27 |        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00011.h5 |
| 28 | Q2M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00008.h5 |
| 29 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00009.h5 |
| 30 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00010.h5 |
| 31 |        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00011.h5 |
| 32 | Q3M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00008.h5 |
| 33 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00009.h5 |
| 34 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00010.h5 |
| 35 |        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00011.h5 |
| 36 | Q3M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00008.h5 |
| 37 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00009.h5 |
| 38 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00010.h5 |
| 39 |        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00011.h5 |
| 40 | Q3M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00008.h5 |
| 41 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00009.h5 |
| 42 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00010.h5 |
| 43 |        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00011.h5 |
| 44 | Q3M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00008.h5 |
| 45 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00009.h5 |
| 46 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00010.h5 |
| 47 |        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00011.h5 |
| 48 | Q4M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00008.h5 |
| 49 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00009.h5 |
| 50 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00010.h5 |
| 51 |        | 3        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00011.h5 |
| 52 | Q4M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00008.h5 |
| 53 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00009.h5 |
| 54 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00010.h5 |

**4.55 Processed Files** 60

|    |      |   |   |
|----|------|---|---|
| 55 | Q4M3 | 0 | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00008.h5 |
| 56 |      | 1 | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00009.h5 |
| 57 |      | 2 | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00010.h5 |
| 58 |      | 3 | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00011.h5 |

A range of 500 pulse indices is selected: from 0 to 500 with a step of 1  
Running 32 tasks parallel  
Running 32 tasks parallel

```
Constants were injected on:
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
```



```
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels.... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
```

```
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
```

```
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
```

```
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
```

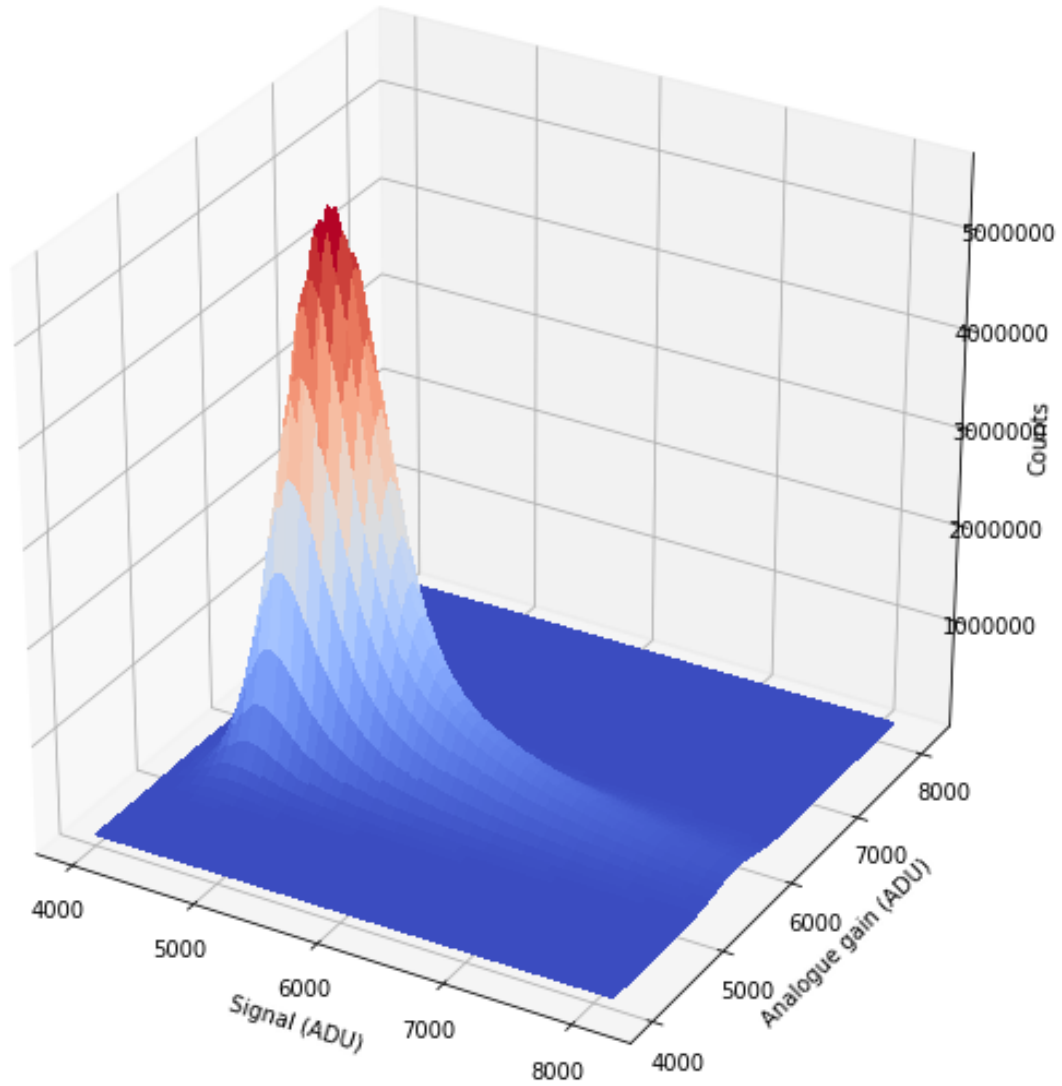
```
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
```

```
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
```

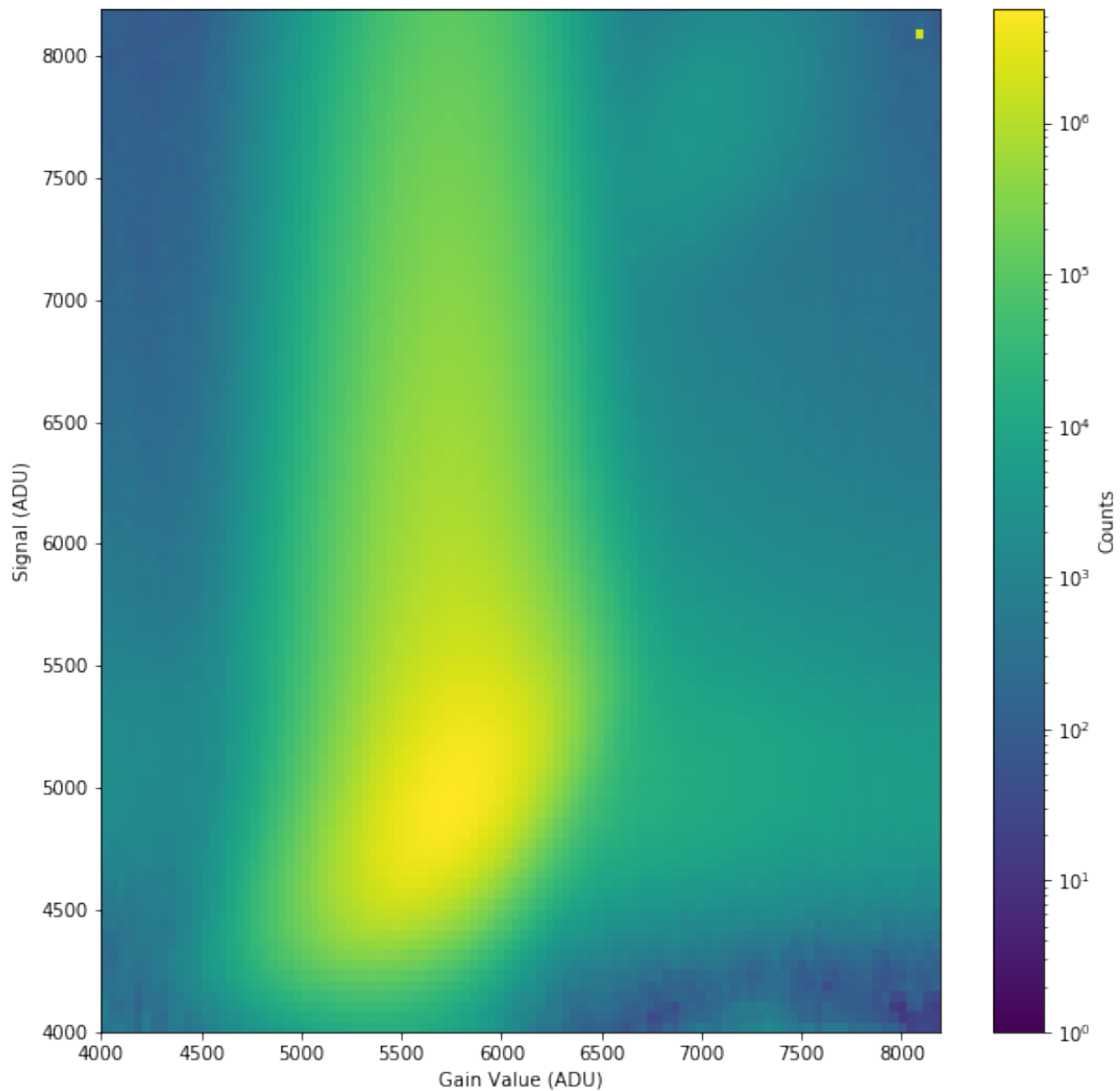
```
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
```

## 4.2 Signal vs. Analogue Gain

The following plot shows plots signal vs. gain for the first 128 images.

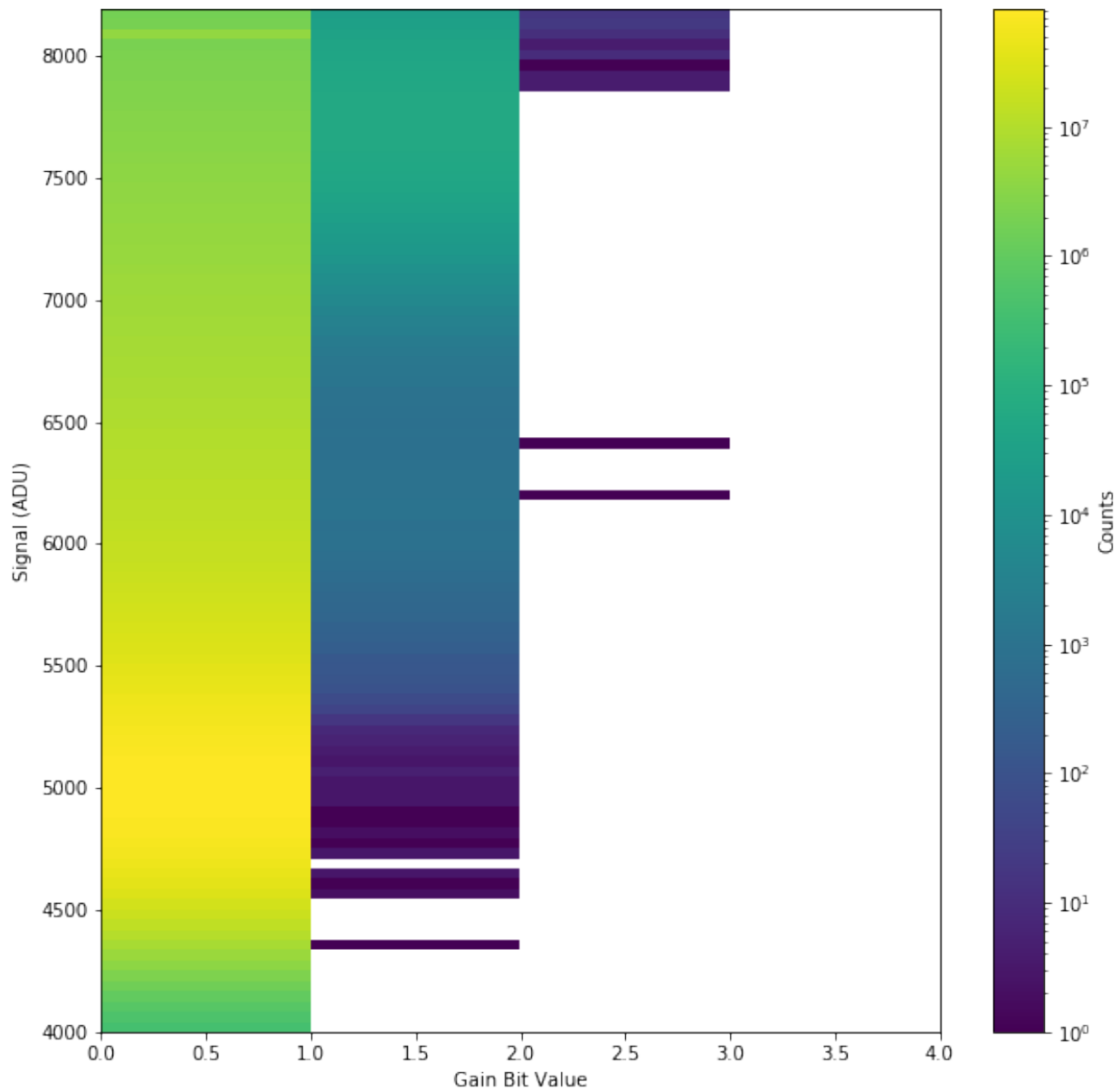


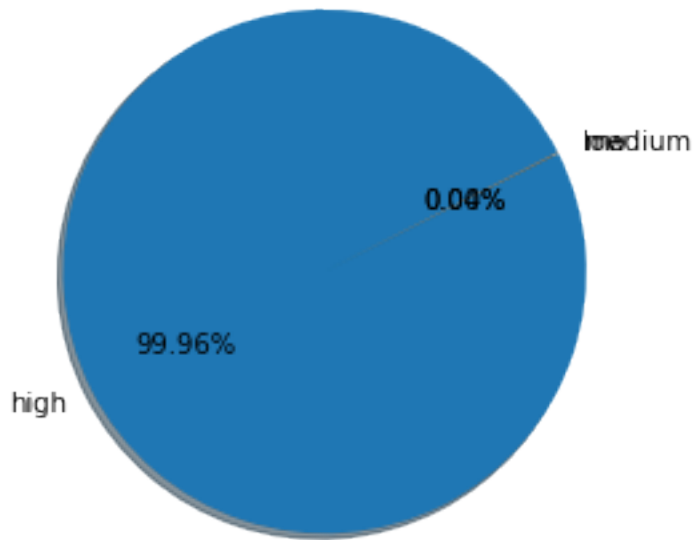




### 4.3 Signal vs. Digitized Gain

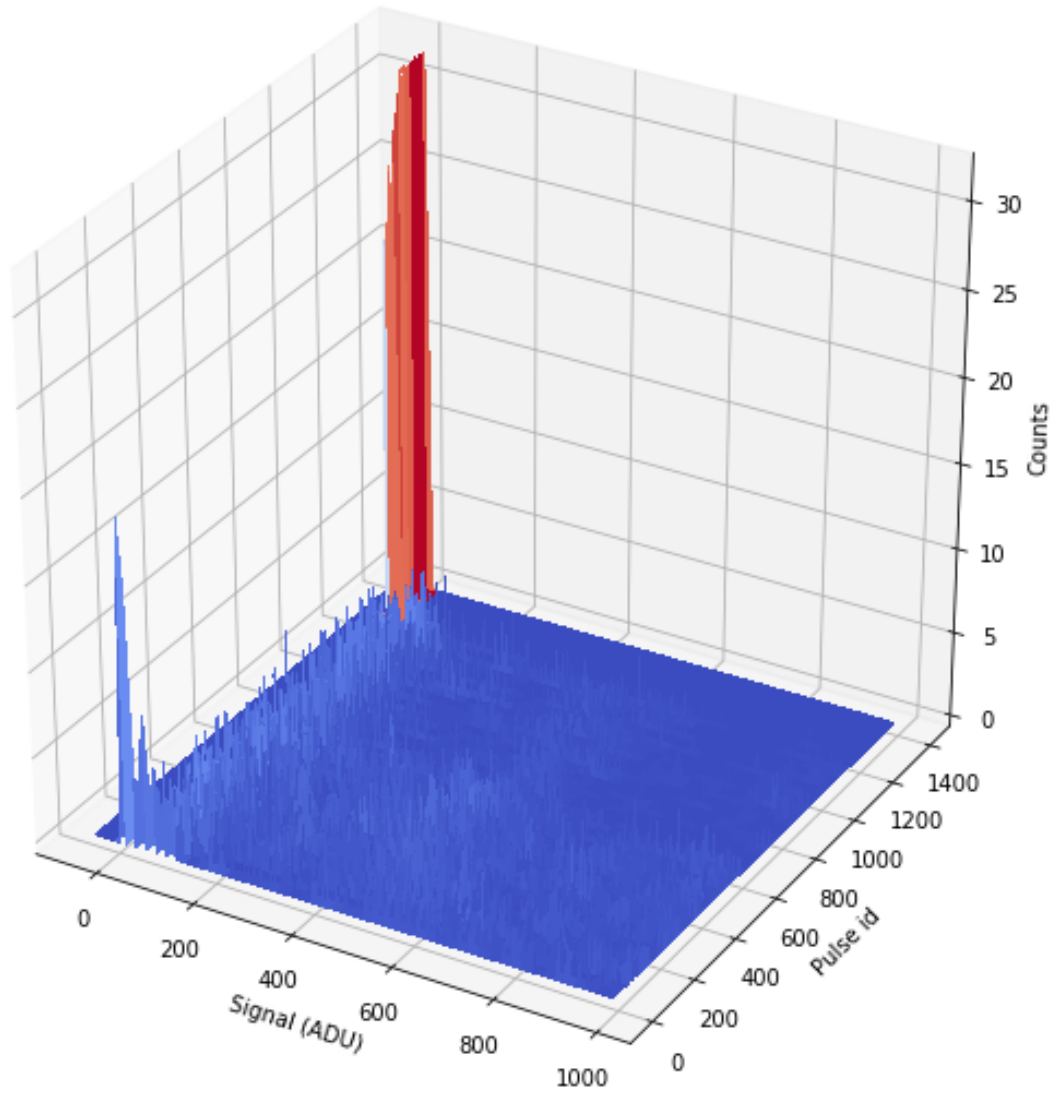
The following plot shows plots signal vs. digitized gain for the first 128 images.

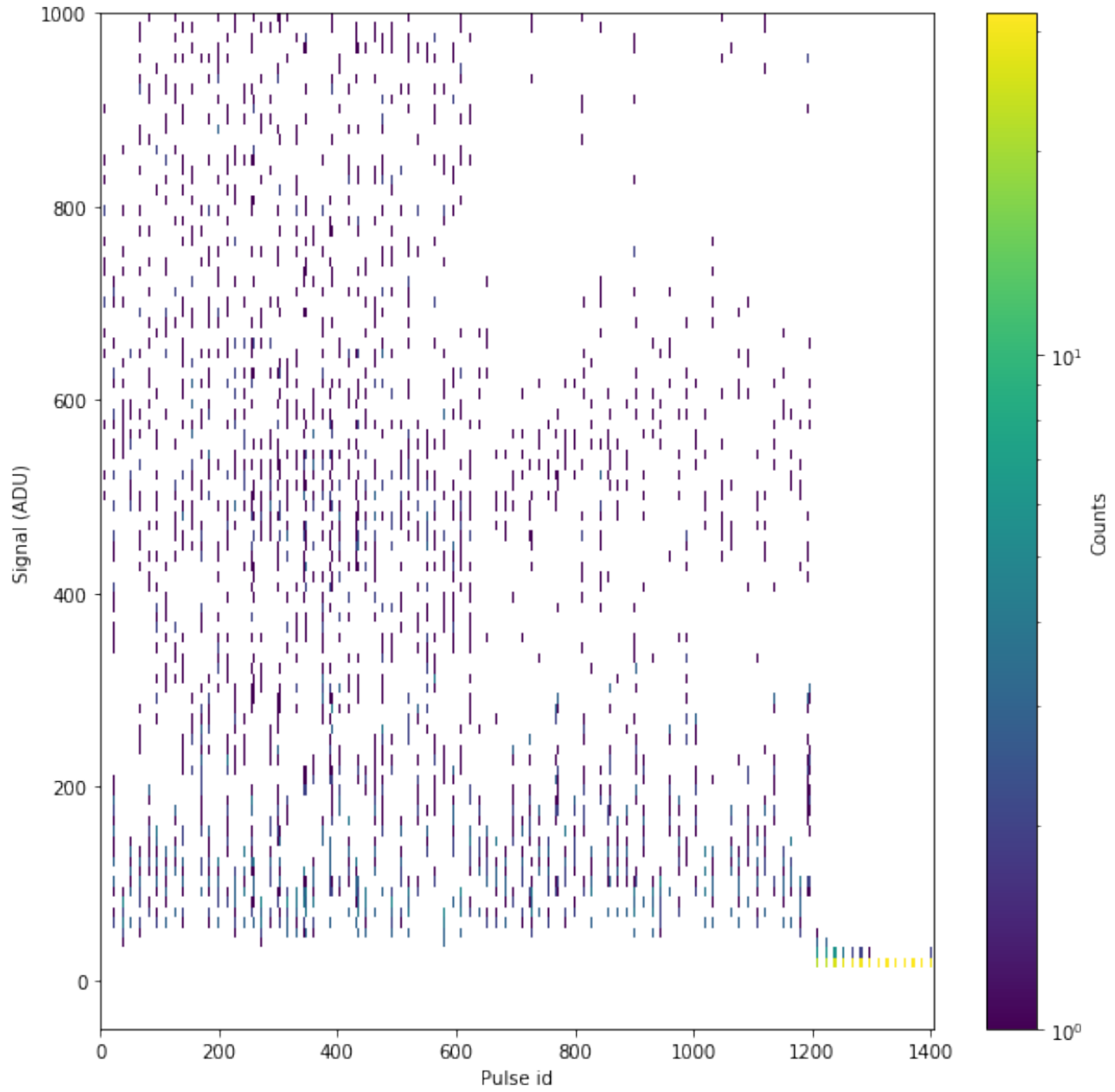


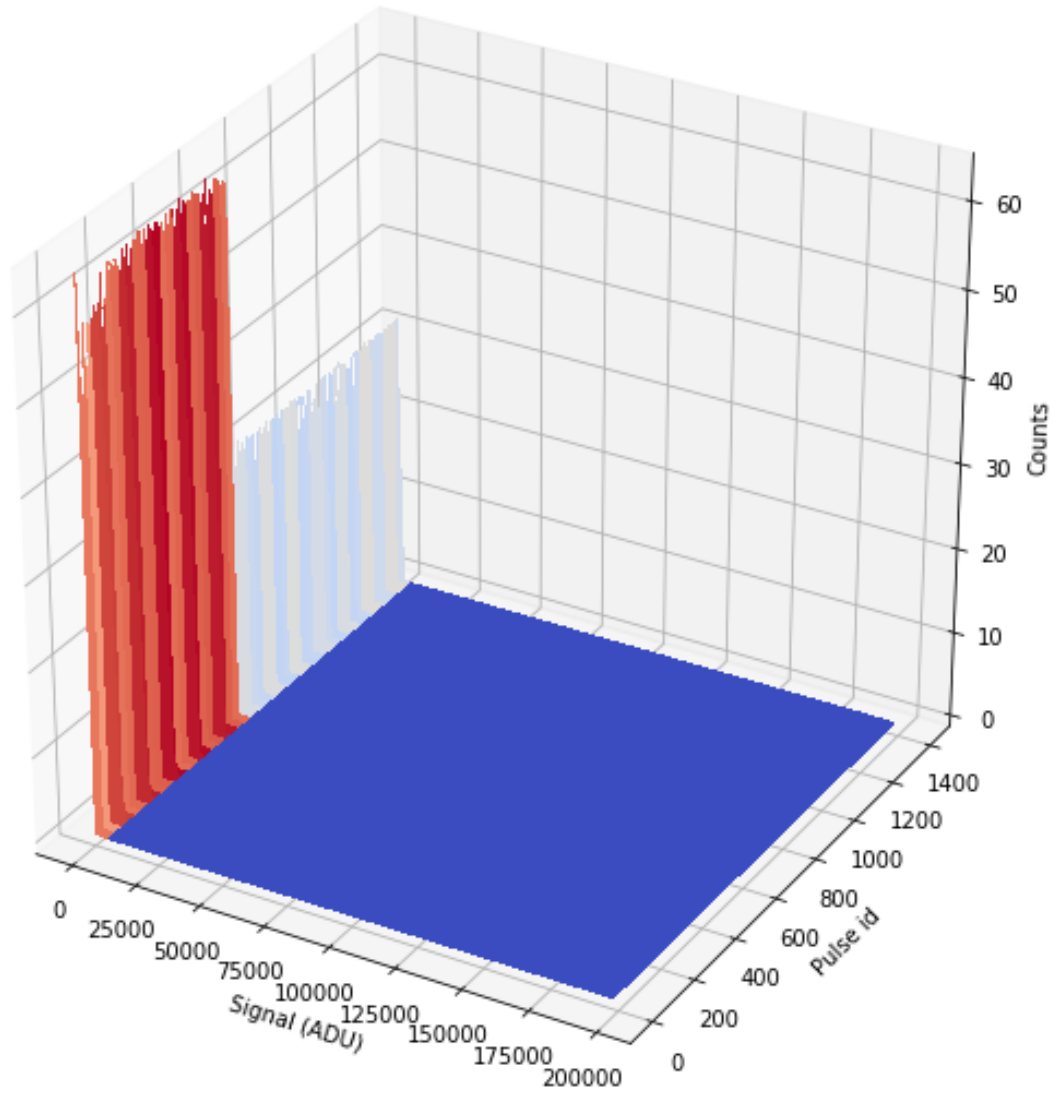


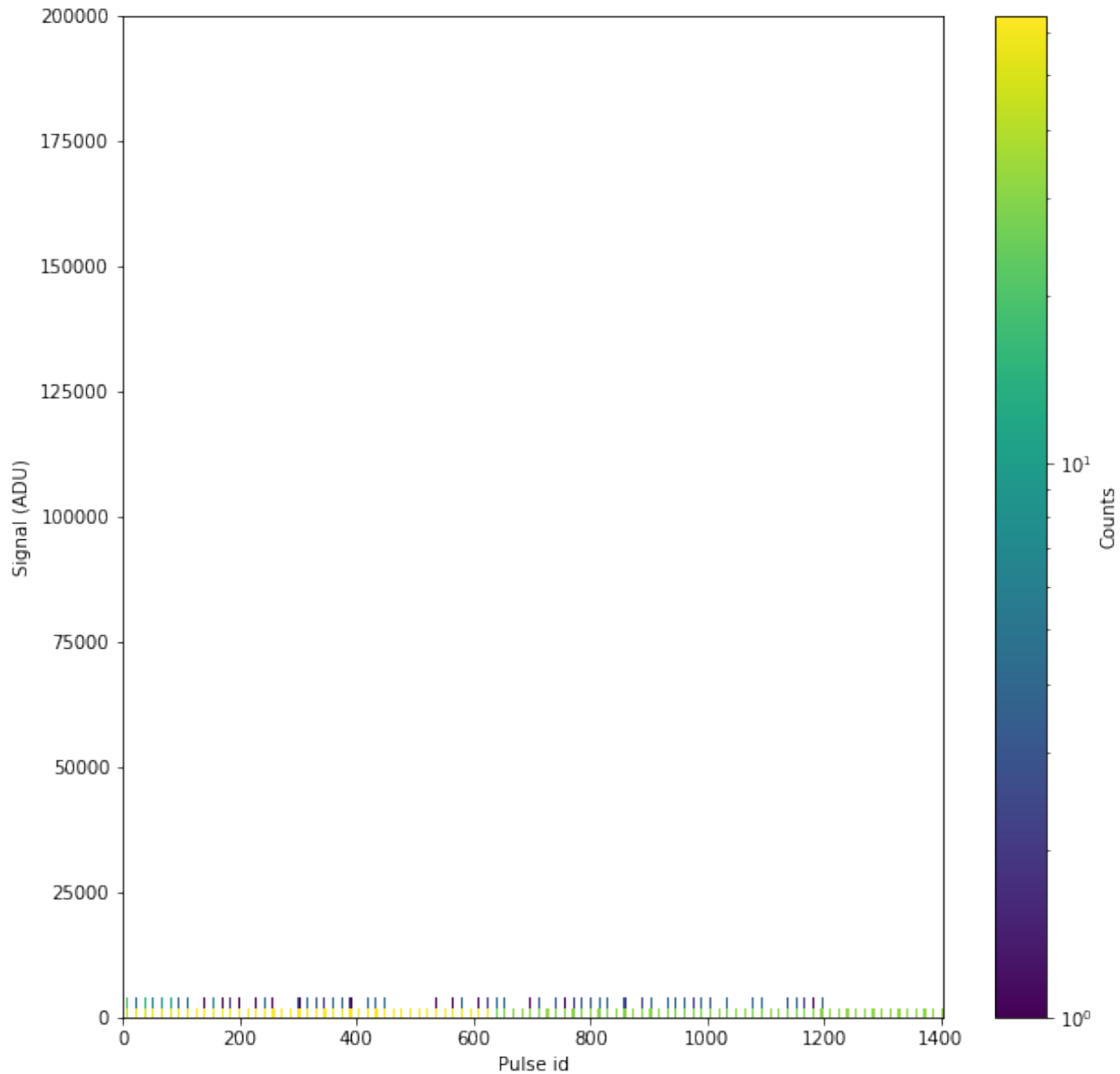
#### 4.4 Mean Intensity per Pulse

The following plots show the mean signal for each pulse in a detailed and expanded intensity region.



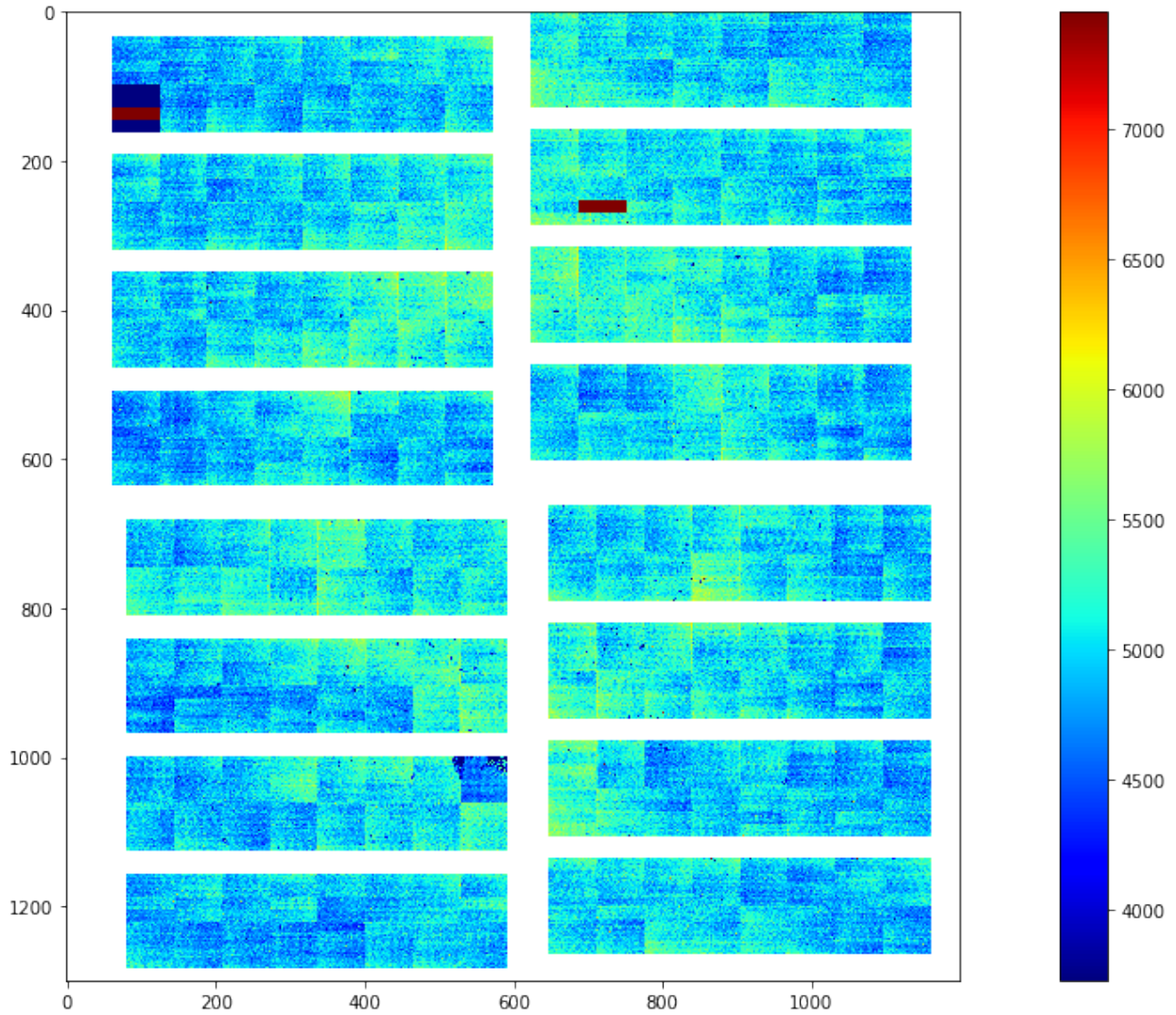






#### 4.4.1 Mean RAW Preview

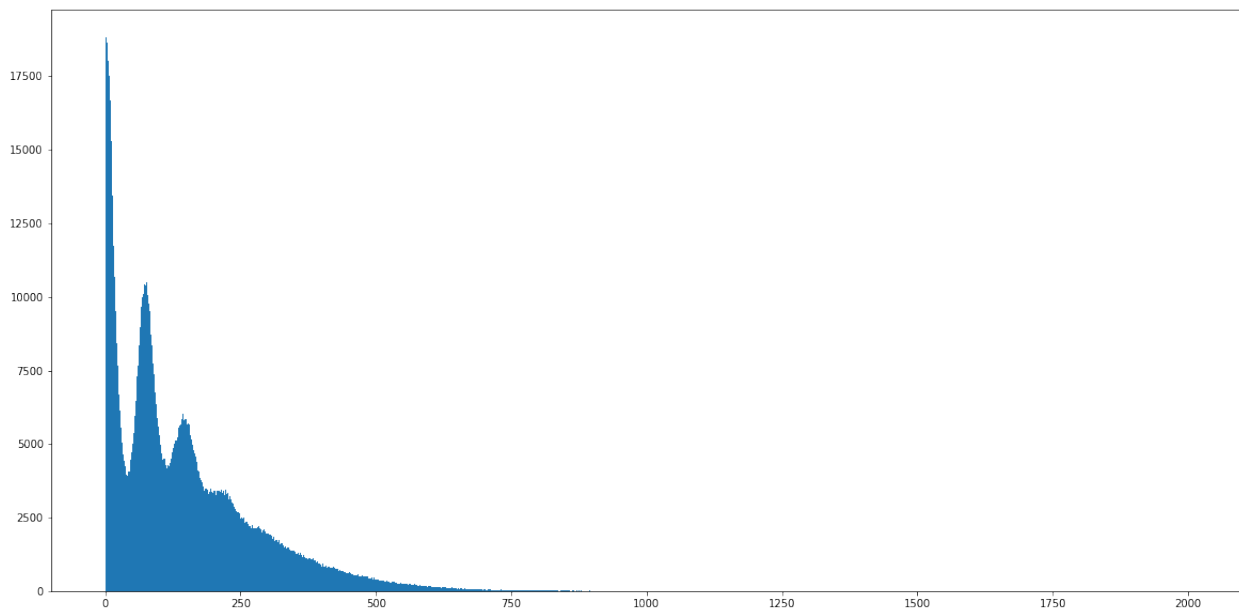
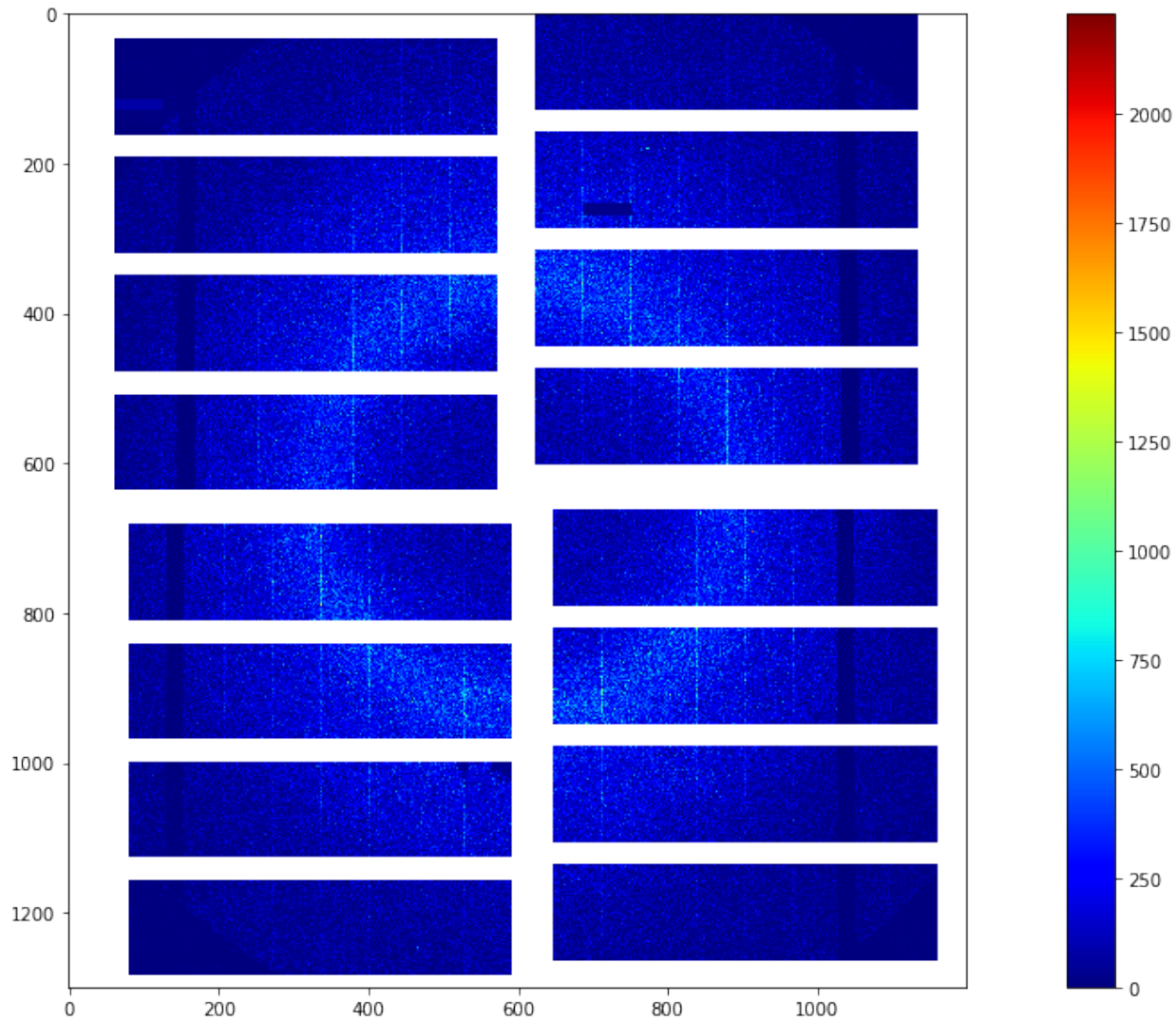
The per pixel mean of the first 128 images of the RAW data



#### 4.4.2 Single Shot Preview

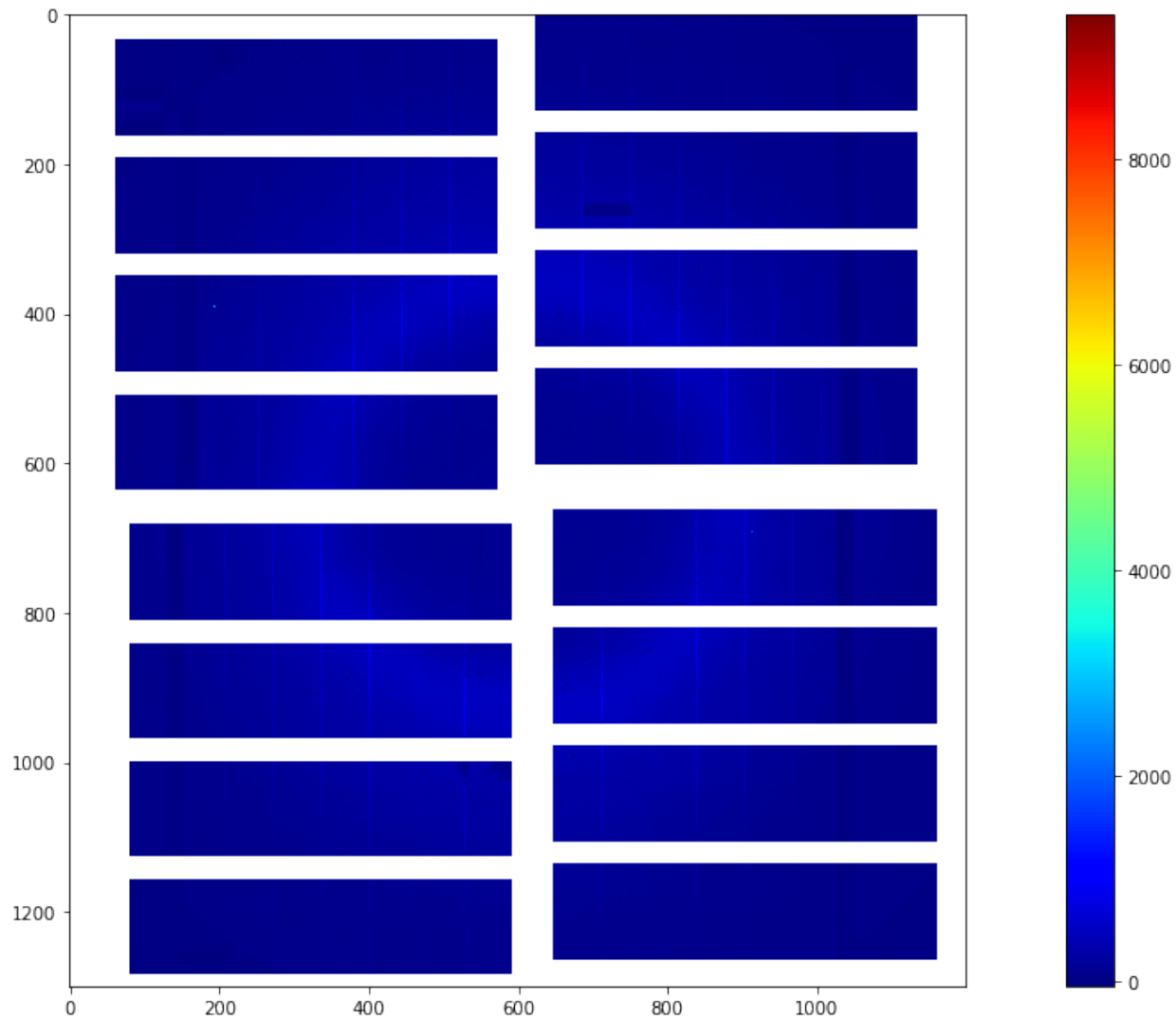
A single shot image from cell 12 of the first train

