^{83m}Kr pulse and event misclassification studies
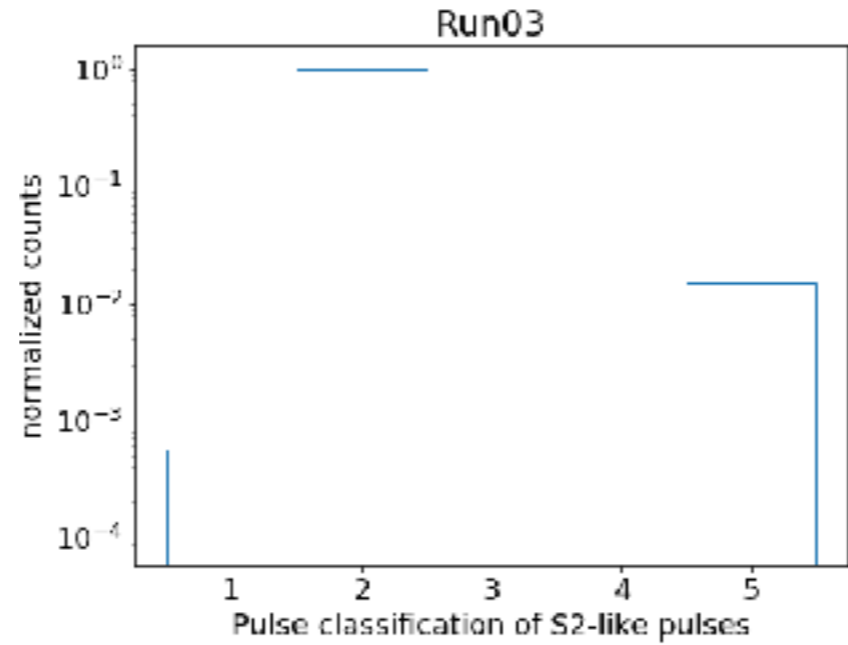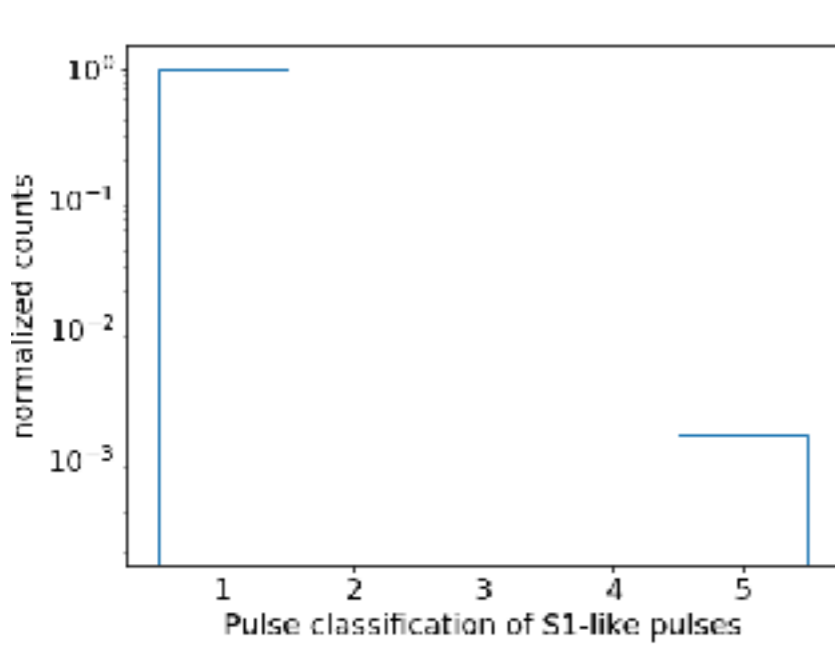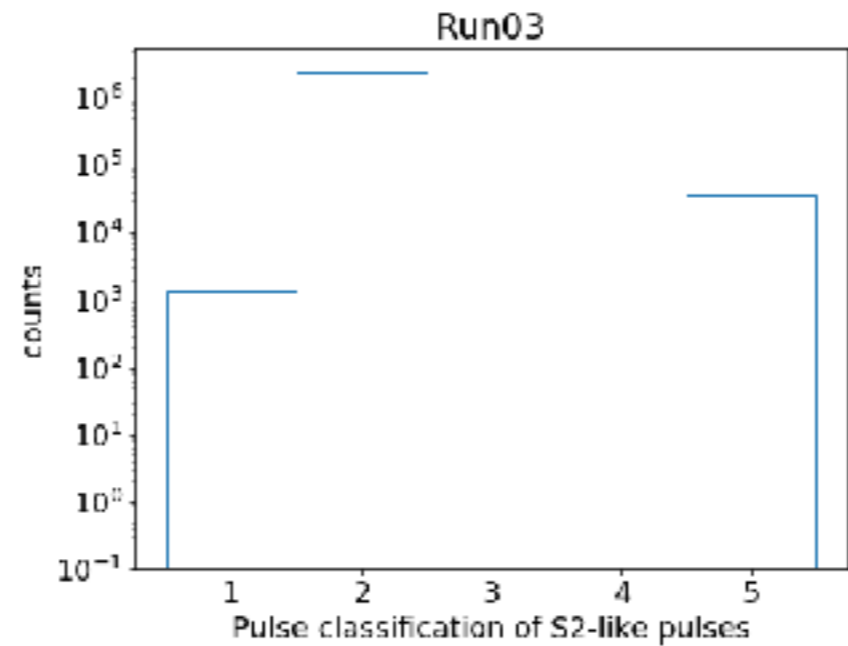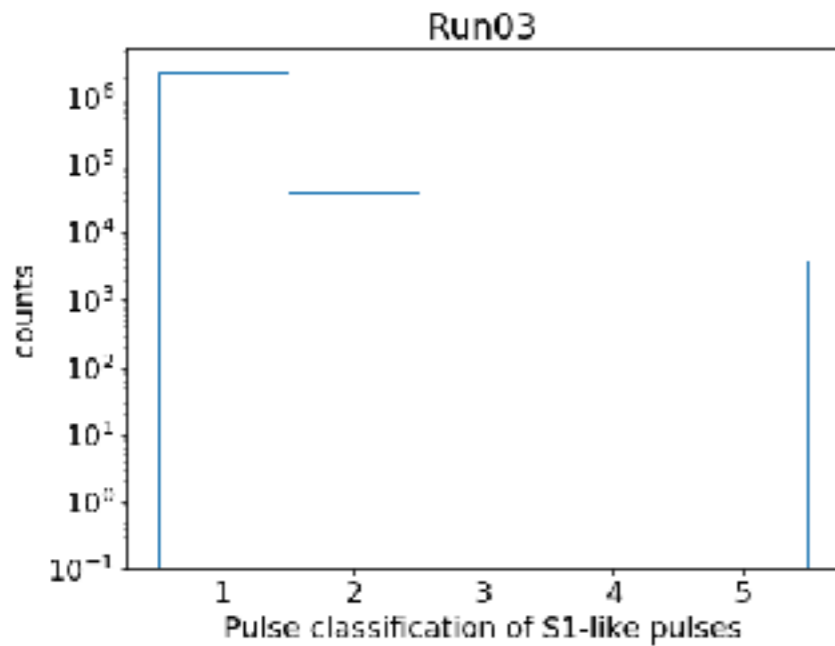
Rachel Mannino
7 February 2018

^{83m}Kr data

- Datasets created by Evan to select "S1-like" and "S2-like" pulses in Kr-83m contaminated datasets in Runs 03 and 04.

