# Dataset Structural Summary

Shape: (3246507, 9)

## Columns

['index', 'test\_time', 'cycle\_index', 'cell\_index', 'voltage', 'discharge\_capacity', 'current', 'internal\_resistance', 'temperature']

## Data Types

index int64  
test\_time float64  
cycle\_index float64  
cell\_index object  
voltage float64  
discharge\_capacity float64  
current float64  
internal\_resistance float64  
temperature float64  
dtype: object

## Missing Values

index 0  
test\_time 0  
cycle\_index 0  
cell\_index 0  
voltage 0  
discharge\_capacity 0  
current 0  
internal\_resistance 0  
temperature 0  
dtype: int64

## Descriptive Statistics

index test\_time cycle\_index cell\_index voltage discharge\_capacity current internal\_resistance temperature  
count 3.246507e+06 3.246507e+06 3.246507e+06 3246507 3.246507e+06 3.246507e+06 3.246507e+06 3.246507e+06 3.246507e+06  
unique NaN NaN NaN 6 NaN NaN NaN NaN NaN  
top NaN NaN NaN 2017-05-12\_4C-80per\_4C\_CH6 NaN NaN NaN NaN NaN  
freq NaN NaN NaN 828077 NaN NaN NaN NaN NaN  
mean 6.489080e+06 1.696320e+05 3.528092e+02 NaN 2.801509e+00 6.463740e-01 -2.569222e+00 1.739771e-02 3.290376e+01  
std 5.301643e+06 1.704525e+05 3.281495e+02 NaN 4.690325e-01 3.380258e-01 2.081012e+00 1.457385e-03 2.732549e+00  
min 8.343550e+05 0.000000e+00 0.000000e+00 NaN 1.988390e+00 0.000000e+00 -4.408104e+00 0.000000e+00 2.461202e+01  
25% 1.645982e+06 1.026758e+04 0.000000e+00 NaN 2.413094e+00 4.980011e-01 -4.400026e+00 1.659088e-02 3.014927e+01  
50% 6.891365e+06 1.370401e+05 2.970000e+02 NaN 3.022973e+00 5.984044e-01 -4.399726e+00 1.697572e-02 3.269007e+01  
75% 1.231099e+07 2.772040e+05 6.100000e+02 NaN 3.142839e+00 9.771983e-01 -1.100047e-01 1.731287e-02 3.510753e+01  
max 1.677897e+07 9.103222e+05 1.226000e+03 NaN 4.623832e+00 2.884083e+00 -2.384186e-07 2.156725e-02 4.147976e+01