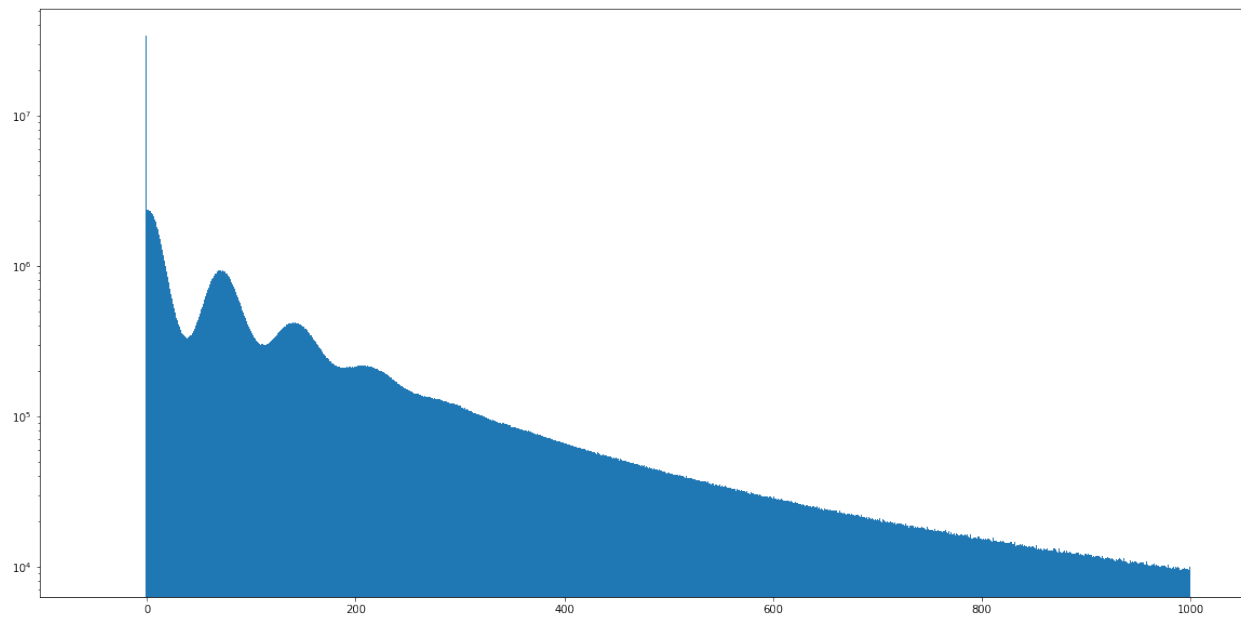




### 4.4.3 Mean CORRECTED Preview

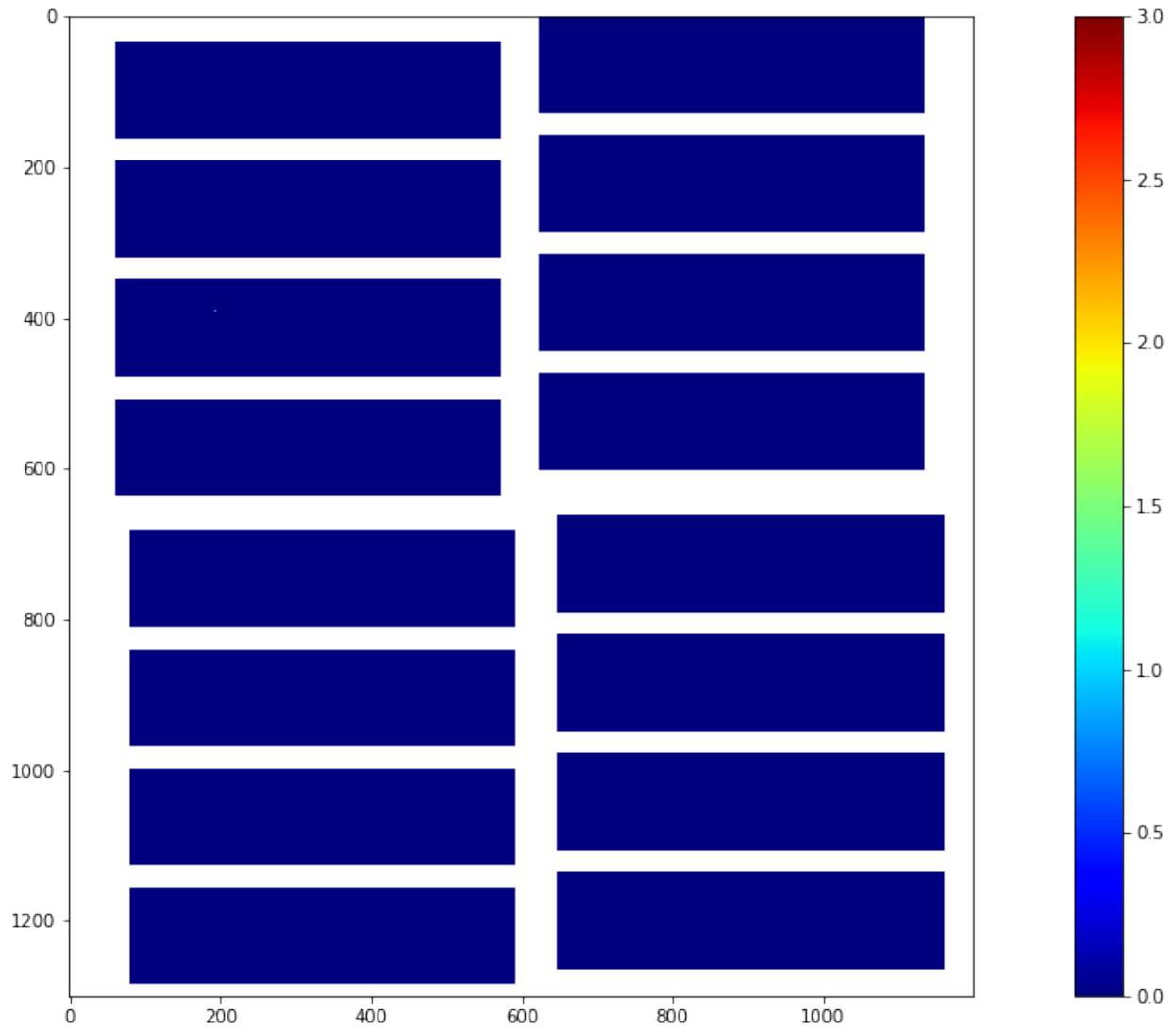
The per pixel mean of the first 128 images of the CORRECTED data





#### 4.4.4 Maximum GAIN Preview

The per pixel maximum of the first 128 images of the digitized GAIN data



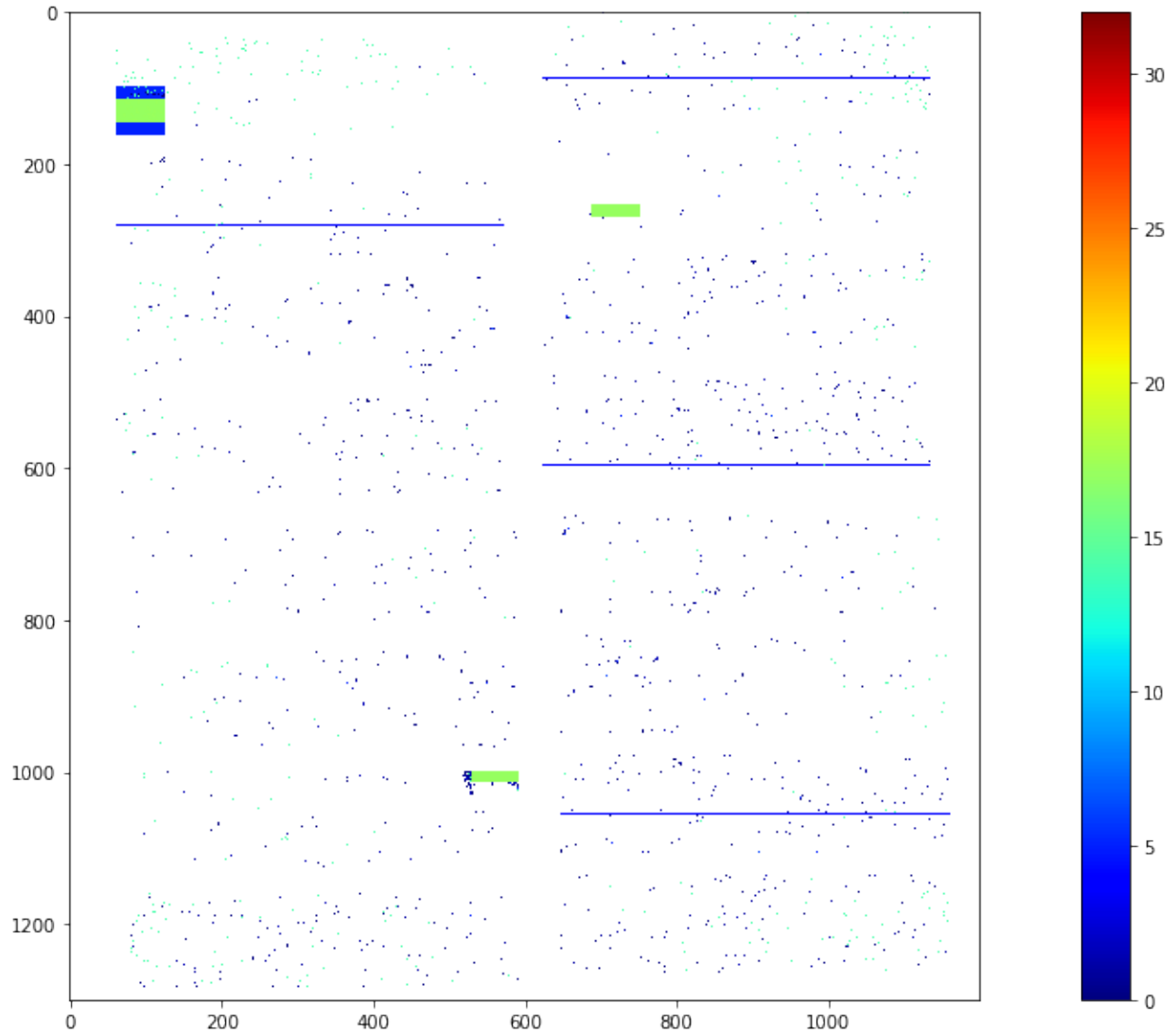
## 4.5 Bad Pixels

The mask contains dedicated entries for all pixels and memory cells as well as all three gains stages. Each mask entry is encoded in 32 bits as:

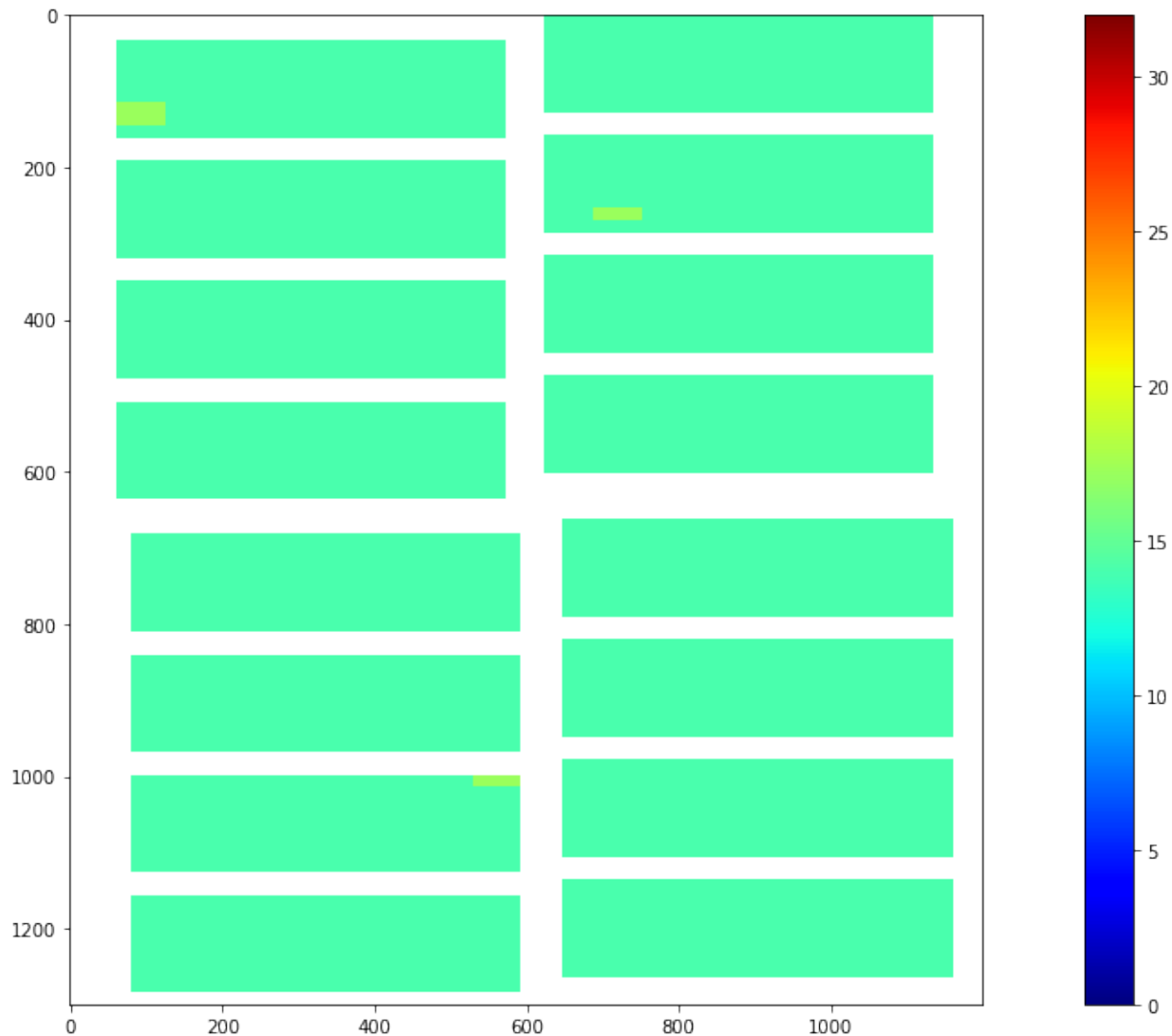
| Bad pixel type          | Bit mask         |
|-------------------------|------------------|
| OFFSET_OUT_OF_THRESHOLD | 0000000000000001 |
| NOISE_OUT_OF_THRESHOLD  | 0000000000000010 |
| OFFSET_NOISE_EVAL_ERROR | 0000000000000100 |
| NO_DARK_DATA            | 0000000000001000 |
| CI_GAIN_OF_OF_THRESHOLD | 0000000000010000 |
| CI_LINEAR_DEVIATION     | 000000000100000  |
| CI_EVAL_ERROR           | 000000001000000  |
| FF_GAIN_EVAL_ERROR      | 000000010000000  |
| FF_GAIN_DEVIATION       | 000000100000000  |
| FF_NO_ENTRIES           | 000001000000000  |
| CI2_EVAL_ERROR          | 000010000000000  |
| VALUE_IS_NAN            | 000010000000000  |
| VALUE_OUT_OF_RANGE      | 000100000000000  |
| GAIN_THRESHOLDING_ERROR | 001000000000000  |
| DATA_STD_IS_ZERO        | 010000000000000  |
| ASIC_STD_BELOW_NOISE    | 100000000000000  |
| INTERPOLATED            | 100000000000000  |
| NOISY_ADC               | 100000000000000  |
| OVERSCAN                | 100000000000000  |
| NON_SENSITIVE           | 100000000000000  |
| NON_LIN_RESPONSE_REGION | 100000000000000  |

### 4.5.1 Single Shot Bad Pixels

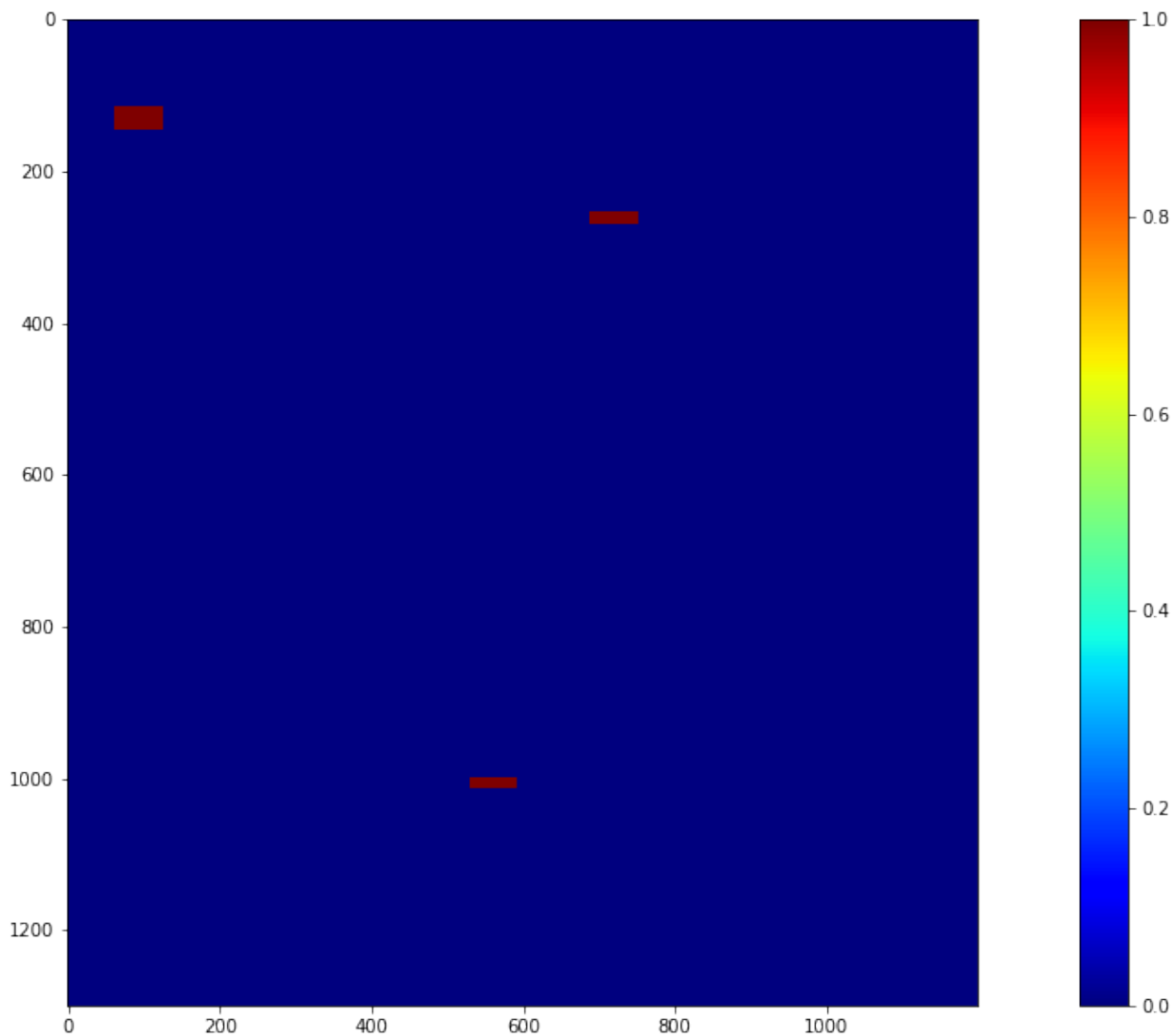
A single shot bad pixel map from cell 4 of the first train



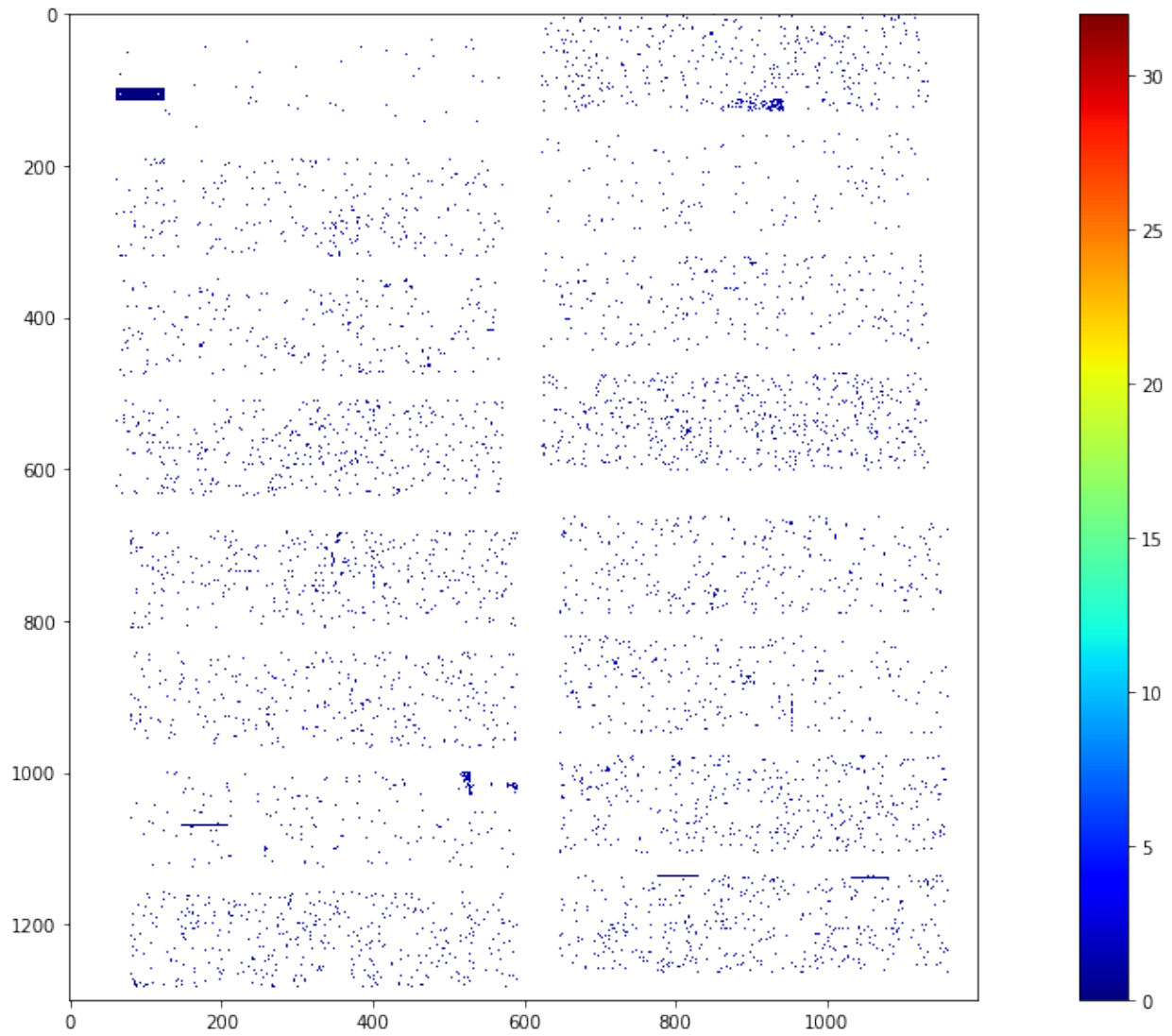
### 4.5.2 Full Train Bad Pixels



### 4.5.3 Full Train Bad Pixels - Only Dark Char. Related







## AGIPD OFFLINE CORRECTION, SEQUENCES = 12-14

```
Connecting to profile slurm_prof_766b6a76-c719-4b68-b085-6d9165c1a5b8_12-14
Using 2020-03-09 01:07:51+01:00 as creation time
Working in IL Mode: False. Actual cells in use are: 0
Outputting to /gpfs/exfel/d/proc/SPB/202030/p900119/r0096
Detector in use is SPB_DET_AGIPD1M-1
```

```
Gain setting: 0
```

### 5.1 Processed Files

```
Processing a total of 48 sequence files in chunks of 32
```

| #  | module | # module | file  |
|----|--------|----------|---|
| 0  | Q1M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00012.h5 |
| 1  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00013.h5 |
| 2  |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00014.h5 |
| 3  | Q1M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00012.h5 |
| 4  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00013.h5 |
| 5  |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00014.h5 |
| 6  | Q1M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00012.h5 |
| 7  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00013.h5 |
| 8  |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00014.h5 |
| 9  | Q1M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00012.h5 |
| 10 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00013.h5 |
| 11 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00014.h5 |
| 12 | Q2M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00012.h5 |
| 13 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00013.h5 |
| 14 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00014.h5 |
| 15 | Q2M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00012.h5 |
| 16 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00013.h5 |
| 17 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00014.h5 |
| 18 | Q2M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00012.h5 |
| 19 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00013.h5 |
| 20 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00014.h5 |
| 21 | Q2M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00012.h5 |
| 22 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00013.h5 |
| 23 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00014.h5 |
| 24 | Q3M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00012.h5 |
| 25 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00013.h5 |
| 26 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00014.h5 |
| 27 | Q3M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00012.h5 |
| 28 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00013.h5 |
| 29 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00014.h5 |
| 30 | Q3M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00012.h5 |
| 31 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00013.h5 |
| 32 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00014.h5 |
| 33 | Q3M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00012.h5 |
| 34 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00013.h5 |
| 35 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00014.h5 |
| 36 | Q4M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00012.h5 |
| 37 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00013.h5 |
| 38 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00014.h5 |
| 39 | Q4M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00012.h5 |
| 40 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00013.h5 |
| 41 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00014.h5 |
| 42 | Q4M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00012.h5 |
| 43 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00013.h5 |
| 44 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00014.h5 |
| 45 | Q4M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD15-S00012.h5 |
| 46 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD15-S00013.h5 |
| 47 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD15-S00014.h5 |

```
A range of 500 pulse indices is selected: from 0 to 500 with a step of 1
Running 32 tasks parallel
Running 16 tasks parallel
```

```
Constants were injected on:
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
```

```
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
```

```
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
```

```
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
```

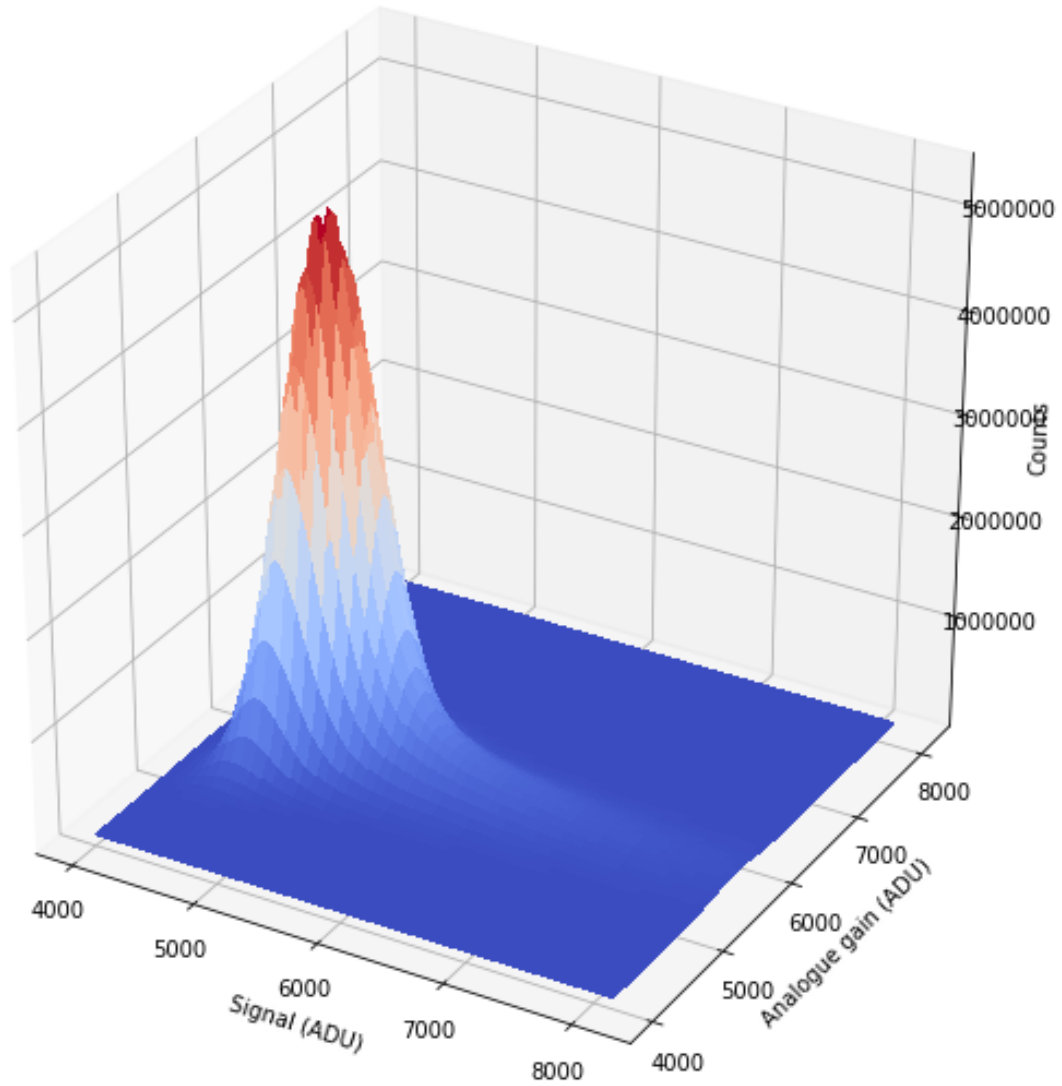
```
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
```

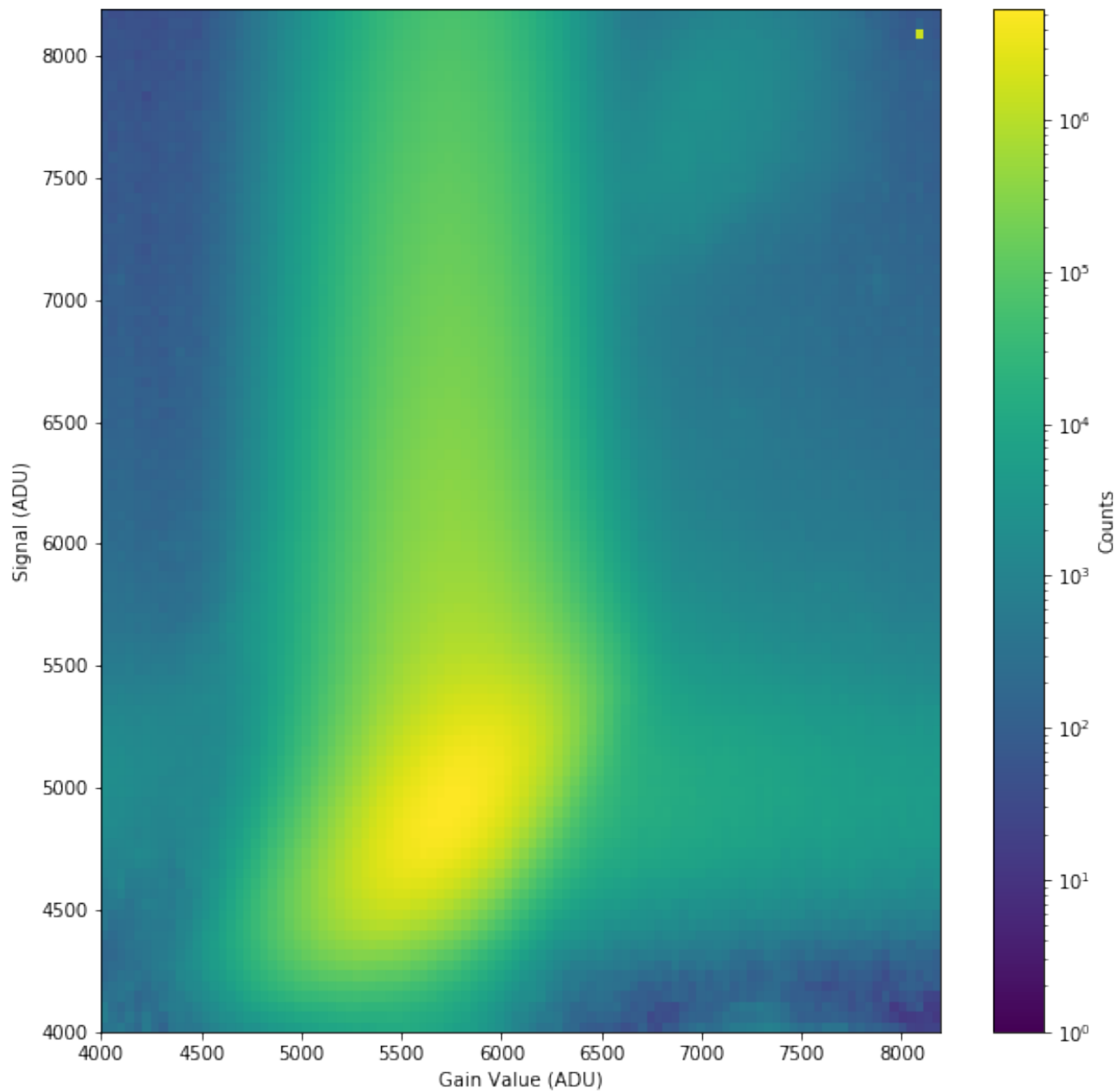


```
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
```

## 5.2 Signal vs. Analogue Gain

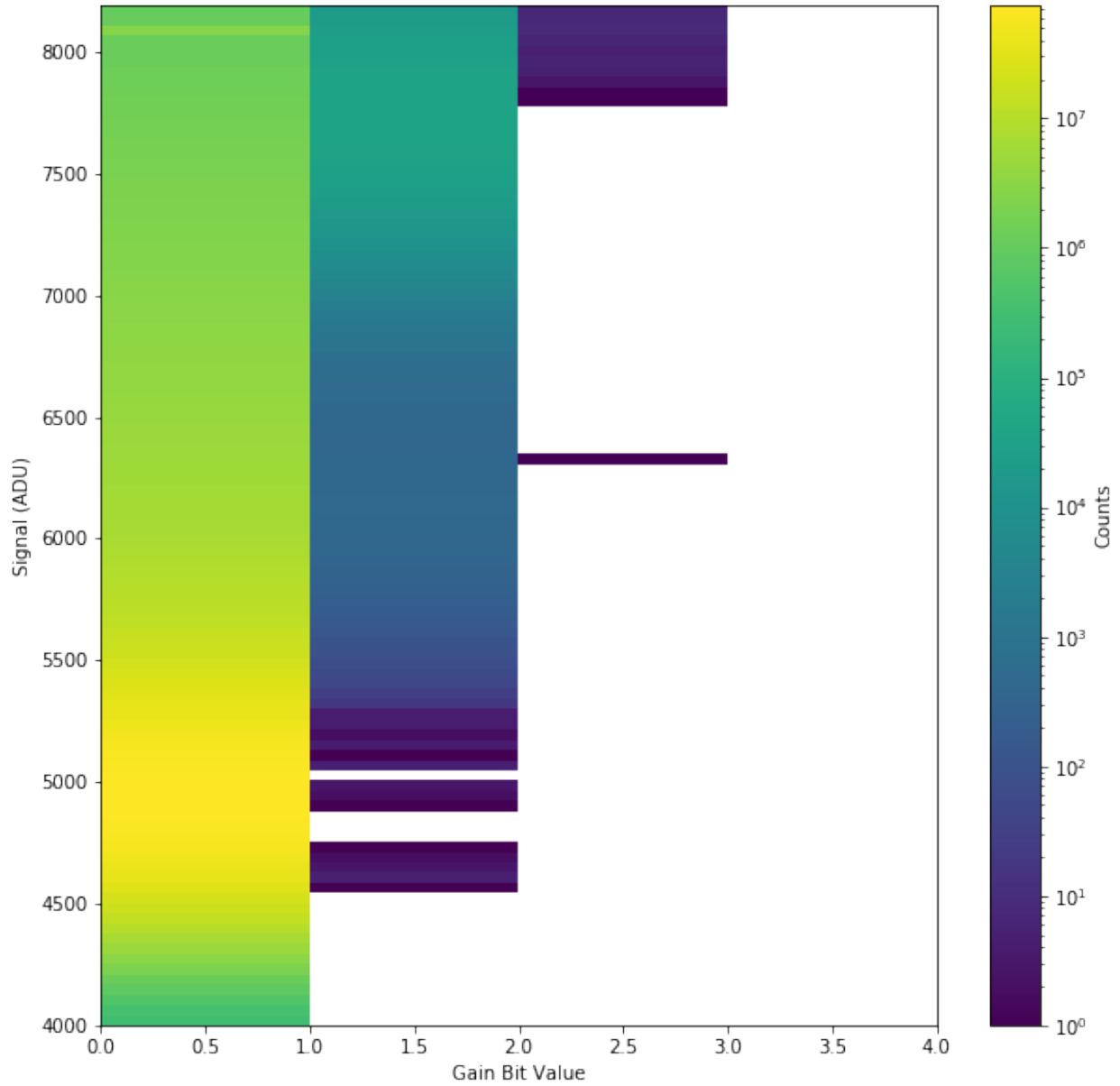
The following plot shows plots signal vs. gain for the first 128 images.

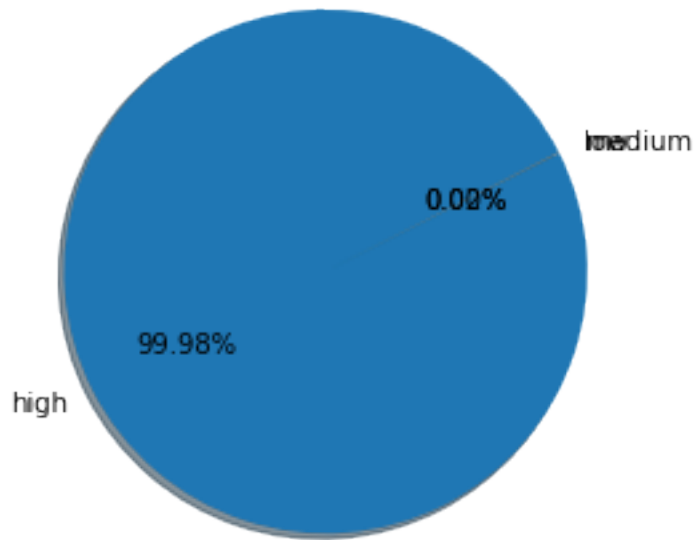




### 5.3 Signal vs. Digitized Gain

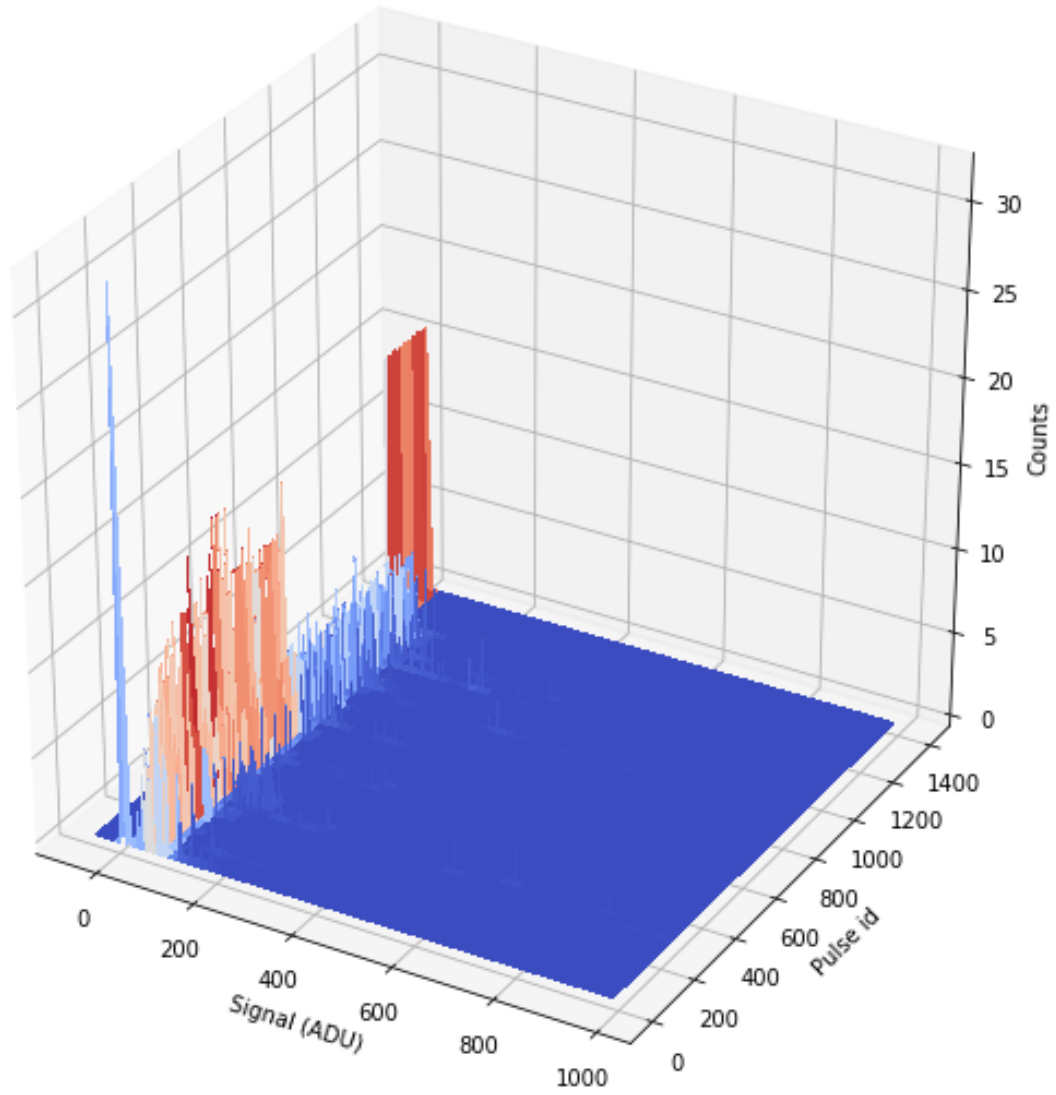
The following plot shows plots signal vs. digitized gain for the first 128 images.