  - Kr83m_IsoS1S2_run3.npz

  - Kr83m_IsoS1S2_tb1.npz

  - Kr83m_IsoS1S2_tb2.npz

  - Kr83m_IsoS1S2_tb3.npz

  - Kr83m_IsoS1S2_tb4a.npz

  - Kr83m_IsoS1S2_tb4b.npz

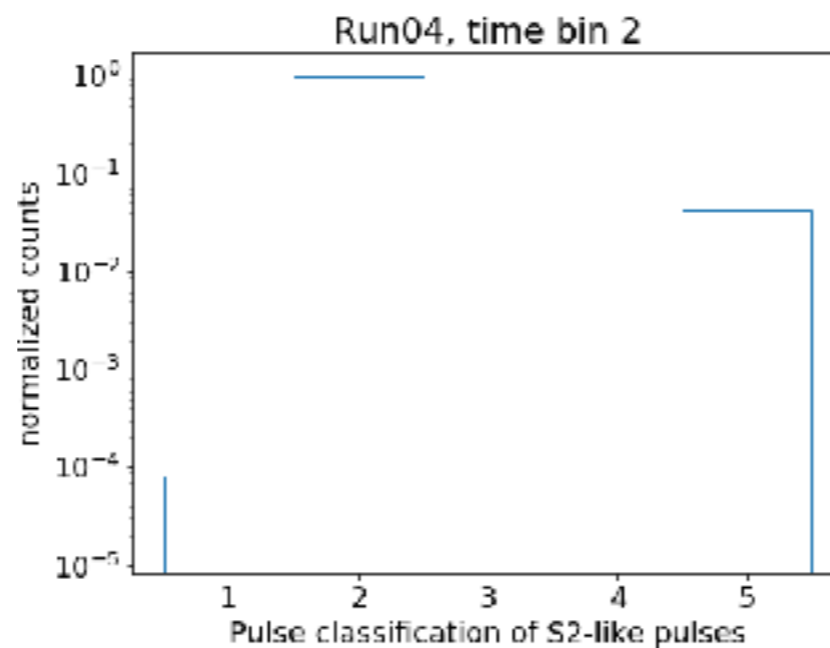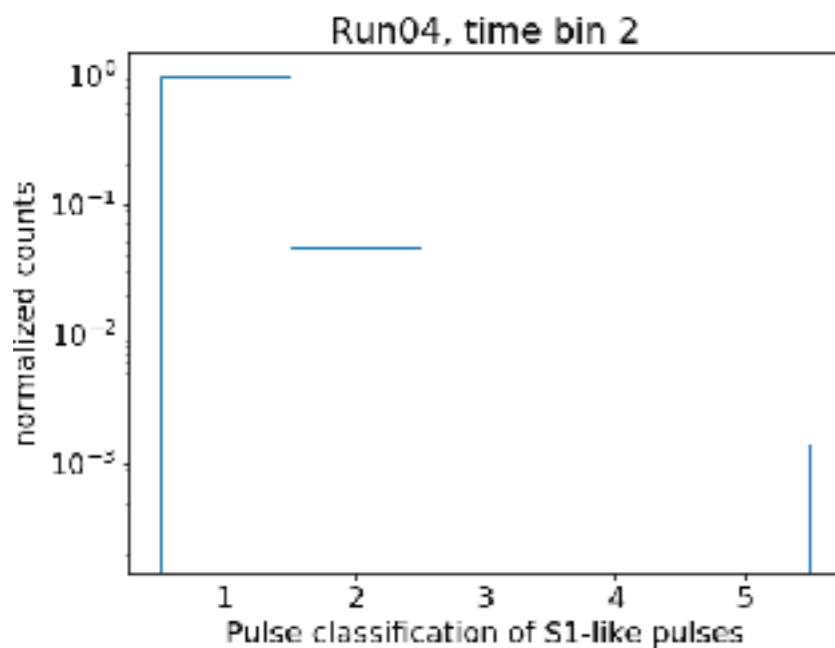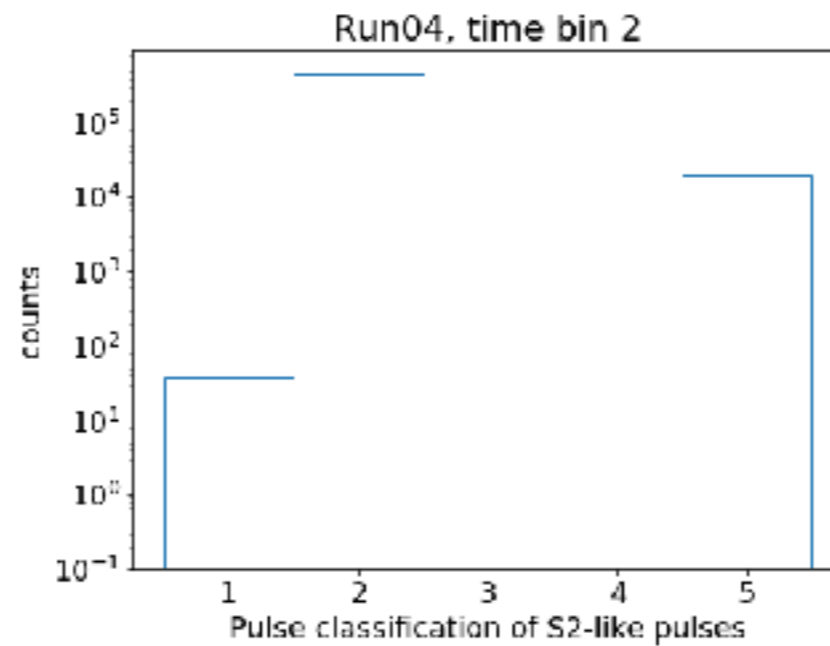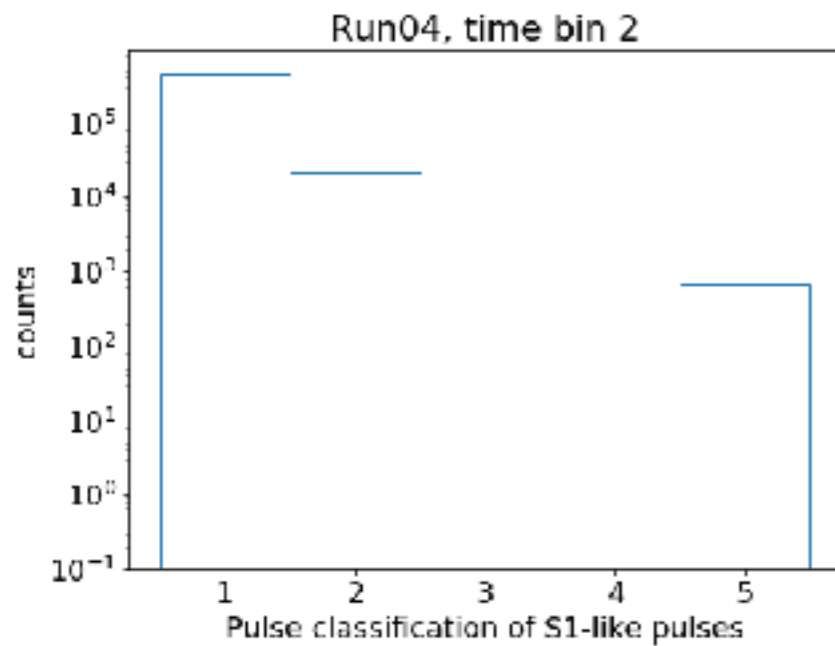# Number of misclassified pulses in Run03

	S1-like	S2-like
S1	98.20%	0.058%
S2	1.64%	98.48%
SPE	0	0
SE	0	0
Else	0.16%	1.46%

Number of misclassified pulses in Run04, time bin 1
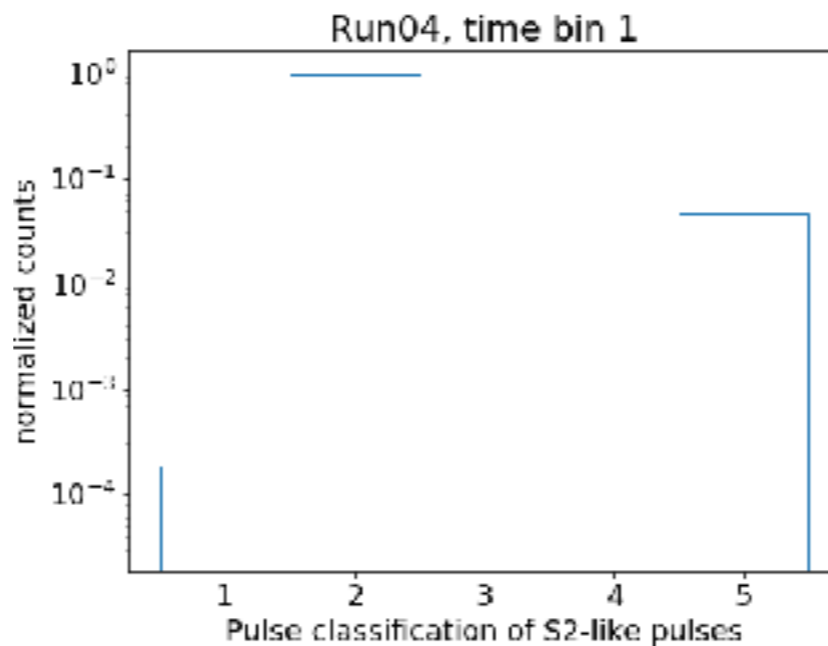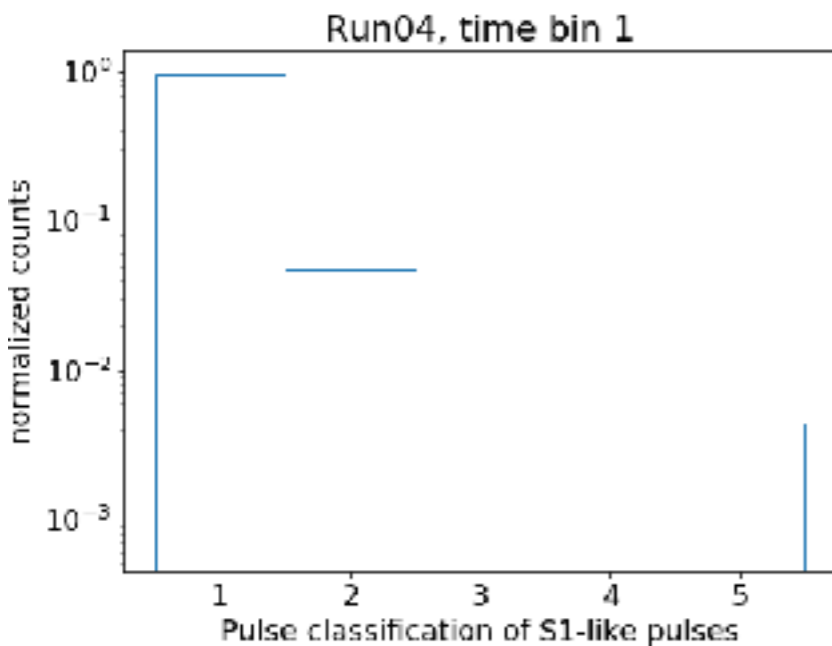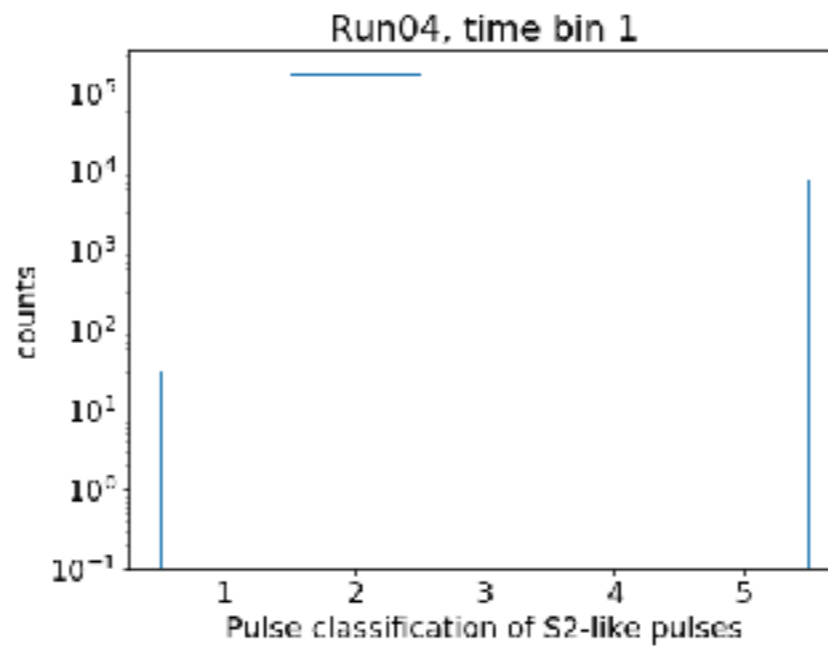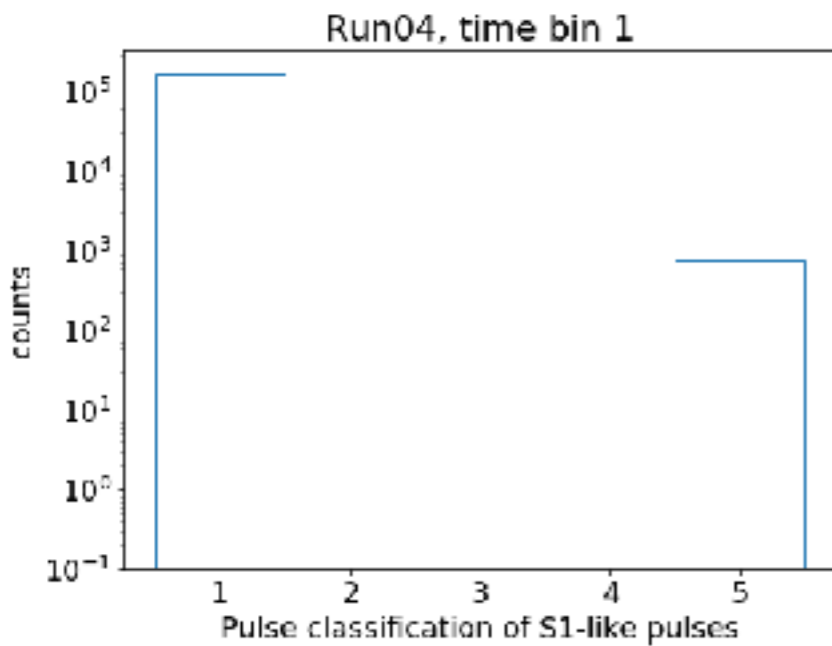
	S1-like	S2-like
S1	94.86%	0.018%
S2	4.69%	95.35%
SPE	0	0
SE	0	0
Else	4.41%	4.64%