## Cycle Index Distribution

cycle\_index  
0.0 828052  
40.0 12787  
12.0 2731  
38.0 2728  
1.0 2716  
27.0 2716  
6.0 2713  
41.0 2710  
5.0 2707  
45.0 2707  
69.0 2706  
39.0 2705  
10.0 2704  
96.0 2700  
65.0 2696  
26.0 2696  
126.0 2694  
4.0 2693  
8.0 2692  
37.0 2691  
88.0 2691  
47.0 2690  
36.0 2689  
71.0 2688  
52.0 2688  
61.0 2688  
90.0 2688  
137.0 2687  
87.0 2687  
76.0 2687  
15.0 2686  
83.0 2685  
94.0 2685  
154.0 2684  
44.0 2683  
80.0 2682  
171.0 2681  
2.0 2680  
29.0 2679  
23.0 2679  
56.0 2679  
51.0 2679  
60.0 2678  
124.0 2678  
70.0 2678  
110.0 2677  
50.0 2677  
202.0 2677  
197.0 2676  
151.0 2676  
192.0 2676  
198.0 2676  
3.0 2675  
49.0 2675  
93.0 2674  
55.0 2674  
18.0 2674  
59.0 2673  
84.0 2673  
188.0 2673  
91.0 2672  
42.0 2671  
17.0 2671  
106.0 2671  
146.0 2670  
102.0 2670  
11.0 2670  
13.0 2669  
7.0 2669  
16.0 2669  
105.0 2668  
34.0 2668  
111.0 2668  
203.0 2668  
31.0 2667  
95.0 2667  
20.0 2667  
72.0 2667  
218.0 2667  
14.0 2667  
227.0 2666  
66.0 2666  
9.0 2666  
216.0 2666  
92.0 2665  
86.0 2665  
104.0 2664  
118.0 2664  
122.0 2663  
231.0 2663  
21.0 2663  
25.0 2663  
75.0 2663  
79.0 2662  
160.0 2662  
107.0 2662  
116.0 2661  
149.0 2661  
157.0 2661  
57.0 2661  
74.0 2660  
131.0 2660  
85.0 2660  
109.0 2660  
32.0 2660  
220.0 2660  
63.0 2659  
103.0 2659  
260.0 2659  
150.0 2659  
114.0 2659  
190.0 2659  
182.0 2659  
136.0 2658  
145.0 2657  
130.0 2657  
97.0 2657  
120.0 2657  
73.0 2657  
62.0 2656  
77.0 2656  
211.0 2656  
35.0 2655  
223.0 2655  
259.0 2655  
215.0 2655  
22.0 2655  
156.0 2655  
138.0 2654  
206.0 2654  
28.0 2654  
64.0 2654  
378.0 2653  
180.0 2653  
46.0 2653  
181.0 2653  
153.0 2653  
89.0 2653  
112.0 2653  
98.0 2653  
236.0 2652  
229.0 2652  
100.0 2651  
184.0 2651  
191.0 2651  
217.0 2650  
254.0 2650  
133.0 2650  
163.0 2650  
232.0 2650  
30.0 2650  
127.0 2649  
194.0 2649  
172.0 2649  
115.0 2649  
162.0 2649  
189.0 2649  
19.0 2649  
441.0 2648  
351.0 2648  
142.0 2648  
173.0 2648  
155.0 2648  
24.0 2648  
54.0 2647  
81.0 2647  
176.0 2647  
152.0 2647  
101.0 2647  
165.0 2647  
212.0 2646  
431.0 2646  
248.0 2645  
48.0 2645  
108.0 2645  
53.0 2645  
208.0 2645  
210.0 2644  
175.0 2643  
267.0 2643  
78.0 2643  
178.0 2643  
33.0 2642  
257.0 2642  
392.0 2642  
273.0 2641  
225.0 2641  
256.0 2641  
161.0 2641  
187.0 2641  
135.0 2641  
370.0 2641  
352.0 2641  
343.0 2641  
341.0 2640  
221.0 2640  
134.0 2640  
345.0 2640  
141.0 2639  
244.0 2639  
247.0 2639  
99.0 2639  
129.0 2639  
304.0 2639  
113.0 2639  
339.0 2639  
196.0 2639  
82.0 2638  
186.0 2638  
399.0 2637  
278.0 2637  
246.0 2637  
119.0 2637  
334.0 2637  
168.0 2636  
222.0 2636  
169.0 2636  
357.0 2635  
132.0 2635  
322.0 2635  
199.0 2635  
43.0 2635  
405.0 2635  
117.0 2635  
266.0 2635  
628.0 2635  
359.0 2635  
128.0 2634  
350.0 2633  
226.0 2633  
368.0 2632  
311.0 2632  
258.0 2632  
200.0 2632  
174.0 2632  
402.0 2631  
207.0 2631  
382.0 2631  
377.0 2631  
608.0 2631  
164.0 2631  
219.0 2631  
58.0 2631  
272.0 2630  
310.0 2630  
214.0 2630  
224.0 2630  
67.0 2630  
241.0 2630  
125.0 2630  
374.0 2629  
252.0 2628  
606.0 2628  
395.0 2628  
255.0 2628  
289.0 2628  
123.0 2628  
268.0 2628  
610.0 2627  
318.0 2627  
317.0 2627  
331.0 2626  
365.0 2626  
299.0 2626  
546.0 2626  
185.0 2626  
201.0 2626  
177.0 2626  
234.0 2626  
209.0 2626  
228.0 2625  
179.0 2624  
336.0 2624  
595.0 2624  
270.0 2624  
388.0 2624  
170.0 2623  
393.0 2623  
689.0 2623  
664.0 2622  
390.0 2622  
139.0 2622  
423.0 2622  
261.0 2622  
271.0 2622  
263.0 2622  
205.0 2621  
326.0 2621  
298.0 2621  
346.0 2621  
166.0 2621  
291.0 2621  
251.0 2620  
204.0 2620  
239.0 2620  
332.0 2620  
306.0 2620  
321.0 2619  
391.0 2619  
449.0 2619  
121.0 2619  
253.0 2619  
147.0 2619  
683.0 2619  
292.0 2619  
235.0 2619  
425.0 2618  
473.0 2617  