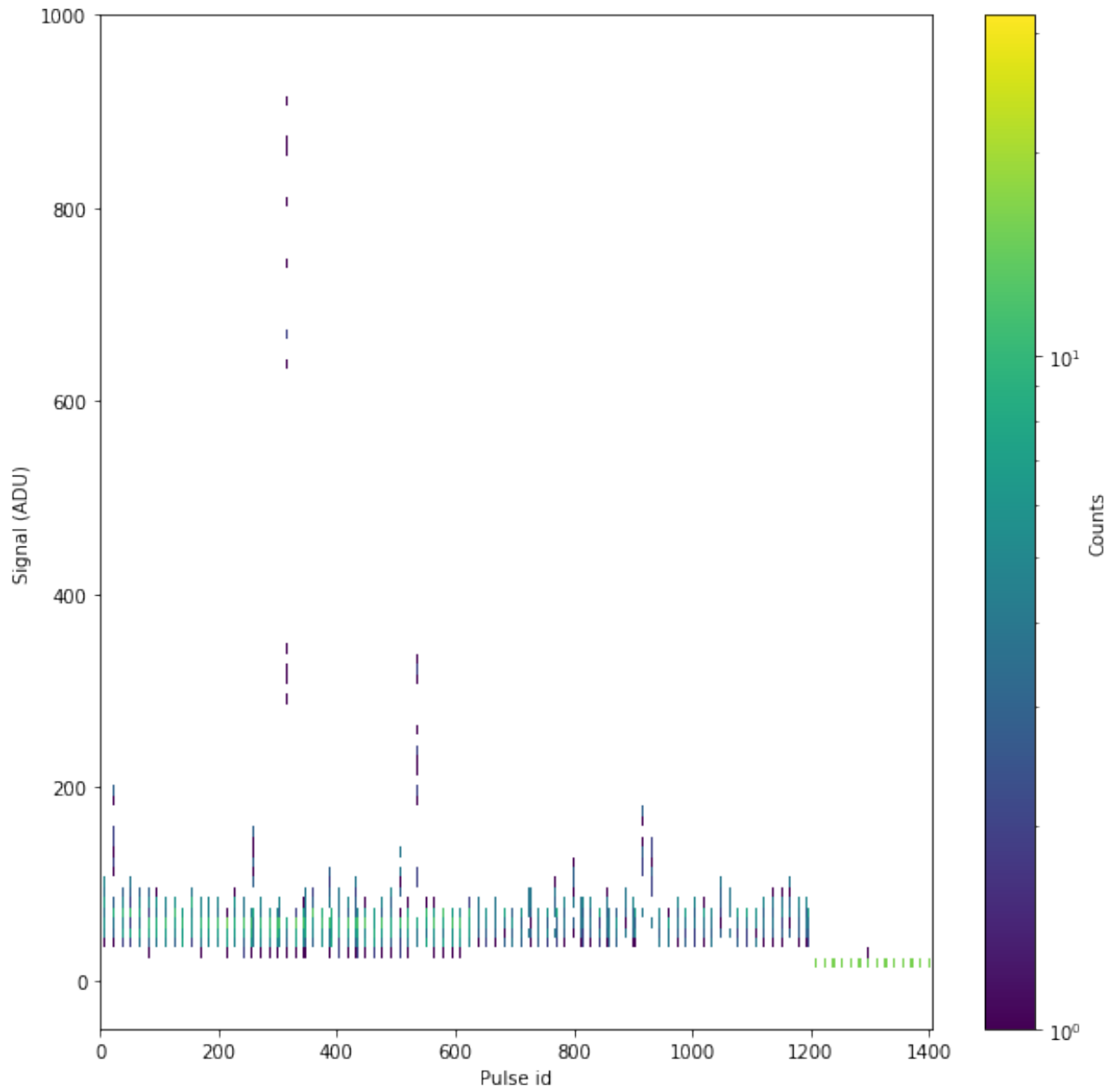


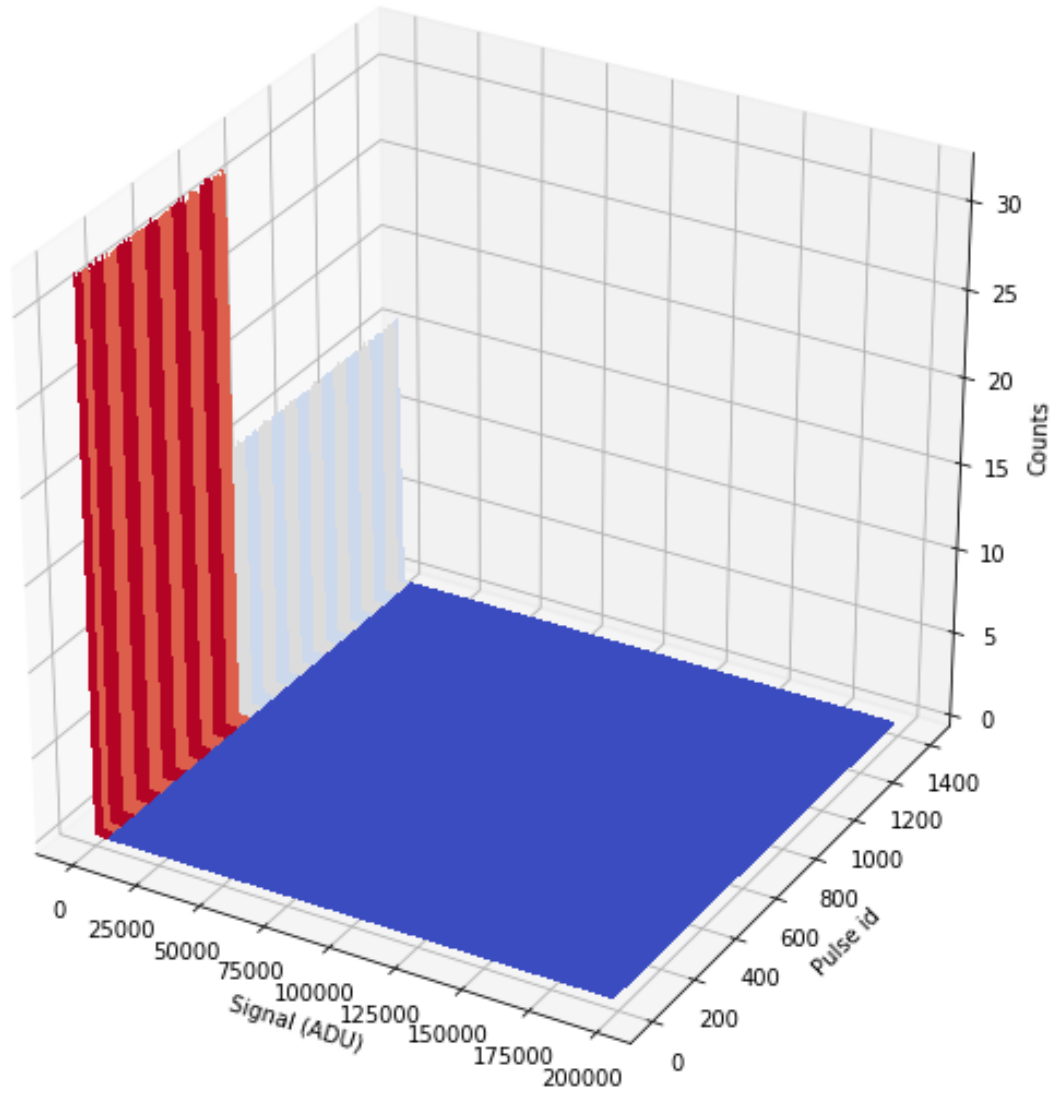


## 5.4 Mean Intensity per Pulse

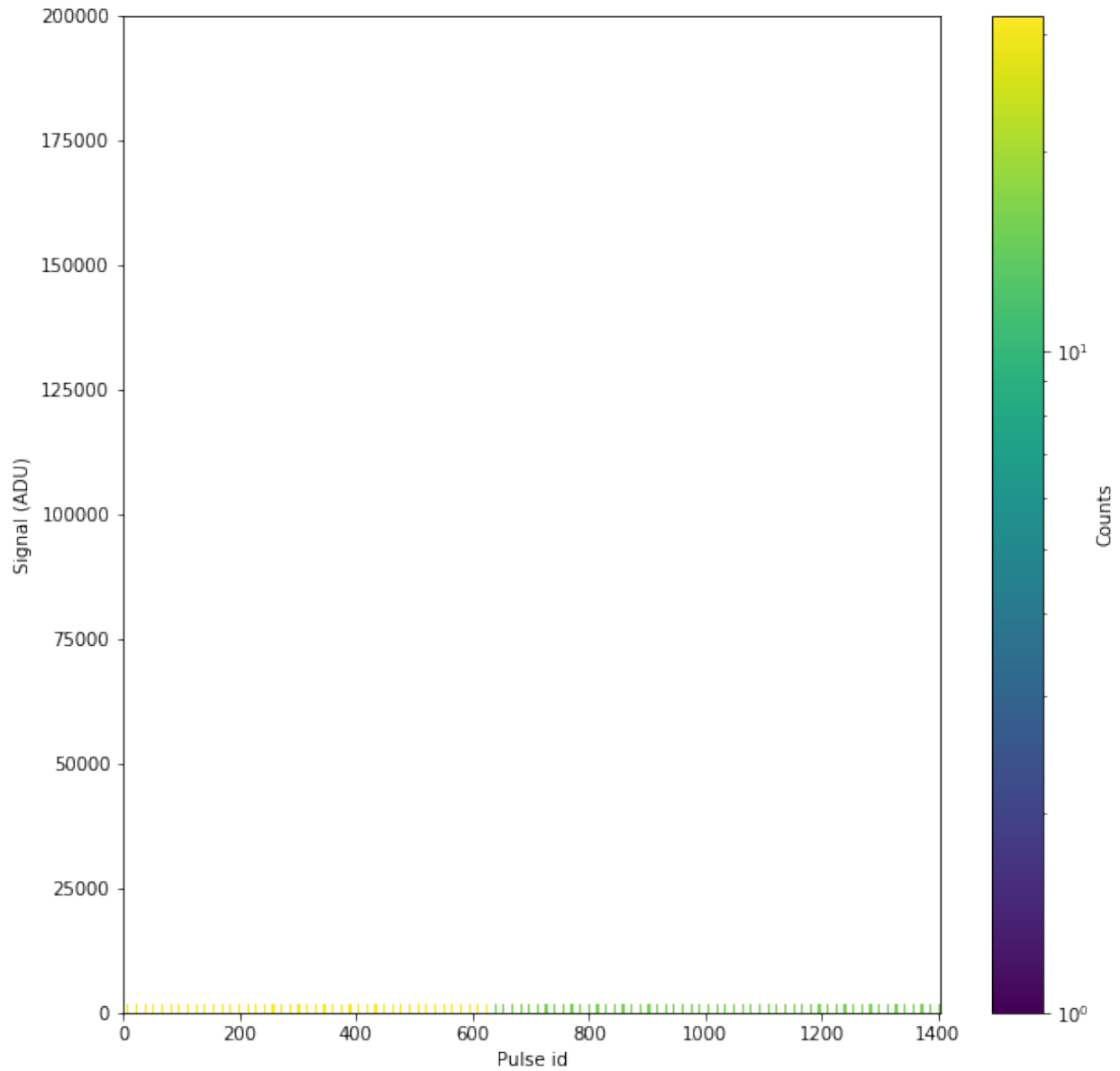
The following plots show the mean signal for each pulse in a detailed and expanded intensity region.





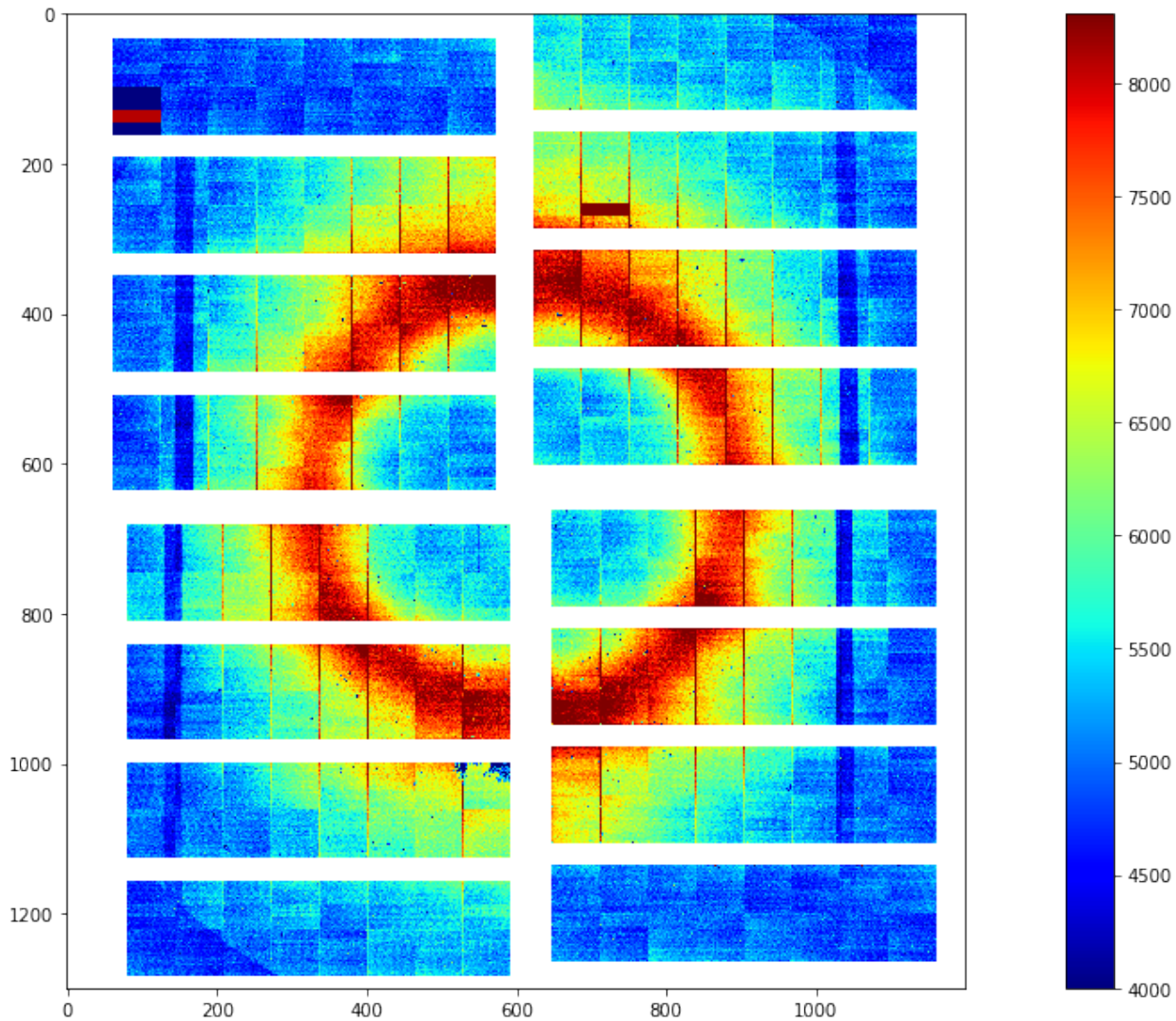






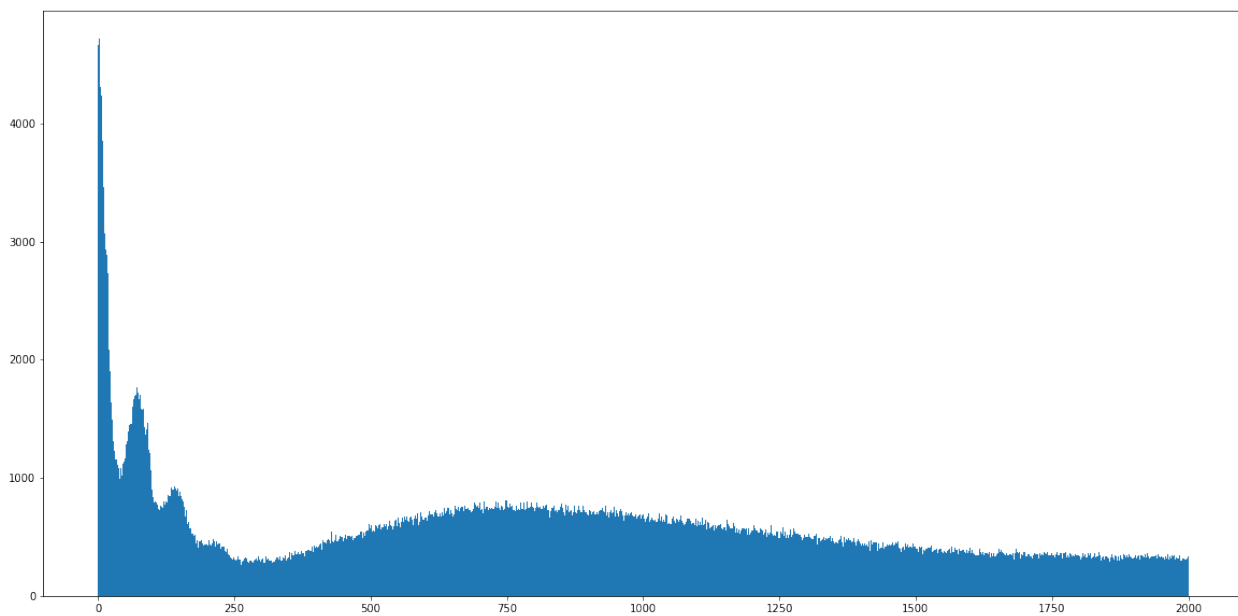
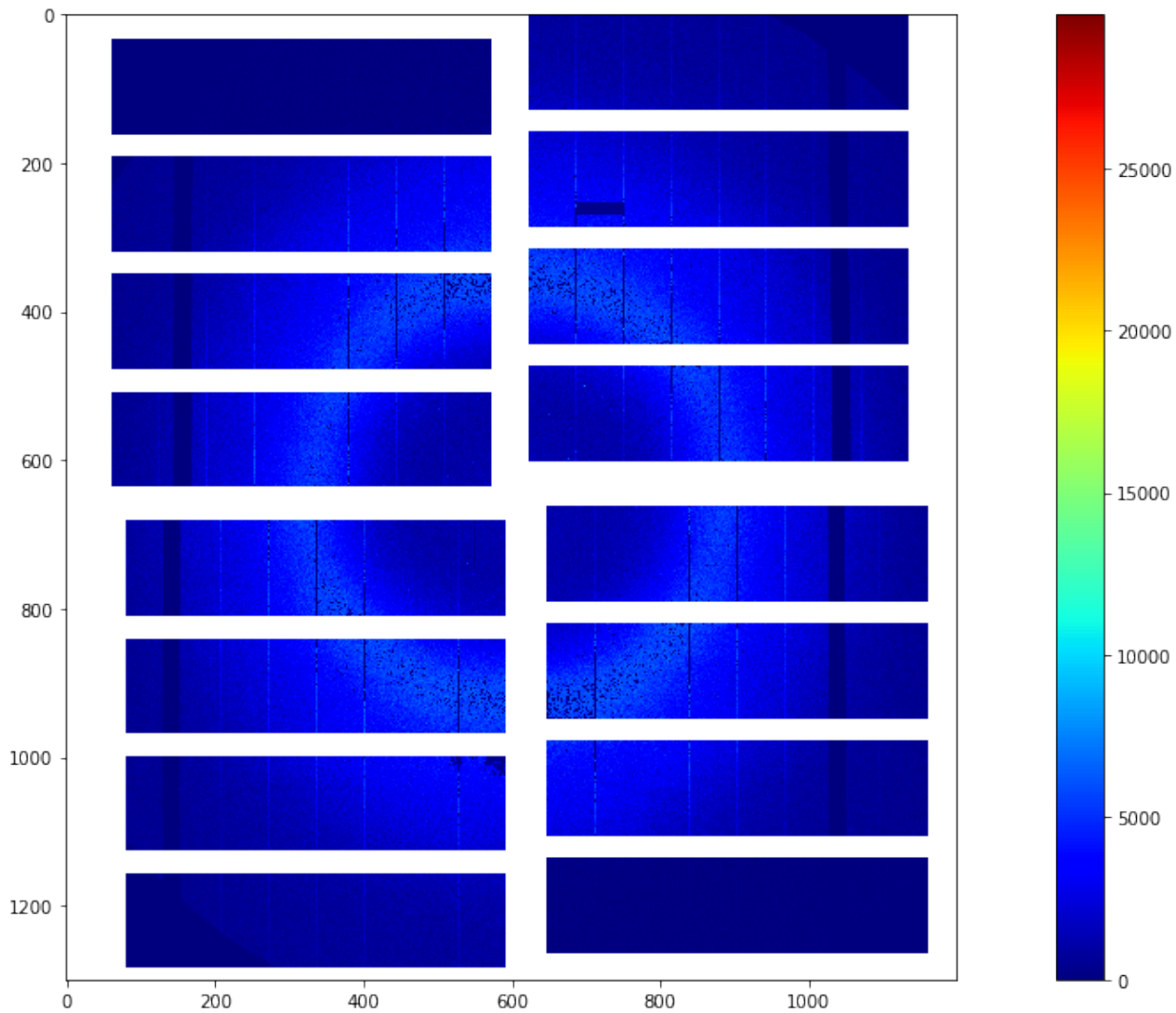
### 5.4.1 Mean RAW Preview

The per pixel mean of the first 128 images of the RAW data



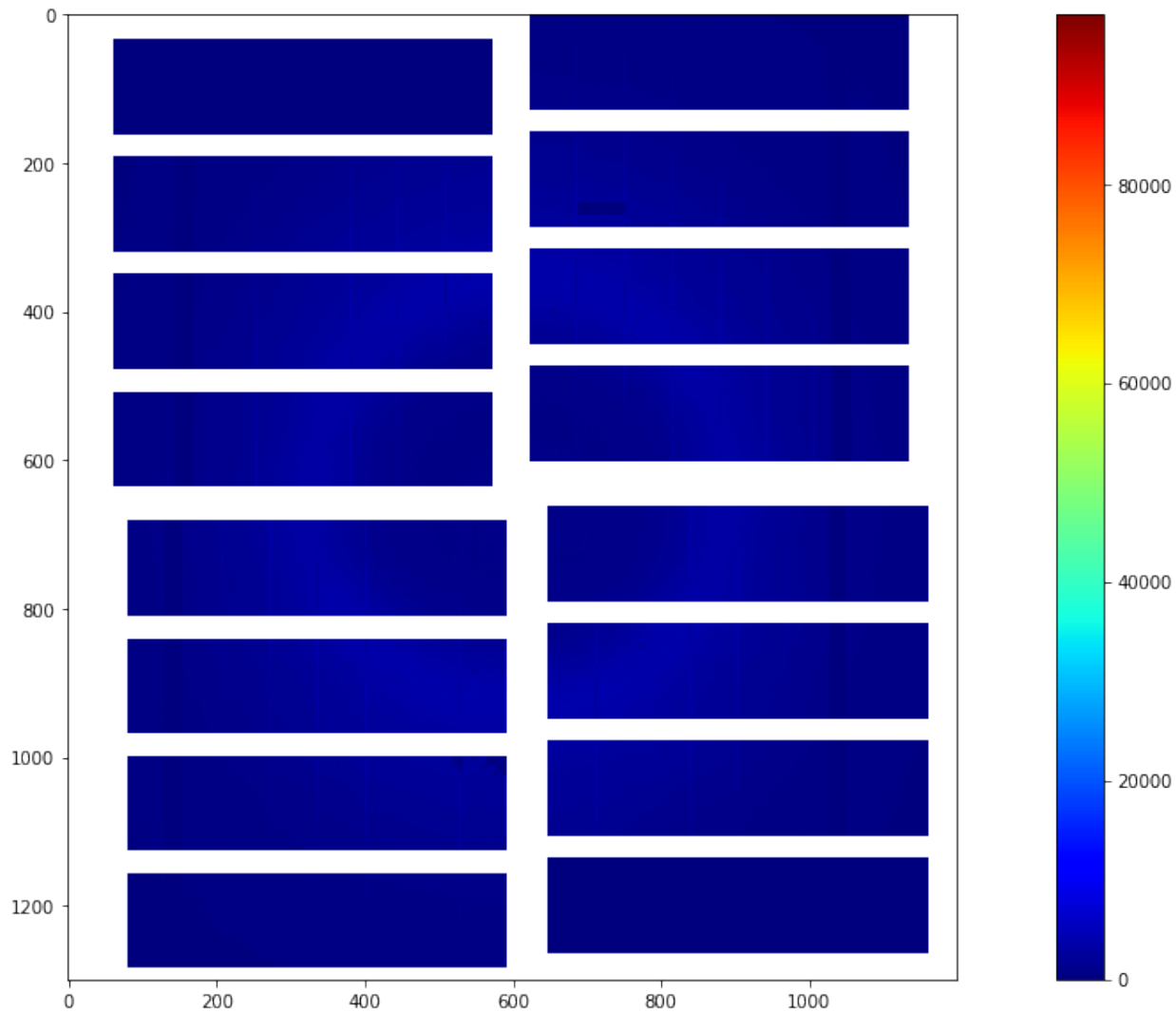
### 5.4.2 Single Shot Preview

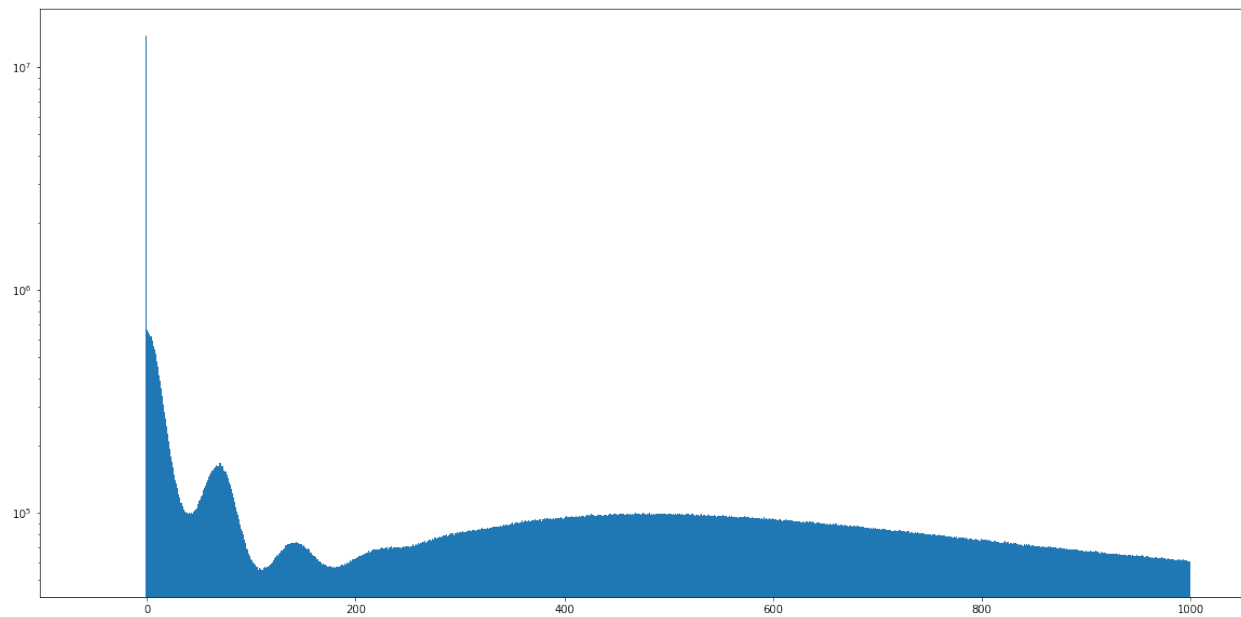
A single shot image from cell 12 of the first train



### 5.4.3 Mean CORRECTED Preview

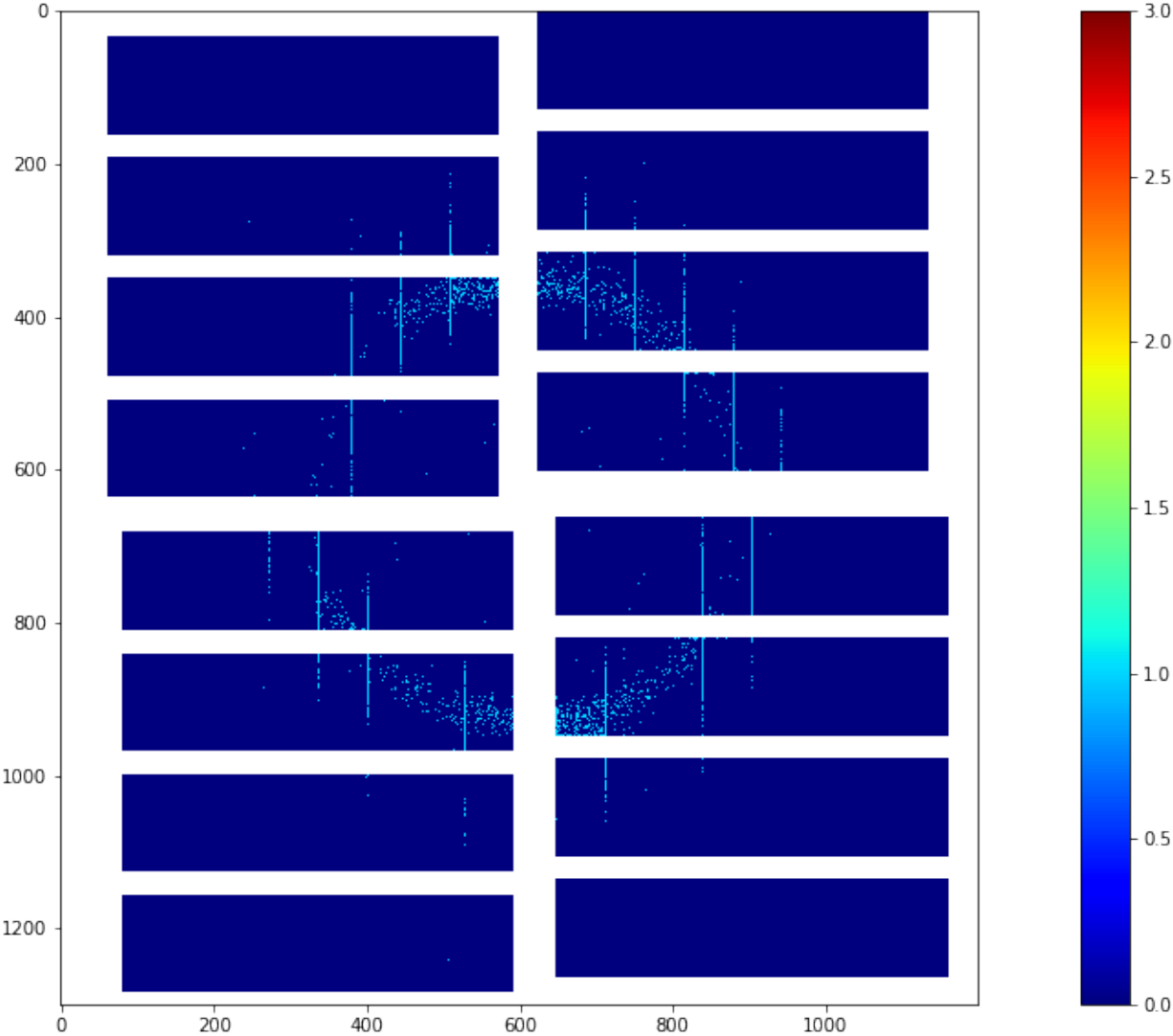
The per pixel mean of the first 128 images of the CORRECTED data





#### 5.4.4 Maximum GAIN Preview

The per pixel maximum of the first 128 images of the digitized GAIN data



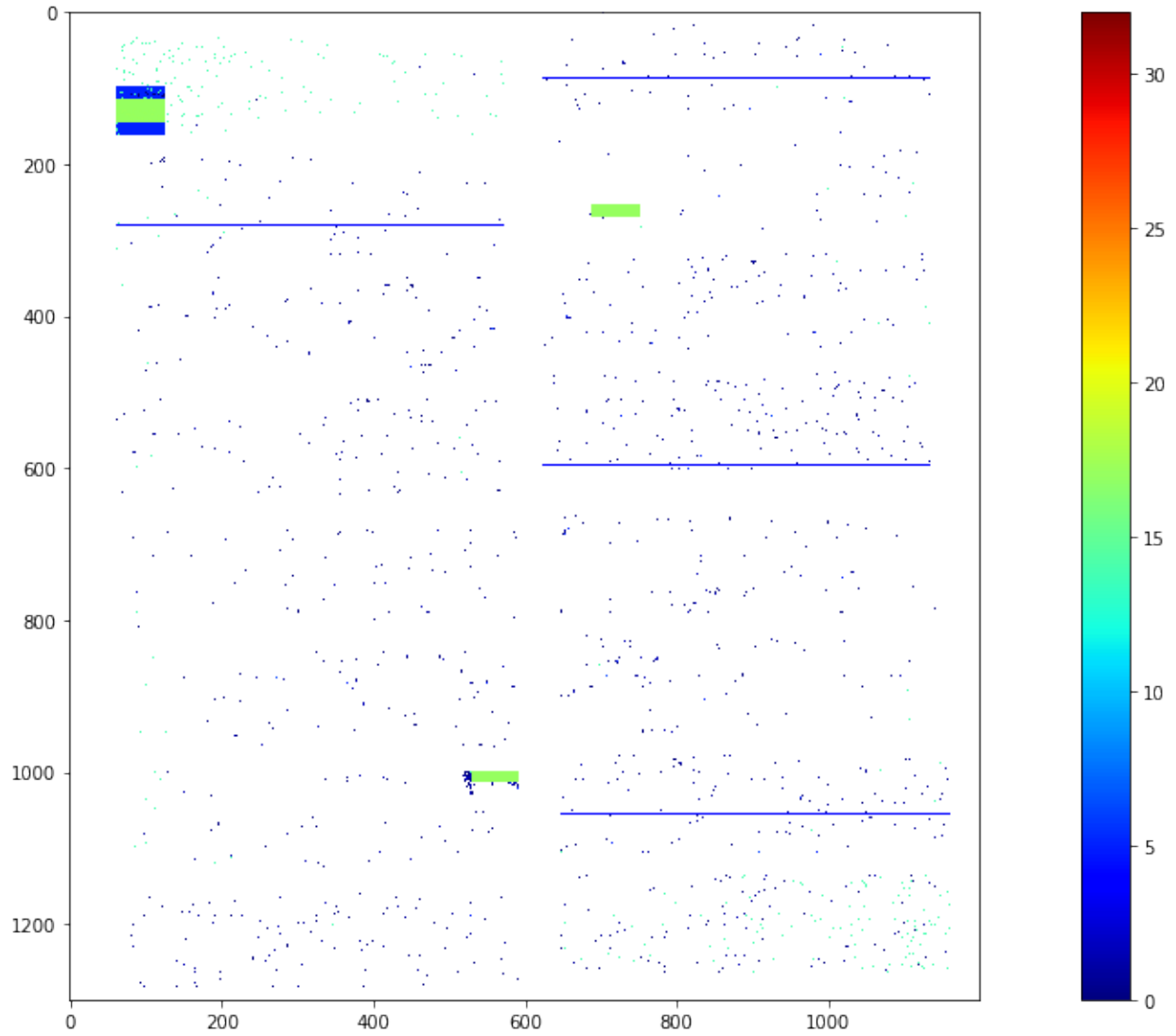
## 5.5 Bad Pixels

The mask contains dedicated entries for all pixels and memory cells as well as all three gains stages. Each mask entry is encoded in 32 bits as:

| Bad pixel type          | Bit mask         |
|-------------------------|------------------|
| OFFSET_OUT_OF_THRESHOLD | 0000000000000001 |
| NOISE_OUT_OF_THRESHOLD  | 0000000000000010 |
| OFFSET_NOISE_EVAL_ERROR | 0000000000000100 |
| NO_DARK_DATA            | 0000000000001000 |
| CI_GAIN_OF_OF_THRESHOLD | 0000000000010000 |
| CI_LINEAR_DEVIATION     | 000000000100000  |
| CI_EVAL_ERROR           | 000000001000000  |
| FF_GAIN_EVAL_ERROR      | 000000010000000  |
| FF_GAIN_DEVIATION       | 000000100000000  |
| FF_NO_ENTRIES           | 000001000000000  |
| CI2_EVAL_ERROR          | 000010000000000  |
| VALUE_IS_NAN            | 000010000000000  |
| VALUE_OUT_OF_RANGE      | 000100000000000  |
| GAIN_THRESHOLDING_ERROR | 001000000000000  |
| DATA_STD_IS_ZERO        | 010000000000000  |
| ASIC_STD_BELOW_NOISE    | 100000000000000  |
| INTERPOLATED            | 100000000000000  |
| NOISY_ADC               | 100000000000000  |
| OVERSCAN                | 100000000000000  |
| NON_SENSITIVE           | 100000000000000  |
| NON_LIN_RESPONSE_REGION | 100000000000000  |

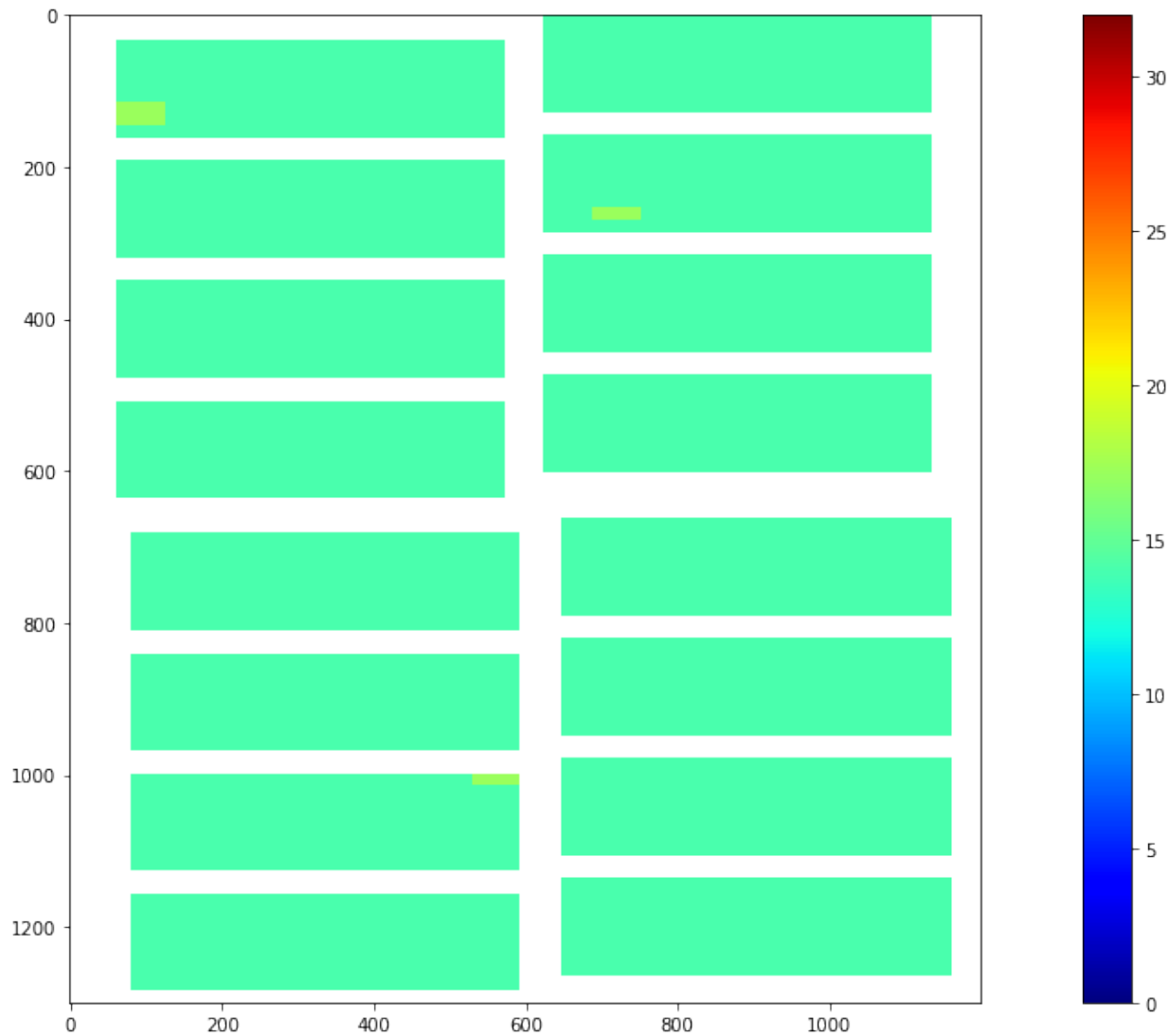
### 5.5.1 Single Shot Bad Pixels

A single shot bad pixel map from cell 4 of the first train

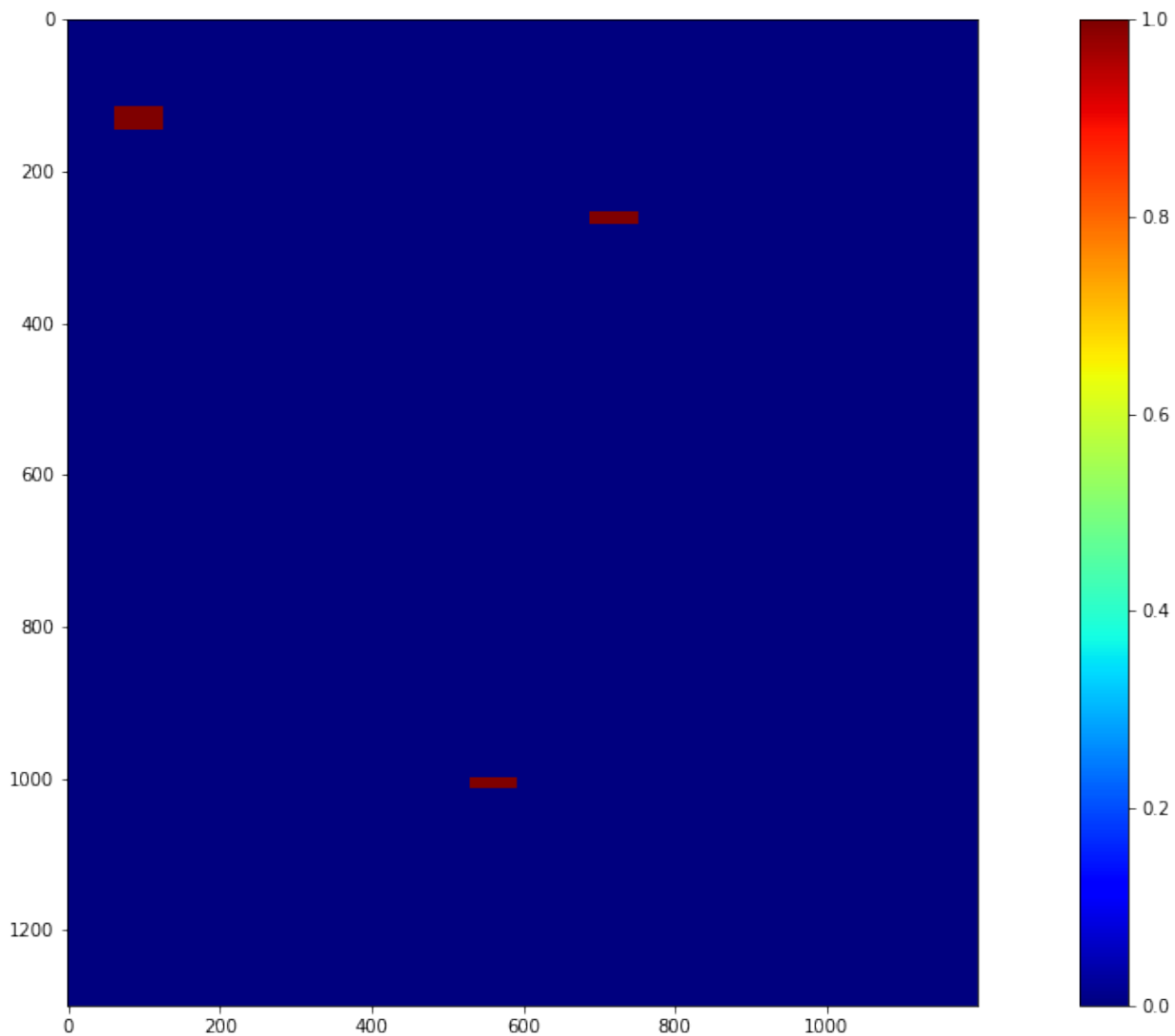


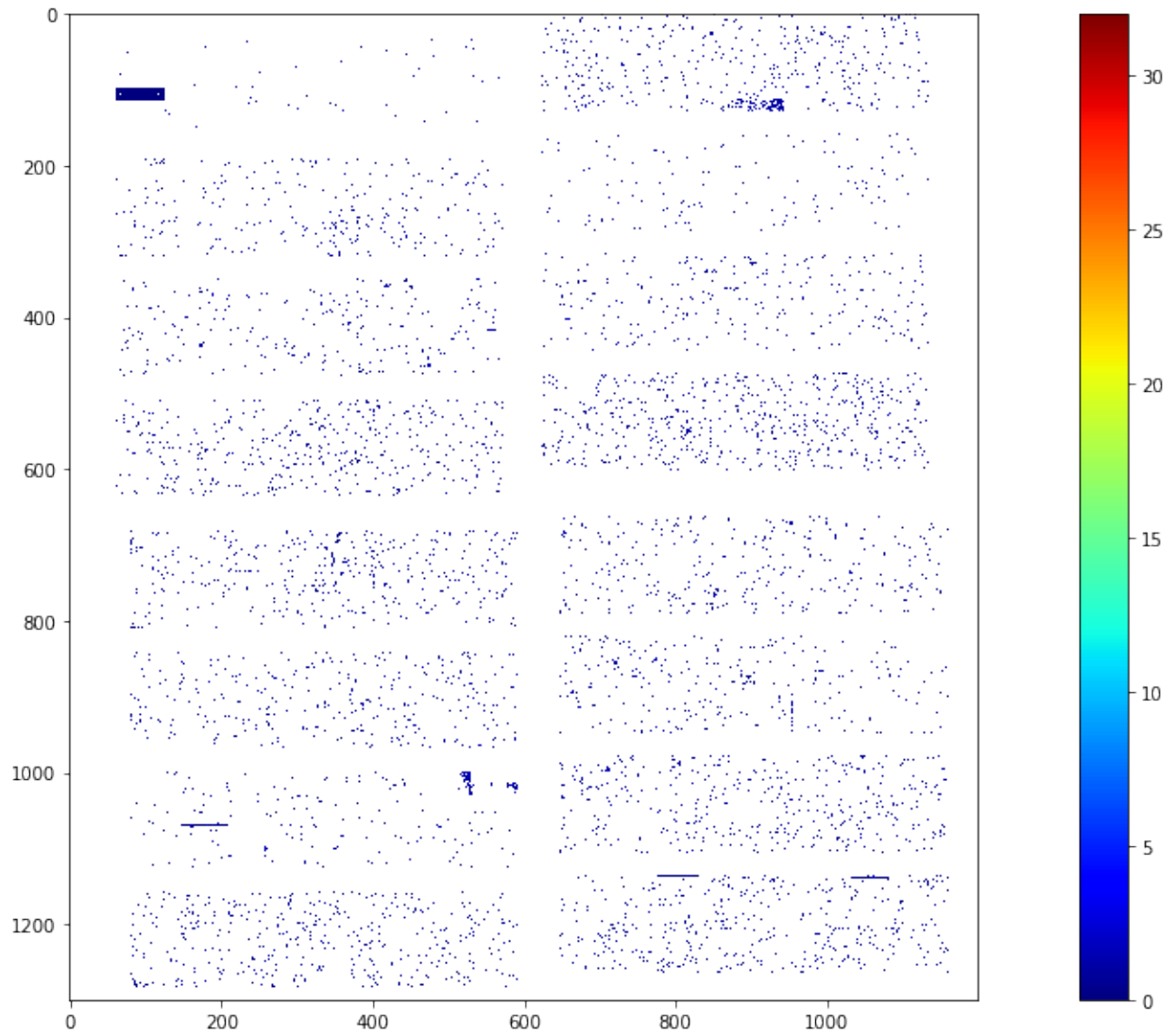


### 5.5.2 Full Train Bad Pixels



### 5.5.3 Full Train Bad Pixels - Only Dark Char. Related





## AGIPD OFFLINE CORRECTION, SEQUENCES = 15-17

```
Connecting to profile slurm_prof_766b6a76-c719-4b68-b085-6d9165c1a5b8_15-17
Using 2020-03-09 01:07:51+01:00 as creation time
Working in IL Mode: False. Actual cells in use are: 0
Outputting to /gpfs/exfel/d/proc/SPB/202030/p900119/r0096
Detector in use is SPB_DET_AGIPD1M-1
```

```
Gain setting: 0
```