Number of misclassified pulses in Run04, time bin 2

	S1-like	S2-like
S1	95.27%	0.008%
S2	4.59%	95.82%
SPE	0	0
SE	0	0
Else	0.14%	4.17%

Number of misclassified pulses in Run04, time bin 3
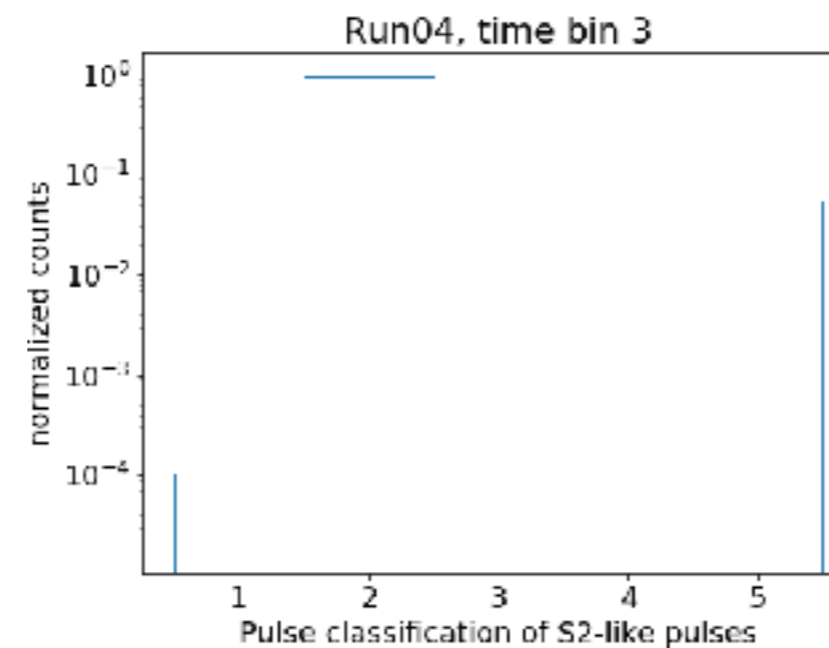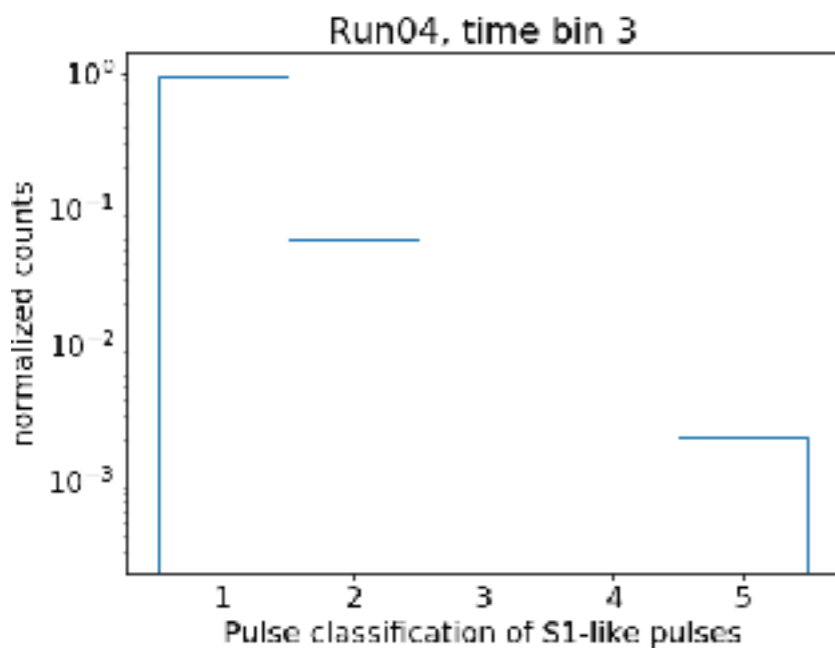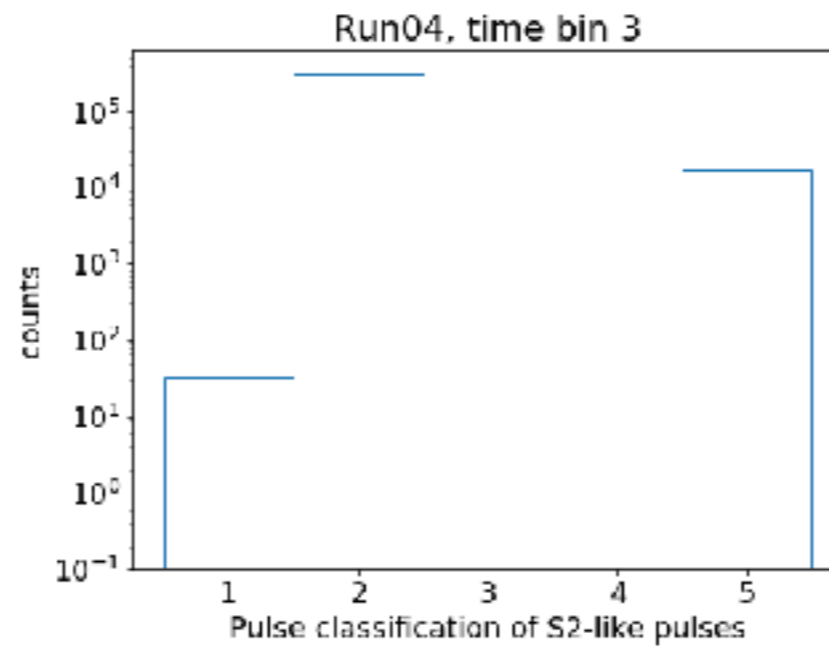
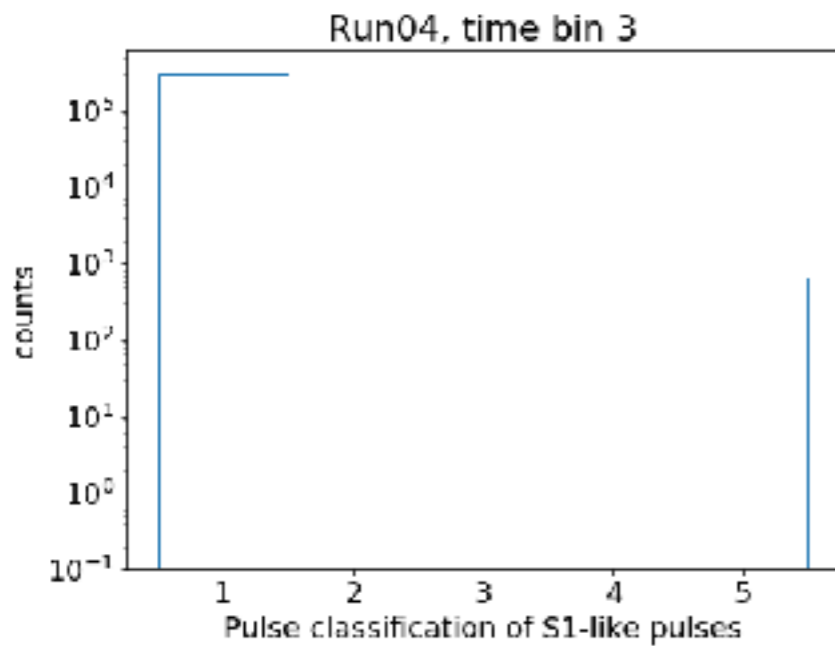|	S1-like	S2-like
S1	93.84%	0.010%
S2	5.96%	94.58%
SPE	0	0
SE	0	0
Else	0.21%	5.41%

