

# Pedestal Scan

## Task:

- Scan the ADC for changes in the Pedestal over time
- Completed this with calibration run files  
/mss/halla/triton/prod/calibration/....

# The process!

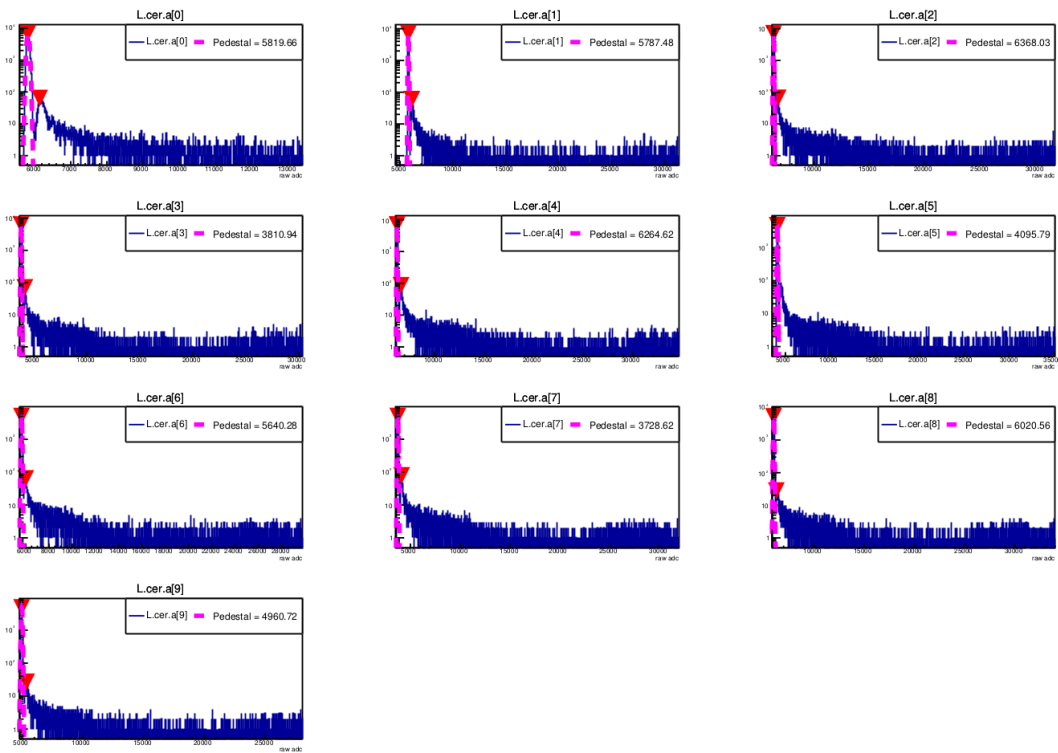
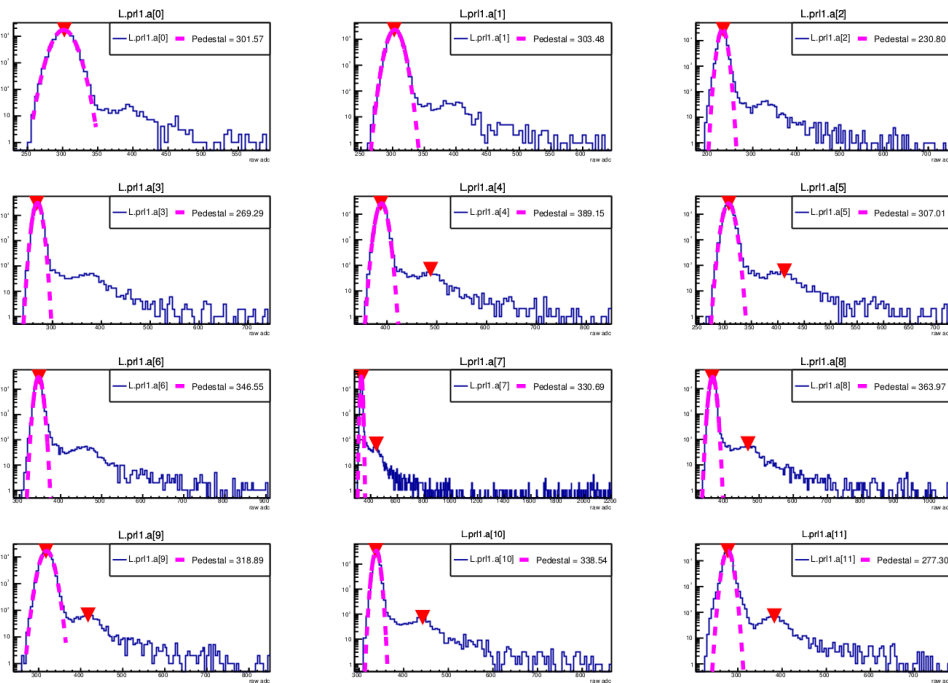