### 6.1 Processed Files

```
Processing a total of 48 sequence files in chunks of 32
```

| #  | module | # module | file  |
|----|--------|----------|---|
| 0  | Q1M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00015.h5 |
| 1  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00016.h5 |
| 2  |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00017.h5 |
| 3  | Q1M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00015.h5 |
| 4  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00016.h5 |
| 5  |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00017.h5 |
| 6  | Q1M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00015.h5 |
| 7  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00016.h5 |
| 8  |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00017.h5 |
| 9  | Q1M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00015.h5 |
| 10 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00016.h5 |
| 11 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00017.h5 |
| 12 | Q2M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00015.h5 |
| 13 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00016.h5 |
| 14 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00017.h5 |
| 15 | Q2M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00015.h5 |
| 16 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00016.h5 |
| 17 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00017.h5 |
| 18 | Q2M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00015.h5 |
| 19 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00016.h5 |
| 20 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00017.h5 |
| 21 | Q2M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00015.h5 |
| 22 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00016.h5 |
| 23 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00017.h5 |
| 24 | Q3M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00015.h5 |
| 25 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00016.h5 |
| 26 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00017.h5 |
| 27 | Q3M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00015.h5 |
| 28 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00016.h5 |
| 29 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00017.h5 |
| 30 | Q3M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00015.h5 |
| 31 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00016.h5 |
| 32 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00017.h5 |
| 33 | Q3M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00015.h5 |
| 34 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00016.h5 |
| 35 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00017.h5 |
| 36 | Q4M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00015.h5 |
| 37 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00016.h5 |
| 38 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00017.h5 |
| 39 | Q4M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00015.h5 |
| 40 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00016.h5 |
| 41 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00017.h5 |
| 42 | Q4M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00015.h5 |
| 43 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00016.h5 |
| 44 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00017.h5 |
| 45 | Q4M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD15-S00015.h5 |
| 46 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD15-S00016.h5 |
| 47 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD15-S00017.h5 |

```
A range of 500 pulse indices is selected: from 0 to 500 with a step of 1
Running 32 tasks parallel
Running 16 tasks parallel
```

```
Constants were injected on:
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
```

```
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
```

```
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
```



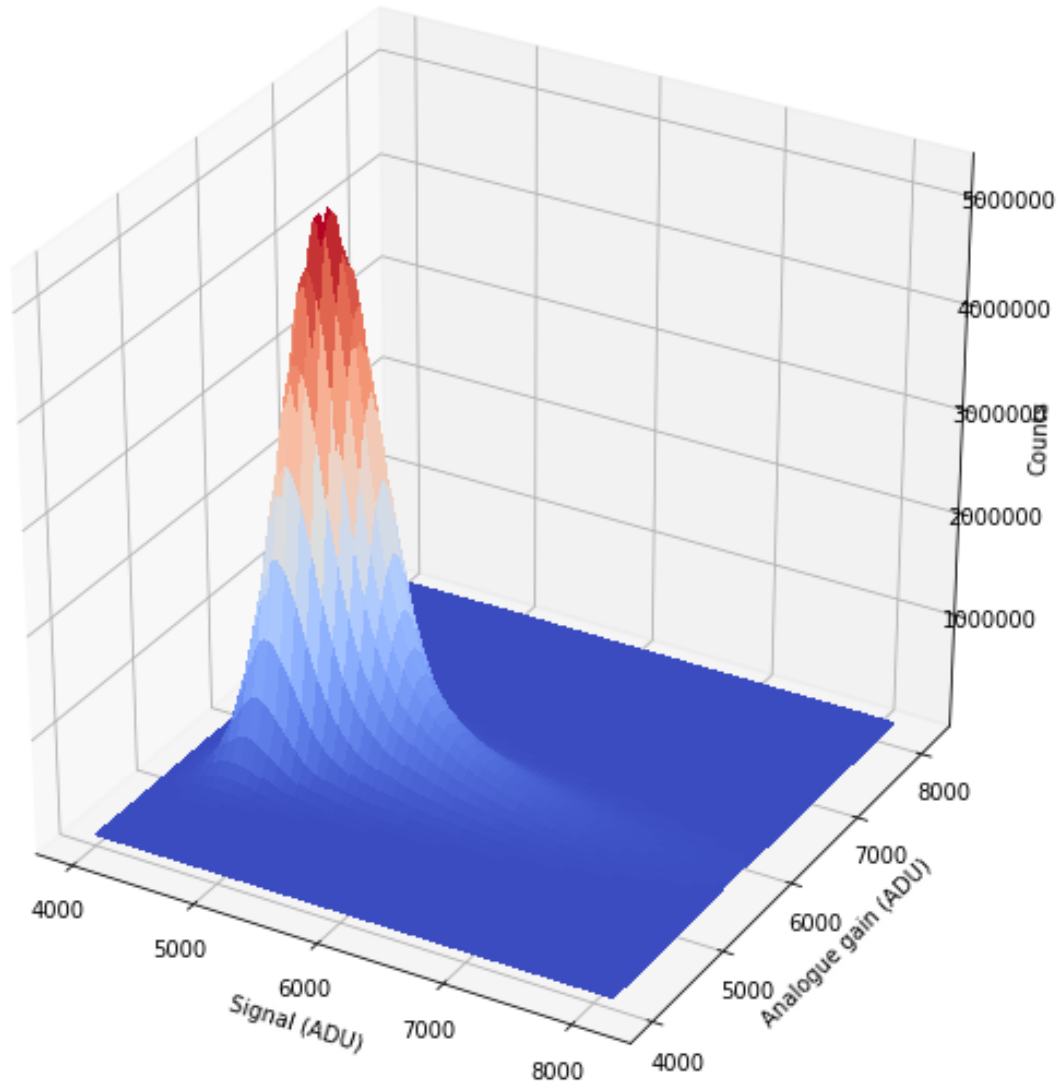
```
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
```

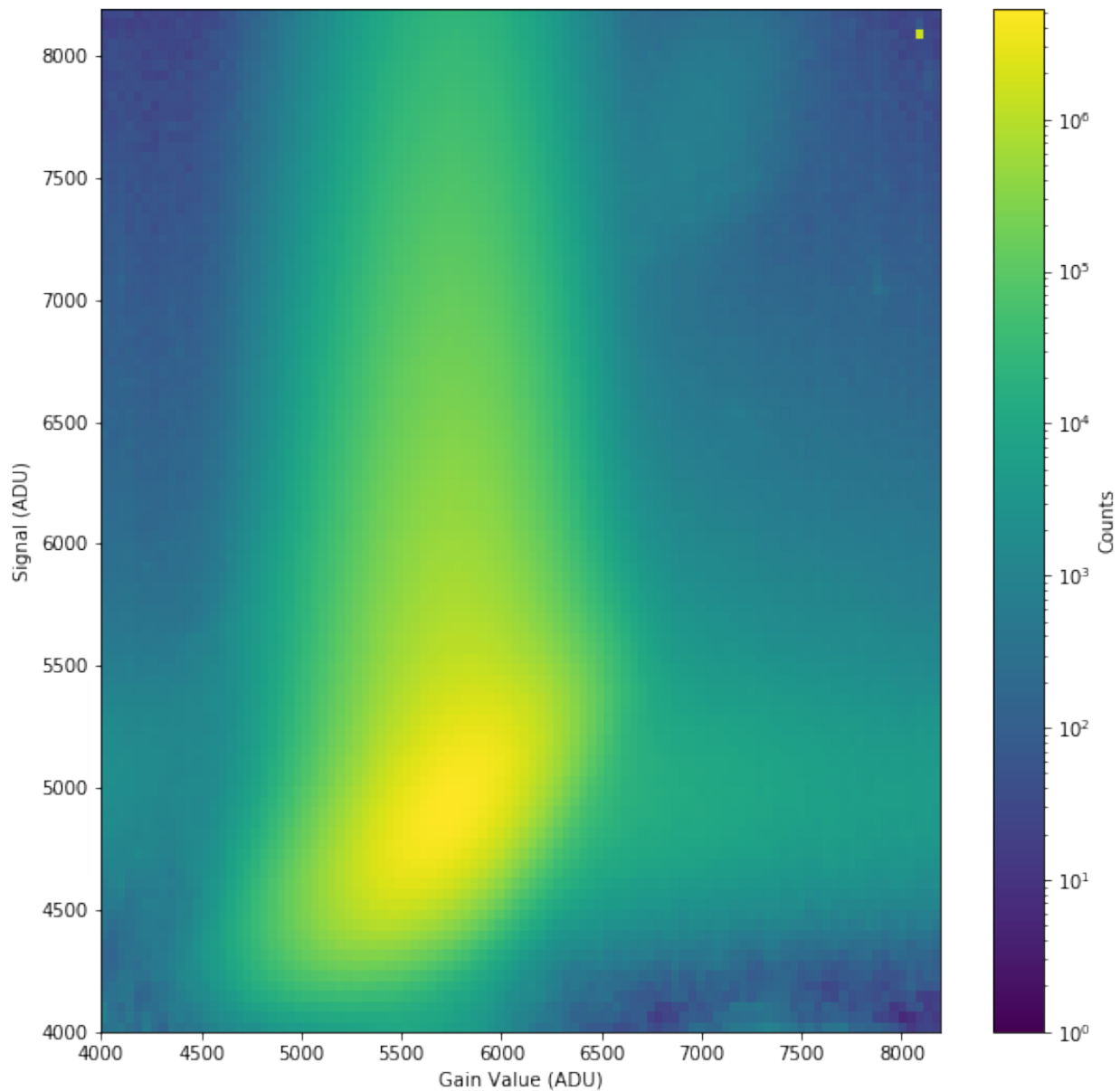
```
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
```

```
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
```

## 6.2 Signal vs. Analogue Gain

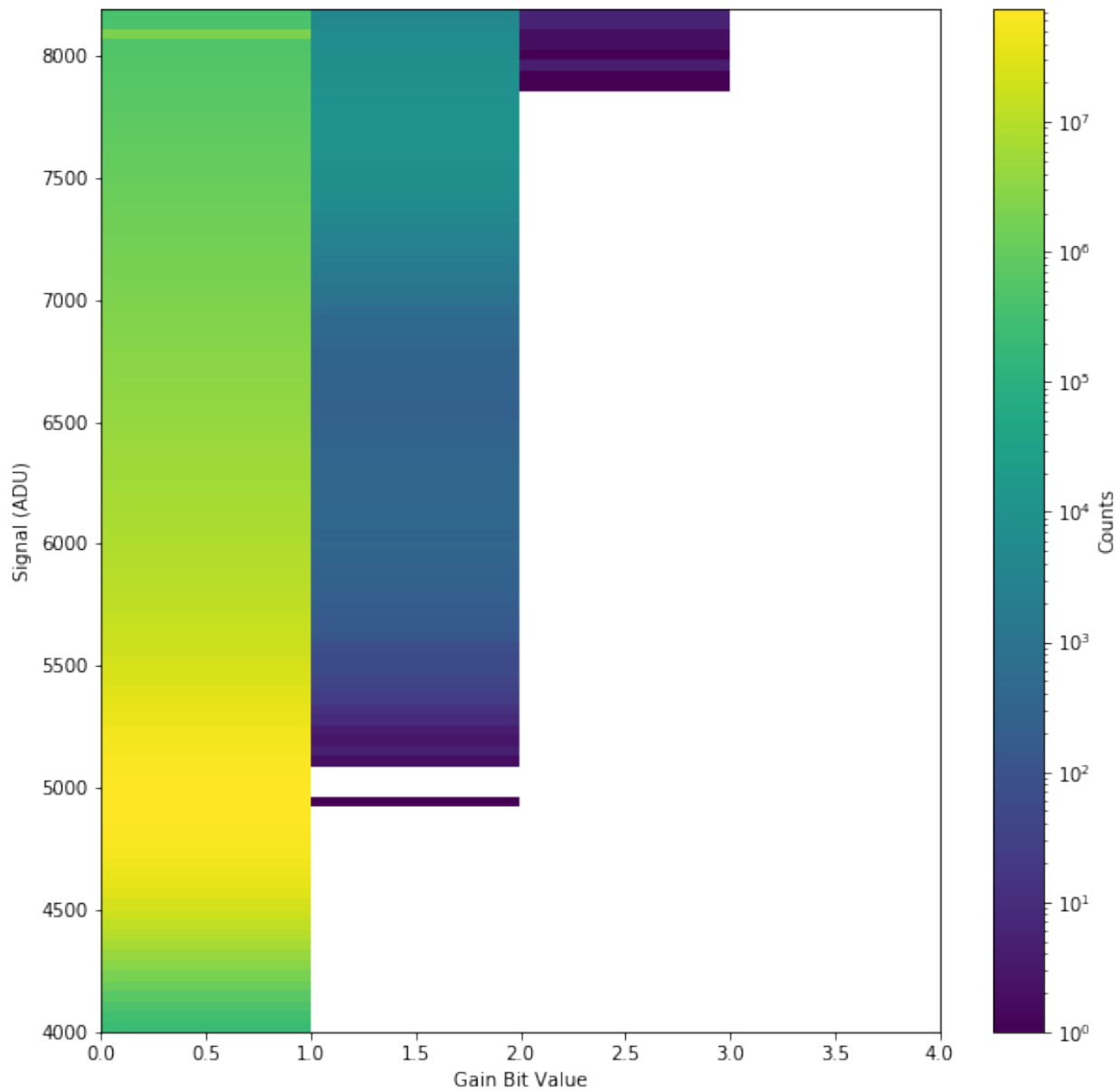
The following plot shows plots signal vs. gain for the first 128 images.

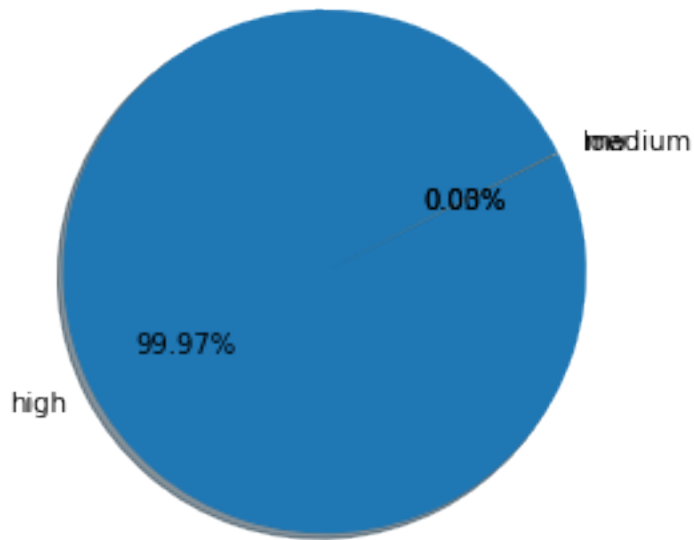




### 6.3 Signal vs. Digitized Gain

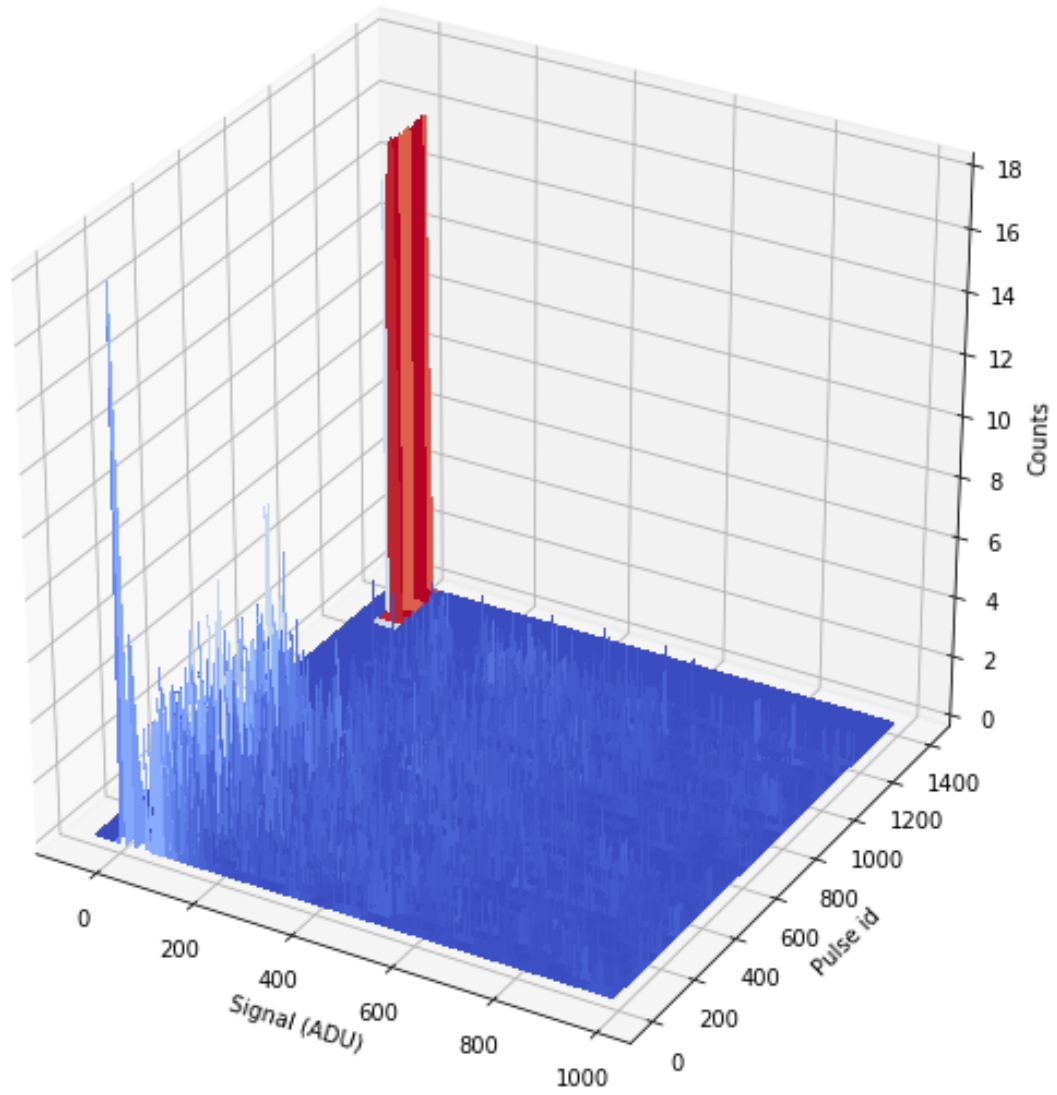
The following plot shows plots signal vs. digitized gain for the first 128 images.



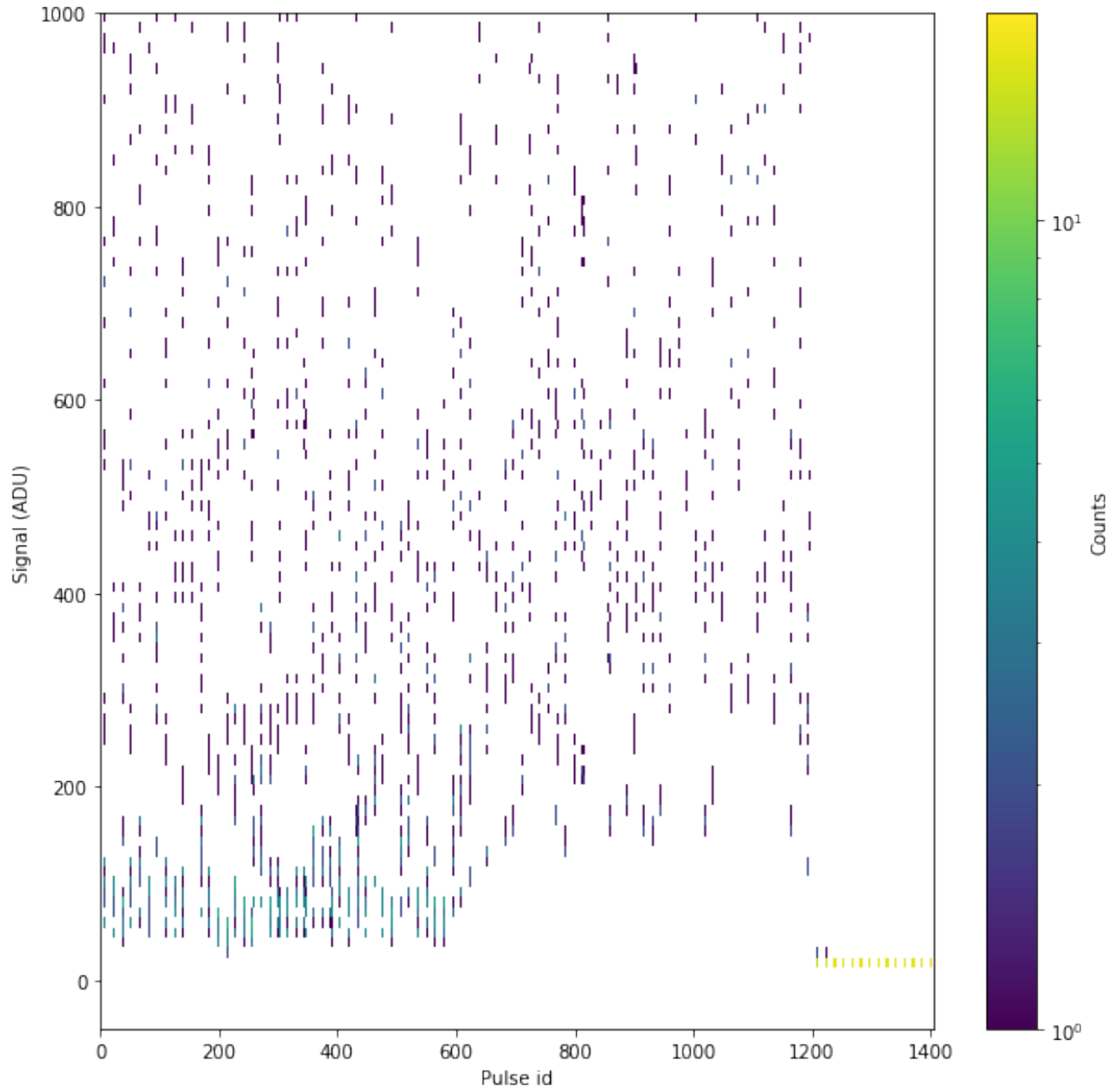


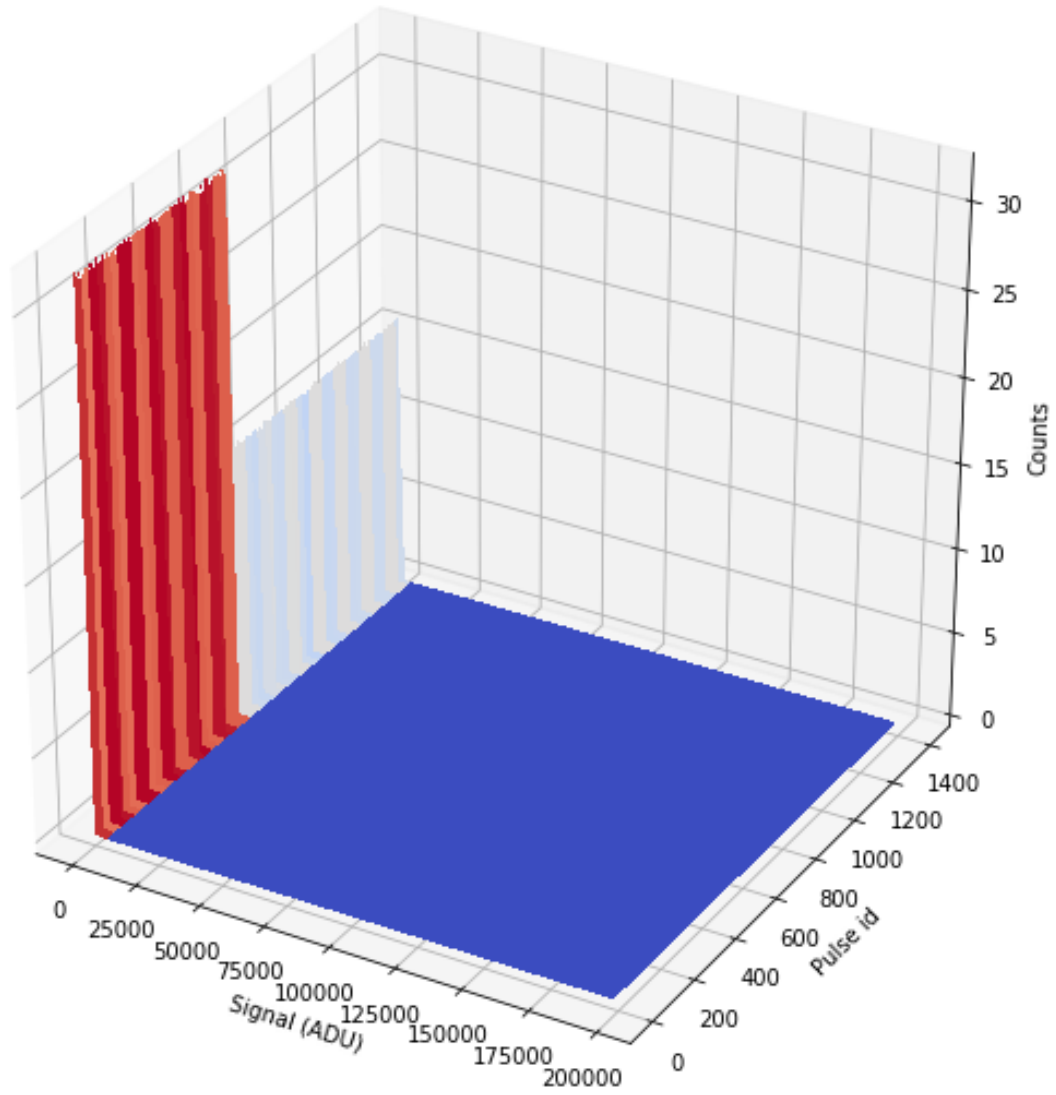
## 6.4 Mean Intensity per Pulse

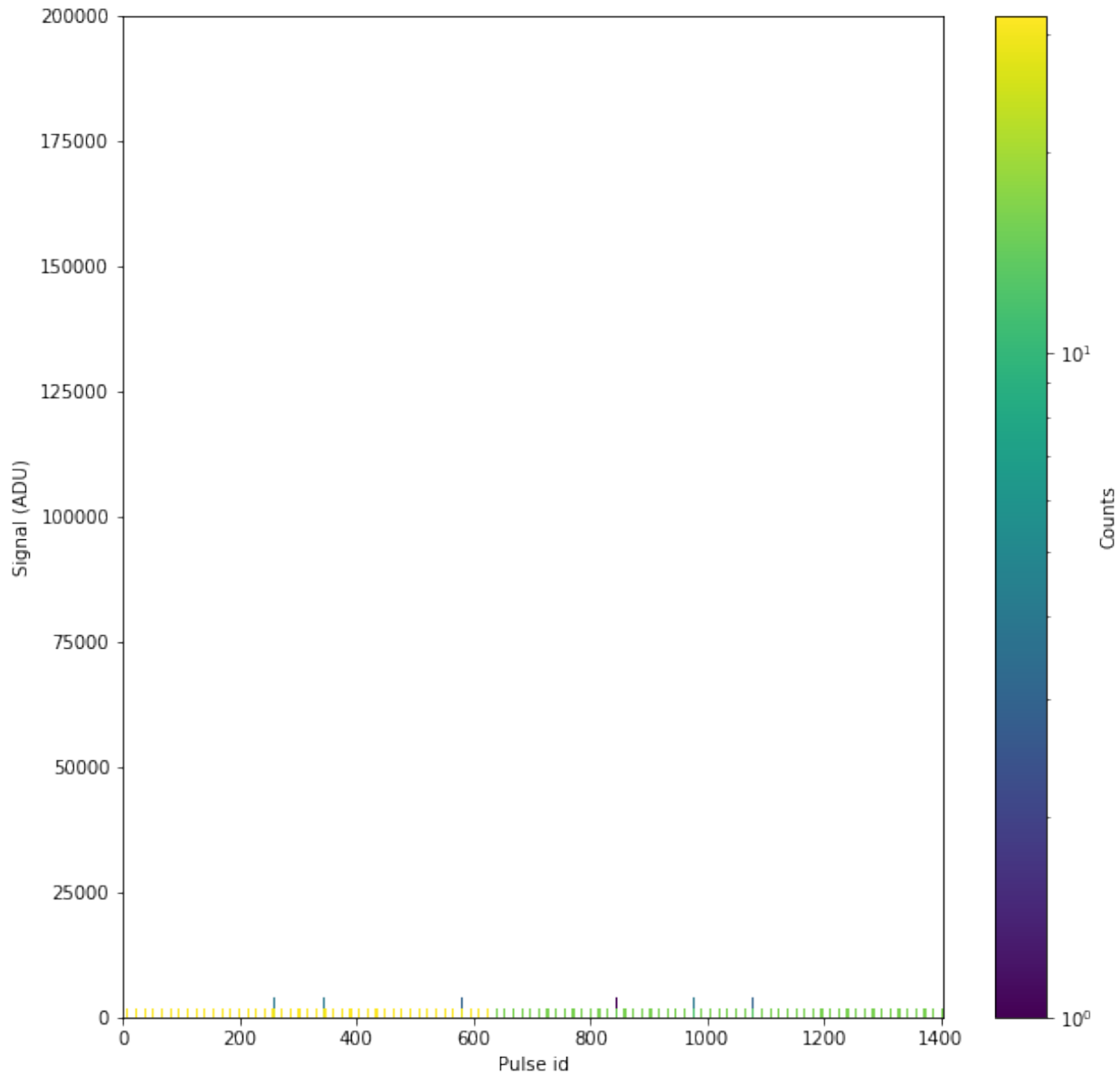
The following plots show the mean signal for each pulse in a detailed and expanded intensity region.





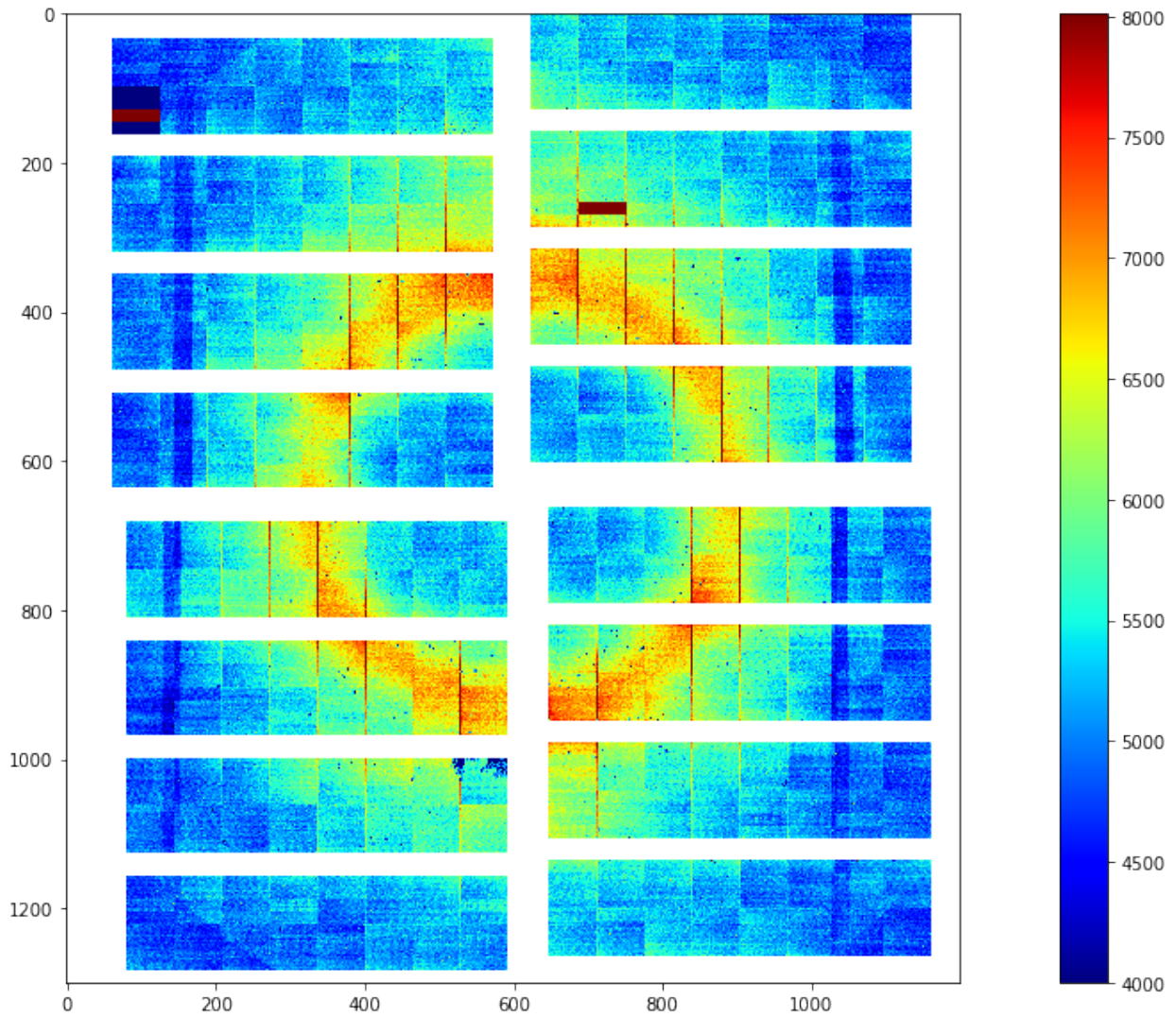






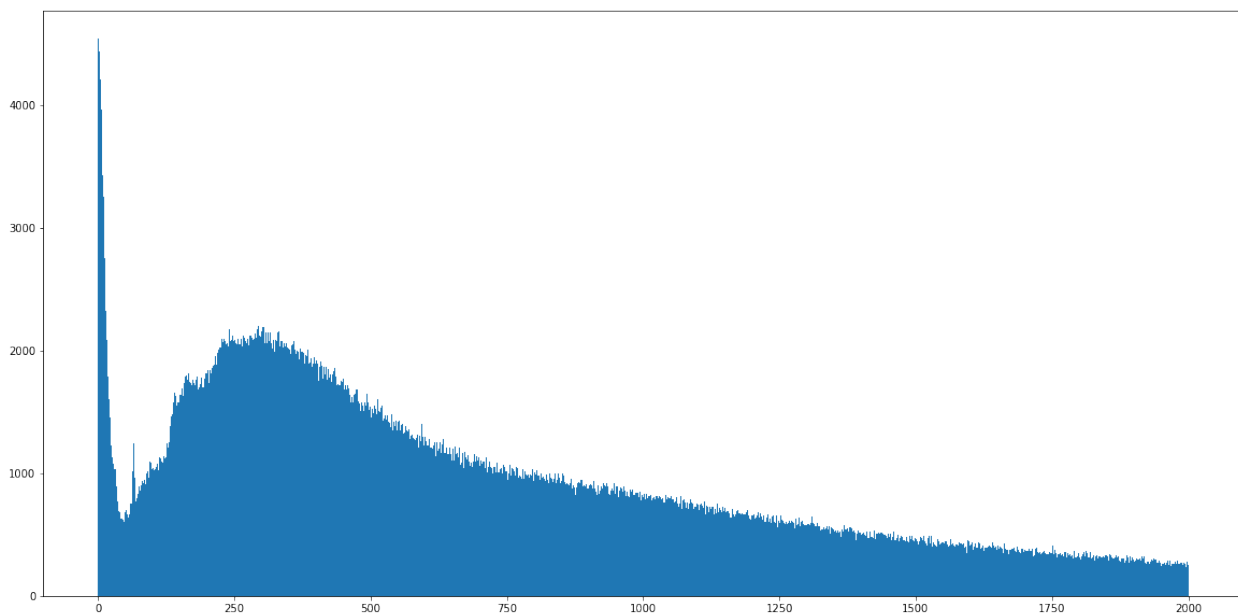
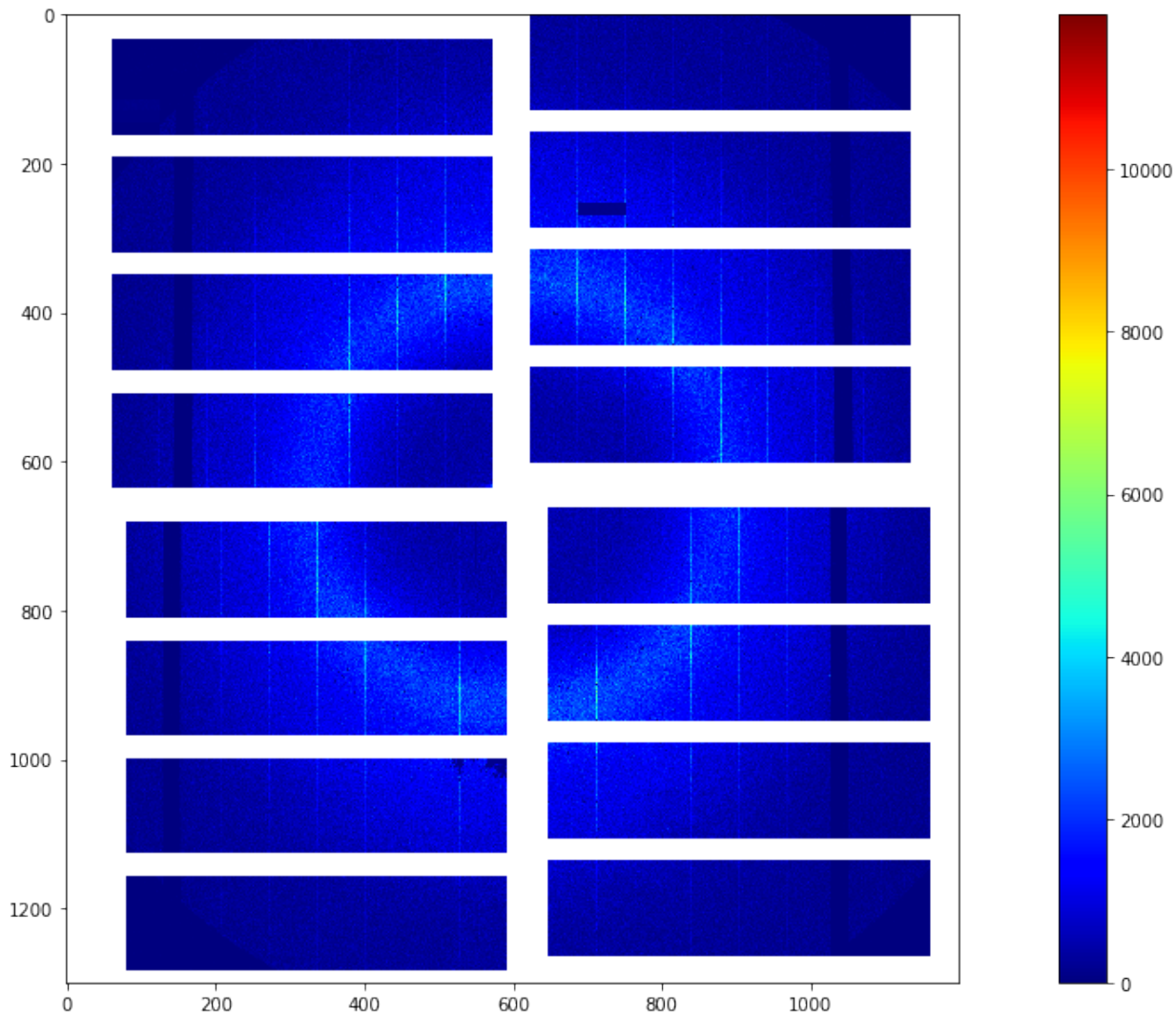
### 6.4.1 Mean RAW Preview