Number of misclassified pulses in Run04, time bin 4a
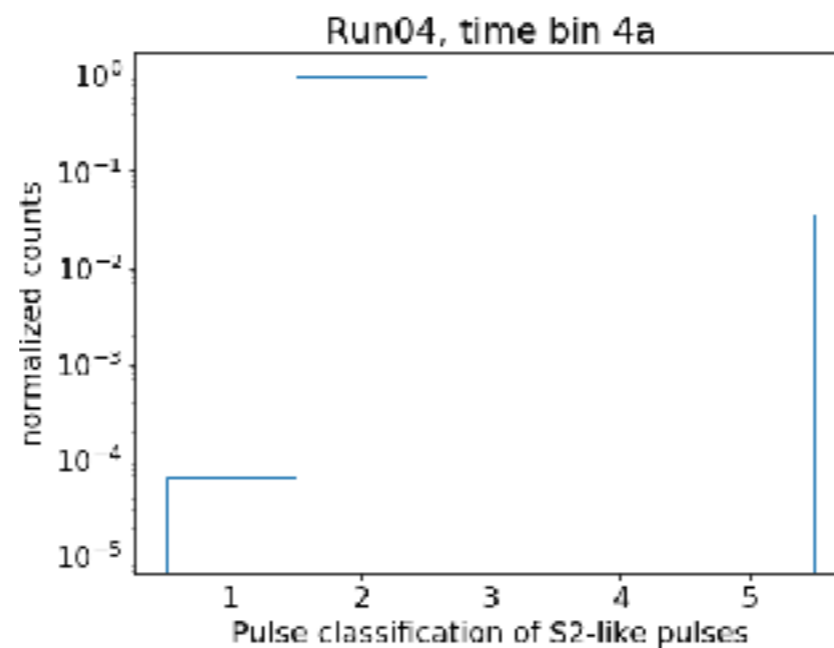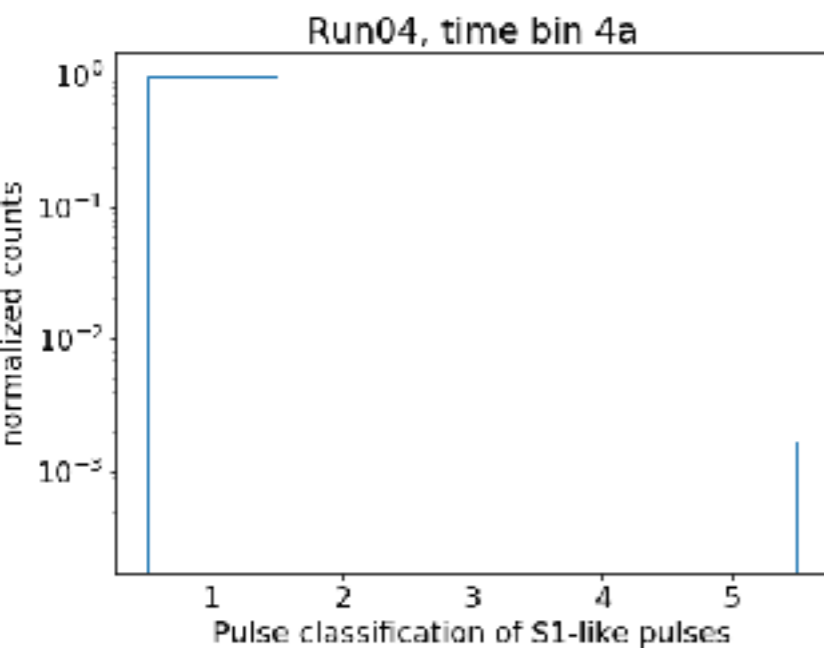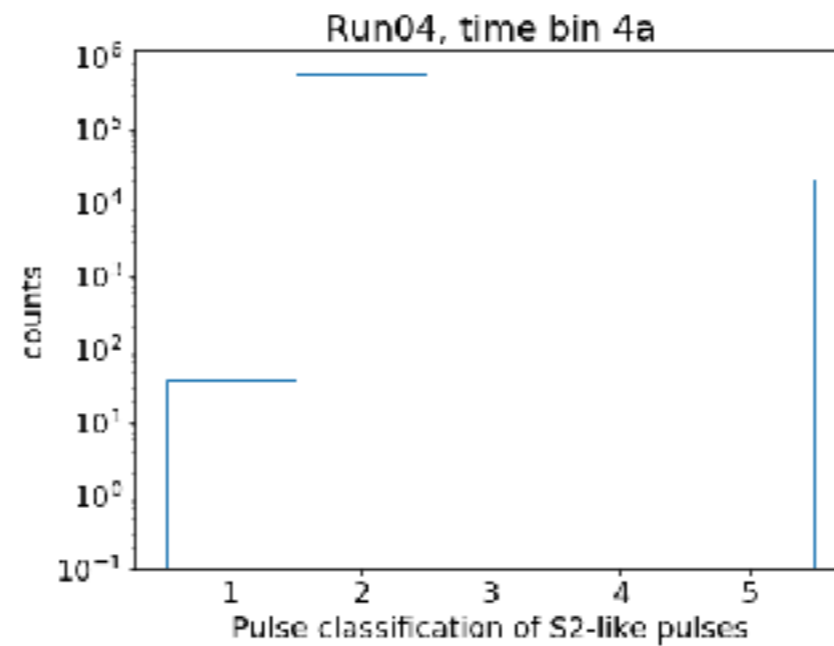
	S1-like	S2-like
S1	96.00%	0.006%
S2	3.83%	96.40%
SPE	0	0
SE	0	0
Else	0.17%	3.59%