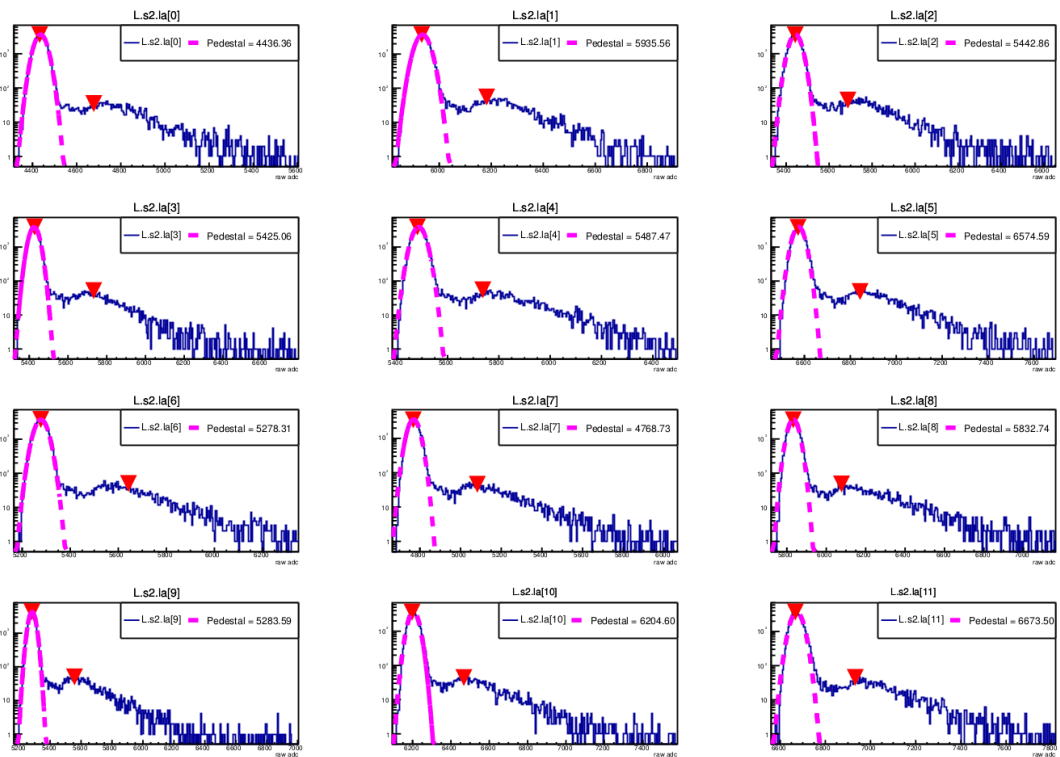
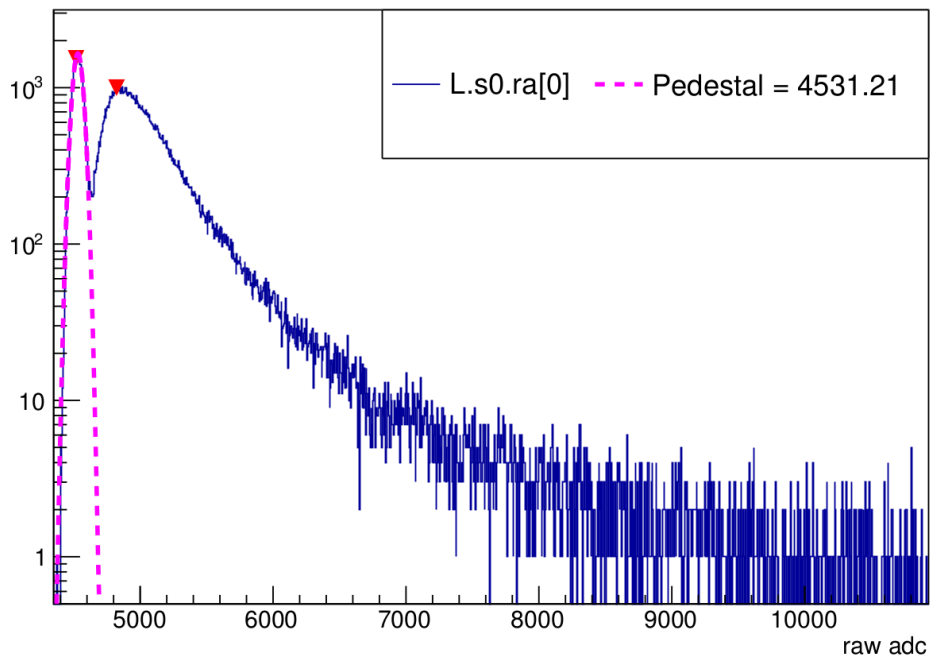
- Use the batch system, with run depended scripts
  - The job generator will double check the access for the root file in volatile
  - If in volatile will generate the job to use said file
  - If the file is not in volatile, it will submit the job with an input of the /mss/ version
- In /mss/...../calibration/
  - Files divided by kin
  - So I made a bash script to scan through the kin run files to determine the correct kin.