143.0 2617  
401.0 2617  
303.0 2616  
444.0 2616  
623.0 2616  
300.0 2616  
274.0 2616  
237.0 2616  
496.0 2615  
213.0 2615  
295.0 2615  
432.0 2615  
680.0 2615  
686.0 2615  
288.0 2615  
275.0 2614  
193.0 2614  
691.0 2614  
369.0 2614  
690.0 2614  
140.0 2614  
287.0 2613  
250.0 2613  
573.0 2613  
265.0 2613  
183.0 2613  
309.0 2613  
158.0 2612  
620.0 2612  
240.0 2612  
313.0 2612  
294.0 2612  
488.0 2611  
622.0 2611  
645.0 2611  
376.0 2611  
293.0 2611  
277.0 2610  
372.0 2610  
314.0 2610  
631.0 2610  
243.0 2610  
577.0 2610  
340.0 2610  
280.0 2609  
353.0 2609  
307.0 2609  
284.0 2609  
398.0 2608  
387.0 2608  
513.0 2608  
364.0 2608  
233.0 2608  
320.0 2608  
515.0 2608  
442.0 2608  
167.0 2608  
464.0 2608  
337.0 2608  
604.0 2608  
433.0 2607  
411.0 2607  
436.0 2607  
640.0 2607  
408.0 2607  
458.0 2607  
607.0 2606  
238.0 2606  
283.0 2606  
678.0 2606  
379.0 2606  
507.0 2605  
679.0 2605  
644.0 2605  
614.0 2605  
536.0 2605  
242.0 2605  
327.0 2605  
328.0 2605  
647.0 2605  
427.0 2605  
489.0 2604  
641.0 2604  
279.0 2604  
657.0 2604  
245.0 2604  
636.0 2604  
672.0 2604  
410.0 2603  
424.0 2603  
567.0 2603  
599.0 2603  
632.0 2603  
519.0 2603  
367.0 2603  
386.0 2603  
324.0 2603  
682.0 2603  
281.0 2603  
348.0 2603  
264.0 2603  
547.0 2602  
584.0 2602  
159.0 2602  
667.0 2602  
450.0 2602  
602.0 2602  
366.0 2602  
663.0 2602  
428.0 2602  
269.0 2602  
574.0 2602  
587.0 2601  
498.0 2601  
347.0 2601  
249.0 2601  
637.0 2601  
323.0 2601  
312.0 2601  
305.0 2601  
319.0 2601  
504.0 2601  
349.0 2601  
684.0 2601  
660.0 2601  
465.0 2600  
559.0 2600  
563.0 2600  
344.0 2600  
68.0 2600  
616.0 2600  
148.0 2600  
477.0 2600  
397.0 2600  
329.0 2599  
673.0 2599  
478.0 2599  
594.0 2599  
596.0 2599  
600.0 2599  
400.0 2599  
417.0 2599  
355.0 2599  
360.0 2599  
524.0 2598  
512.0 2598  
338.0 2598  
426.0 2598  
434.0 2597  
648.0 2597  
415.0 2597  
564.0 2597  
383.0 2597  
517.0 2597  
429.0 2596  
634.0 2596  
282.0 2596  
592.0 2596  
579.0 2596  
371.0 2596  
409.0 2596  
389.0 2595  
296.0 2595  
511.0 2595  
421.0 2595  
630.0 2595  
609.0 2595  
438.0 2595  
412.0 2594  
335.0 2594  
403.0 2594  
646.0 2594  
419.0 2594  
443.0 2594  
666.0 2594  
285.0 2594  
440.0 2594  
537.0 2594  
687.0 2593  
394.0 2593  
653.0 2593  
650.0 2593  
590.0 2593  
586.0 2593  
625.0 2593  
356.0 2593  
638.0 2593  
362.0 2593  
461.0 2593  
665.0 2592  
575.0 2592  
451.0 2592  
385.0 2592  
297.0 2592  
381.0 2592  
333.0 2592  
467.0 2591  
621.0 2591  
462.0 2591  
581.0 2591  
315.0 2591  
276.0 2591  
572.0 2591  
588.0 2591  
418.0 2591  
375.0 2591  
554.0 2590  
578.0 2590  
624.0 2590  
613.0 2590  
493.0 2590  
384.0 2590  
363.0 2590  
446.0 2589  
688.0 2589  
491.0 2589  
582.0 2589  
591.0 2589  
330.0 2589  
681.0 2589  
380.0 2589  
514.0 2589  
651.0 2589  
617.0 2588  
407.0 2588  
490.0 2588  
652.0 2588  
662.0 2587  
468.0 2587  
482.0 2587  
576.0 2587  
342.0 2587  
612.0 2587  
654.0 2587  
230.0 2586  
633.0 2586  
302.0 2586  
361.0 2586  
548.0 2586  
627.0 2586  
495.0 2586  
525.0 2586  
466.0 2585  
373.0 2585  
358.0 2585  
437.0 2585  
404.0 2585  
406.0 2584  
325.0 2584  
459.0 2584  
316.0 2584  
470.0 2584  
301.0 2584  
396.0 2584  
494.0 2584  
492.0 2583  
486.0 2583  
556.0 2583  
474.0 2582  
619.0 2582  
551.0 2582  
569.0 2582  
286.0 2582  
543.0 2582  
430.0 2582  
655.0 2582  
639.0 2581  
675.0 2581  
469.0 2581  
195.0 2581  
414.0 2581  
516.0 2581  
611.0 2581  
544.0 2581  
452.0 2581  
603.0 2580  
354.0 2580  
485.0 2580  
677.0 2579  
685.0 2579  
656.0 2579  
510.0 2579  
487.0 2579  
308.0 2579  
669.0 2579  
541.0 2578  
521.0 2578  
439.0 2578  
460.0 2578  
262.0 2578  
626.0 2578  
422.0 2576  
503.0 2576  
484.0 2576  
290.0 2576  
601.0 2576  
580.0 2576  
479.0 2576  
676.0 2576  
550.0 2576  
520.0 2575  
565.0 2575  
668.0 2574  
529.0 2574  