Number of misclassified pulses in Run04, time bin 4b

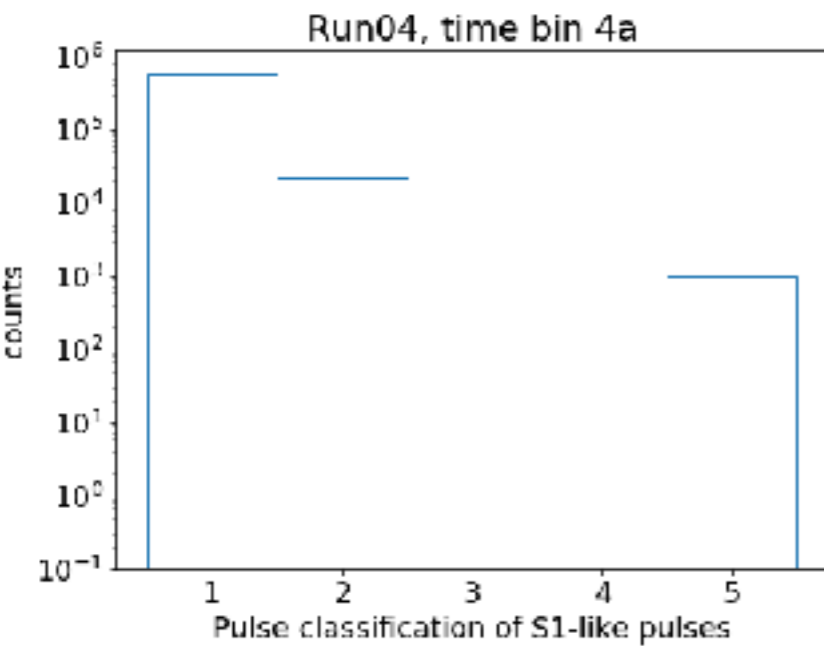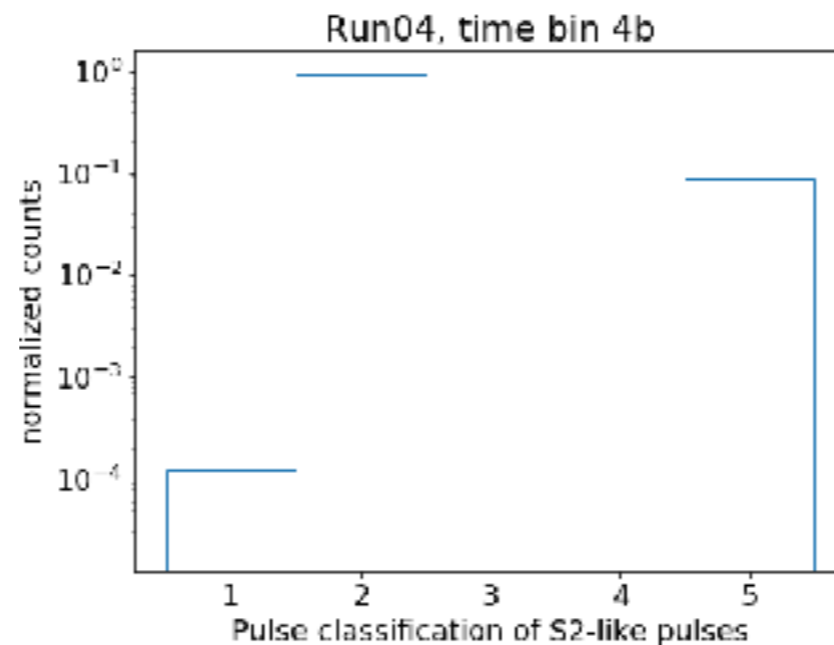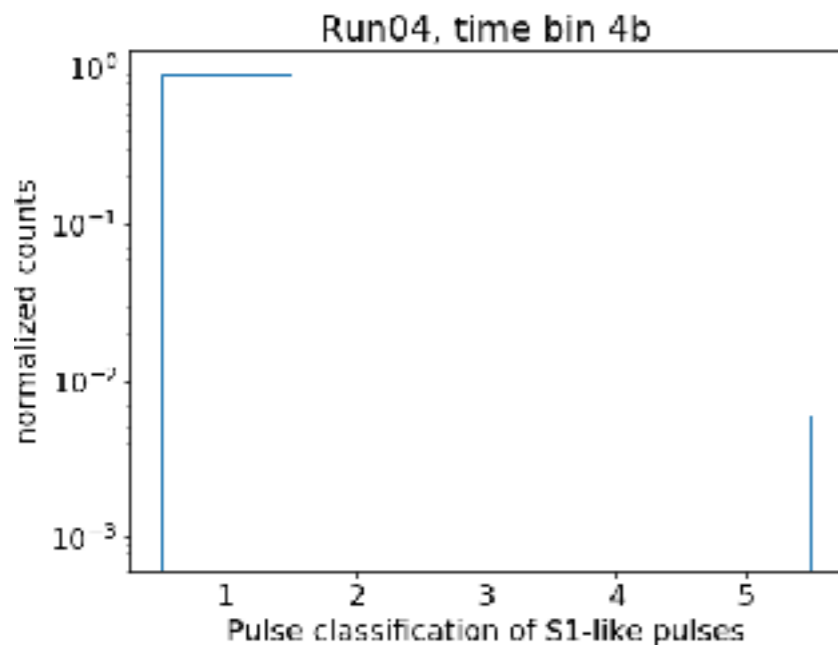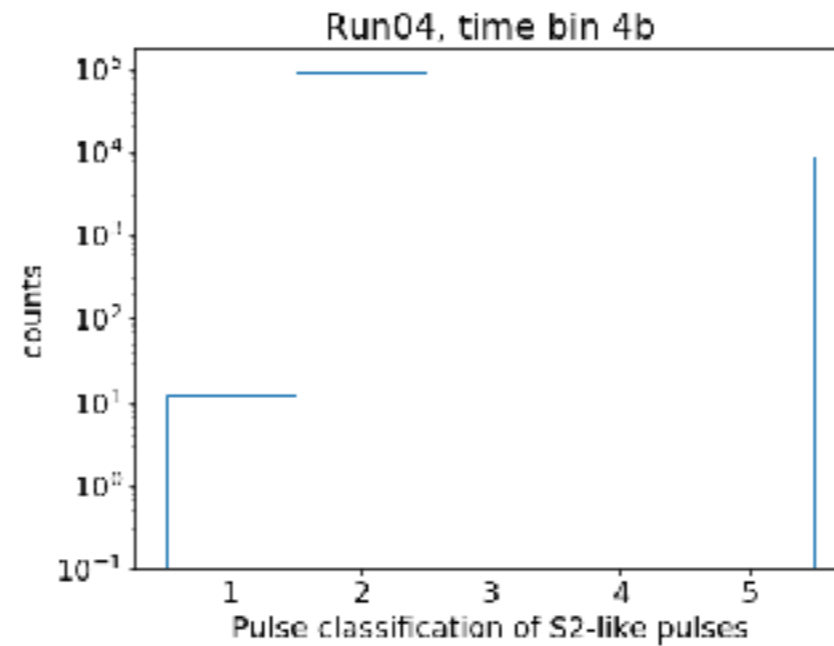|	S1-like	S2-like
S1	89.91%	0.012%
S2	9.48%	90.99%
SPE	0	0
SE	0	0
Else	0.60%	9.00%

Apply fiducial cut

- Run04:

  - Cut 3 cm in from wall

  - Drift: 40 to 300 us

Number of misclassified pulses in Run04, time bin 1 with fiducial cut
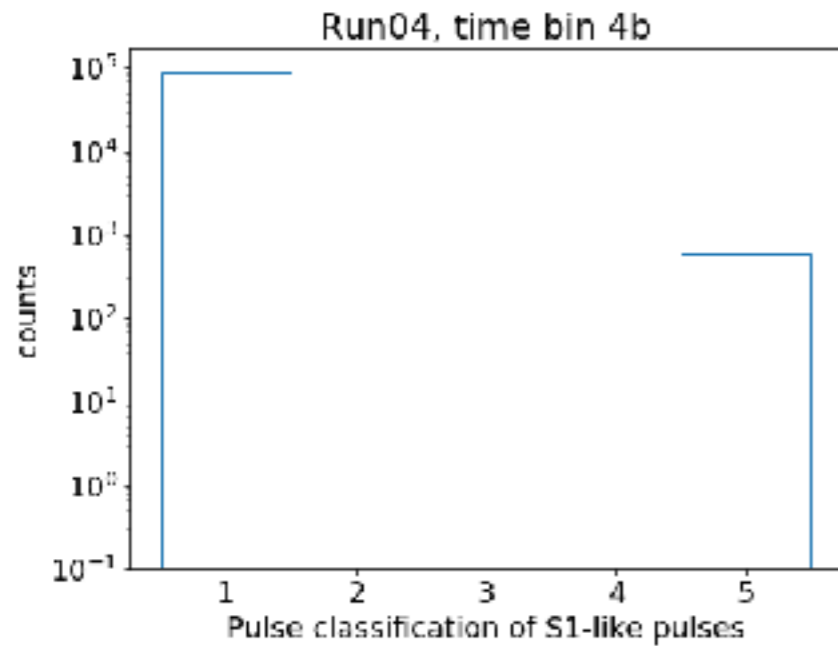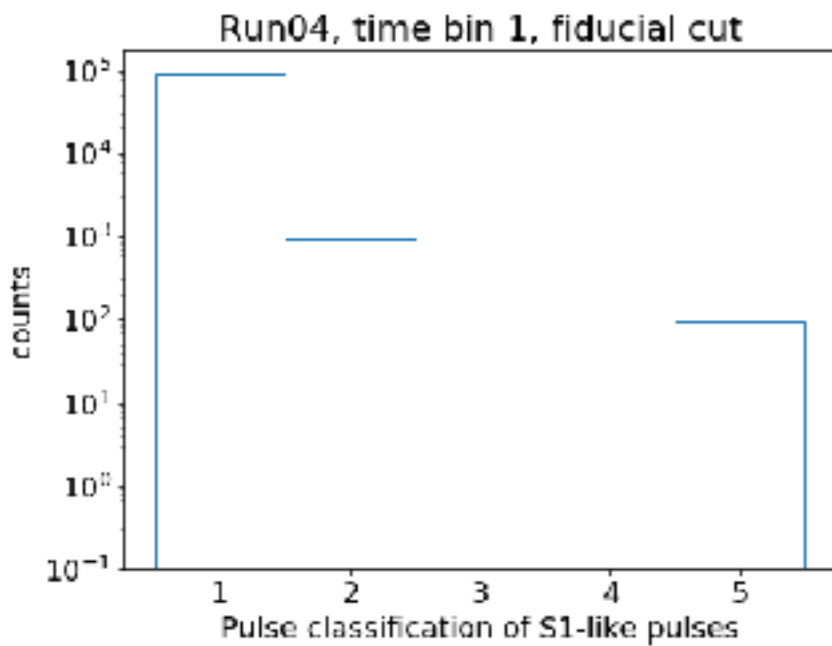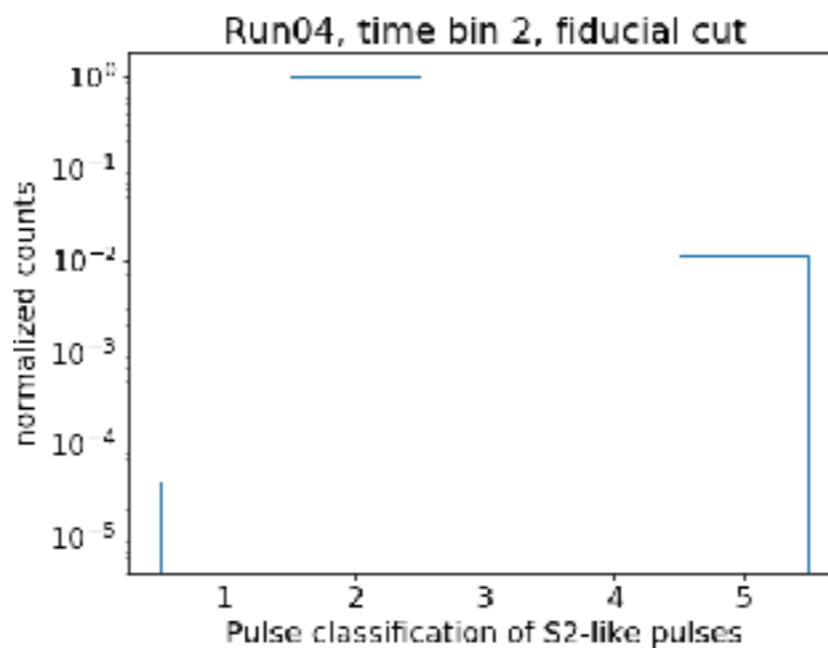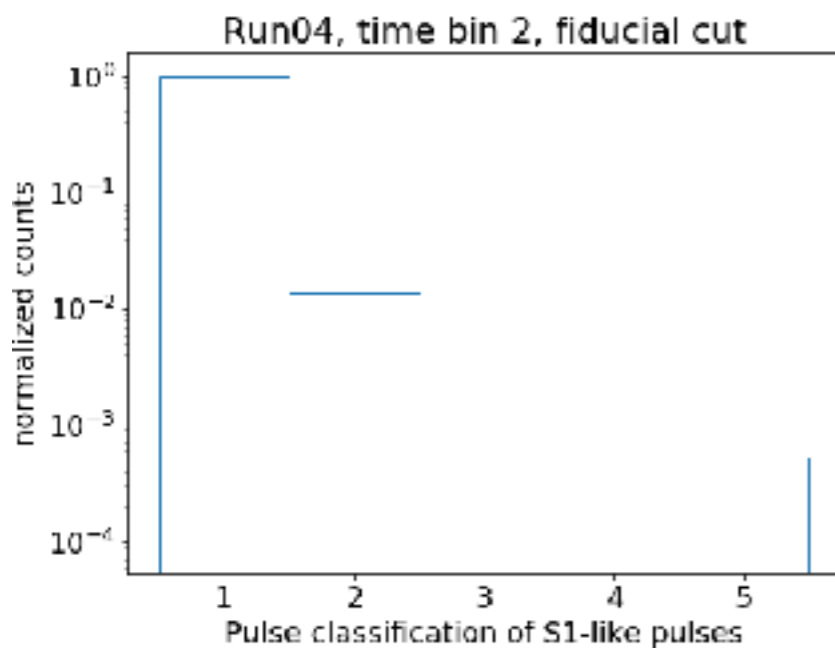