The per pixel mean of the first 128 images of the RAW data



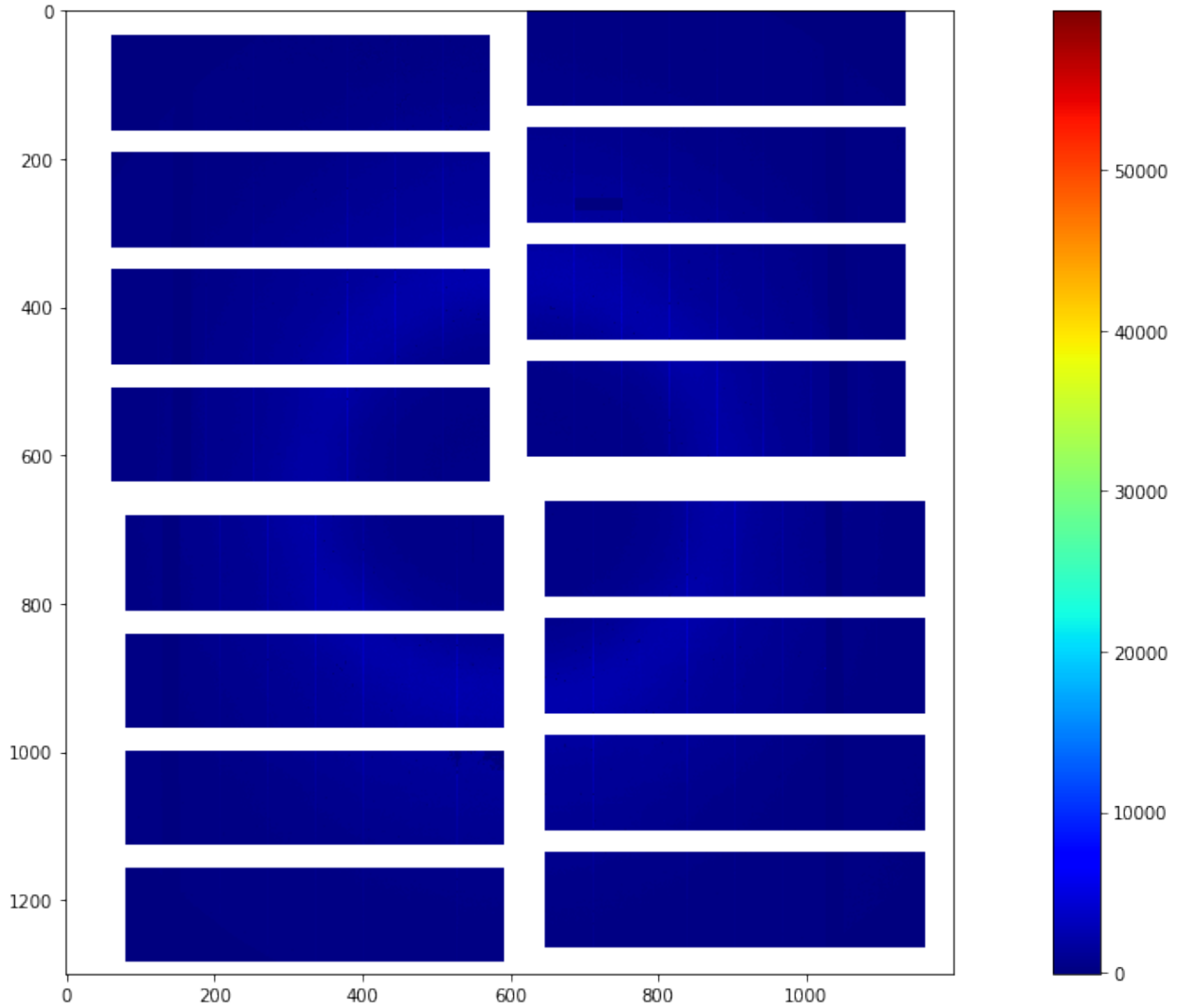
### 6.4.2 Single Shot Preview

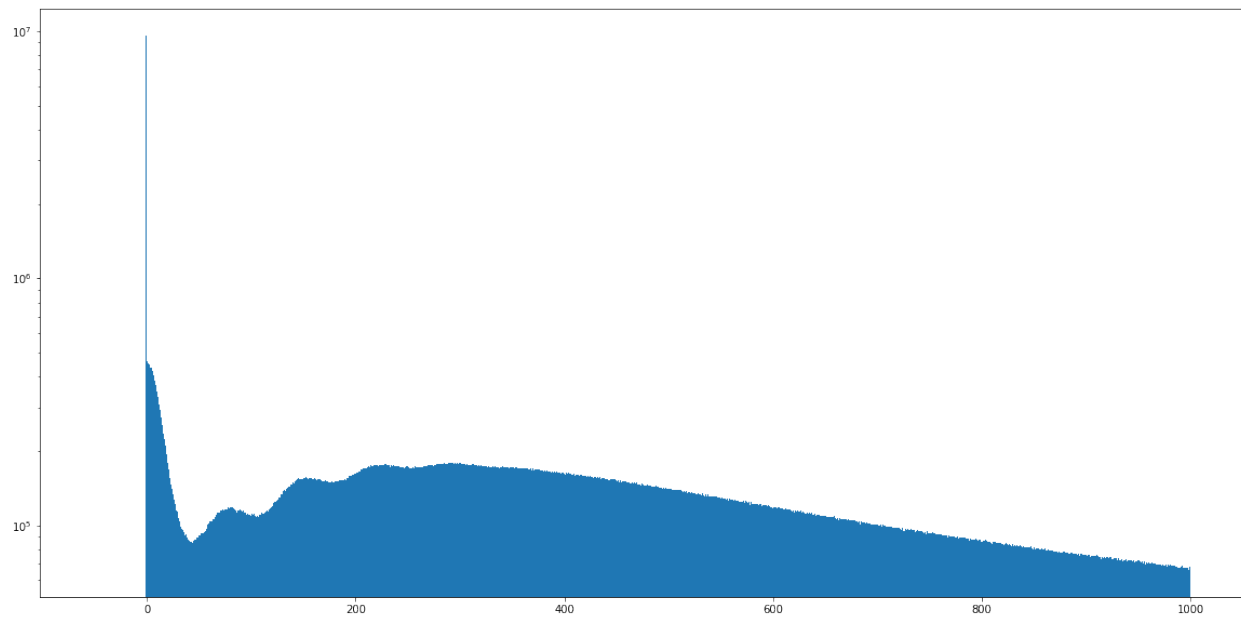
A single shot image from cell 12 of the first train



### 6.4.3 Mean CORRECTED Preview

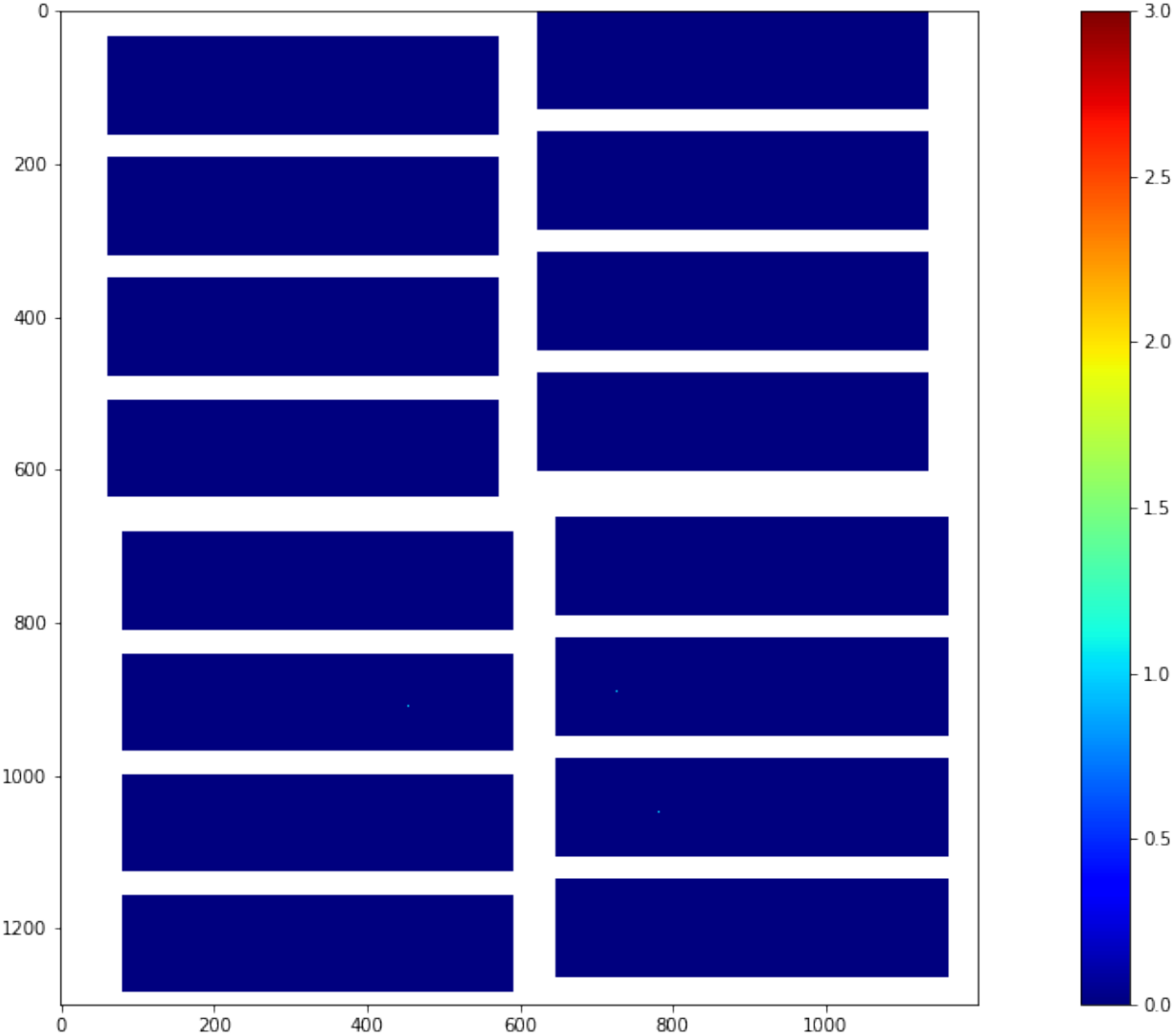
The per pixel mean of the first 128 images of the CORRECTED data





#### 6.4.4 Maximum GAIN Preview

The per pixel maximum of the first 128 images of the digitized GAIN data





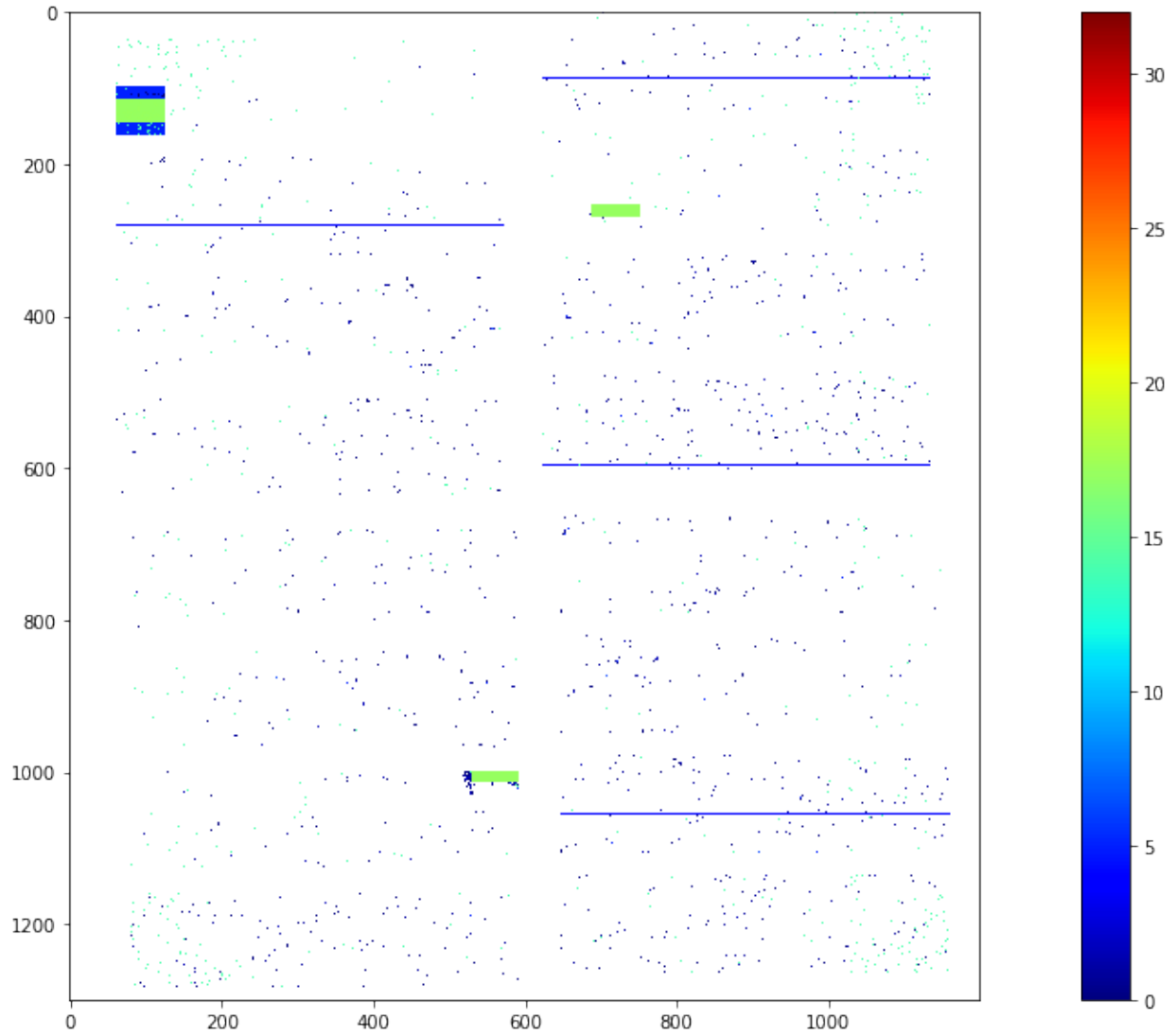
## 6.5 Bad Pixels

The mask contains dedicated entries for all pixels and memory cells as well as all three gains stages. Each mask entry is encoded in 32 bits as:

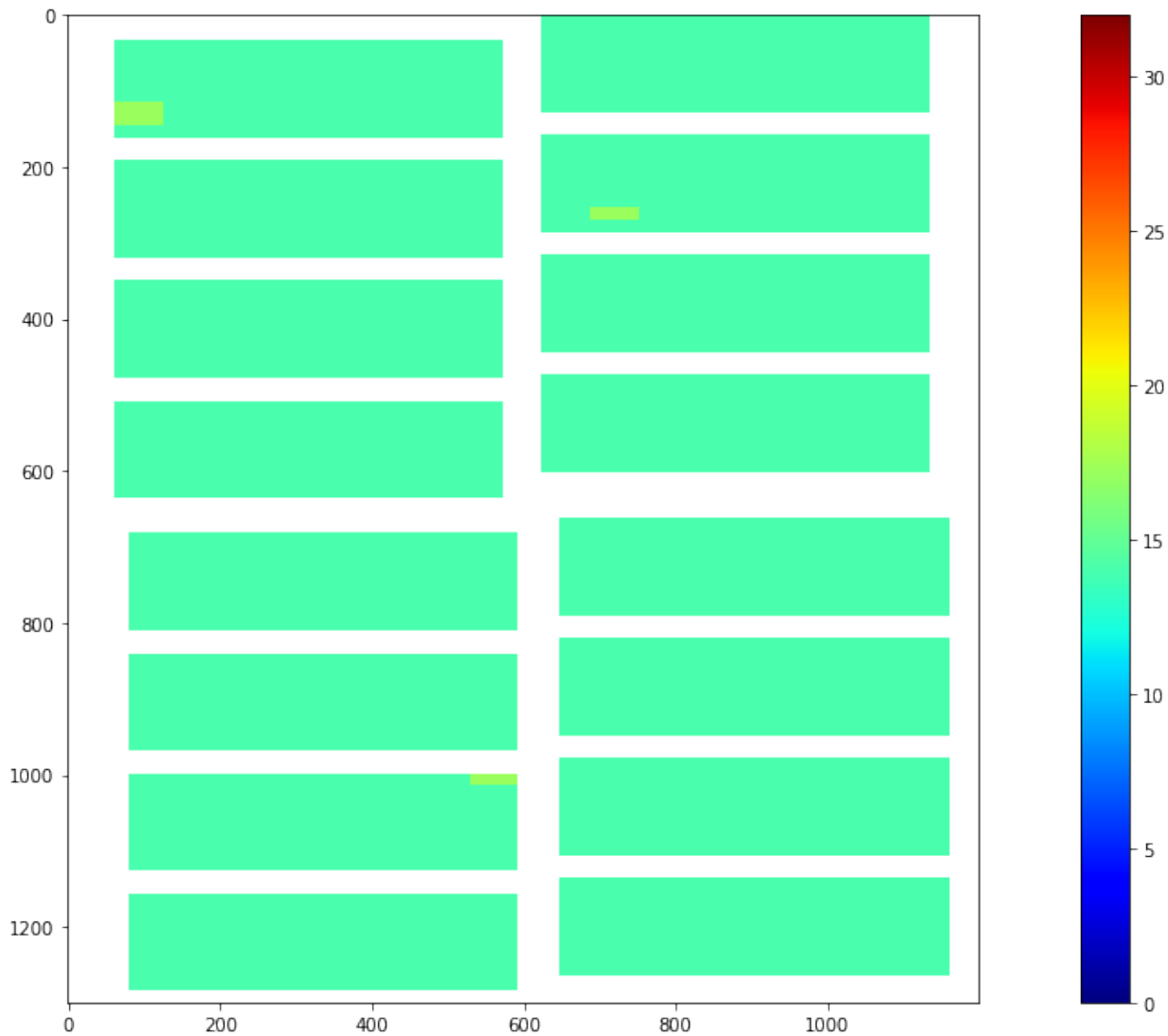
| Bad pixel type          | Bit mask         |
|-------------------------|------------------|
| OFFSET_OUT_OF_THRESHOLD | 0000000000000001 |
| NOISE_OUT_OF_THRESHOLD  | 0000000000000010 |
| OFFSET_NOISE_EVAL_ERROR | 0000000000000100 |
| NO_DARK_DATA            | 0000000000001000 |
| CI_GAIN_OF_OF_THRESHOLD | 0000000000010000 |
| CI_LINEAR_DEVIATION     | 000000000100000  |
| CI_EVAL_ERROR           | 000000001000000  |
| FF_GAIN_EVAL_ERROR      | 000000010000000  |
| FF_GAIN_DEVIATION       | 000000100000000  |
| FF_NO_ENTRIES           | 000001000000000  |
| CI2_EVAL_ERROR          | 000010000000000  |
| VALUE_IS_NAN            | 000010000000000  |
| VALUE_OUT_OF_RANGE      | 000100000000000  |
| GAIN_THRESHOLDING_ERROR | 001000000000000  |
| DATA_STD_IS_ZERO        | 010000000000000  |
| ASIC_STD_BELOW_NOISE    | 100000000000000  |
| INTERPOLATED            | 100000000000000  |
| NOISY_ADC               | 100000000000000  |
| OVERSCAN                | 100000000000000  |
| NON_SENSITIVE           | 100000000000000  |
| NON_LIN_RESPONSE_REGION | 100000000000000  |

### 6.5.1 Single Shot Bad Pixels

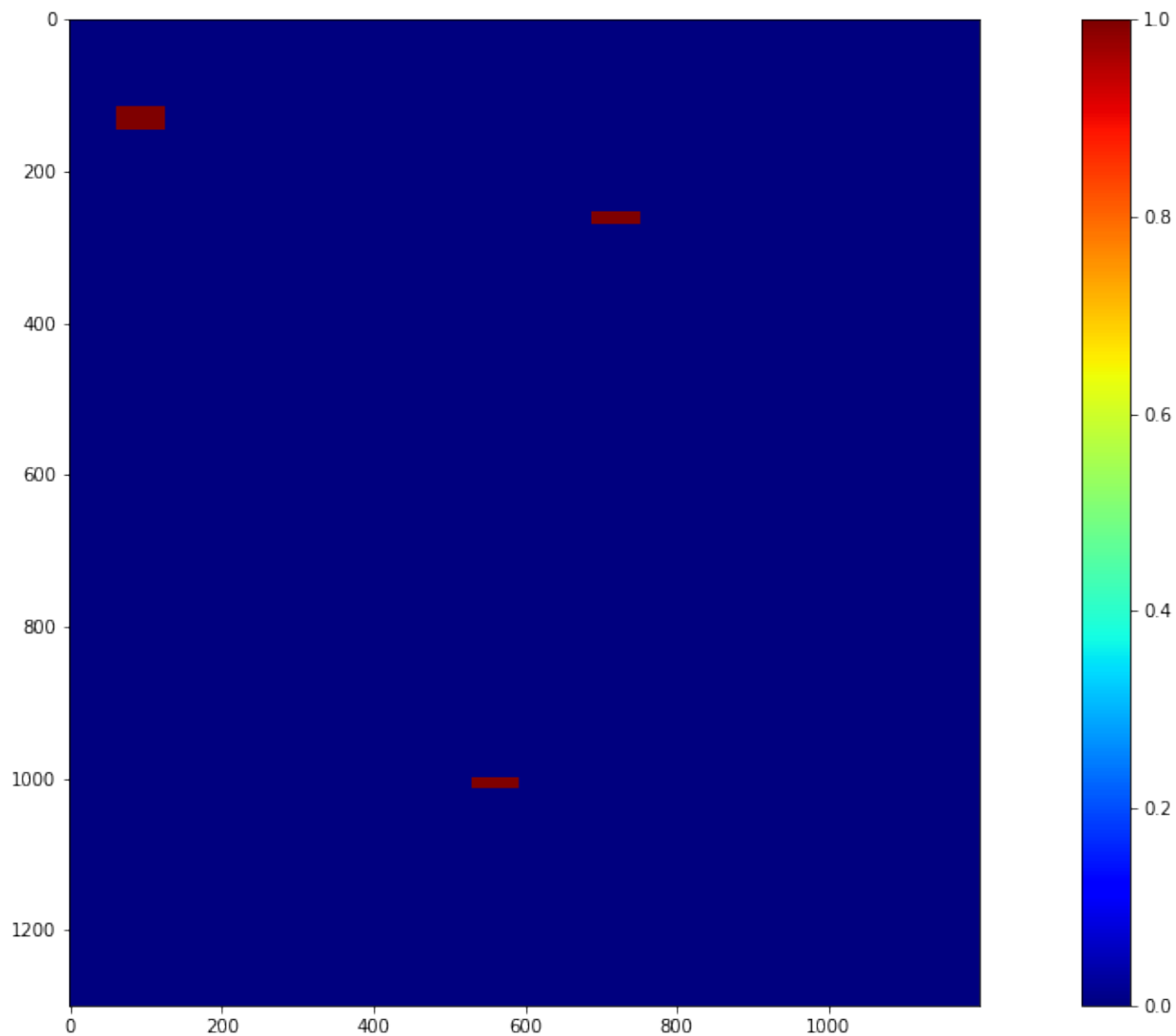
A single shot bad pixel map from cell 4 of the first train

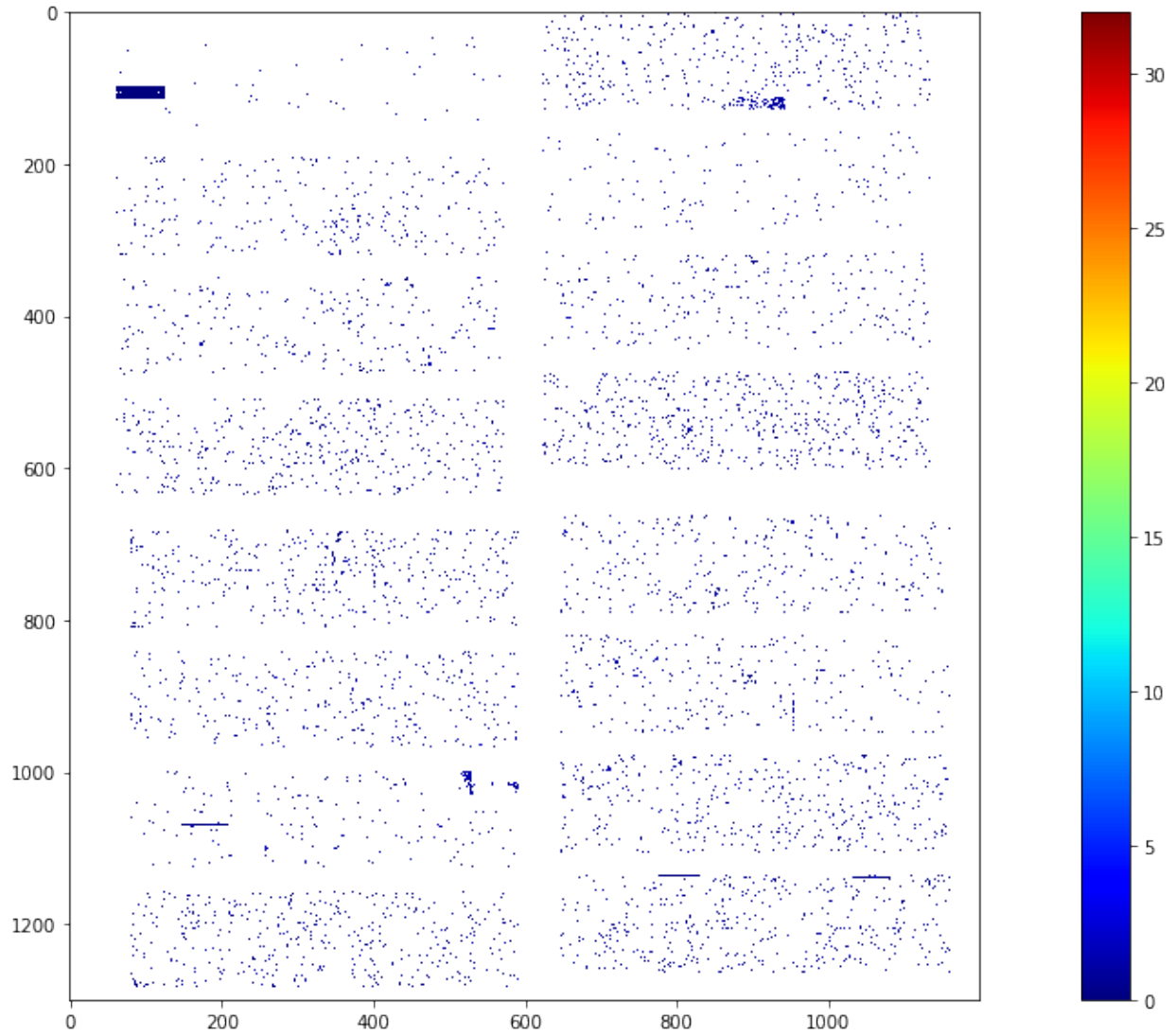


### 6.5.2 Full Train Bad Pixels



### 6.5.3 Full Train Bad Pixels - Only Dark Char. Related





## AGIPD OFFLINE CORRECTION, SEQUENCES = 18-20

```
Connecting to profile slurm_prof_766b6a76-c719-4b68-b085-6d9165c1a5b8_18-20
Using 2020-03-09 01:07:51+01:00 as creation time
Working in IL Mode: False. Actual cells in use are: 0
Outputting to /gpfs/exfel/d/proc/SPB/202030/p900119/r0096
Detector in use is SPB_DET_AGIPD1M-1
```

```
Gain setting: 0
```

### 7.1 Processed Files

```
Processing a total of 48 sequence files in chunks of 32
```

| #  | module | # module | file  |
|----|--------|----------|---|
| 0  | Q1M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00018.h5 |
| 1  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00019.h5 |
| 2  |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00020.h5 |
| 3  | Q1M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00018.h5 |
| 4  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00019.h5 |
| 5  |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00020.h5 |
| 6  | Q1M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00018.h5 |
| 7  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00019.h5 |
| 8  |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00020.h5 |
| 9  | Q1M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00018.h5 |
| 10 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00019.h5 |
| 11 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00020.h5 |
| 12 | Q2M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00018.h5 |
| 13 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00019.h5 |
| 14 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00020.h5 |
| 15 | Q2M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00018.h5 |
| 16 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00019.h5 |
| 17 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00020.h5 |
| 18 | Q2M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00018.h5 |
| 19 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00019.h5 |
| 20 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00020.h5 |
| 21 | Q2M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00018.h5 |
| 22 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00019.h5 |
| 23 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00020.h5 |
| 24 | Q3M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00018.h5 |
| 25 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00019.h5 |
| 26 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00020.h5 |
| 27 | Q3M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00018.h5 |
| 28 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00019.h5 |
| 29 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00020.h5 |
| 30 | Q3M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00018.h5 |
| 31 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00019.h5 |
| 32 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00020.h5 |
| 33 | Q3M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00018.h5 |
| 34 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00019.h5 |
| 35 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00020.h5 |
| 36 | Q4M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00018.h5 |
| 37 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00019.h5 |
| 38 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00020.h5 |
| 39 | Q4M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00018.h5 |
| 40 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00019.h5 |
| 41 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00020.h5 |
| 42 | Q4M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00018.h5 |
| 43 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00019.h5 |
| 44 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00020.h5 |
| 45 | Q4M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD15-S00018.h5 |
| 46 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD15-S00019.h5 |
| 47 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD15-S00020.h5 |

```
A range of 500 pulse indices is selected: from 0 to 500 with a step of 1
Running 32 tasks parallel
Running 16 tasks parallel
```

```
Constants were injected on:
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
```



```
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
```

```
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
```

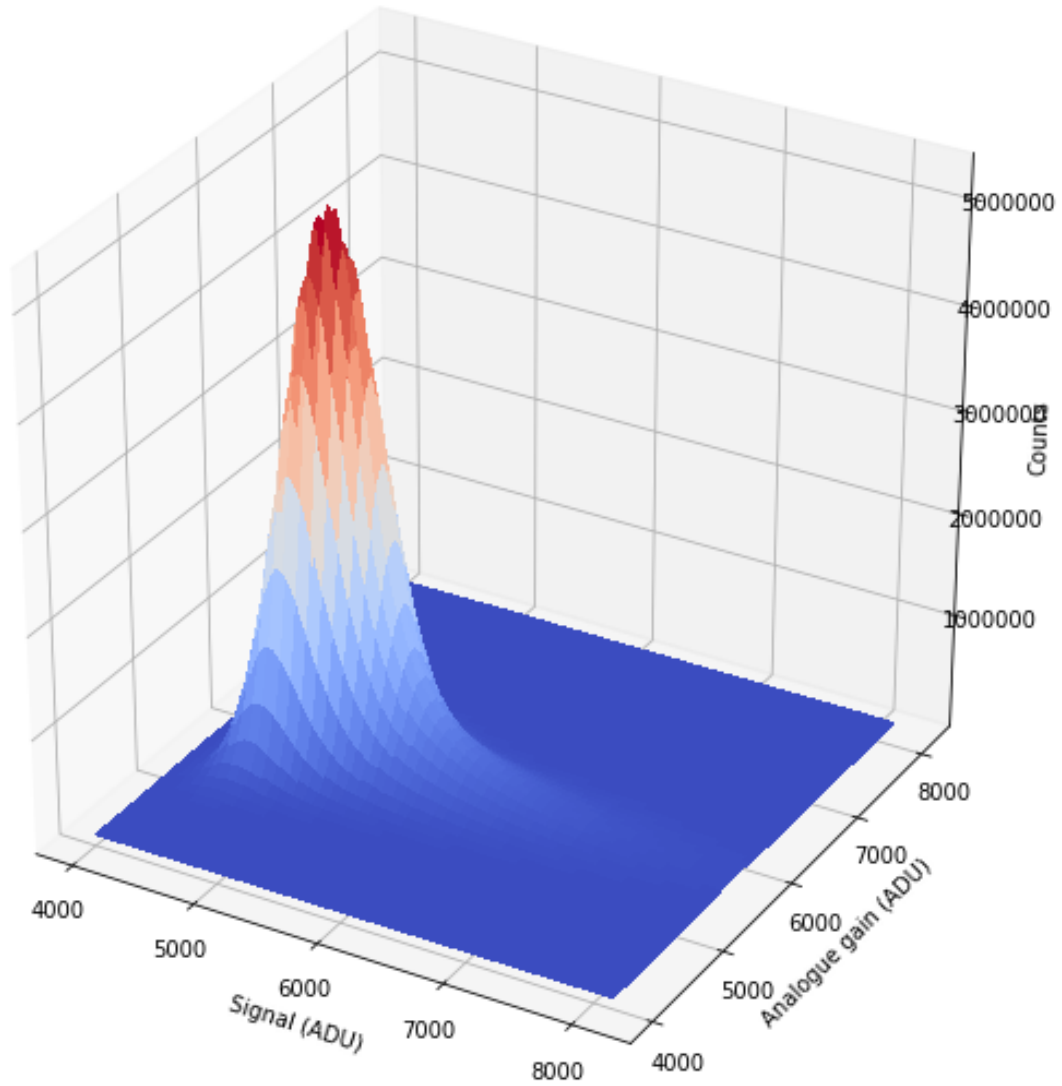
```
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
```

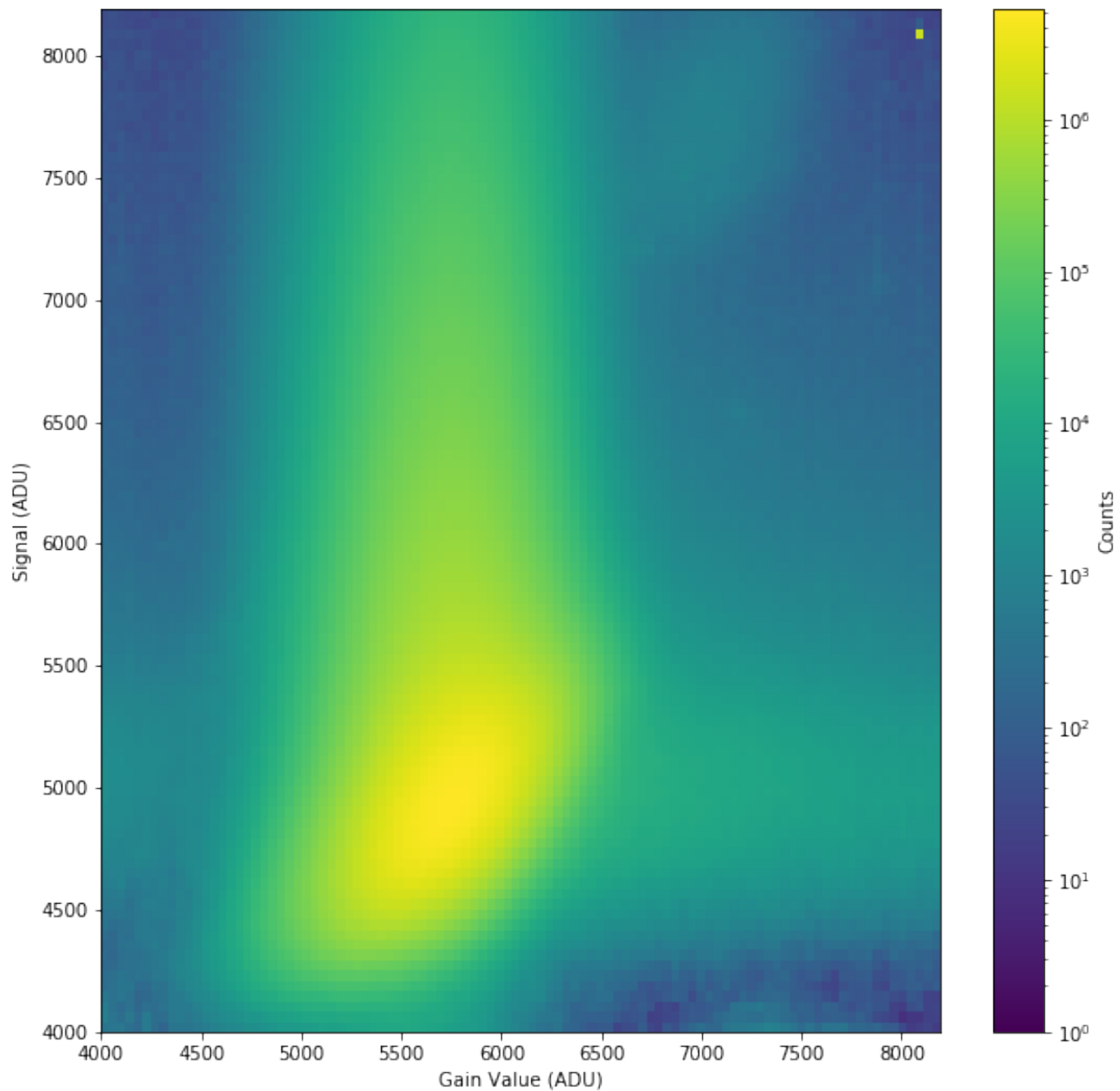
```
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
```

```
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
```

## 7.2 Signal vs. Analogue Gain

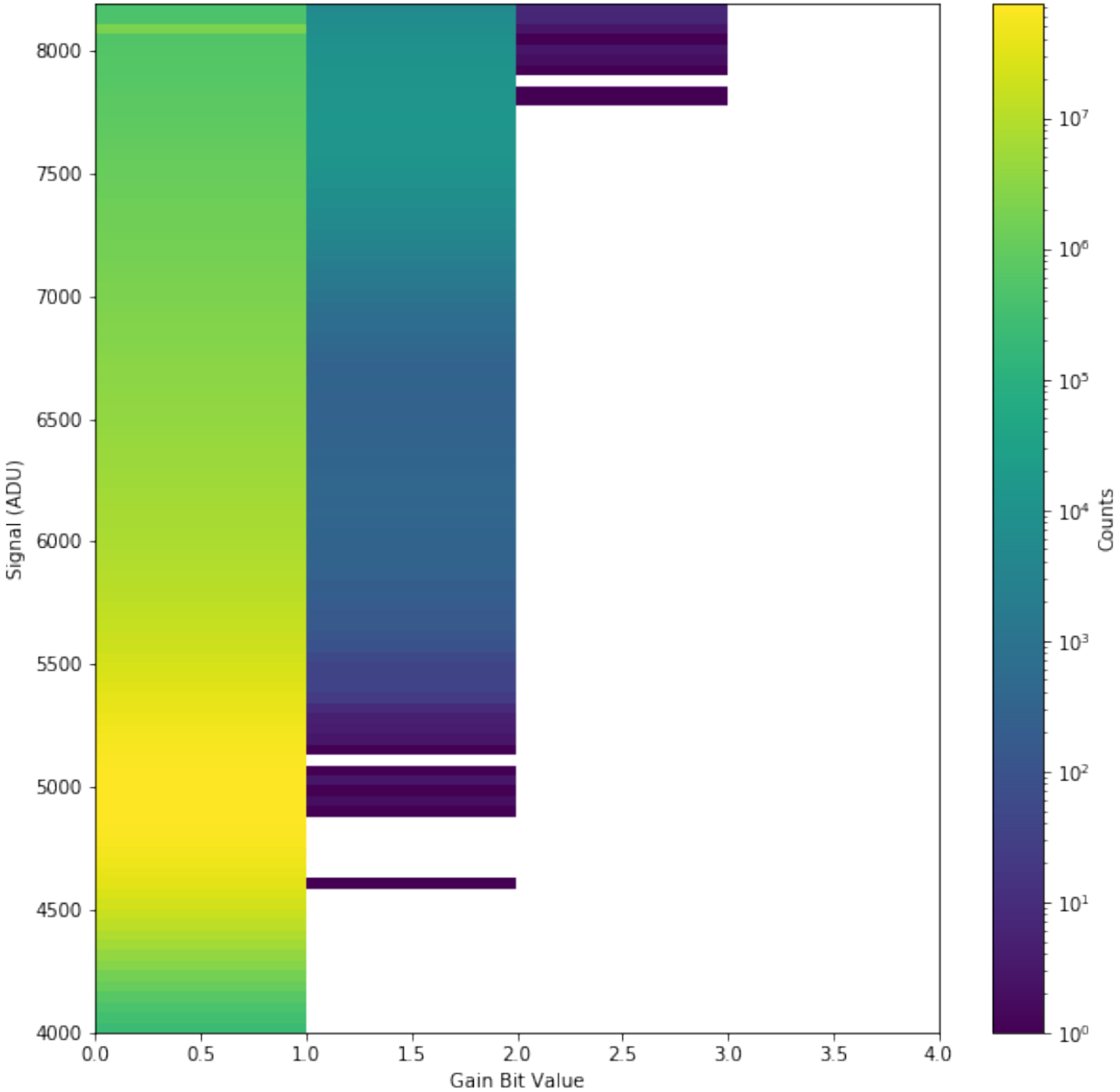
The following plot shows plots signal vs. gain for the first 128 images.