661.0 2573  
420.0 2573  
499.0 2573  
539.0 2573  
535.0 2572  
570.0 2572  
480.0 2571  
457.0 2571  
553.0 2571  
463.0 2570  
456.0 2570  
455.0 2570  
453.0 2570  
413.0 2569  
558.0 2569  
568.0 2569  
475.0 2569  
545.0 2569  
483.0 2569  
501.0 2569  
435.0 2569  
497.0 2569  
448.0 2568  
583.0 2568  
502.0 2568  
481.0 2568  
571.0 2567  
549.0 2567  
566.0 2567  
671.0 2567  
476.0 2567  
605.0 2567  
447.0 2566  
629.0 2566  
649.0 2566  
509.0 2565  
500.0 2565  
416.0 2564  
454.0 2564  
615.0 2564  
557.0 2564  
560.0 2563  
527.0 2563  
518.0 2561  
505.0 2561  
552.0 2560  
445.0 2560  
523.0 2560  
658.0 2558  
589.0 2558  
472.0 2558  
534.0 2557  
508.0 2557  
598.0 2556  
144.0 2556  
618.0 2555  
540.0 2555  
659.0 2554  
538.0 2554  
531.0 2554  
532.0 2553  
643.0 2553  
471.0 2553  
670.0 2553  
642.0 2552  
585.0 2552  
597.0 2551  
561.0 2551  
506.0 2549  
522.0 2547  
555.0 2547  
530.0 2546  
533.0 2546  
674.0 2545  
542.0 2542  
635.0 2542  
562.0 2542  
593.0 2539  
526.0 2535  
528.0 2521  
771.0 2218  
722.0 2213  
778.0 2207  
770.0 2206  
777.0 2205  
769.0 2203  
768.0 2199  
779.0 2196  
786.0 2194  
753.0 2194  
760.0 2193  
765.0 2193  
766.0 2193  
733.0 2192  
756.0 2190  
742.0 2189  
781.0 2189  
751.0 2188  
726.0 2188  
735.0 2186  
736.0 2184  
775.0 2184  
773.0 2182  
731.0 2182  
774.0 2182  
729.0 2182  
739.0 2182  
752.0 2181  
721.0 2179  
743.0 2179  
788.0 2179  
713.0 2179  
703.0 2178  
738.0 2178  
737.0 2178  
763.0 2178  
758.0 2177  
744.0 2177  
725.0 2176  
755.0 2176  
746.0 2176  
784.0 2175  
745.0 2175  
719.0 2173  
732.0 2172  
698.0 2172  
767.0 2171  
764.0 2170  
783.0 2170  
782.0 2170  
754.0 2169  
772.0 2169  
697.0 2169  
741.0 2168  
747.0 2167  
759.0 2165  
716.0 2164  
785.0 2163  
717.0 2163  
720.0 2162  
730.0 2161  
701.0 2161  
695.0 2161  
761.0 2159  
750.0 2159  
694.0 2158  
723.0 2157  
714.0 2156  
762.0 2156  
704.0 2156  
724.0 2153  
780.0 2152  
715.0 2151  
699.0 2150  
728.0 2148  
700.0 2148  
692.0 2148  
710.0 2147  
776.0 2146  
706.0 2145  
740.0 2145  
787.0 2144  
757.0 2143  
749.0 2143  
707.0 2142  
727.0 2140  
748.0 2139  
712.0 2139  
709.0 2138  
718.0 2136  
705.0 2134  
693.0 2133  
734.0 2133  
696.0 2132  
702.0 2132  
711.0 2129  
708.0 2117  
806.0 1789  
842.0 1776  
860.0 1775  
828.0 1775  
791.0 1774  
844.0 1773  
803.0 1772  
854.0 1771  
832.0 1768  
812.0 1766  
856.0 1766  
827.0 1765  
834.0 1765  
818.0 1764  
808.0 1764  
830.0 1763  
831.0 1763  
853.0 1763  
864.0 1762  
851.0 1761  
793.0 1761  
823.0 1761  
833.0 1760  
847.0 1760  
837.0 1759  
821.0 1759  
792.0 1758  
849.0 1758  
845.0 1756  
862.0 1756  
866.0 1755  
809.0 1754  
800.0 1753  
840.0 1753  
835.0 1753  
846.0 1751  
822.0 1751  
852.0 1751  
817.0 1750  
857.0 1750  
869.0 1750  
824.0 1750  
814.0 1749  
819.0 1748  
870.0 1748  
868.0 1747  
797.0 1746  
805.0 1746  
829.0 1746  
799.0 1745  
813.0 1744  
863.0 1744  
850.0 1744  
826.0 1743  
855.0 1739  
794.0 1739  
858.0 1739  
796.0 1737  
848.0 1736  
859.0 1736  
861.0 1736  
843.0 1735  
820.0 1735  
867.0 1735  
841.0 1734  
790.0 1731  
801.0 1731  
804.0 1730  
836.0 1729  
802.0 1729  
838.0 1728  
810.0 1727  
798.0 1726  
811.0 1723  
795.0 1722  
789.0 1722  
816.0 1720  
825.0 1719  
807.0 1719  
865.0 1718  
815.0 1713  
839.0 1712  
887.0 1402  
906.0 1366  
880.0 1331  
897.0 1327  
883.0 1325  
874.0 1323  
872.0 1322  
901.0 1321  
871.0 1321  
876.0 1320  
884.0 1318  
886.0 1317  
879.0 1313  
875.0 1313  
905.0 1312  
903.0 1310  
896.0 1310  
900.0 1308  
882.0 1307  
895.0 1307  
904.0 1307  
893.0 1306  
892.0 1303  
877.0 1299  
888.0 1296  
898.0 1295  
894.0 1291  
891.0 1289  
873.0 1289  
878.0 1289  
881.0 1287  
902.0 1283  
890.0 1283  
899.0 1282  
889.0 1282  
885.0 1282  
969.0 901  
1024.0 891  
1021.0 890  
1049.0 885  
1028.0 884  
930.0 884  
955.0 884  
953.0 883  
933.0 881  