Run04, time bin 1, fiducial cut

Run04, time bin 1, fiducial cut

Run04, time bin 1, fiducial cut

Run04, time bin 1, fiducial cut
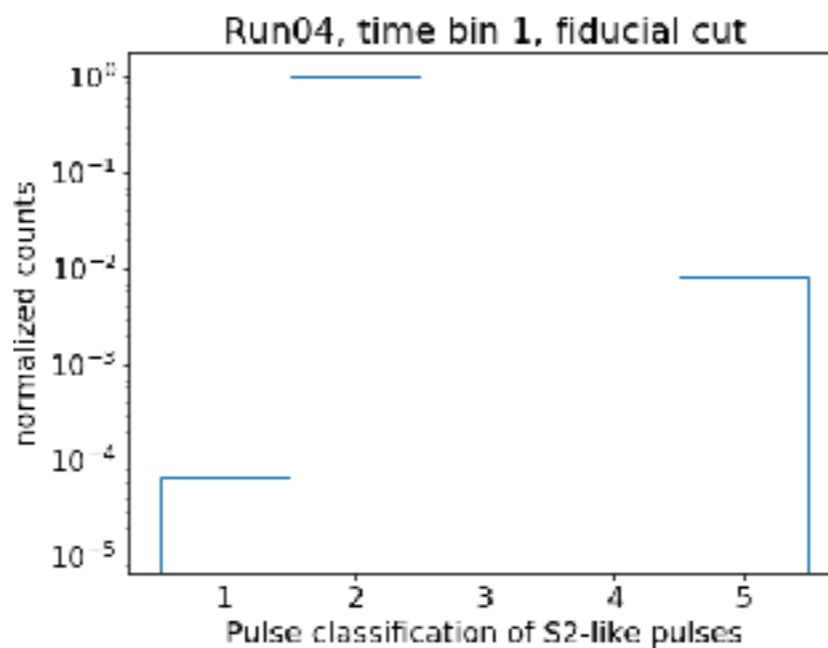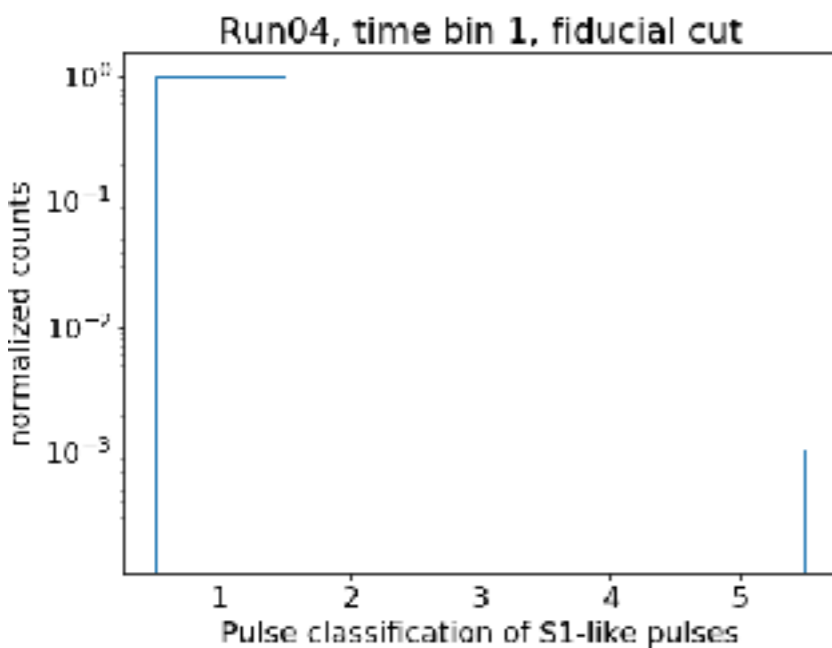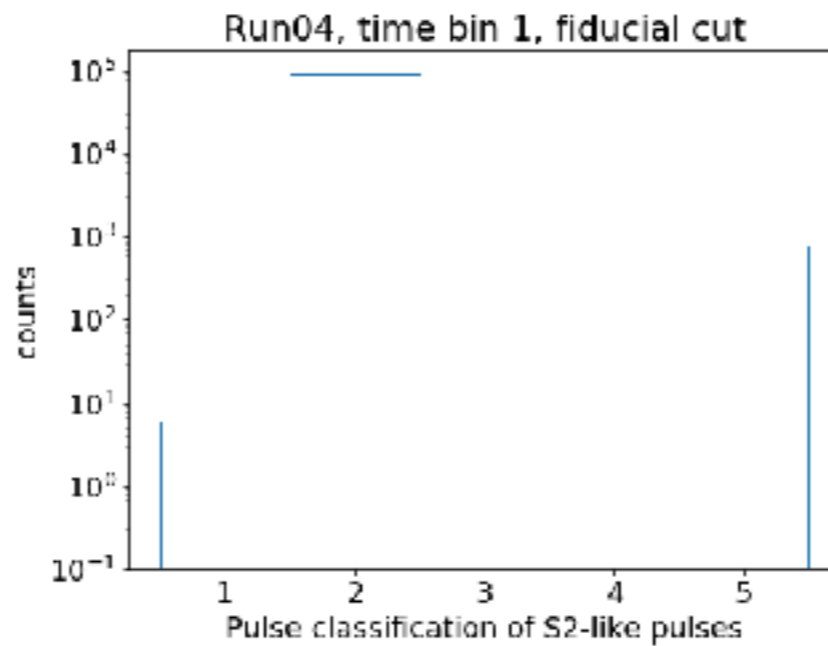
	S1-like	S2-like
S1	98.88%	0.007%
S2	1.01%	99.15%
SPE	0	0
SE	0	0
Else	0.11%	0.84%

Number of misclassified pulses in Run04, time bin 2 with fiducial cut
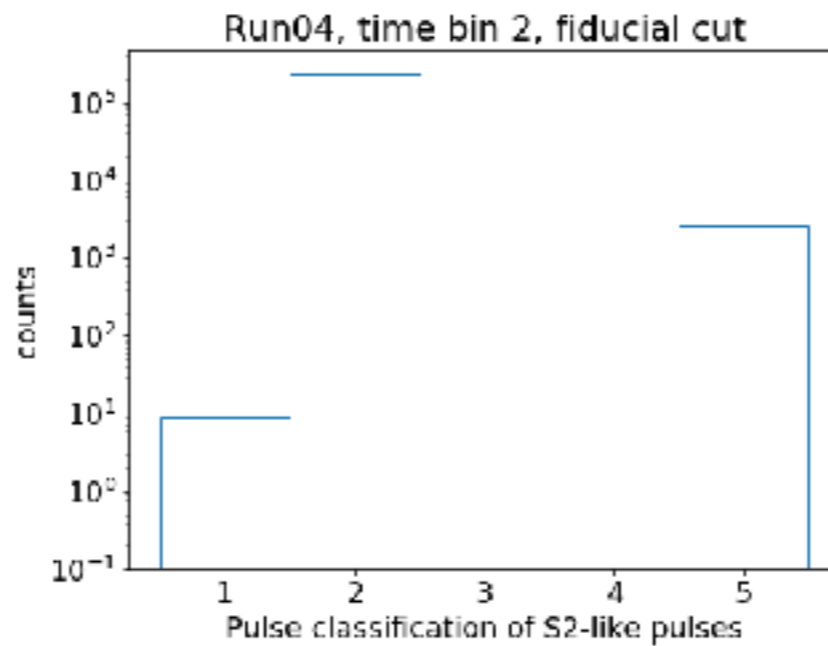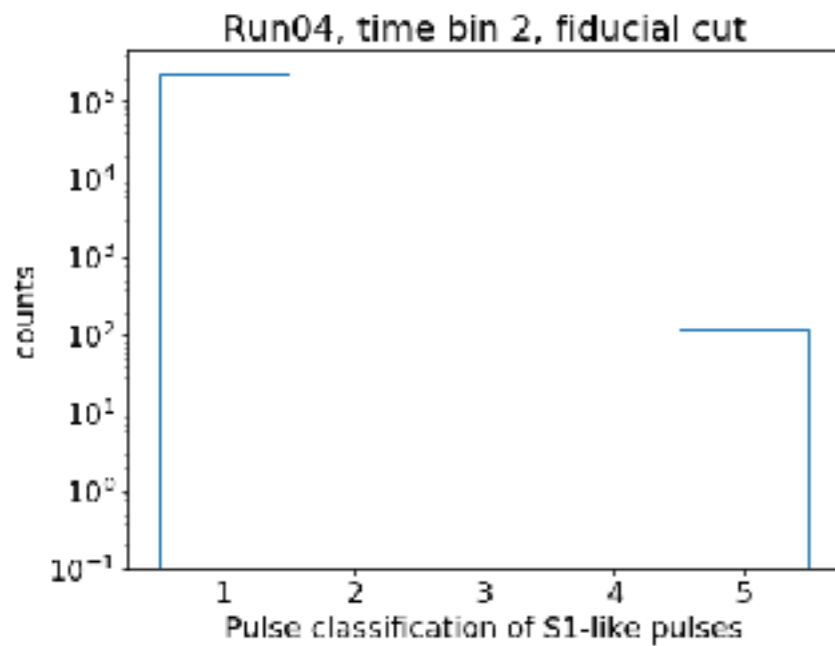
	S1-like	S2-like
S1	98.55%	0.004%
S2	1.40%	98.86%
SPE	0	0
SE	0	0
Else	0.05%	1.14%