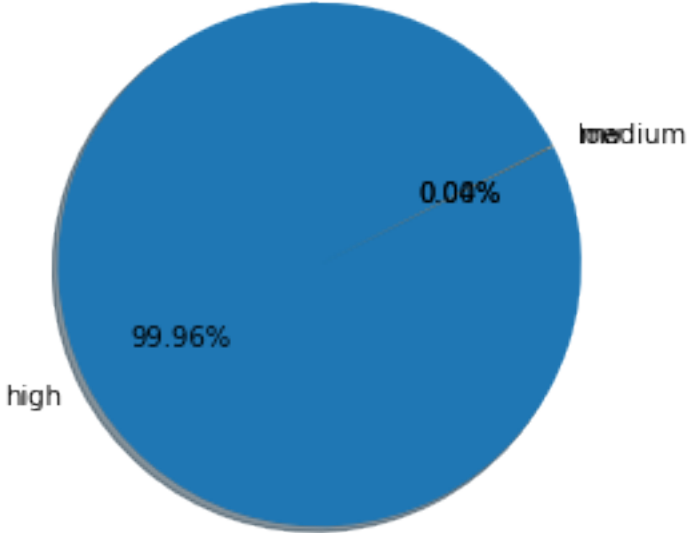


### 7.3 Signal vs. Digitized Gain

The following plot shows plots signal vs. digitized gain for the first 128 images.

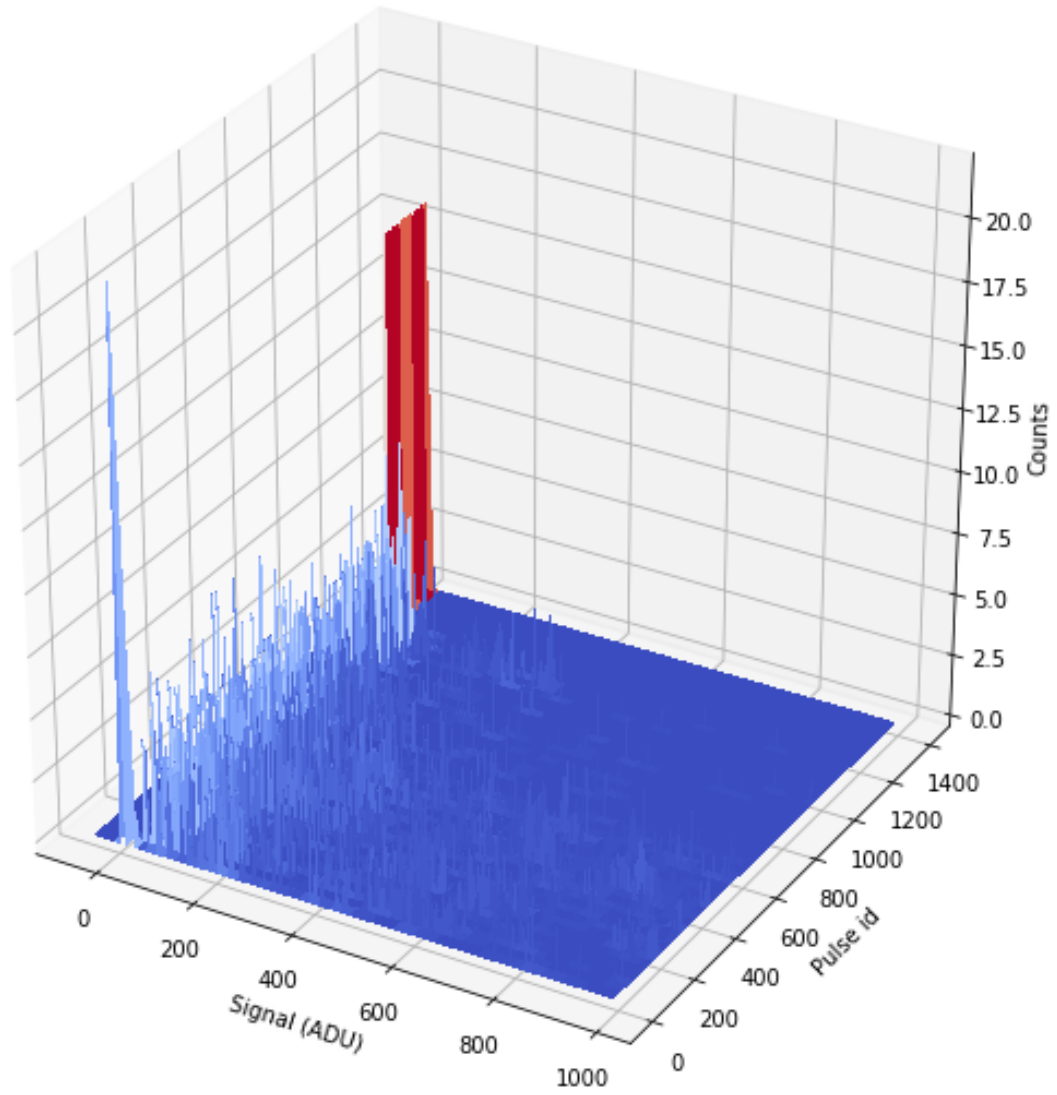


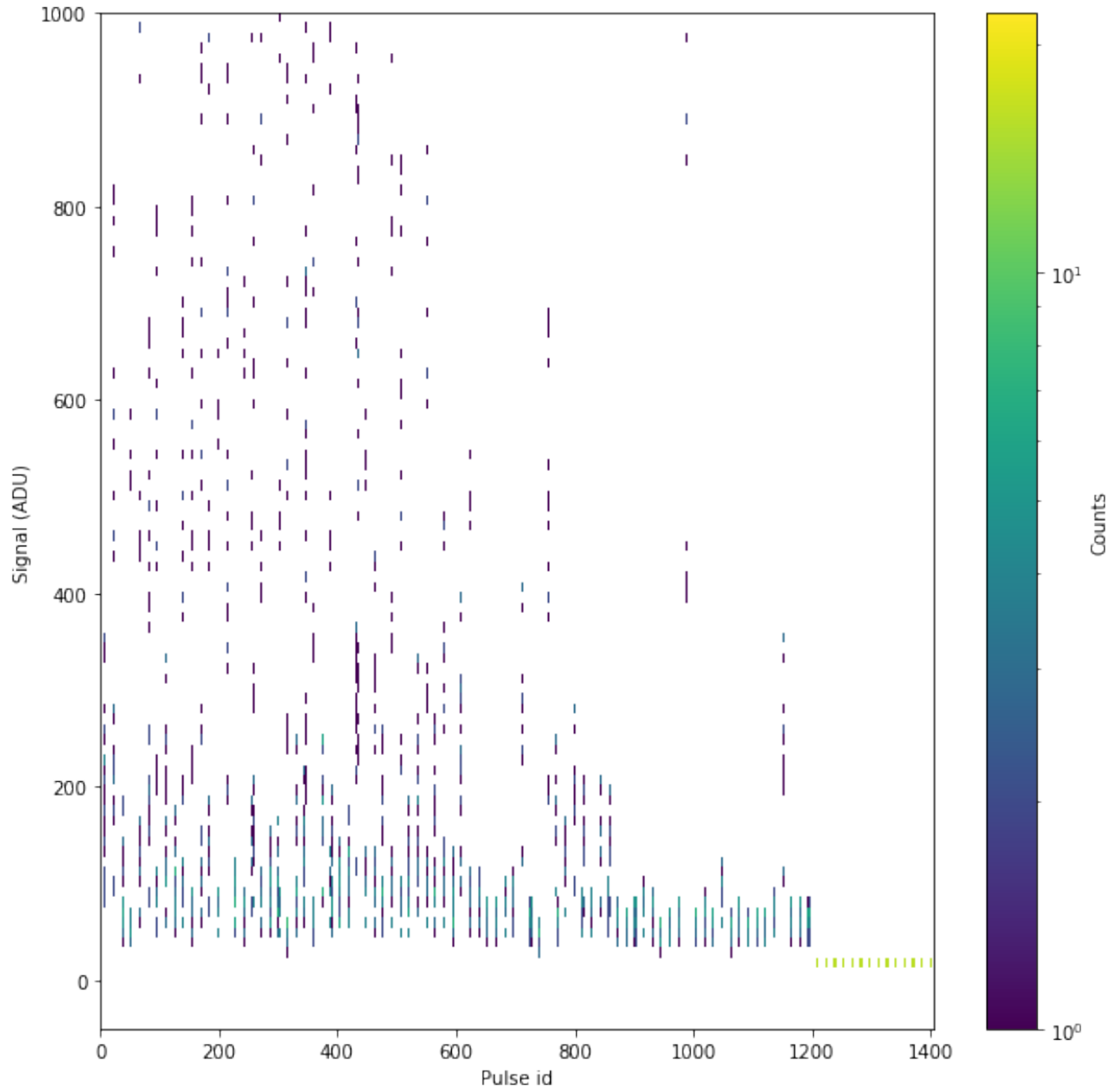


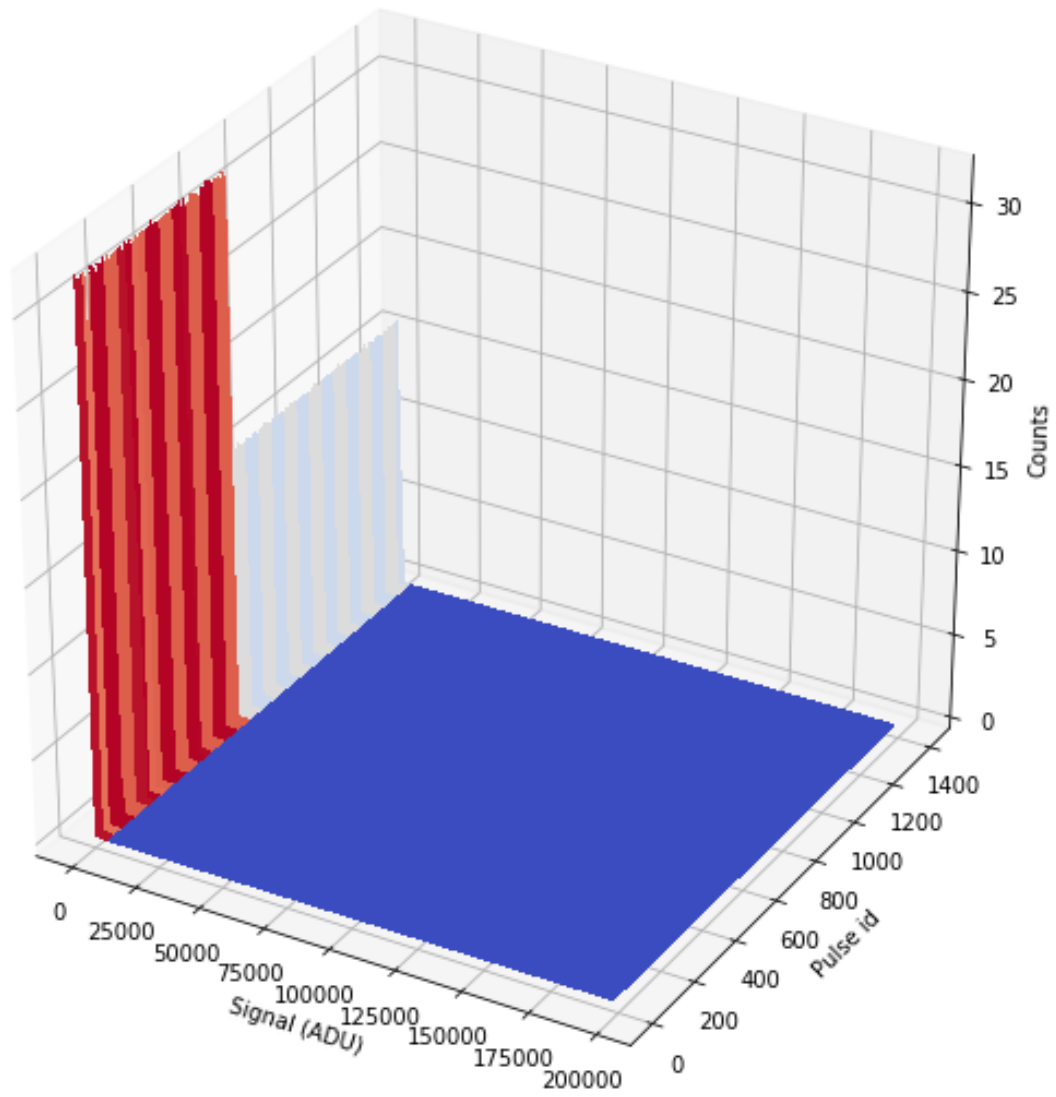


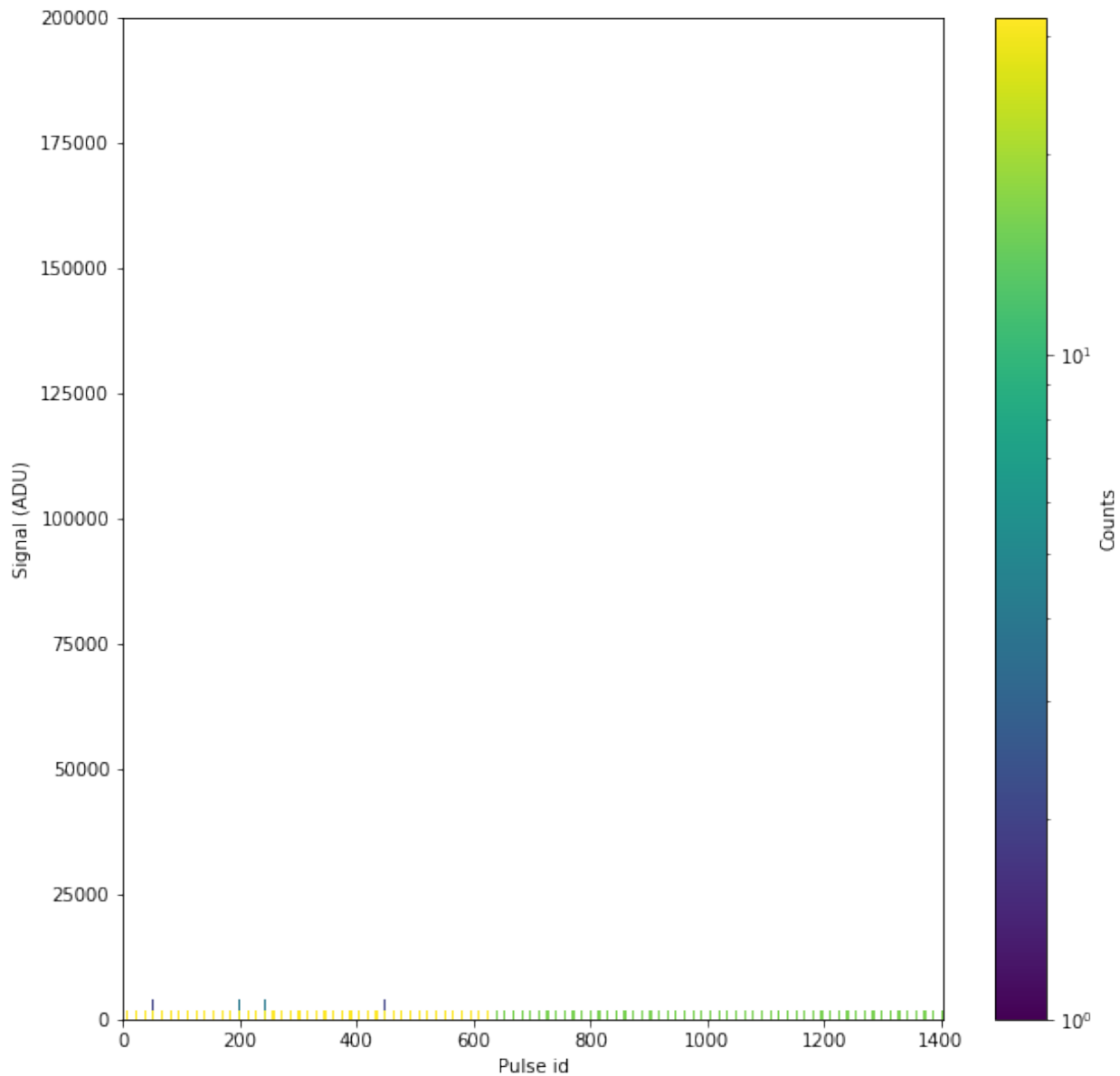
### 7.4 Mean Intensity per Pulse

The following plots show the mean signal for each pulse in a detailed and expanded intensity region.



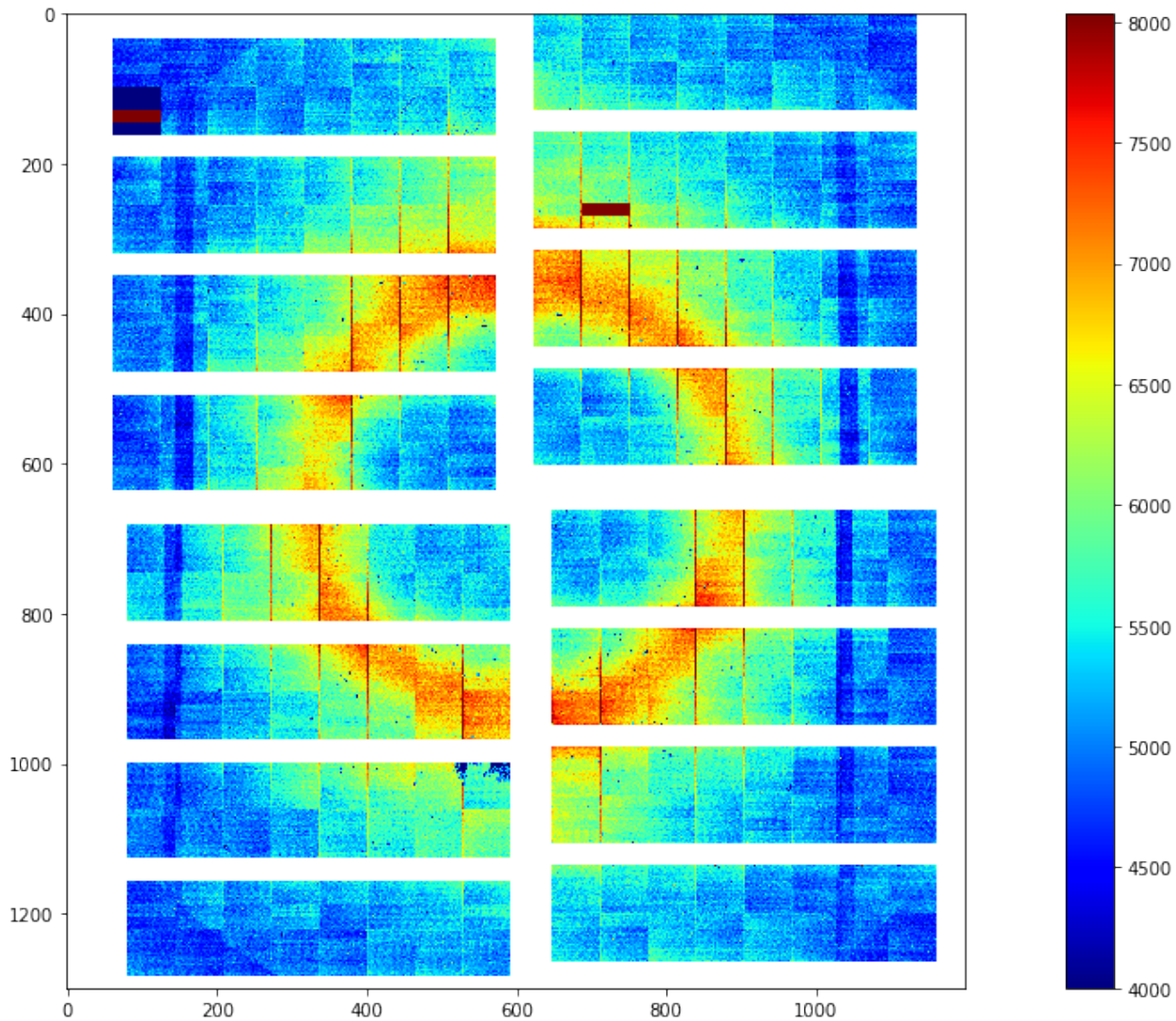






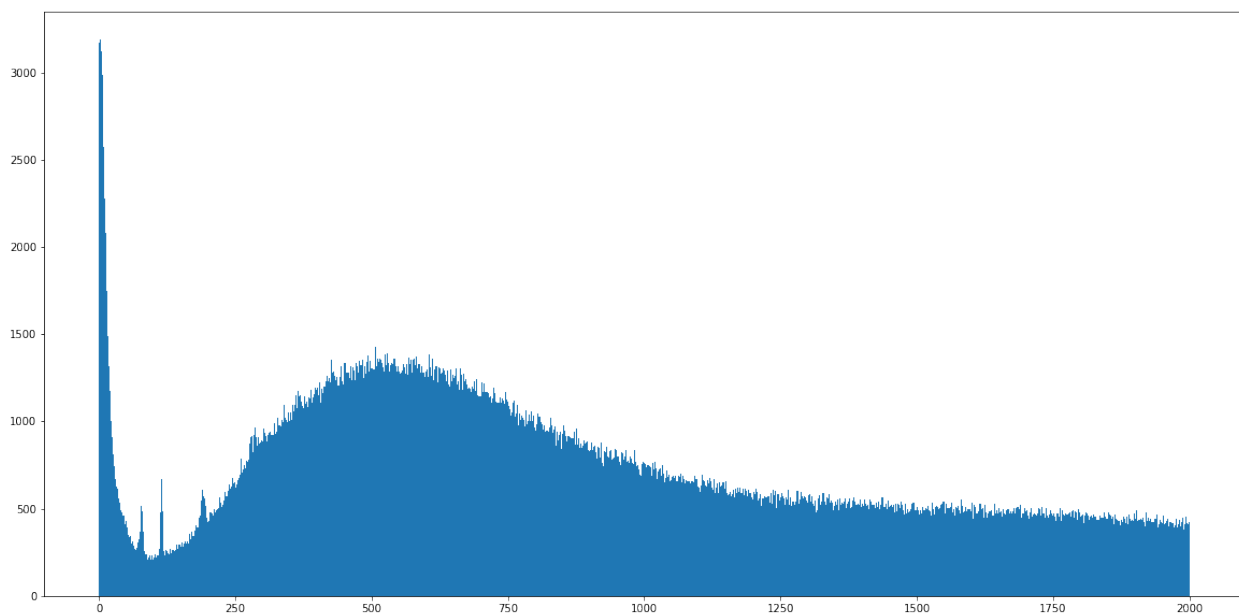
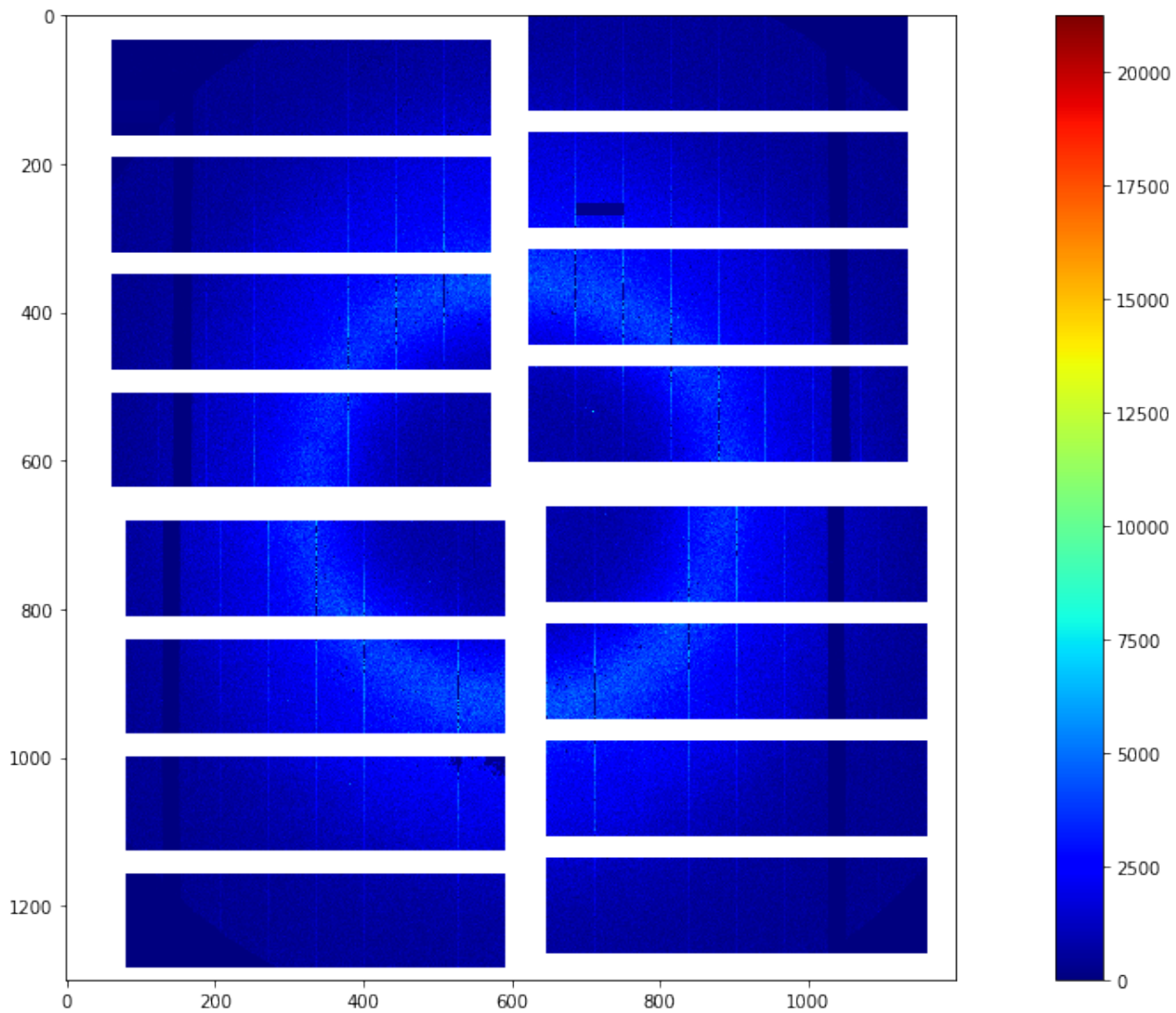
### 7.4.1 Mean RAW Preview

The per pixel mean of the first 128 images of the RAW data



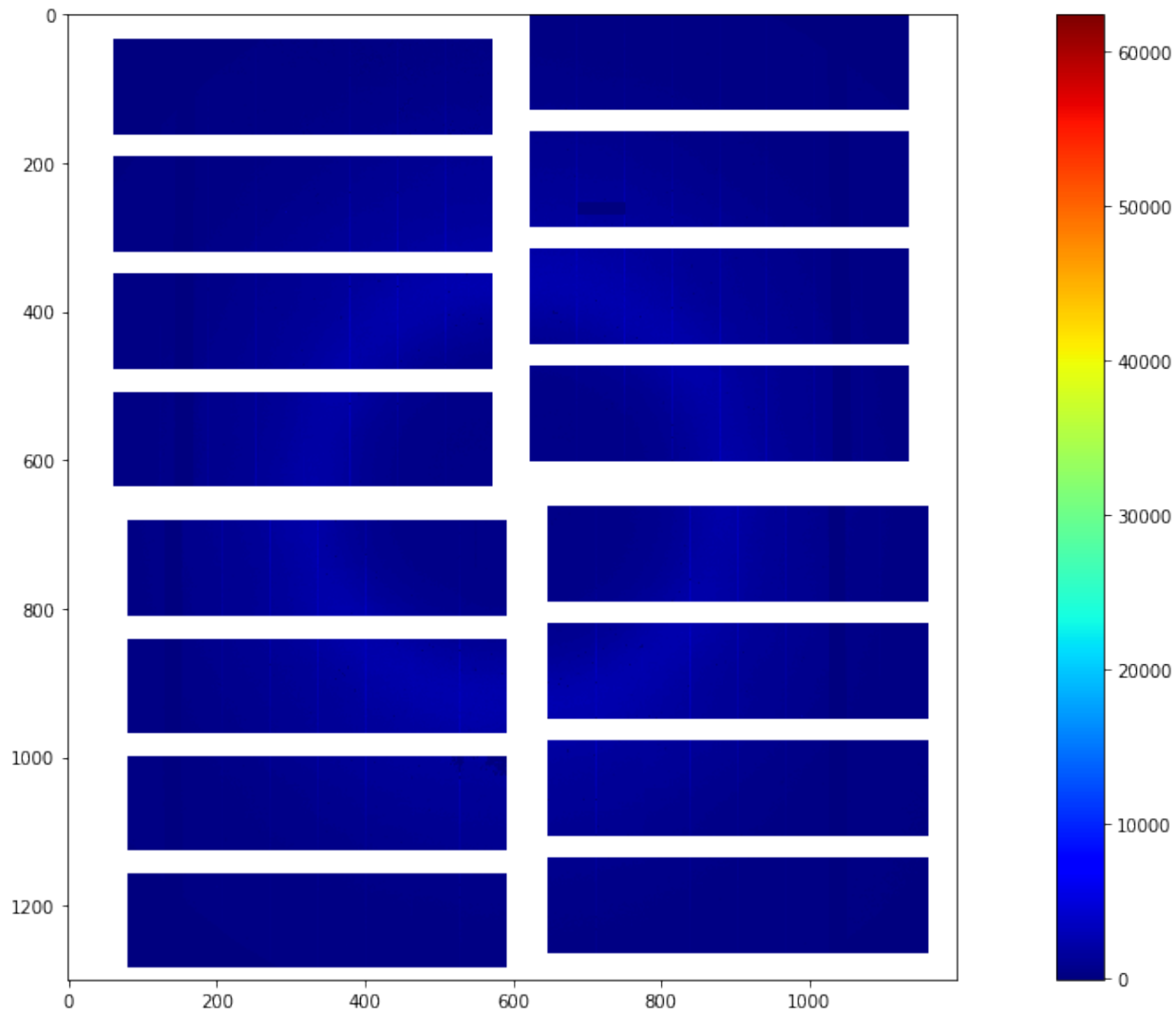
### 7.4.2 Single Shot Preview

A single shot image from cell 12 of the first train

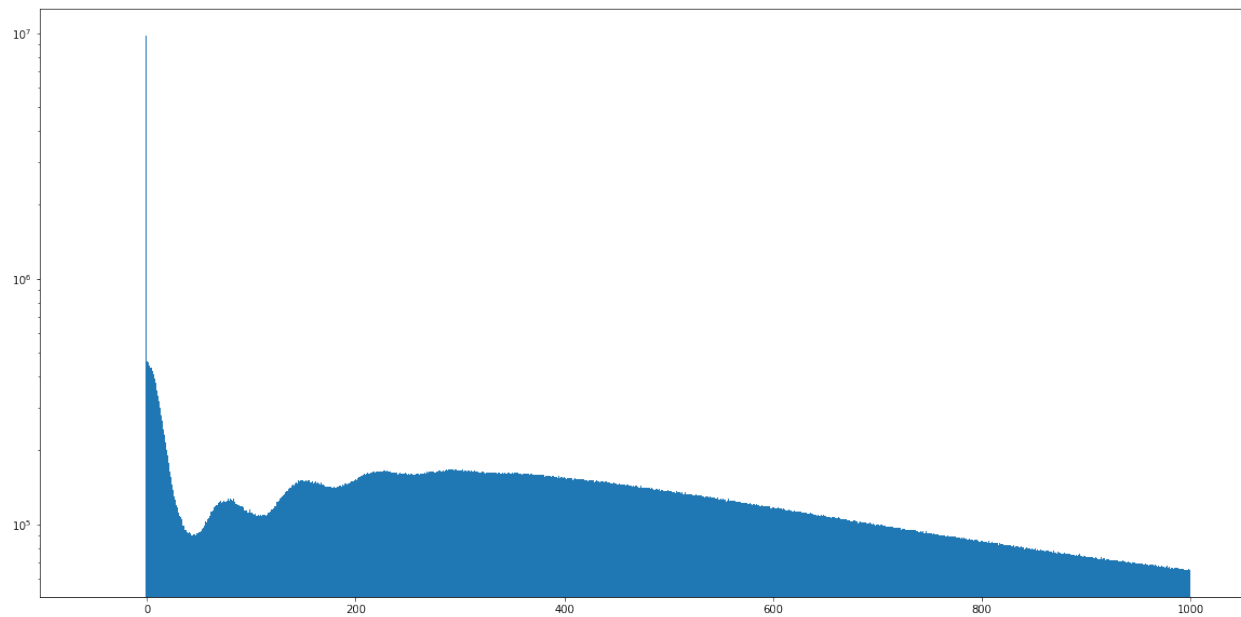


### 7.4.3 Mean CORRECTED Preview

The per pixel mean of the first 128 images of the CORRECTED data

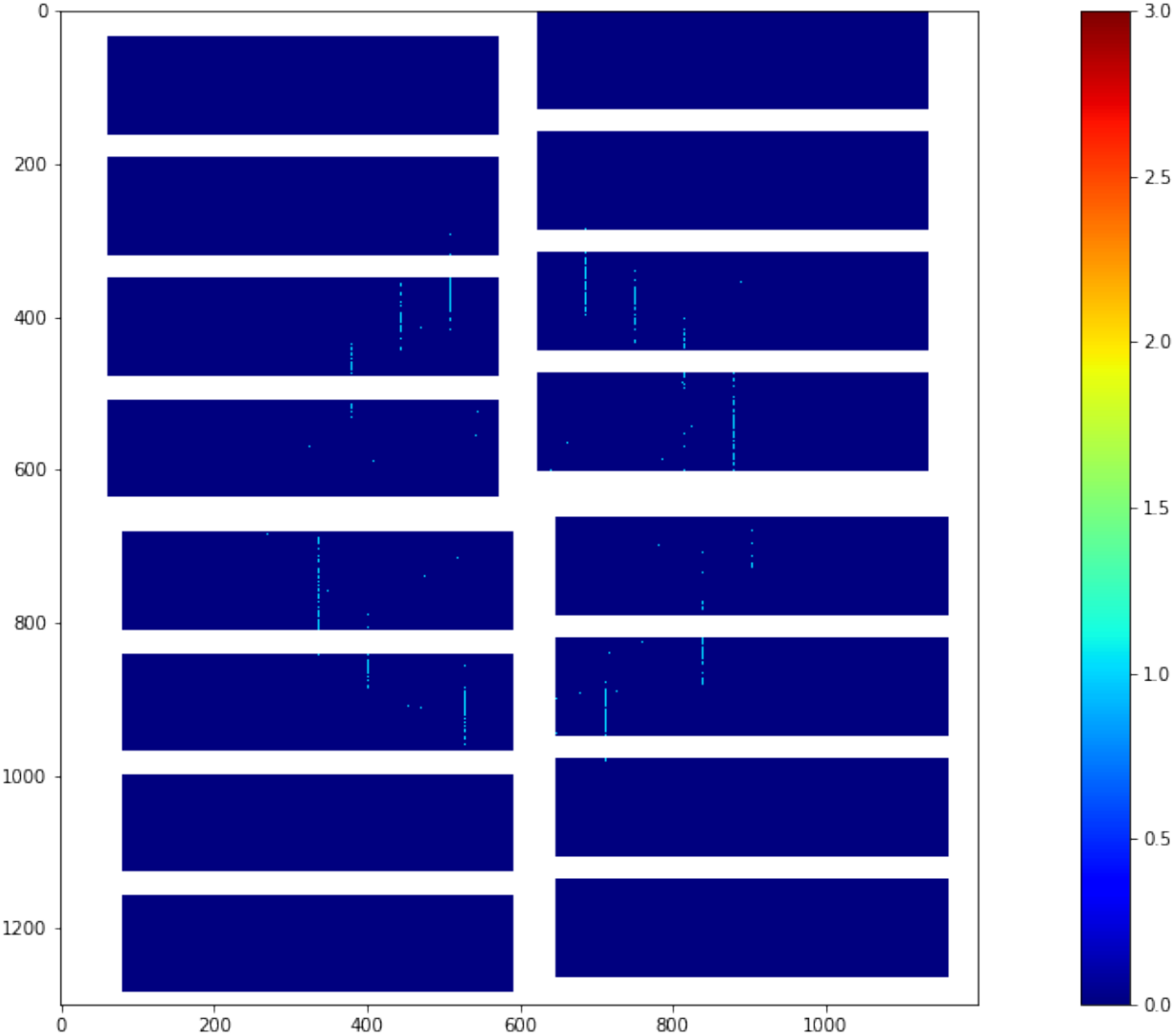






#### 7.4.4 Maximum GAIN Preview

The per pixel maximum of the first 128 images of the digitized GAIN data



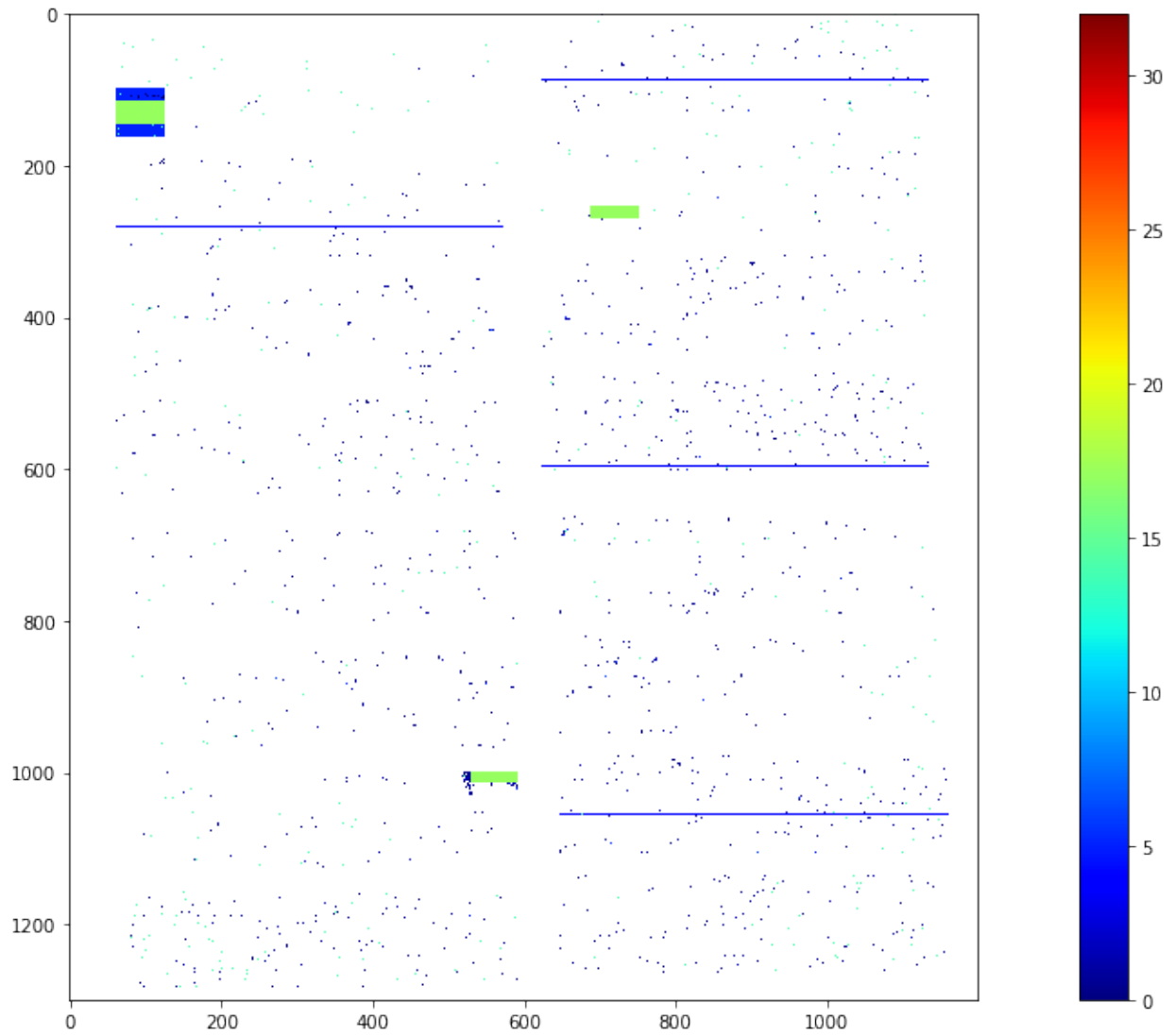
## 7.5 Bad Pixels

The mask contains dedicated entries for all pixels and memory cells as well as all three gains stages. Each mask entry is encoded in 32 bits as:

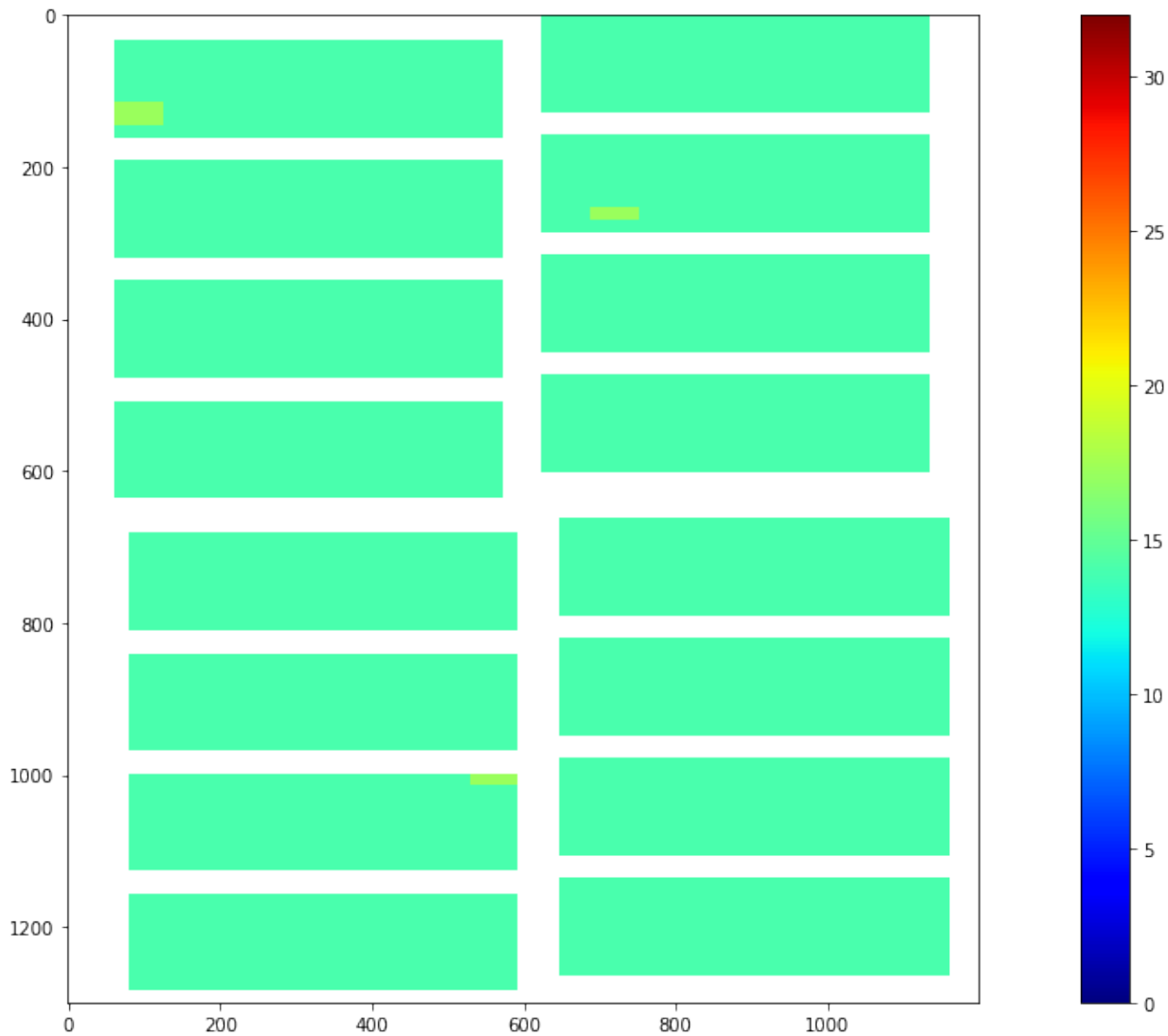
| Bad pixel type          | Bit mask         |
|-------------------------|------------------|
| OFFSET_OUT_OF_THRESHOLD | 0000000000000001 |
| NOISE_OUT_OF_THRESHOLD  | 0000000000000010 |
| OFFSET_NOISE_EVAL_ERROR | 0000000000000100 |
| NO_DARK_DATA            | 0000000000001000 |
| CI_GAIN_OF_OF_THRESHOLD | 0000000000010000 |
| CI_LINEAR_DEVIATION     | 000000000100000  |
| CI_EVAL_ERROR           | 000000001000000  |
| FF_GAIN_EVAL_ERROR      | 000000010000000  |
| FF_GAIN_DEVIATION       | 000000100000000  |
| FF_NO_ENTRIES           | 000001000000000  |
| CI2_EVAL_ERROR          | 000010000000000  |
| VALUE_IS_NAN            | 000010000000000  |
| VALUE_OUT_OF_RANGE      | 000100000000000  |
| GAIN_THRESHOLDING_ERROR | 001000000000000  |
| DATA_STD_IS_ZERO        | 010000000000000  |
| ASIC_STD_BELOW_NOISE    | 100000000000000  |
| INTERPOLATED            | 100000000000000  |
| NOISY_ADC               | 100000000000000  |
| OVERSCAN                | 100000000000000  |
| NON_SENSITIVE           | 100000000000000  |
| NON_LIN_RESPONSE_REGION | 100000000000000  |

### 7.5.1 Single Shot Bad Pixels

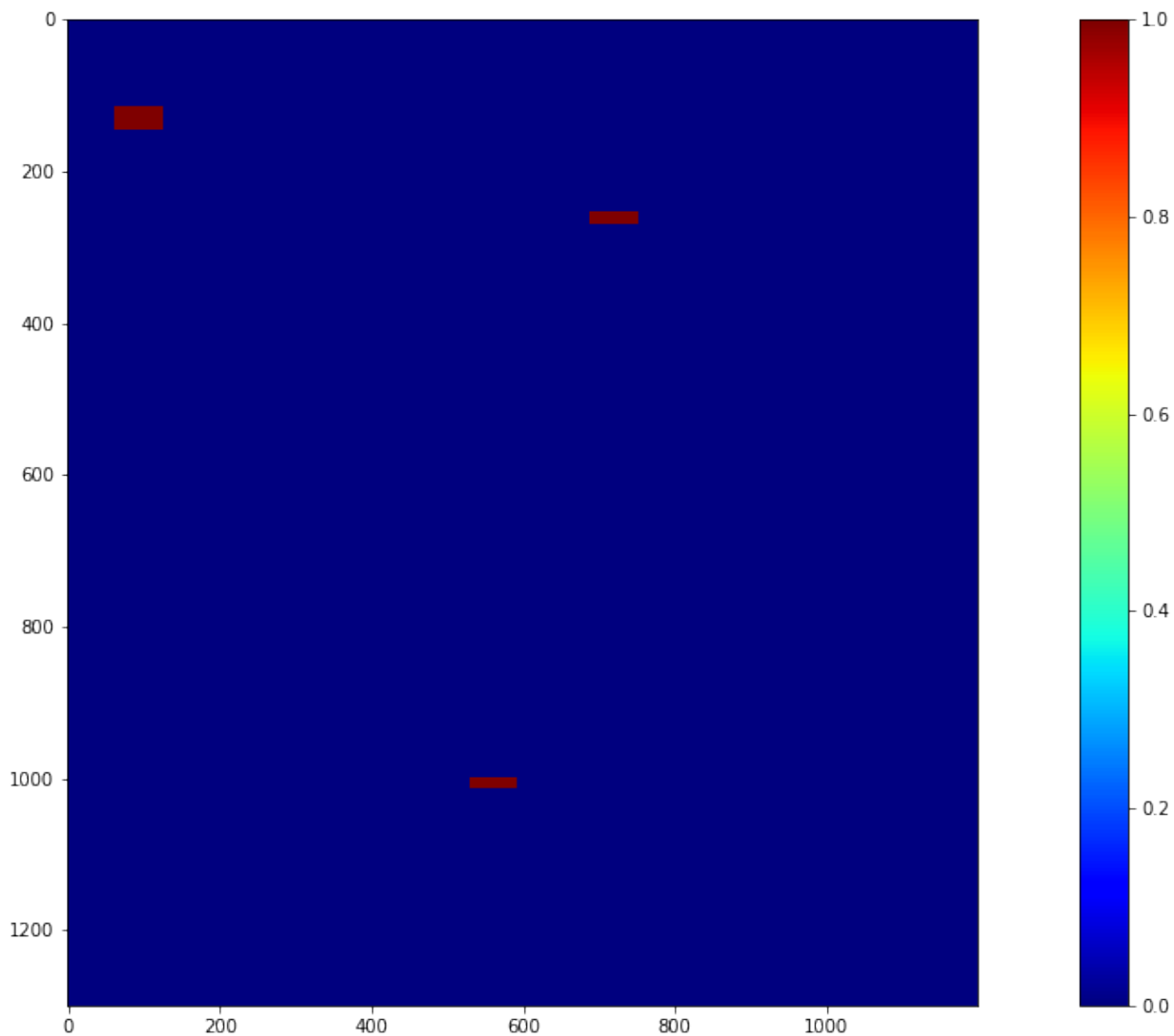
A single shot bad pixel map from cell 4 of the first train

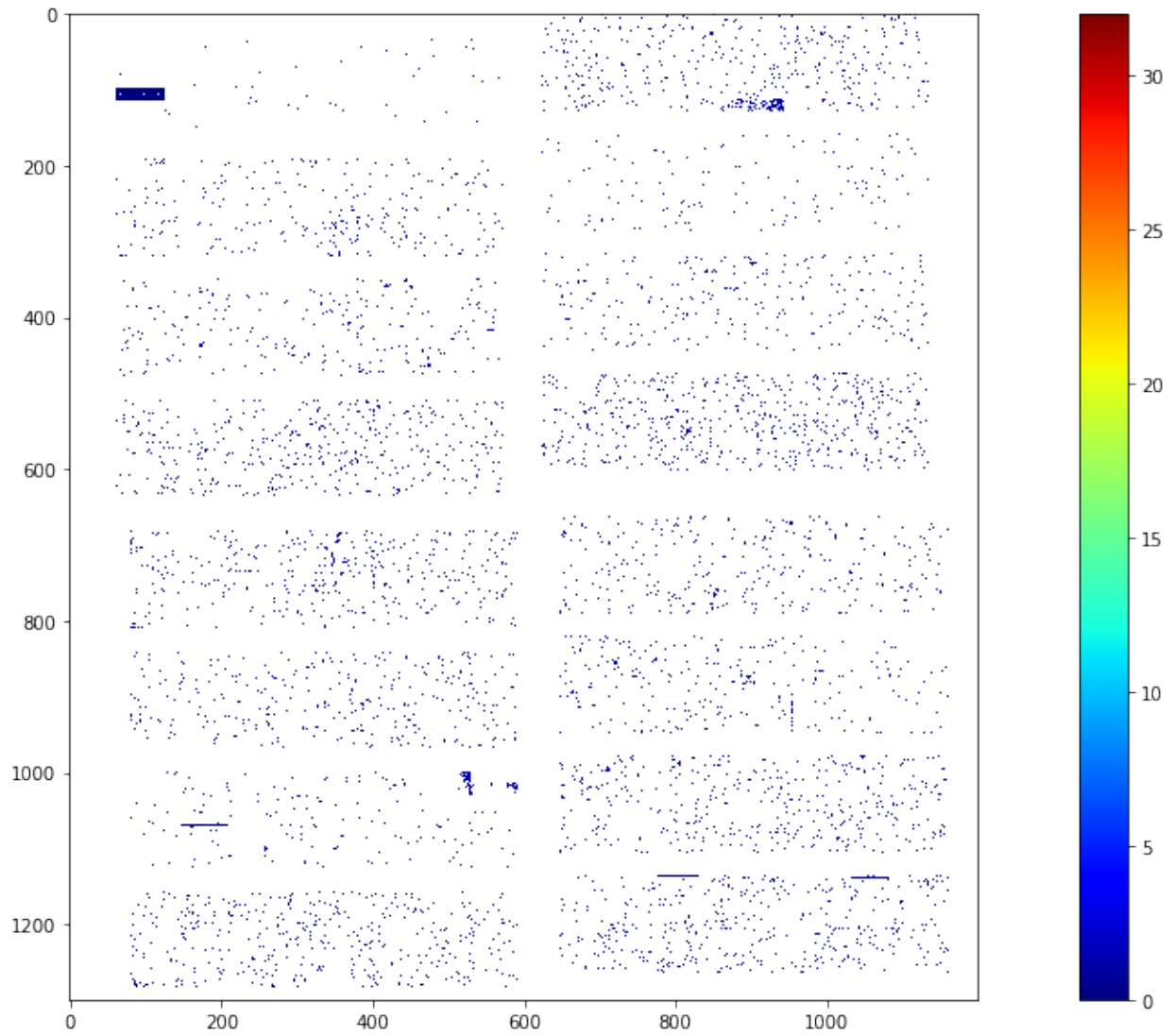


### 7.5.2 Full Train Bad Pixels



### 7.5.3 Full Train Bad Pixels - Only Dark Char. Related





## AGIPD OFFLINE CORRECTION, SEQUENCES = 21-23

```
Connecting to profile slurm_prof_766b6a76-c719-4b68-b085-6d9165c1a5b8_21-23
Using 2020-03-09 01:07:51+01:00 as creation time
Working in IL Mode: False. Actual cells in use are: 0
Outputting to /gpfs/exfel/d/proc/SPB/202030/p900119/r0096
Detector in use is SPB_DET_AGIPD1M-1
```

```
Gain setting: 0
```

### 8.1 Processed Files

```
Processing a total of 48 sequence files in chunks of 32
```



| #  | module | # module | file  |
|----|--------|----------|---|
| 0  | Q1M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00021.h5 |
| 1  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00022.h5 |
| 2  |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD00-S00023.h5 |
| 3  | Q1M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00021.h5 |
| 4  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00022.h5 |
| 5  |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD01-S00023.h5 |
| 6  | Q1M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00021.h5 |
| 7  |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00022.h5 |
| 8  |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD02-S00023.h5 |
| 9  | Q1M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00021.h5 |
| 10 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00022.h5 |
| 11 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD03-S00023.h5 |
| 12 | Q2M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00021.h5 |
| 13 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00022.h5 |
| 14 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD04-S00023.h5 |
| 15 | Q2M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00021.h5 |
| 16 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00022.h5 |
| 17 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD05-S00023.h5 |
| 18 | Q2M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00021.h5 |
| 19 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00022.h5 |
| 20 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD06-S00023.h5 |
| 21 | Q2M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00021.h5 |
| 22 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00022.h5 |
| 23 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD07-S00023.h5 |
| 24 | Q3M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00021.h5 |
| 25 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00022.h5 |
| 26 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD08-S00023.h5 |
| 27 | Q3M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00021.h5 |
| 28 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00022.h5 |
| 29 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD09-S00023.h5 |
| 30 | Q3M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00021.h5 |
| 31 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00022.h5 |
| 32 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD10-S00023.h5 |
| 33 | Q3M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00021.h5 |
| 34 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00022.h5 |
| 35 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD11-S00023.h5 |
| 36 | Q4M1   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00021.h5 |
| 37 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00022.h5 |
| 38 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD12-S00023.h5 |
| 39 | Q4M2   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00021.h5 |
| 40 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00022.h5 |
| 41 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD13-S00023.h5 |
| 42 | Q4M3   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00021.h5 |
| 43 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00022.h5 |
| 44 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD14-S00023.h5 |
| 45 | Q4M4   | 0        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD15-S00021.h5 |
| 46 |        | 1        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD15-S00022.h5 |
| 47 |        | 2        | /gpfs/xfel/exp/SPB/202030/p900119/raw/r0096/RAW-R0096-AGIPD15-S00023.h5 |

```
A range of 500 pulse indices is selected: from 0 to 500 with a step of 1
Running 32 tasks parallel
Running 16 tasks parallel
```

```
Constants were injected on:
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
```

```
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
```

```
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
```

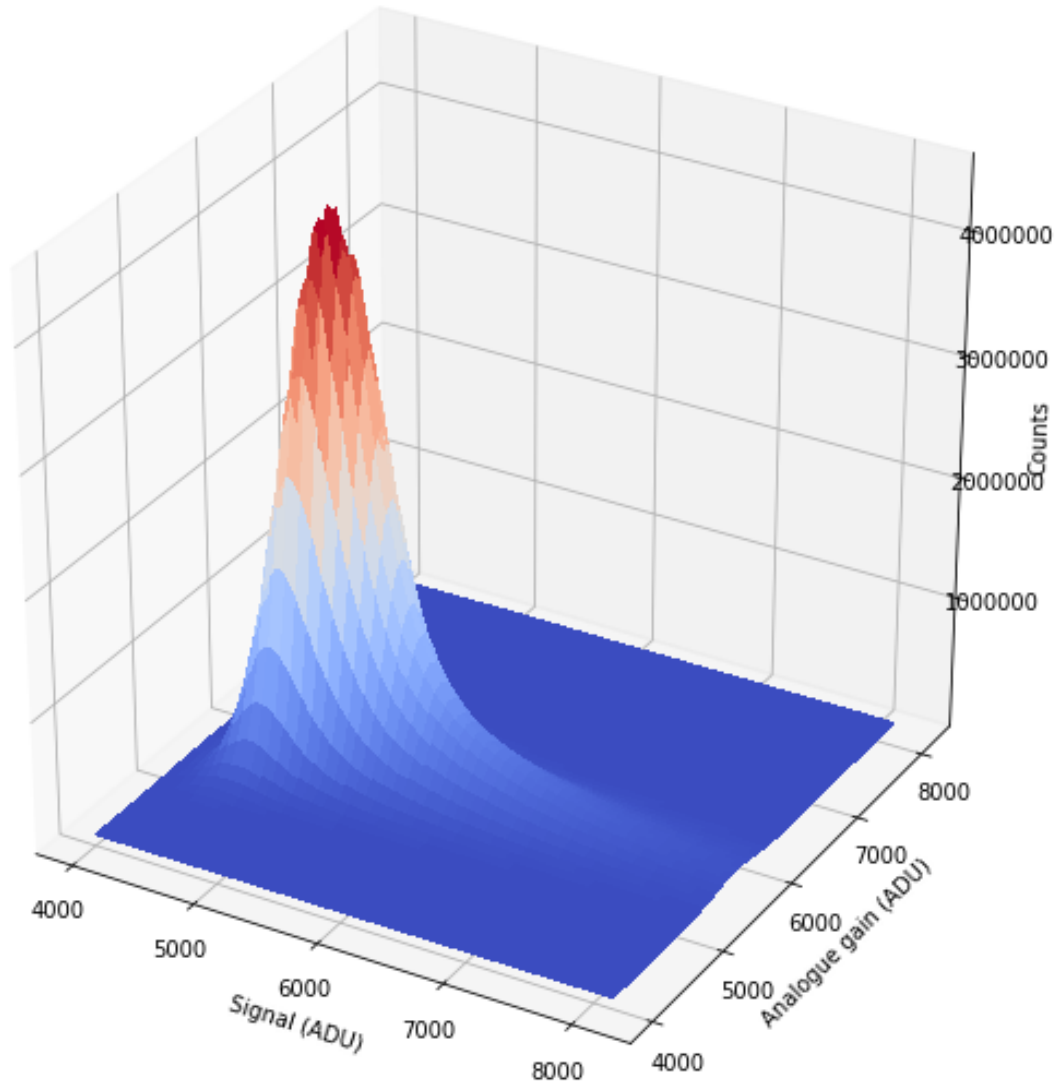
```
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
Q1M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:50
slopesPC.... 19-11-25 21:40
```

```
Q1M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:22
slopesPC.... 19-11-25 21:24
Q1M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:10
slopesPC.... 19-11-25 21:40
Q1M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 19:13
slopesPC.... 19-11-25 22:01
Q2M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:20
slopesPC.... 19-11-25 21:30
Q2M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:00
Q2M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:24
slopesPC.... 19-11-25 21:09
Q2M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:52
slopesPC.... 19-11-25 21:05
Q3M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... None
slopesPC.... 19-11-25 21:04
Q3M2
offset..... 20-03-04 15:33
```

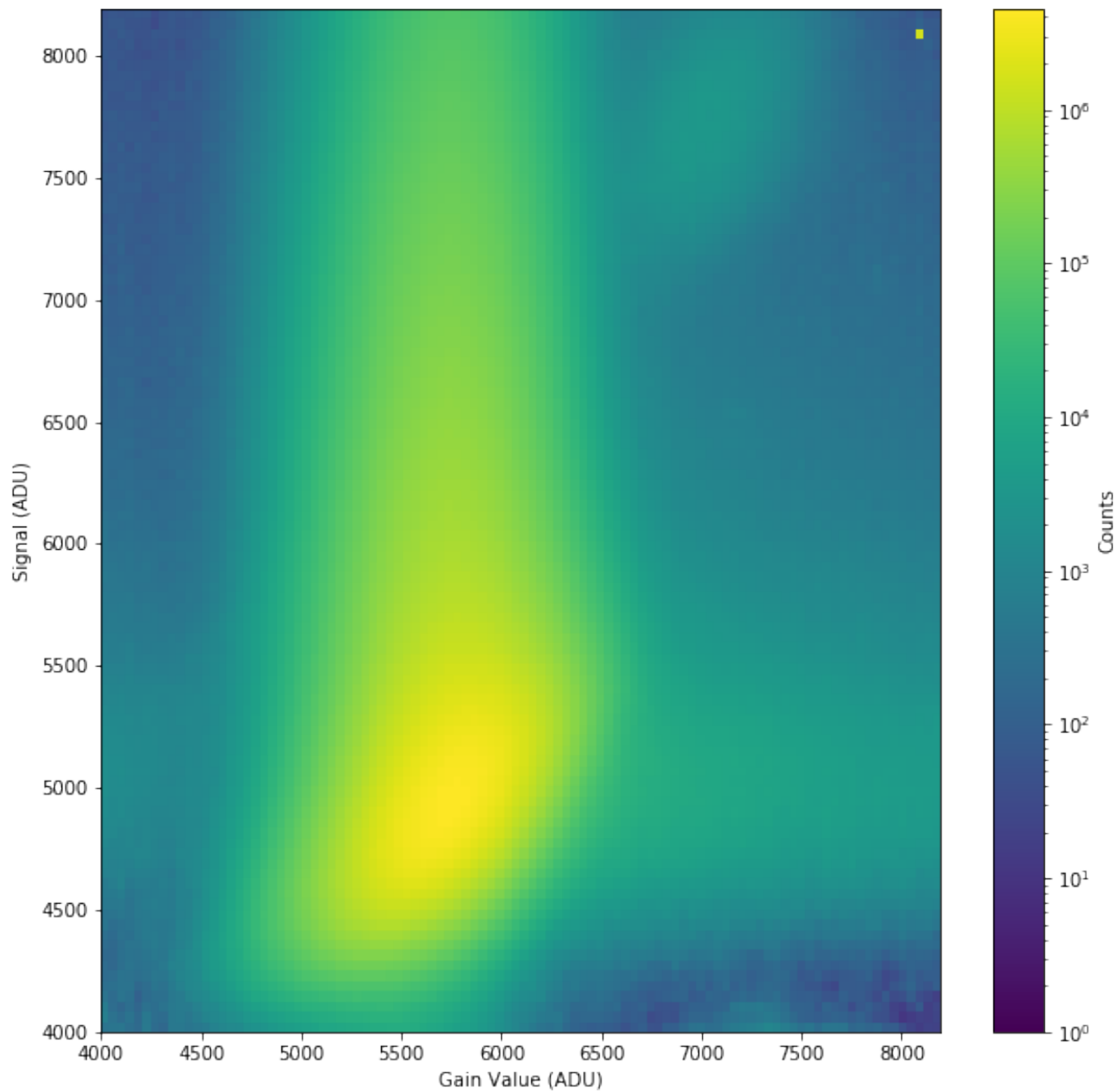
```
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:34
Q3M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:38
slopesPC.... 19-11-25 22:00
Q3M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:25
slopesPC.... 19-11-25 21:58
Q4M1
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:41
slopesPC.... 19-11-25 22:07
Q4M2
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:19
slopesPC.... 19-11-25 21:33
Q4M3
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:18
slopesPC.... 19-11-25 21:42
Q4M4
offset..... 20-03-04 15:33
noise..... 20-03-04 15:33
bpixels..... 20-03-04 15:33
thresholds.. 20-03-04 15:33
bppc..... 20-03-05 18:21
slopesPC.... 19-11-25 21:59
```

## 8.2 Signal vs. Analogue Gain

The following plot shows plots signal vs. gain for the first 128 images.

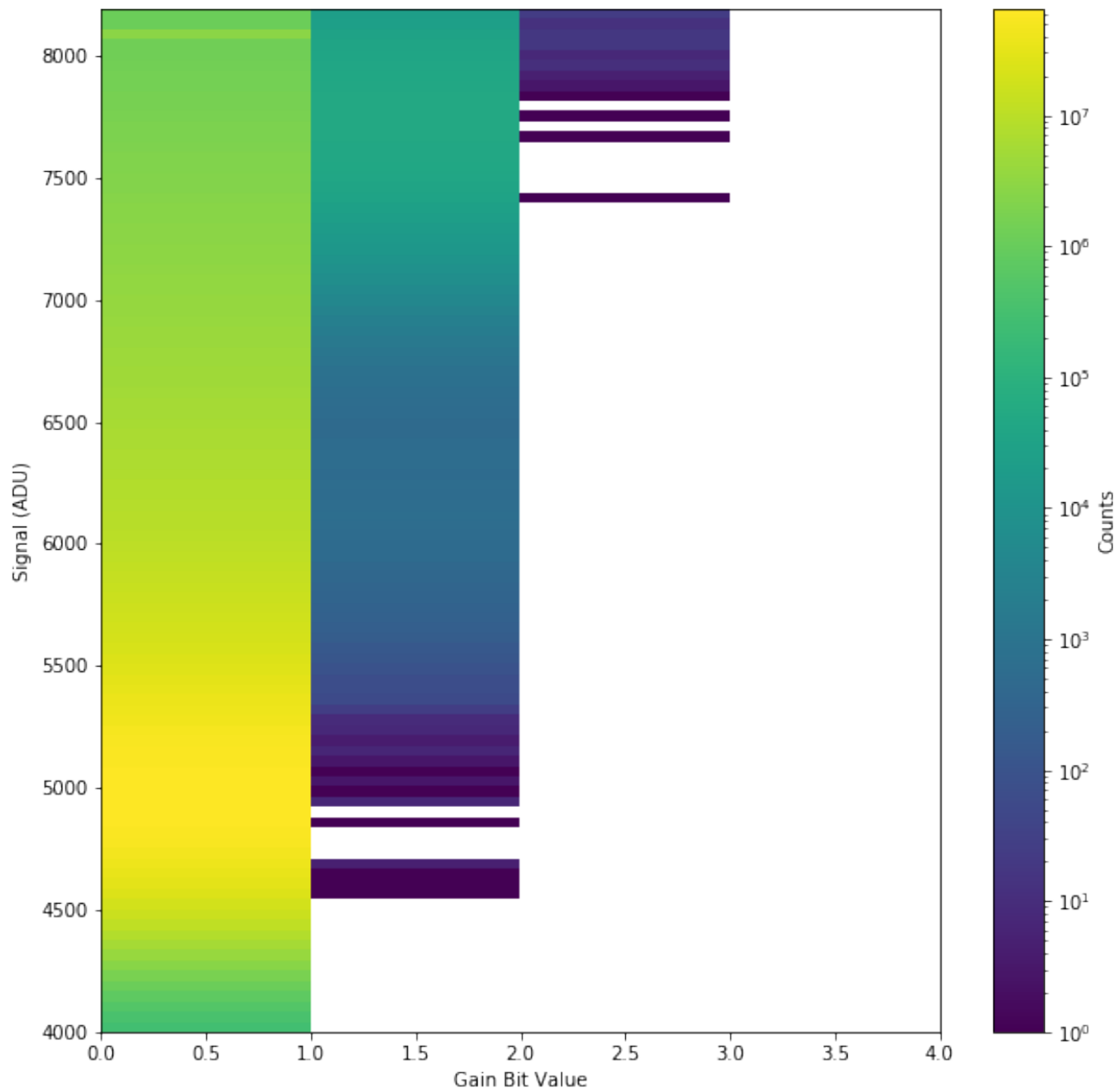


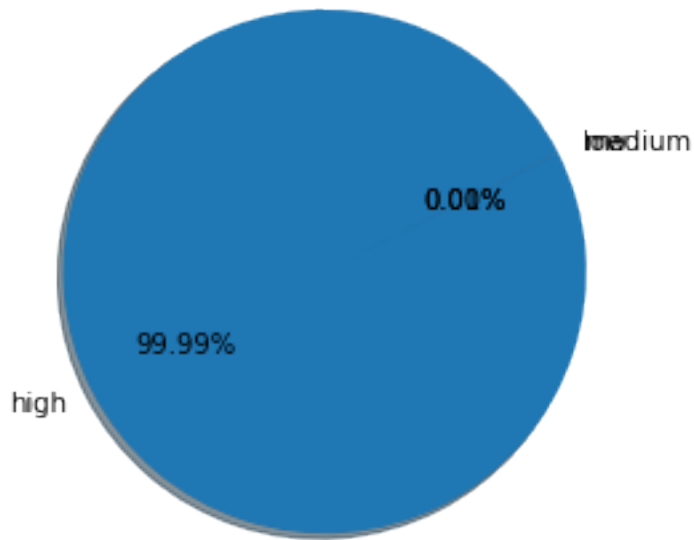




### 8.3 Signal vs. Digitized Gain

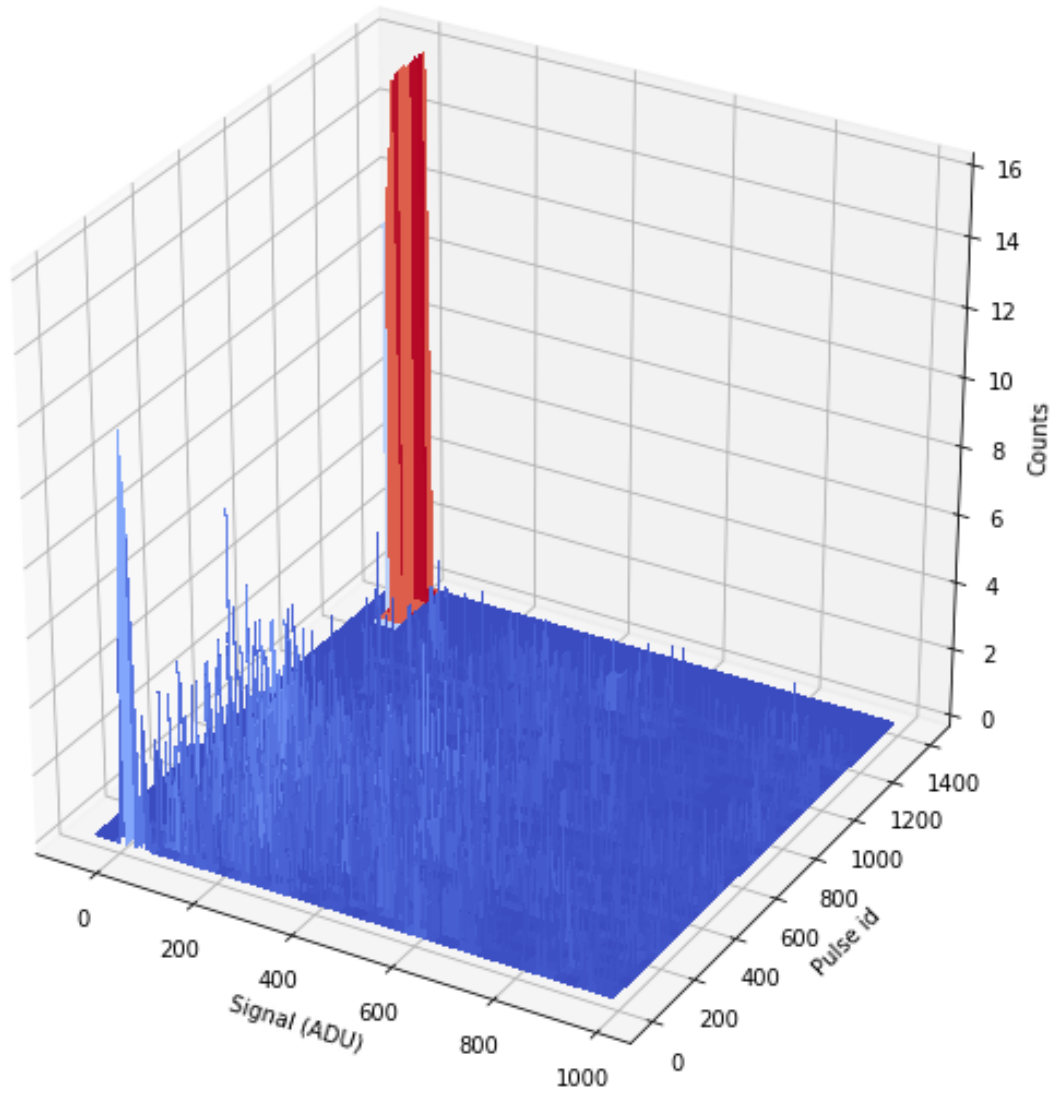
The following plot shows plots signal vs. digitized gain for the first 128 images.

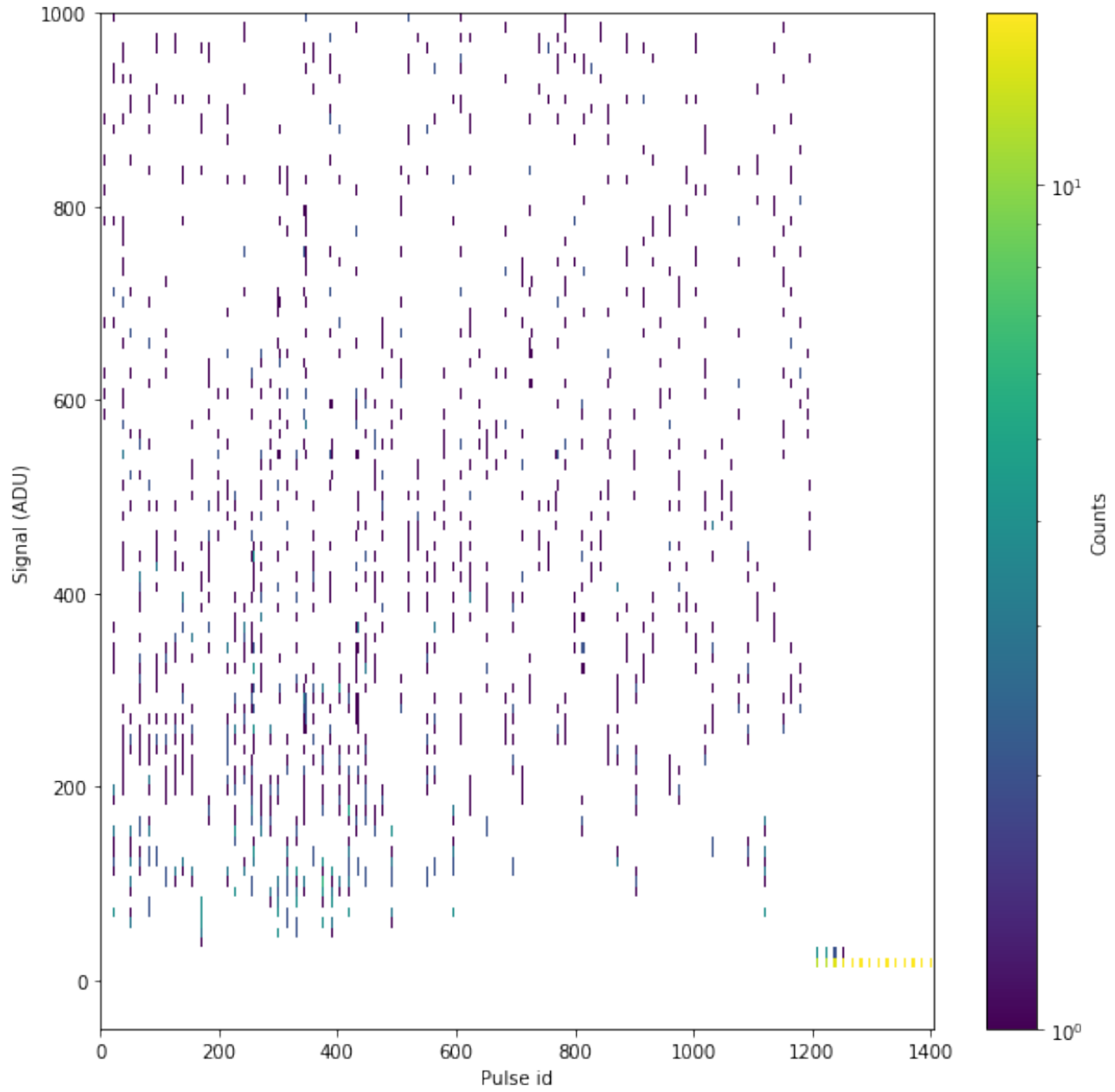


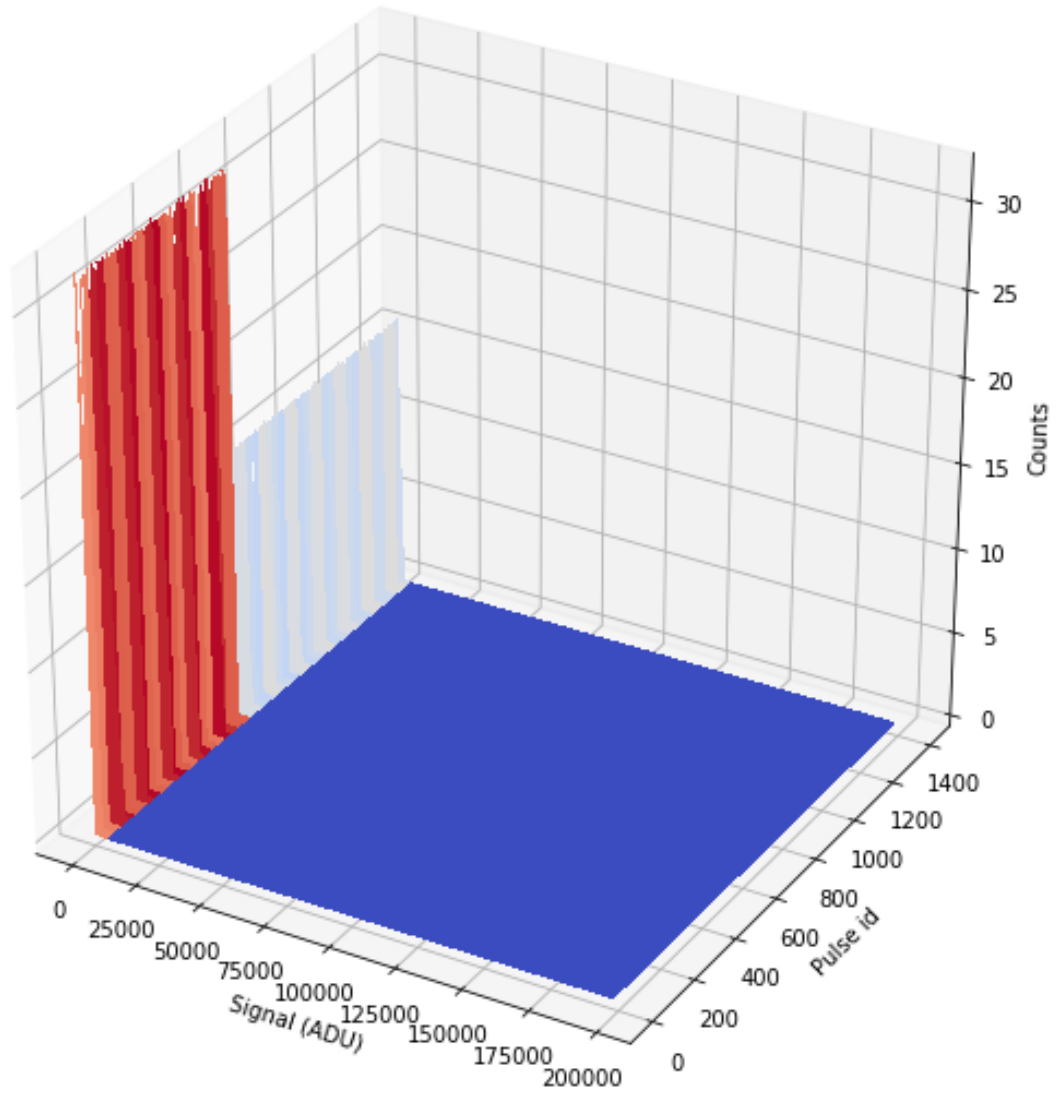


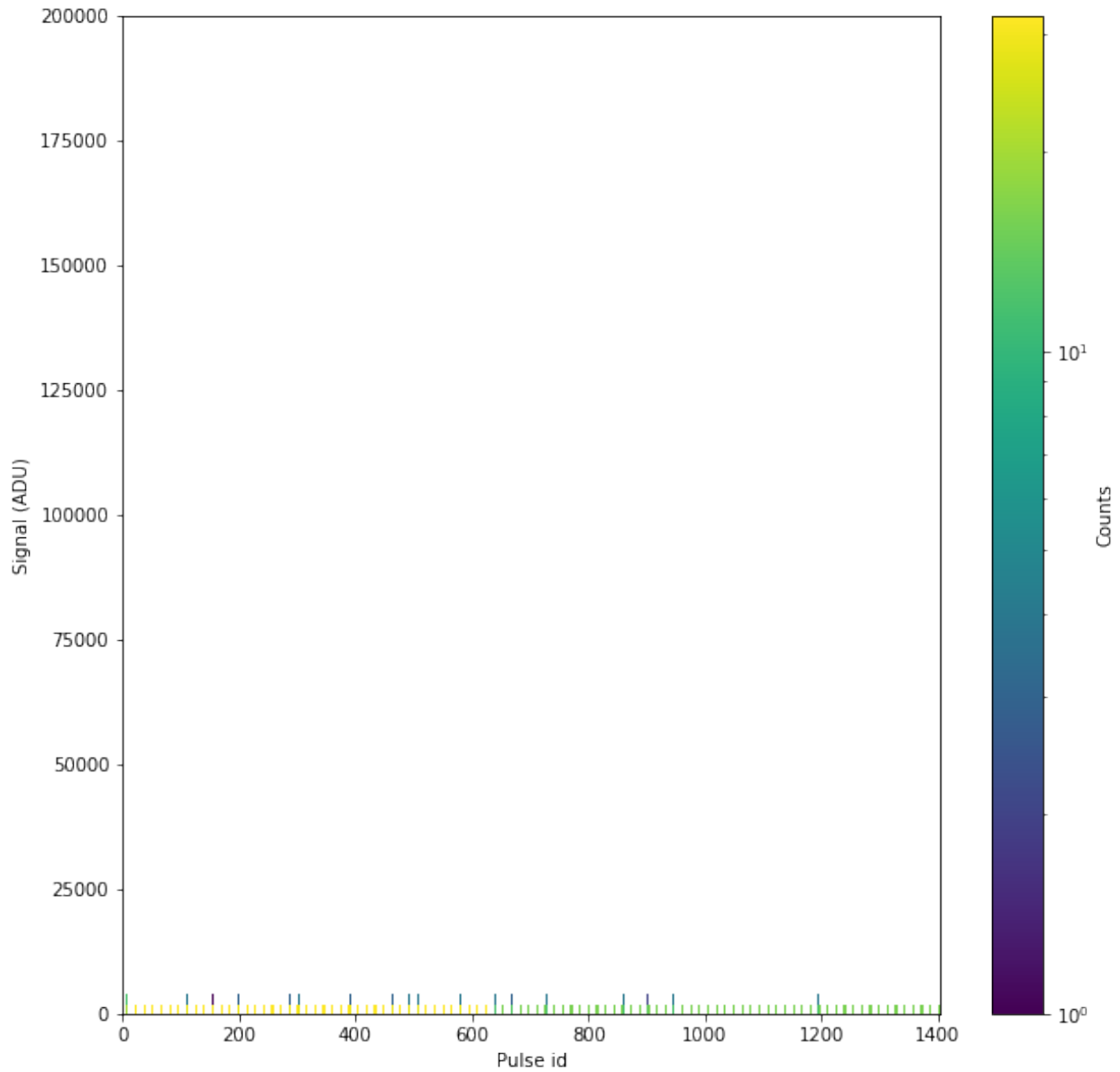
## 8.4 Mean Intensity per Pulse

The following plots show the mean signal for each pulse in a detailed and expanded intensity region.