948.0 880  
983.0 880  
923.0 879  
997.0 878  
1004.0 876  
1011.0 875  
994.0 875  
980.0 875  
1053.0 874  
940.0 873  
934.0 873  
1027.0 873  
1035.0 873  
915.0 873  
1016.0 872  
1018.0 872  
975.0 871  
960.0 870  
942.0 869  
1008.0 869  
1009.0 869  
957.0 869  
954.0 868  
967.0 868  
914.0 868  
946.0 868  
979.0 867  
1025.0 867  
925.0 867  
918.0 866  
1023.0 866  
1041.0 866  
1012.0 866  
921.0 865  
978.0 865  
938.0 865  
931.0 865  
1015.0 865  
950.0 864  
1042.0 864  
977.0 864  
1033.0 863  
1037.0 863  
1048.0 862  
913.0 862  
958.0 862  
1013.0 862  
993.0 861  
910.0 861  
985.0 861  
1003.0 861  
1026.0 861  
956.0 861  
928.0 861  
995.0 860  
982.0 860  
1045.0 860  
952.0 860  
949.0 859  
1010.0 859  
988.0 859  
909.0 859  
976.0 859  
1038.0 858  
1052.0 858  
968.0 858  
965.0 858  
941.0 858  
959.0 858  
935.0 858  
1007.0 857  
973.0 857  
1043.0 857  
945.0 857  
987.0 857  
929.0 857  
1036.0 857  
917.0 857  
990.0 856  
922.0 856  
1051.0 856  
1034.0 856  
1000.0 855  
966.0 855  
937.0 855  
912.0 855  
961.0 855  
964.0 854  
1047.0 854  
924.0 854  
984.0 854  
996.0 853  
1017.0 853  
916.0 853  
1032.0 852  
999.0 852  
1001.0 852  
1050.0 852  
972.0 851  
936.0 851  
947.0 851  
1039.0 851  
926.0 851  
1005.0 850  
1029.0 850  
1046.0 850  
907.0 850  
1019.0 849  
939.0 848  
943.0 848  
992.0 848  
919.0 847  
1002.0 846  
998.0 846  
911.0 846  
986.0 846  
1031.0 846  
981.0 845  
1006.0 845  
971.0 844  
991.0 844  
1020.0 843  
974.0 843  
908.0 842  
970.0 841  
1040.0 841  
932.0 840  
944.0 839  
1030.0 838  
962.0 837  
963.0 837  
1014.0 837  
920.0 837  
1044.0 835  
1022.0 834  
927.0 832  
1054.0 828  
951.0 828  
989.0 826  
1091.0 454  
1101.0 440  
1056.0 438  
1200.0 436  
1209.0 436  
1061.0 436  
1074.0 435  
1087.0 435  
1089.0 434  
1217.0 432  
1103.0 432  
1069.0 432  
1084.0 432  
1214.0 431  
1120.0 431  
1118.0 431  
1181.0 431  
1126.0 430  
1224.0 430  
1162.0 430  
1171.0 430  
1211.0 430  
1150.0 429  
1095.0 429  
1192.0 429  
1199.0 429  
1168.0 429  
1106.0 429  
1156.0 428  
1109.0 428  
1110.0 428  
1090.0 428  
1073.0 428  
1143.0 428  
1223.0 428  
1086.0 428  
1083.0 427  
1080.0 427  
1071.0 427  
1119.0 427  
1182.0 426  
1102.0 426  
1081.0 426  
1149.0 426  
1140.0 426  
1208.0 426  
1212.0 426  
1165.0 425  
1157.0 425  
1220.0 425  
1154.0 425  
1216.0 425  
1064.0 425  
1065.0 425  
1116.0 425  
1141.0 424  
1147.0 424  
1124.0 424  
1088.0 424  
1082.0 424  
1070.0 424  
1068.0 424  
1186.0 423  
1202.0 423  
1067.0 423  
1062.0 423  
1122.0 423  
1055.0 423  
1142.0 422  
1201.0 422  
1104.0 422  
1092.0 422  
1077.0 422  
1152.0 421  
1105.0 421  
1121.0 421  
1123.0 421  
1190.0 421  
1188.0 421  
1075.0 421  
1060.0 421  
1218.0 421  
1167.0 421  
1145.0 420  
1183.0 420  
1127.0 420  
1098.0 420  
1169.0 420  
1193.0 420  
1196.0 420  
1164.0 420  
1197.0 420  
1204.0 420  
1206.0 420  
1210.0 420  
1066.0 420  
1215.0 420  
1130.0 420  
1221.0 420  
1114.0 419  
1072.0 419  
1177.0 419  
1159.0 419  
1125.0 419  
1203.0 418  
1100.0 418  
1226.0 418  
1112.0 418  
1111.0 418  
1180.0 417  
1134.0 417  
1153.0 417  
1138.0 417  
1148.0 416  
1198.0 416  
1058.0 416  
1178.0 416  
1096.0 416  
1174.0 415  
1097.0 415  
1173.0 415  
1155.0 415  
1170.0 415  
1078.0 415  
1191.0 415  
1117.0 414  
1094.0 414  
1194.0 414  
1166.0 414  
1185.0 413  
1205.0 413  
1222.0 413  
1158.0 413  
1195.0 413  
1146.0 413  
1132.0 412  
1184.0 412  
1172.0 412  
1085.0 412  
1057.0 412  
1144.0 412  
1059.0 411  
1115.0 411  
1176.0 411  
1187.0 411  
1213.0 410  
1175.0 410  
1079.0 410  
1139.0 410  
1093.0 410  
1189.0 409  
1108.0 409  
1219.0 409  
1131.0 409  
1135.0 409  
1179.0 409  
1113.0 408  
1076.0 408  
1160.0 407  
1163.0 407  
1133.0 407  
1151.0 407  
1063.0 406  
1137.0 406  
1225.0 406  
1161.0 406  
1136.0 405  
1129.0 405  
1107.0 405  
1207.0 404  
1128.0 401  
1099.0 400