Number of misclassified pulses in Run04, time bin 3 with fiducial cut
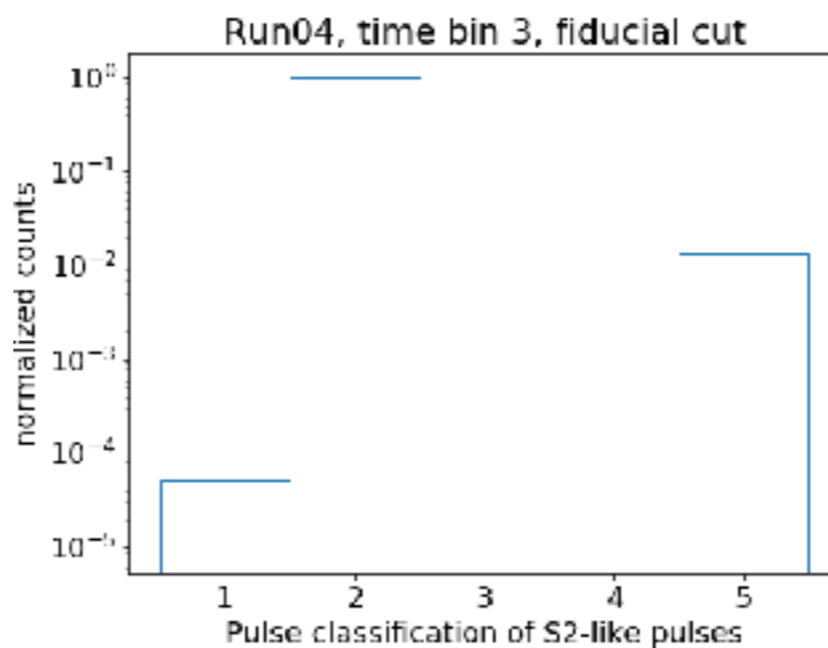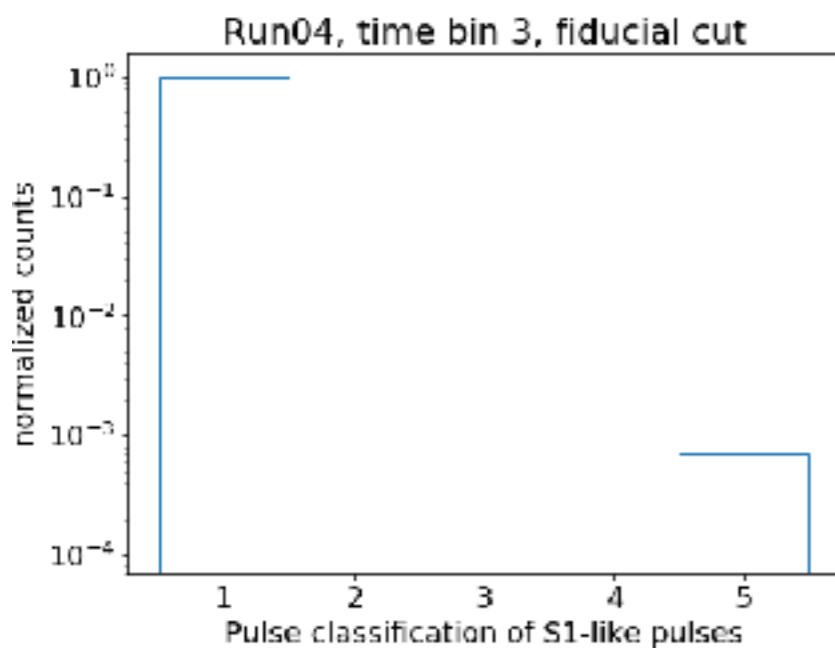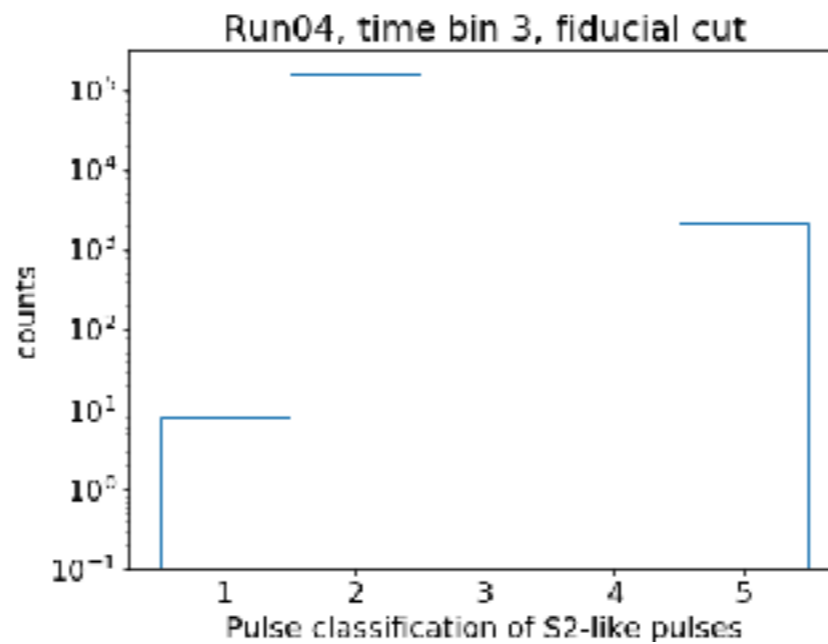
	S1-like	S2-like
S1	98.14%	0.005%
S2	1.79%	98.64%
SPE	0	0
SE	0	0
Else	0.069%	1.36%