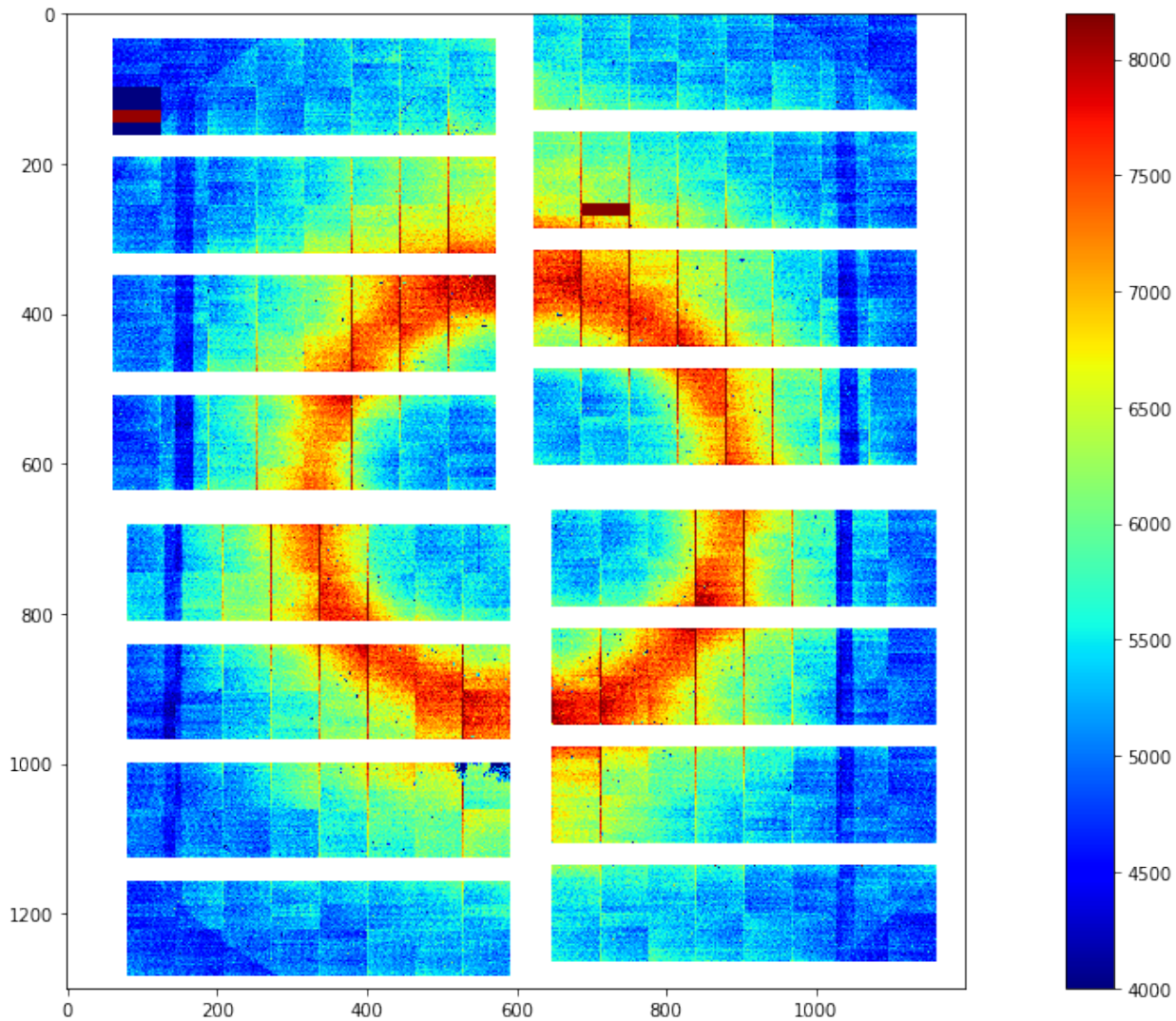






### 8.4.1 Mean RAW Preview

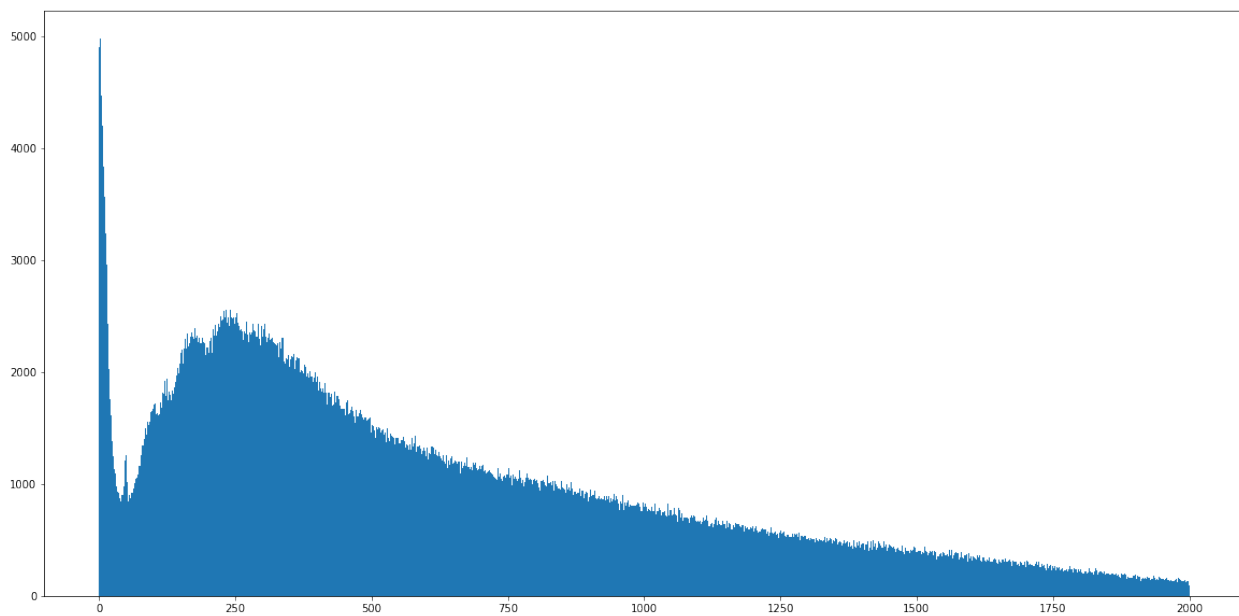
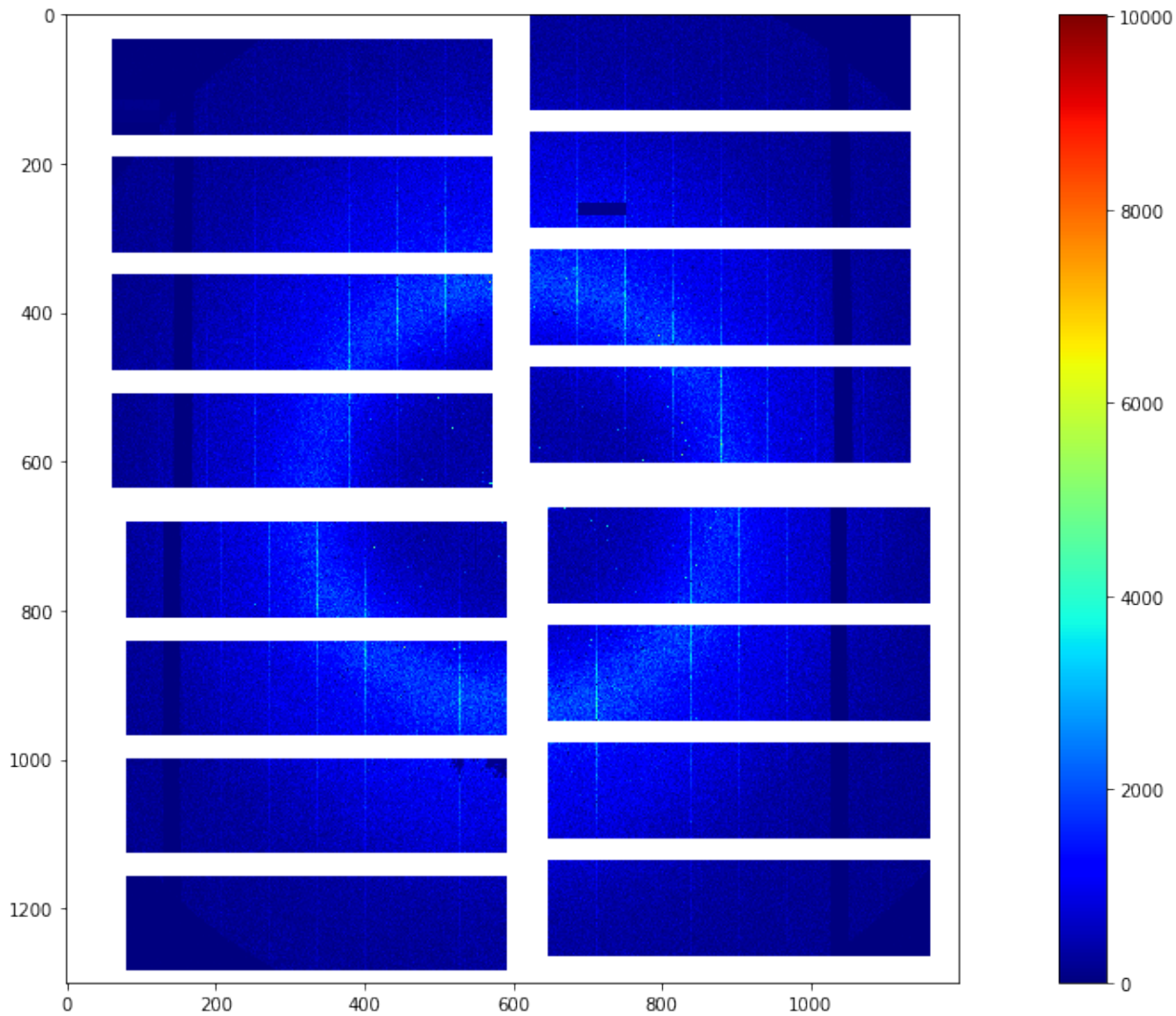
The per pixel mean of the first 128 images of the RAW data



### 8.4.2 Single Shot Preview

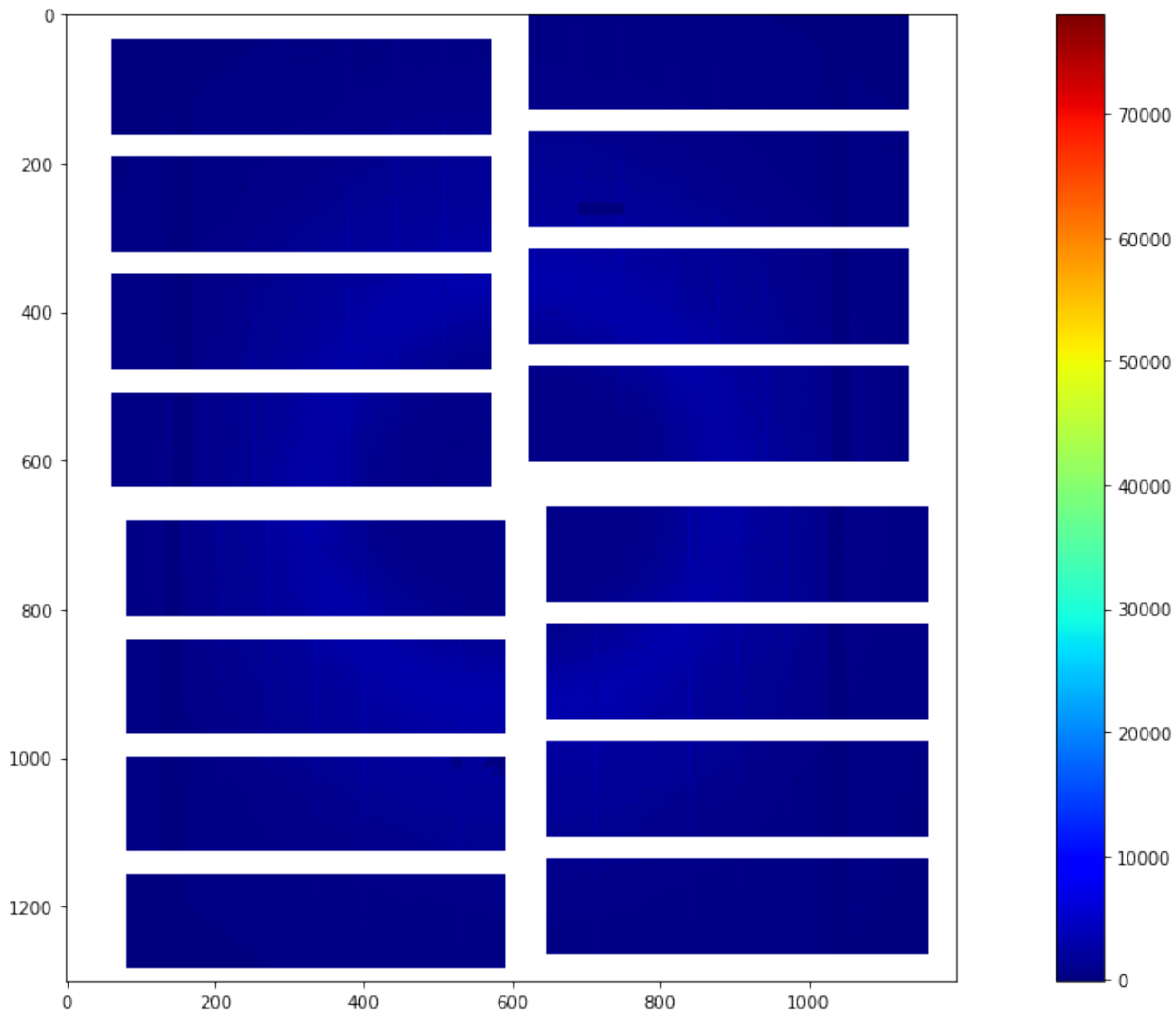
A single shot image from cell 12 of the first train

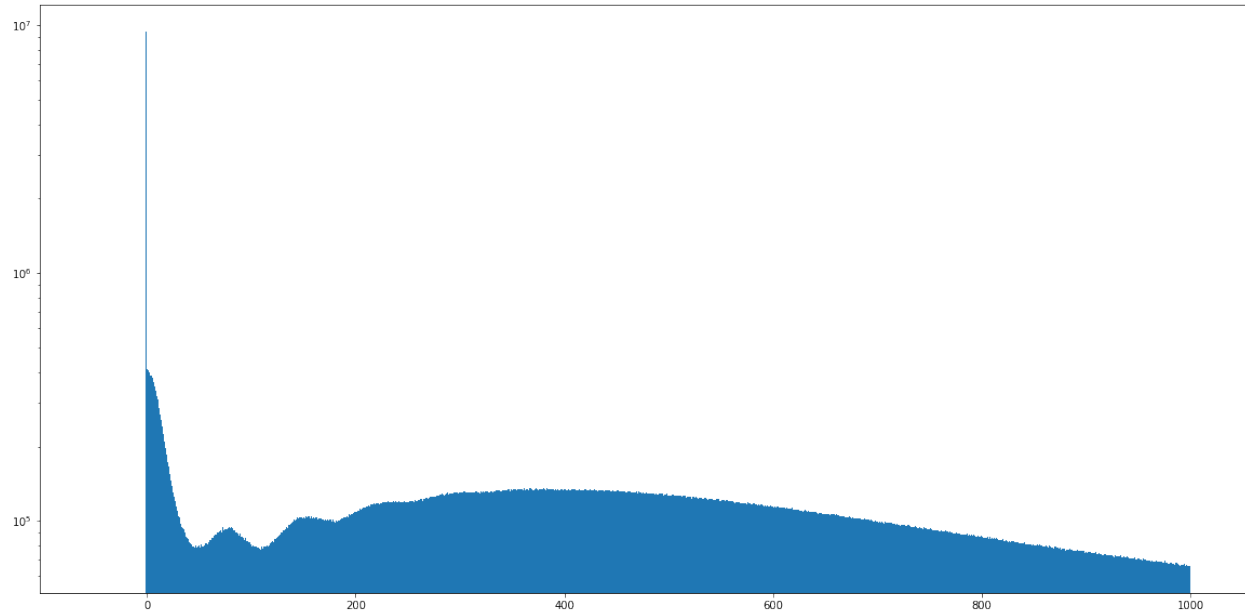




### 8.4.3 Mean CORRECTED Preview

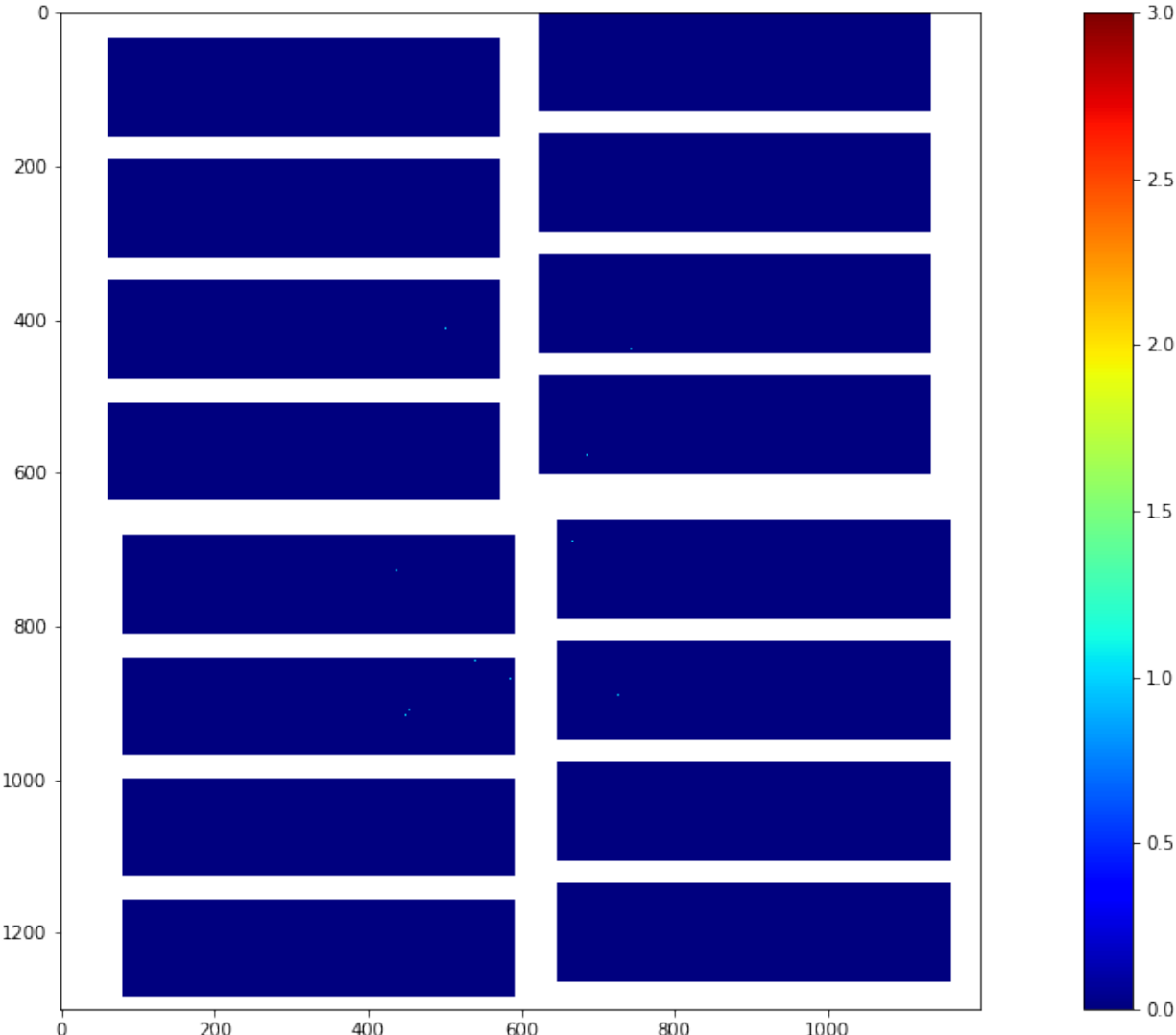
The per pixel mean of the first 128 images of the CORRECTED data





#### 8.4.4 Maximum GAIN Preview

The per pixel maximum of the first 128 images of the digitized GAIN data



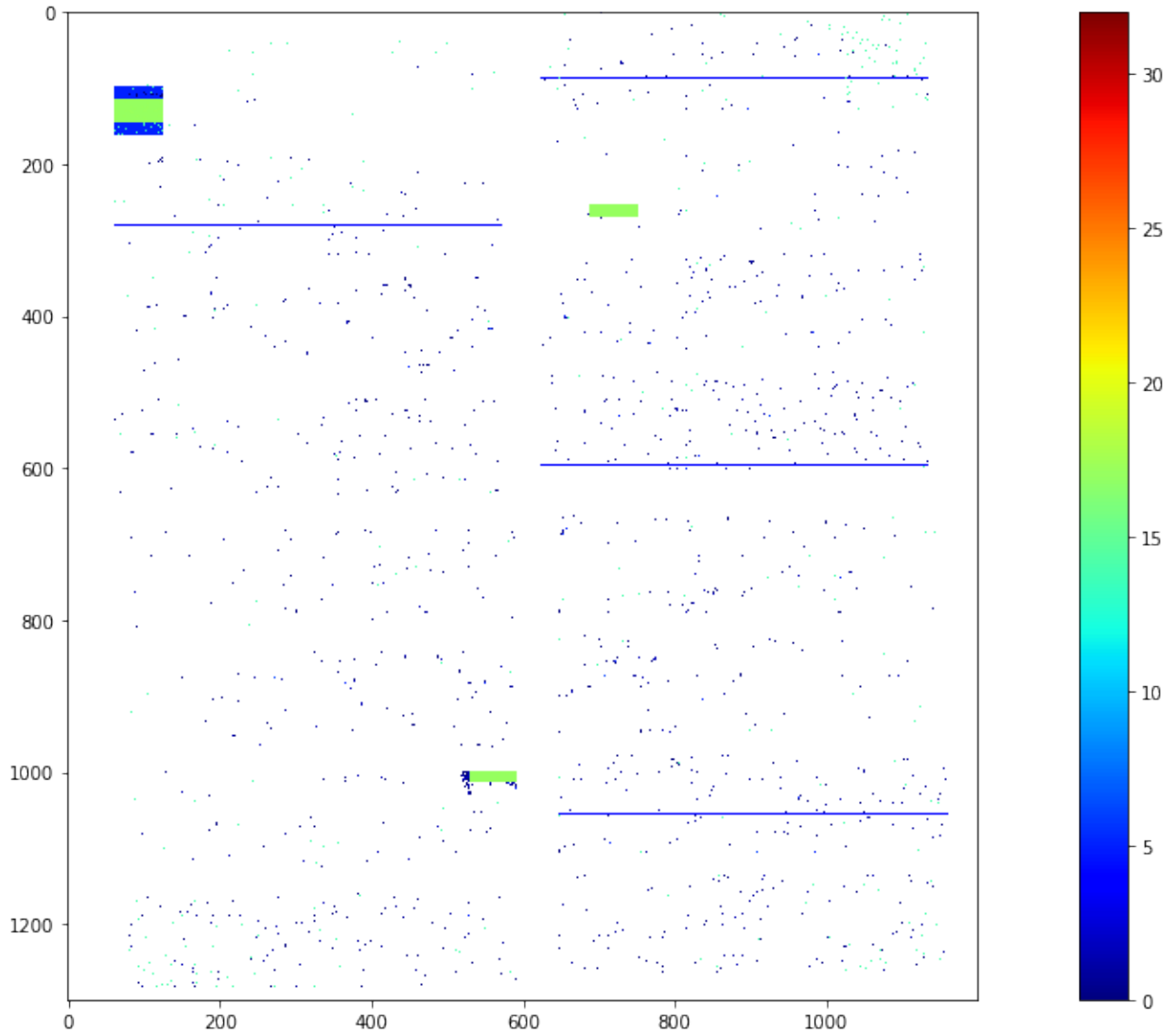
## 8.5 Bad Pixels

The mask contains dedicated entries for all pixels and memory cells as well as all three gains stages. Each mask entry is encoded in 32 bits as:

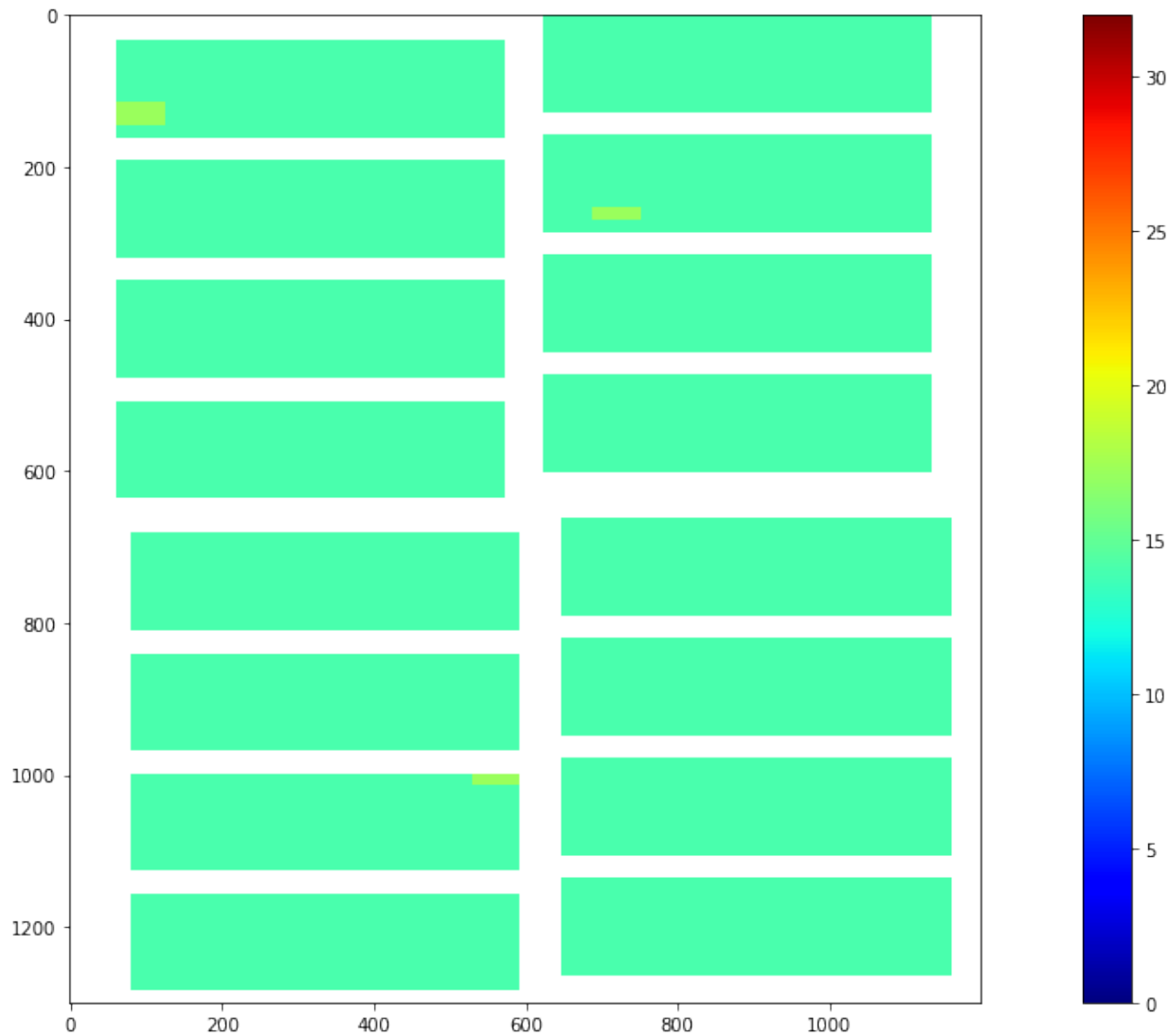
| Bad pixel type          | Bit mask         |
|-------------------------|------------------|
| OFFSET_OUT_OF_THRESHOLD | 0000000000000001 |
| NOISE_OUT_OF_THRESHOLD  | 0000000000000010 |
| OFFSET_NOISE_EVAL_ERROR | 0000000000000100 |
| NO_DARK_DATA            | 0000000000001000 |
| CI_GAIN_OF_OF_THRESHOLD | 0000000000010000 |
| CI_LINEAR_DEVIATION     | 000000000100000  |
| CI_EVAL_ERROR           | 000000001000000  |
| FF_GAIN_EVAL_ERROR      | 000000010000000  |
| FF_GAIN_DEVIATION       | 000000100000000  |
| FF_NO_ENTRIES           | 000001000000000  |
| CI2_EVAL_ERROR          | 000010000000000  |
| VALUE_IS_NAN            | 000010000000000  |
| VALUE_OUT_OF_RANGE      | 000100000000000  |
| GAIN_THRESHOLDING_ERROR | 001000000000000  |
| DATA_STD_IS_ZERO        | 010000000000000  |
| ASIC_STD_BELOW_NOISE    | 100000000000000  |
| INTERPOLATED            | 100000000000000  |
| NOISY_ADC               | 100000000000000  |
| OVERSCAN                | 100000000000000  |
| NON_SENSITIVE           | 100000000000000  |
| NON_LIN_RESPONSE_REGION | 100000000000000  |

### 8.5.1 Single Shot Bad Pixels

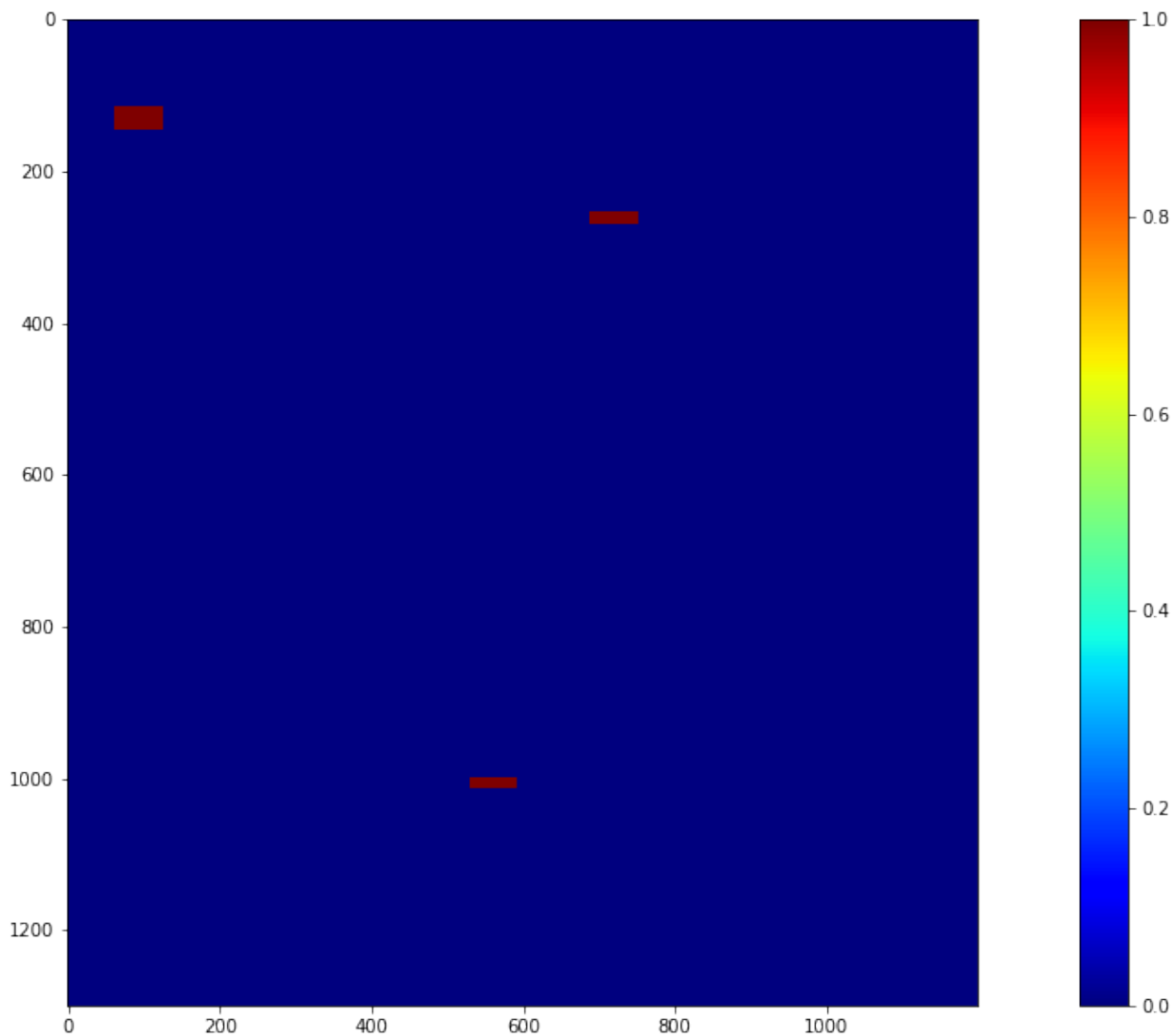
A single shot bad pixel map from cell 4 of the first train



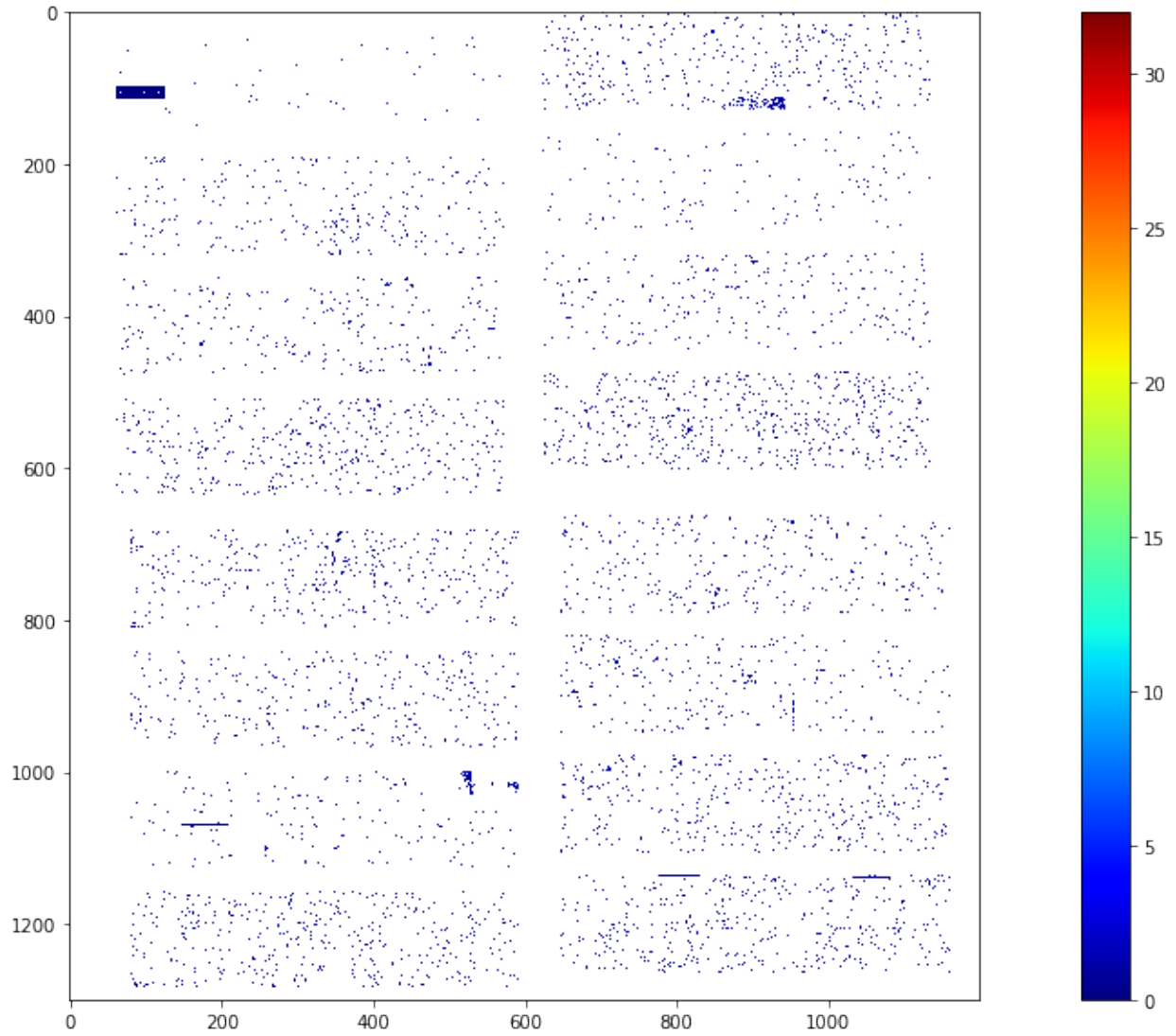
### 8.5.2 Full Train Bad Pixels



### 8.5.3 Full Train Bad Pixels - Only Dark Char. Related







## SUMMARY OF THE AGIPD OFFLINE CORRECTION

offset were injected on:

| Time stamps    | Modules and sequences |
|----------------|-----------------------|
| 20-03-04 15:33 | All modules           |

slopesPC were injected on:

| Time stamps    | Modules and sequences  |
|----------------|--|
| 19-11-25 21:00 | S0: ['Q2M2'], S1: ['Q2M2'], S2: ['Q2M2'], S3: ['Q2M2'], S4: ['Q2M2'], S5: ['Q2M2'], S6: ['Q2M2'], S7: ['Q2M2'] |
| 19-11-25 21:04 | S0: ['Q3M1'], S1: ['Q3M1'], S2: ['Q3M1'], S3: ['Q3M1'], S4: ['Q3M1'], S5: ['Q3M1'], S6: ['Q3M1'], S7: ['Q3M1'] |
| 19-11-25 21:05 | S0: ['Q2M4'], S1: ['Q2M4'], S2: ['Q2M4'], S3: ['Q2M4'], S4: ['Q2M4'], S5: ['Q2M4'], S6: ['Q2M4'], S7: ['Q2M4'] |
| 19-11-25 21:09 | S0: ['Q2M3'], S1: ['Q2M3'], S2: ['Q2M3'], S3: ['Q2M3'], S4: ['Q2M3'], S5: ['Q2M3'], S6: ['Q2M3'], S7: ['Q2M3'] |
| 19-11-25 21:24 | S0: ['Q1M2'], S1: ['Q1M2'], S2: ['Q1M2'], S3: ['Q1M2'], S4: ['Q1M2'], S5: ['Q1M2'], S6: ['Q1M2'], S7: ['Q1M2'] |
| 19-11-25 21:30 | S0: ['Q2M1'], S1: ['Q2M1'], S2: ['Q2M1'], S3: ['Q2M1'], S4: ['Q2M1'], S5: ['Q2M1'], S6: ['Q2M1'], S7: ['Q2M1'] |
| 19-11-25 21:33 | S0: ['Q4M2'], S1: ['Q4M2'], S2: ['Q4M2'], S3: ['Q4M2'], S4: ['Q4M2'], S5: ['Q4M2'], S6: ['Q4M2'], S7: ['Q4M2'] |
| 19-11-25 21:34 | S0: ['Q3M2'], S1: ['Q3M2'], S2: ['Q3M2'], S3: ['Q3M2'], S4: ['Q3M2'], S5: ['Q3M2'], S6: ['Q3M2'], S7: ['Q3M2'] |
| 19-11-25 21:40 | Rest of the modules  |
| 19-11-25 21:42 | S0: ['Q4M3'], S1: ['Q4M3'], S2: ['Q4M3'], S3: ['Q4M3'], S4: ['Q4M3'], S5: ['Q4M3'], S6: ['Q4M3'], S7: ['Q4M3'] |
| 19-11-25 21:58 | S0: ['Q3M4'], S1: ['Q3M4'], S2: ['Q3M4'], S3: ['Q3M4'], S4: ['Q3M4'], S5: ['Q3M4'], S6: ['Q3M4'], S7: ['Q3M4'] |
| 19-11-25 21:59 | S0: ['Q4M4'], S1: ['Q4M4'], S2: ['Q4M4'], S3: ['Q4M4'], S4: ['Q4M4'], S5: ['Q4M4'], S6: ['Q4M4'], S7: ['Q4M4'] |
| 19-11-25 22:00 | S0: ['Q3M3'], S1: ['Q3M3'], S2: ['Q3M3'], S3: ['Q3M3'], S4: ['Q3M3'], S5: ['Q3M3'], S6: ['Q3M3'], S7: ['Q3M3'] |
| 19-11-25 22:01 | S0: ['Q1M4'], S1: ['Q1M4'], S2: ['Q1M4'], S3: ['Q1M4'], S4: ['Q1M4'], S5: ['Q1M4'], S6: ['Q1M4'], S7: ['Q1M4'] |
| 19-11-25 22:07 | S0: ['Q4M1'], S1: ['Q4M1'], S2: ['Q4M1'], S3: ['Q4M1'], S4: ['Q4M1'], S5: ['Q4M1'], S6: ['Q4M1'], S7: ['Q4M1'] |

slopesFF were injected on:

| Time stamps | Modules and sequences |
|-------------|-----------------------|
| NA          | All modules           |

## RUNTIME SUMMARY

| JobID   | Elapsed  | Suspended |
|---------|----------|-----------|
| 4397295 | 02:40:59 | 00:00:00  |
| 4397296 | 02:21:37 | 00:00:00  |
| 4397297 | 02:24:28 | 00:00:00  |
| 4397298 | 01:56:27 | 00:00:00  |
| 4397299 | 01:45:13 | 00:00:00  |
| 4397300 | 01:20:20 | 00:00:00  |
| 4397301 | 01:32:10 | 00:00:00  |
| 4397302 | 00:00:27 | 00:00:00  |