All unique cycle\_index values: [0.0, 40.0, 12.0, 38.0, 1.0, 27.0, 6.0, 41.0, 5.0, 45.0, 69.0, 39.0, 10.0, 96.0, 65.0, 26.0, 126.0, 4.0, 8.0, 37.0, 88.0, 47.0, 36.0, 71.0, 52.0, 61.0, 90.0, 137.0, 87.0, 76.0, 15.0, 83.0, 94.0, 154.0, 44.0, 80.0, 171.0, 2.0, 29.0, 23.0, 56.0, 51.0, 60.0, 124.0, 70.0, 110.0, 50.0, 202.0, 197.0, 151.0, 192.0, 198.0, 3.0, 49.0, 93.0, 55.0, 18.0, 59.0, 84.0, 188.0, 91.0, 42.0, 17.0, 106.0, 146.0, 102.0, 11.0, 13.0, 7.0, 16.0, 105.0, 34.0, 111.0, 203.0, 31.0, 95.0, 20.0, 72.0, 218.0, 14.0, 227.0, 66.0, 9.0, 216.0, 92.0, 86.0, 104.0, 118.0, 122.0, 231.0, 21.0, 25.0, 75.0, 79.0, 160.0, 107.0, 116.0, 149.0, 157.0, 57.0, 74.0, 131.0, 85.0, 109.0, 32.0, 220.0, 63.0, 103.0, 260.0, 150.0, 114.0, 190.0, 182.0, 136.0, 145.0, 130.0, 97.0, 120.0, 73.0, 62.0, 77.0, 211.0, 35.0, 223.0, 259.0, 215.0, 22.0, 156.0, 138.0, 206.0, 28.0, 64.0, 378.0, 180.0, 46.0, 181.0, 153.0, 89.0, 112.0, 98.0, 236.0, 229.0, 100.0, 184.0, 191.0, 217.0, 254.0, 133.0, 163.0, 232.0, 30.0, 127.0, 194.0, 172.0, 115.0, 162.0, 189.0, 19.0, 441.0, 351.0, 142.0, 173.0, 155.0, 24.0, 54.0, 81.0, 176.0, 152.0, 101.0, 165.0, 212.0, 431.0, 248.0, 48.0, 108.0, 53.0, 208.0, 210.0, 175.0, 267.0, 78.0, 178.0, 33.0, 257.0, 392.0, 273.0, 225.0, 256.0, 161.0, 187.0, 135.0, 370.0, 352.0, 343.0, 341.0, 221.0, 134.0, 345.0, 141.0, 244.0, 247.0, 99.0, 129.0, 304.0, 113.0, 339.0, 196.0, 82.0, 186.0, 399.0, 278.0, 246.0, 119.0, 334.0, 168.0, 222.0, 169.0, 357.0, 132.0, 322.0, 199.0, 43.0, 405.0, 117.0, 266.0, 628.0, 359.0, 128.0, 350.0, 226.0, 368.0, 311.0, 258.0, 200.0, 174.0, 402.0, 207.0, 382.0, 377.0, 608.0, 164.0, 219.0, 58.0, 272.0, 310.0, 214.0, 224.0, 67.0, 241.0, 125.0, 374.0, 252.0, 606.0, 395.0, 255.0, 289.0, 123.0, 268.0, 610.0, 318.0, 317.0, 331.0, 365.0, 299.0, 546.0, 185.0, 201.0, 177.0, 234.0, 209.0, 228.0, 179.0, 336.0, 595.0, 270.0, 388.0, 170.0, 393.0, 689.0, 664.0, 390.0, 139.0, 423.0, 261.0, 271.0, 263.0, 205.0, 326.0, 298.0, 346.0, 166.0, 291.0, 251.0, 204.0, 239.0, 332.0, 306.0, 321.0, 391.0, 449.0, 121.0, 253.0, 147.0, 683.0, 292.0, 235.0, 425.0, 473.0, 143.0, 401.0, 303.0, 444.0, 623.0, 300.0, 274.0, 237.0, 496.0, 213.0, 295.0, 432.0, 680.0, 686.0, 288.0, 275.0, 193.0, 691.0, 369.0, 690.0, 140.0, 287.0, 250.0, 573.0, 265.0, 183.0, 309.0, 158.0, 620.0, 240.0, 313.0, 294.0, 488.0, 622.0, 645.0, 376.0, 293.0, 277.0, 372.0, 314.0, 631.0, 243.0, 577.0, 340.0, 280.0, 353.0, 307.0, 284.0, 398.0, 387.0, 513.0, 364.0, 233.0, 320.0, 515.0, 442.0, 167.0, 464.0, 337.0, 604.0, 433.0, 411.0, 436.0, 640.0, 408.0, 458.0, 607.0, 238.0, 283.0, 678.0, 379.0, 507.0, 679.0, 644.0, 614.0, 536.0, 242.0, 327.0, 328.0, 647.0, 427.0, 489.0, 641.0, 279.0, 657.0, 245.0, 636.0, 672.0, 410.0, 424.0, 567.0, 599.0, 632.0, 519.0, 367.0, 386.0, 324.0, 682.0, 281.0, 348.0, 264.0, 547.0, 584.0, 159.0, 667.0, 450.0, 602.0, 366.0, 663.0, 428.0, 269.0, 574.0, 587.0, 498.0, 347.0, 249.0, 637.0, 323.0, 312.0, 305.0, 319.0, 504.0, 349.0, 684.0, 660.0, 465.0, 559.0, 563.0, 344.0, 68.0, 616.0, 148.0, 477.0, 397.0, 329.0, 673.0, 478.0, 594.0, 596.0, 600.0, 400.0, 417.0, 355.0, 360.0, 524.0, 