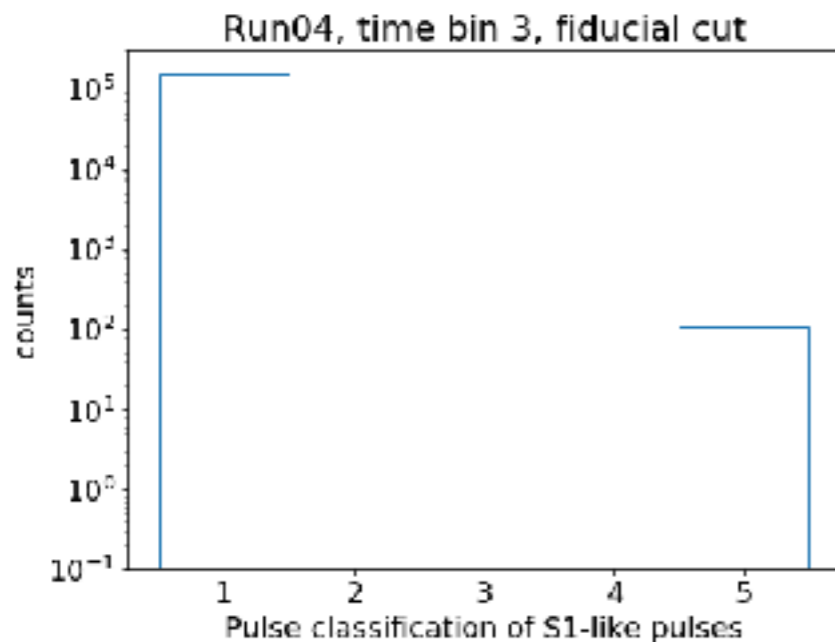# Number of misclassified pulses in Run04, time bin 4a with fiducial cut
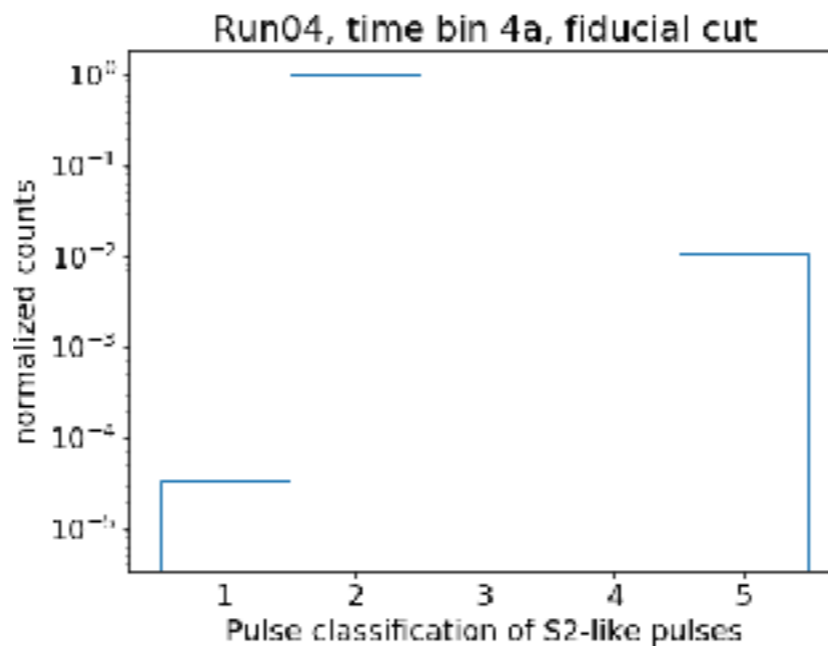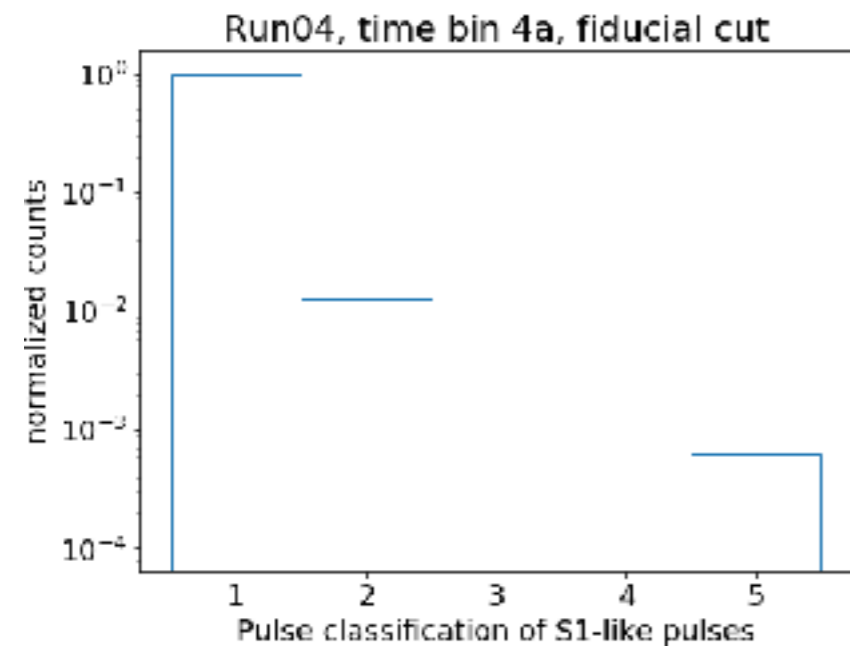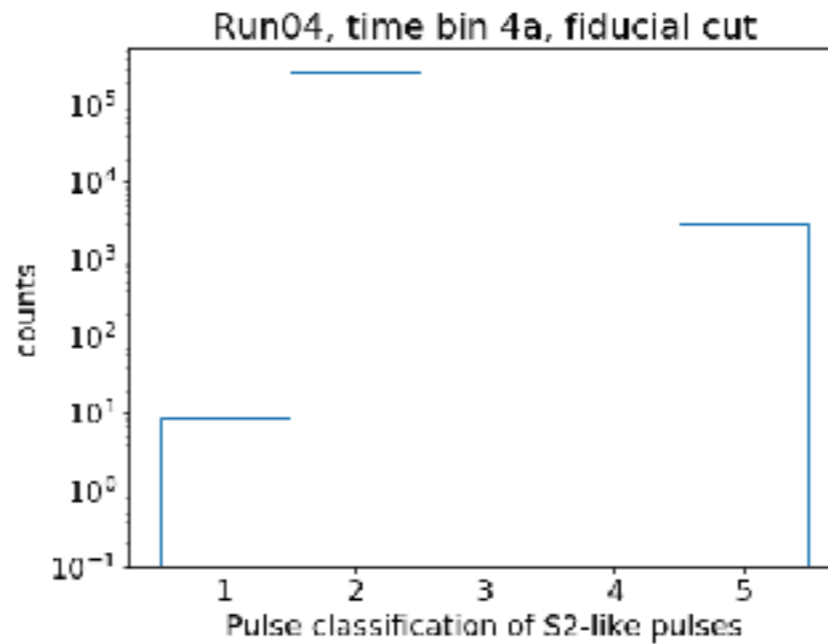
	S1-like	S2-like
S1	98.66%	0.003%
S2	1.27%	98.93%
SPE	0	0
SE	0	0
Else	0.064%	1.06%

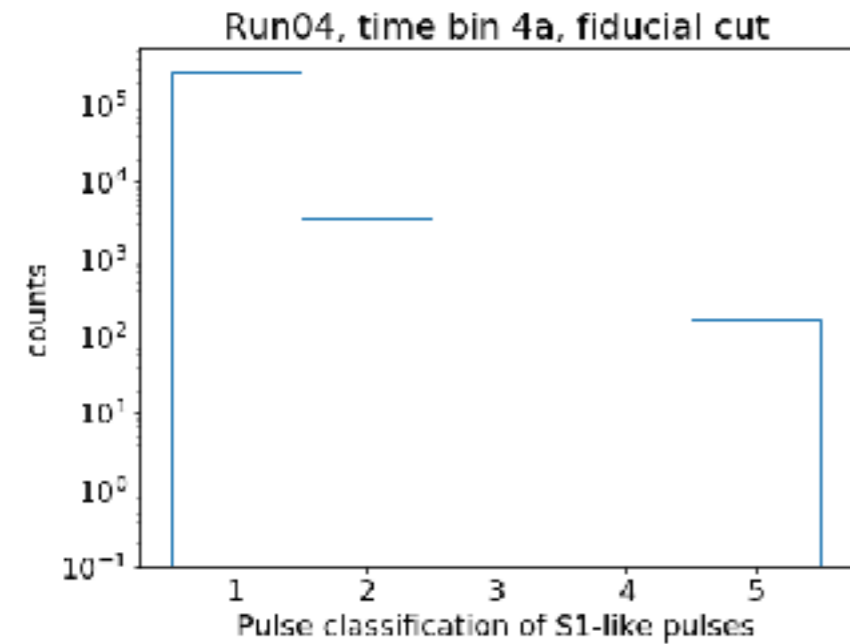# Number of misclassified pulses in Run04, time bin 4b with fiducial cut
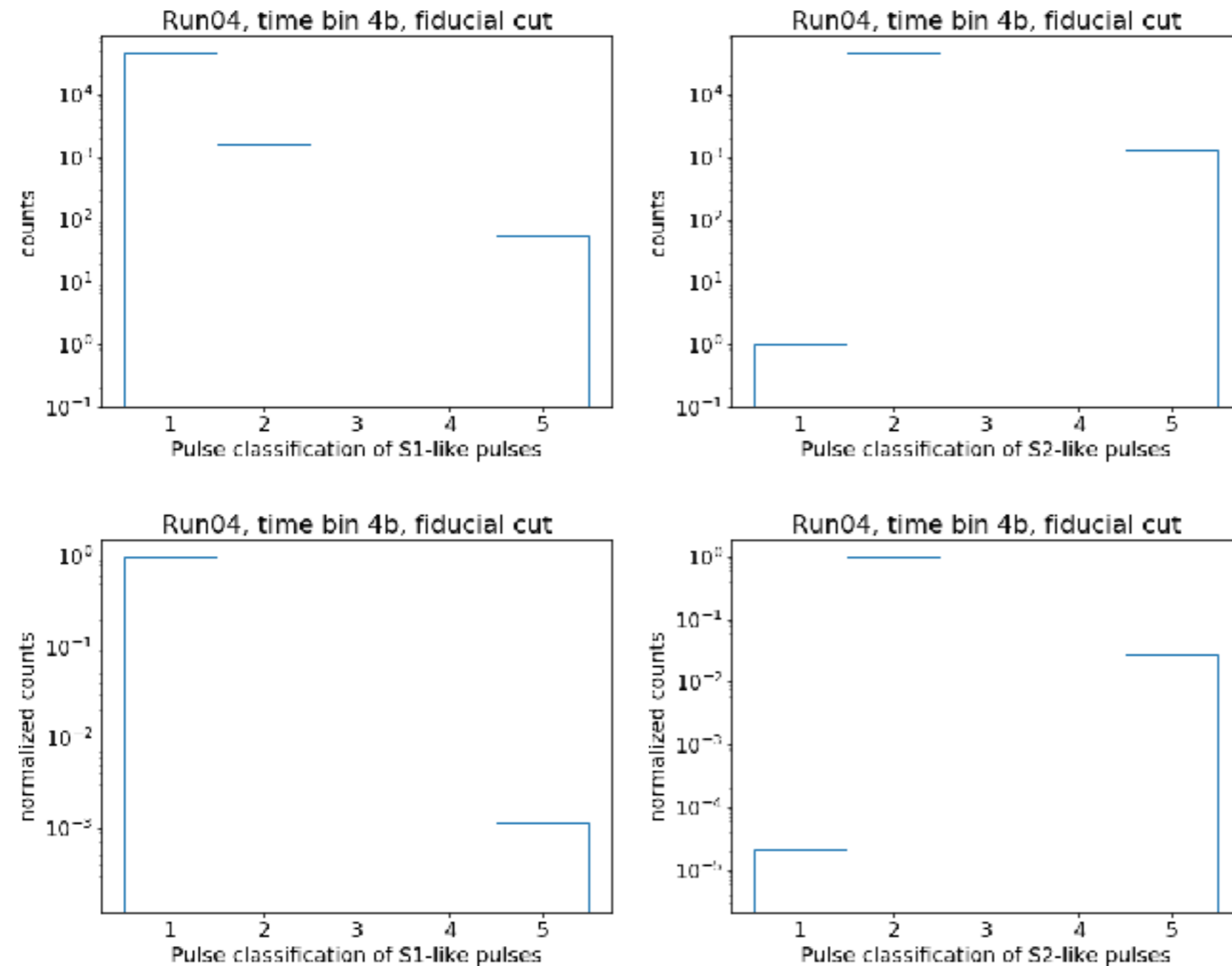
	S1-like	S2-like
S1	96.49%	0.002%
S2	3.40%	97.25%
SPE	0	0
SE	0	0
Else	0.12%	2.75%