512.0, 338.0, 426.0, 434.0, 648.0, 415.0, 564.0, 383.0, 517.0, 429.0, 634.0, 282.0, 592.0, 579.0, 371.0, 409.0, 389.0, 296.0, 511.0, 421.0, 630.0, 609.0, 438.0, 412.0, 335.0, 403.0, 646.0, 419.0, 443.0, 666.0, 285.0, 440.0, 537.0, 687.0, 394.0, 653.0, 650.0, 590.0, 586.0, 625.0, 356.0, 638.0, 362.0, 461.0, 665.0, 575.0, 451.0, 385.0, 297.0, 381.0, 333.0, 467.0, 621.0, 462.0, 581.0, 315.0, 276.0, 572.0, 588.0, 418.0, 375.0, 554.0, 578.0, 624.0, 613.0, 493.0, 384.0, 363.0, 446.0, 688.0, 491.0, 582.0, 591.0, 330.0, 681.0, 380.0, 514.0, 651.0, 617.0, 407.0, 490.0, 652.0, 662.0, 468.0, 482.0, 576.0, 342.0, 612.0, 654.0, 230.0, 633.0, 302.0, 361.0, 548.0, 627.0, 495.0, 525.0, 466.0, 373.0, 358.0, 437.0, 404.0, 406.0, 325.0, 459.0, 316.0, 470.0, 301.0, 396.0, 494.0, 492.0, 486.0, 556.0, 474.0, 619.0, 551.0, 569.0, 286.0, 543.0, 430.0, 655.0, 639.0, 675.0, 469.0, 195.0, 414.0, 516.0, 611.0, 544.0, 452.0, 603.0, 354.0, 485.0, 677.0, 685.0, 656.0, 510.0, 487.0, 308.0, 669.0, 541.0, 521.0, 439.0, 460.0, 262.0, 626.0, 422.0, 503.0, 484.0, 290.0, 601.0, 580.0, 479.0, 676.0, 550.0, 520.0, 565.0, 668.0, 529.0, 661.0, 420.0, 499.0, 539.0, 535.0, 570.0, 480.0, 457.0, 553.0, 463.0, 456.0, 455.0, 453.0, 413.0, 558.0, 568.0, 475.0, 545.0, 483.0, 501.0, 435.0, 497.0, 448.0, 583.0, 502.0, 481.0, 571.0, 549.0, 566.0, 671.0, 476.0, 605.0, 447.0, 629.0, 649.0, 509.0, 500.0, 416.0, 454.0, 615.0, 557.0, 560.0, 527.0, 518.0, 505.0, 552.0, 445.0, 523.0, 658.0, 589.0, 472.0, 534.0, 508.0, 598.0, 144.0, 618.0, 540.0, 659.0, 538.0, 531.0, 532.0, 643.0, 471.0, 670.0, 642.0, 585.0, 597.0, 561.0, 506.0, 522.0, 555.0, 530.0, 533.0, 674.0, 542.0, 635.0, 562.0, 593.0, 526.0, 528.0, 771.0, 722.0, 778.0, 770.0, 777.0, 769.0, 768.0, 779.0, 786.0, 753.0, 760.0, 765.0, 766.0, 733.0, 756.0, 742.0, 781.0, 751.0, 726.0, 735.0, 736.0, 775.0, 773.0, 731.0, 774.0, 729.0, 739.0, 752.0, 721.0, 743.0, 788.0, 713.0, 703.0, 738.0, 737.0, 763.0, 758.0, 744.0, 725.0, 755.0, 746.0, 784.0, 745.0, 719.0, 732.0, 698.0, 767.0, 764.0, 783.0, 782.0, 754.0, 772.0, 697.0, 741.0, 747.0, 759.0, 716.0, 785.0, 717.0, 720.0, 730.0, 701.0, 695.0, 761.0, 750.0, 694.0, 723.0, 714.0, 762.0, 704.0, 724.0, 780.0, 715.0, 699.0, 728.0, 700.0, 692.0, 710.0, 776.0, 706.0, 740.0, 787.0, 757.0, 749.0, 707.0, 727.0, 748.0, 712.0, 709.0, 718.0, 705.0, 693.0, 734.0, 696.0, 702.0, 711.0, 708.0, 806.0, 842.0, 860.0, 828.0, 791.0, 844.0, 803.0, 854.0, 832.0, 812.0, 856.0, 827.0, 834.0, 818.0, 808.0, 830.0, 831.0, 853.0, 864.0, 851.0, 793.0, 823.0, 833.0, 847.0, 837.0, 821.0, 792.0, 849.0, 845.0, 862.0, 866.0, 809.0, 800.0, 840.0, 835.0, 846.0, 822.0, 852.0, 817.0, 857.0, 869.0, 824.0, 814.0, 819.0, 870.0, 868.0, 797.0, 805.0, 829.0, 799.0, 813.0, 863.0, 850.0, 826.0, 855.0, 794.0, 858.0, 796.0, 848.0, 859.0, 861.0, 843.0, 820.0, 867.0, 841.0, 790.0, 801.0, 804.0, 836.0, 802.0, 838.0, 810.0, 798.0, 811.0, 795.0, 789.0, 816.0, 825.0, 807.0, 865.0, 815.0, 839.0, 887.0, 906.0, 880.0, 897.0, 883.0, 874.0, 872.0, 901.0, 871.0, 876.0, 884.0, 886.0, 879.0, 875.0, 905.0, 903.0, 896.0, 900.0, 882.0, 895.0, 904.0, 893.0, 892.0, 877.0, 888.0, 898.0, 894.0, 891.0, 873.0, 878.0, 881.0, 902.0, 890.0, 899.0, 889.0, 885.0, 969.0, 1024.0, 1021.0, 1049.0, 1028.0, 930.0, 955.0, 953.0, 933.0, 948.0, 983.0, 923.0, 997.0, 1004.0, 1011.0, 994.0, 980.0, 1053.0, 940.0, 934.0, 1027.0, 1035.0, 915.0, 1016.0, 1018.0, 975.0, 960.0, 942.0, 1008.0, 1009.0, 957.0, 954.0, 967.0, 914.0, 946.0, 979.0, 1025.0, 925.0, 918.0, 1023.0, 1041.0, 1012.0, 921.0, 978.0, 938.0, 931.0, 1015.0, 950.0, 1042.0, 977.0, 1033.0, 1037.0, 1048.0, 913.0, 958.0, 1013.0, 993.0, 910.0, 985.0, 1003.0, 1026.0, 956.0, 928.0, 995.0, 982.0, 1045.0, 952.0, 949.0, 1010.0, 988.0, 909.0, 976.0, 1038.0, 1052.0, 968.0, 965.0, 941.0, 959.0, 935.0, 1007.0, 973.0, 1043.0, 945.0, 987.0, 929.0, 1036.0, 917.0, 990.0, 922.0, 1051.0, 1034.0, 1000.0, 966.0, 937.0, 912.0, 961.0, 964.0, 1047.0, 924.0, 984.0, 996.0, 1017.0, 916.0, 1032.0, 999.0, 1001.0, 1050.0, 972.0, 936.0, 947.0, 1039.0, 926.0, 1005.0, 1029.0, 1046.0, 907.0, 1019.0, 939.0, 943.0, 992.0, 919.0, 1002.0, 998.0, 911.0, 986.0, 1031.0, 981.0, 1006.0, 971.0, 991.0, 1020.0, 974.0, 908.0, 970.0, 1040.0, 932.0, 944.0, 1030.0, 962.0, 963.0, 1014.0, 920.0, 1044.0, 1022.0, 927.0, 1054.0, 951.0, 989.0, 1091.0, 1101.0, 1056.0, 1200.0, 1209.0, 1061.0, 1074.0, 1087.0, 1089.0, 1217.0, 1103.0, 1069.0, 1084.0, 1214.0, 1120.0, 1118.0, 1181.0, 1126.0, 1224.0, 1162.0, 1171.0, 1211.0, 1150.0, 1095.0, 1192.0, 1199.0, 1168.0, 1106.0, 1156.0, 1109.0, 1110.0, 1090.0, 1073.0, 1143.0, 1223.0, 1086.0, 1083.0, 1080.0, 1071.0, 1119.0, 1182.0, 1102.0, 1081.0, 1149.0, 1140.0, 1208.0, 1212.0, 1165.0, 1157.0, 1220.0, 1154.0, 1216.0, 1064.0, 1065.0, 1116.0, 1141.0, 1147.0, 1124.0, 1088.0, 1082.0, 1070.0, 1068.0, 1186.0, 1202.0, 1067.0, 1062.0, 1122.0, 1055.0, 1142.0, 1201.0, 1104.0, 1092.0, 1077.0, 1152.0, 1105.0, 1121.0, 1123.0, 1190.0, 1188.0, 1075.0, 1060.0, 1218.0, 1167.0, 1145.0, 1183.0, 1127.0, 1098.0, 1169.0, 1193.0, 1196.0, 1164.0, 1197.0, 1204.0, 1206.0, 1210.0, 1066.0, 1215.0, 1130.0, 1221.0, 1114.0, 1072.0, 1177.0, 1159.0, 1125.0, 1203.0, 1100.0, 1226.0, 1112.0, 1111.0, 1180.0, 1134.0, 1153.0, 1138.0, 1148.0, 1198.0, 1058.0, 1178.0, 1096.0, 1174.0, 1097.0, 1173.0, 1155.0, 1170.0, 1078.0, 1191.0, 1117.0, 1094.0, 1194.0, 1166.0, 1185.0, 1205.0, 1222.0, 1158.0, 1195.0, 1146.0, 1132.0, 1184.0, 1172.0, 1085.0, 1057.0, 1144.0, 1059.0, 1115.0, 1176.0, 1187.0, 1213.0, 1175.0, 1079.0, 1139.0, 1093.0, 1189.0, 1108.0, 1219.0, 1131.0, 1135.0, 1179.0, 1113.0, 1076.0, 1160.0, 1163.0, 1133.0, 1151.0, 1063.0, 1137.0, 1225.0, 1161.0, 1136.0, 1129.0, 1107.0, 1207.0, 1128.0, 1099.0]

## Cell Index Distribution

cell\_index  
2017-05-12\_4C-80per\_4C\_CH6 828077  
2017-05-12\_5\_4C-50per\_3C\_CH13 655274  
2017-05-12\_5\_4C-50per\_3C\_CH14 605852  
2017-05-12\_5\_4C-40per\_3\_6C\_CH20 458967  
2017-05-12\_6C-40per\_3\_6C\_CH33 384612  
2017-05-12\_5\_4C-70per\_3C\_CH17 313725

All unique cell\_index values: ['2017-05-12\_4C-80per\_4C\_CH6', '2017-05-12\_5\_4C-50per\_3C\_CH13', '2017-05-12\_5\_4C-50per\_3C\_CH14', '2017-05-12\_5\_4C-40per\_3\_6C\_CH20', '2017-05-12\_6C-40per\_3\_6C\_CH33', '2017-05-12\_5\_4C-70per\_3C\_CH17']