# Files not in volatile

- The batch system will then determine if the file is in cache.
- If the file is in cache then, the job gets put in the queue.
- Otherwise, the file gets strapped with a depend status and waits for the files on tape before hopping on the queue.



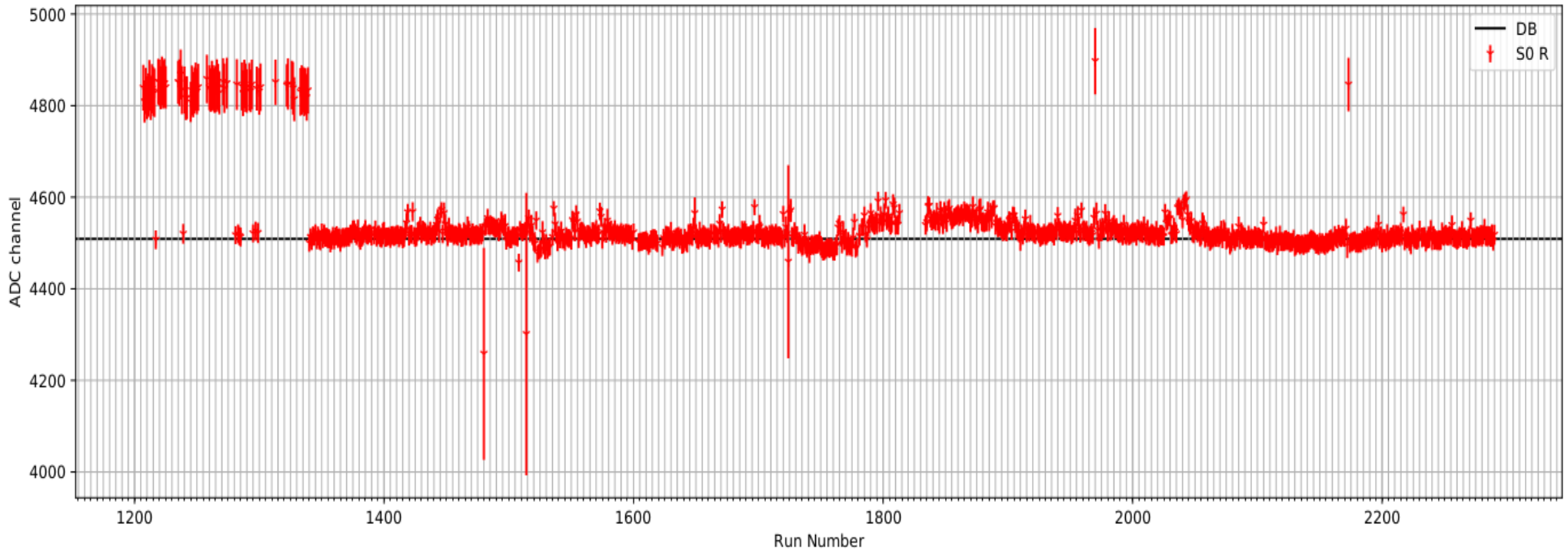
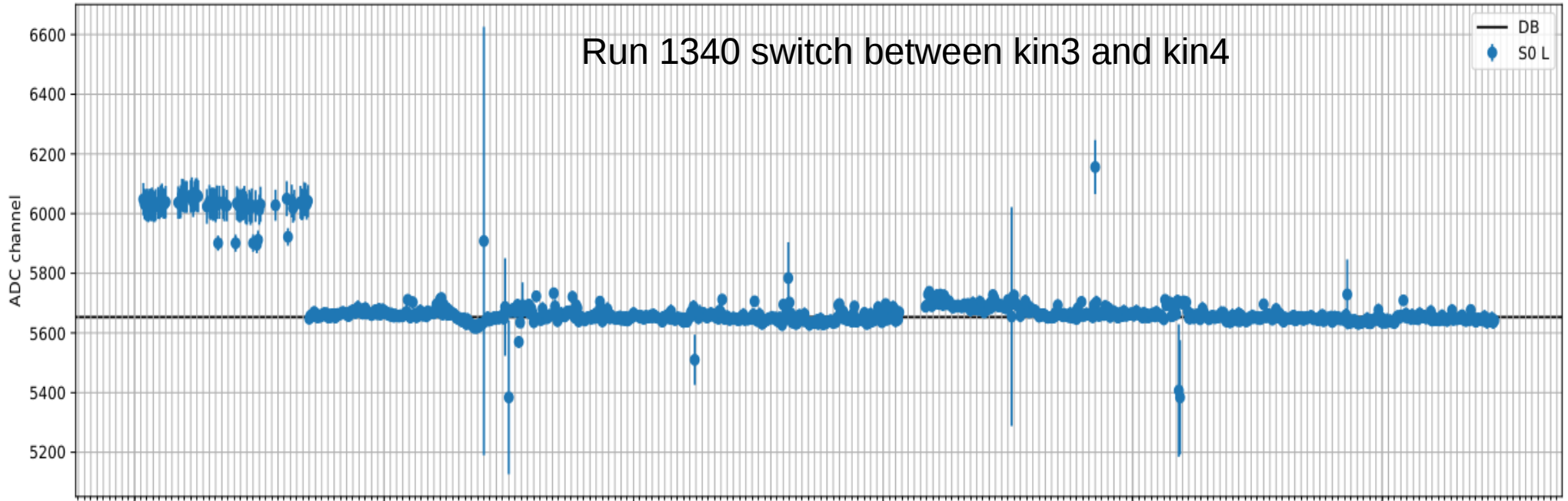
# L.s0.ra[0]



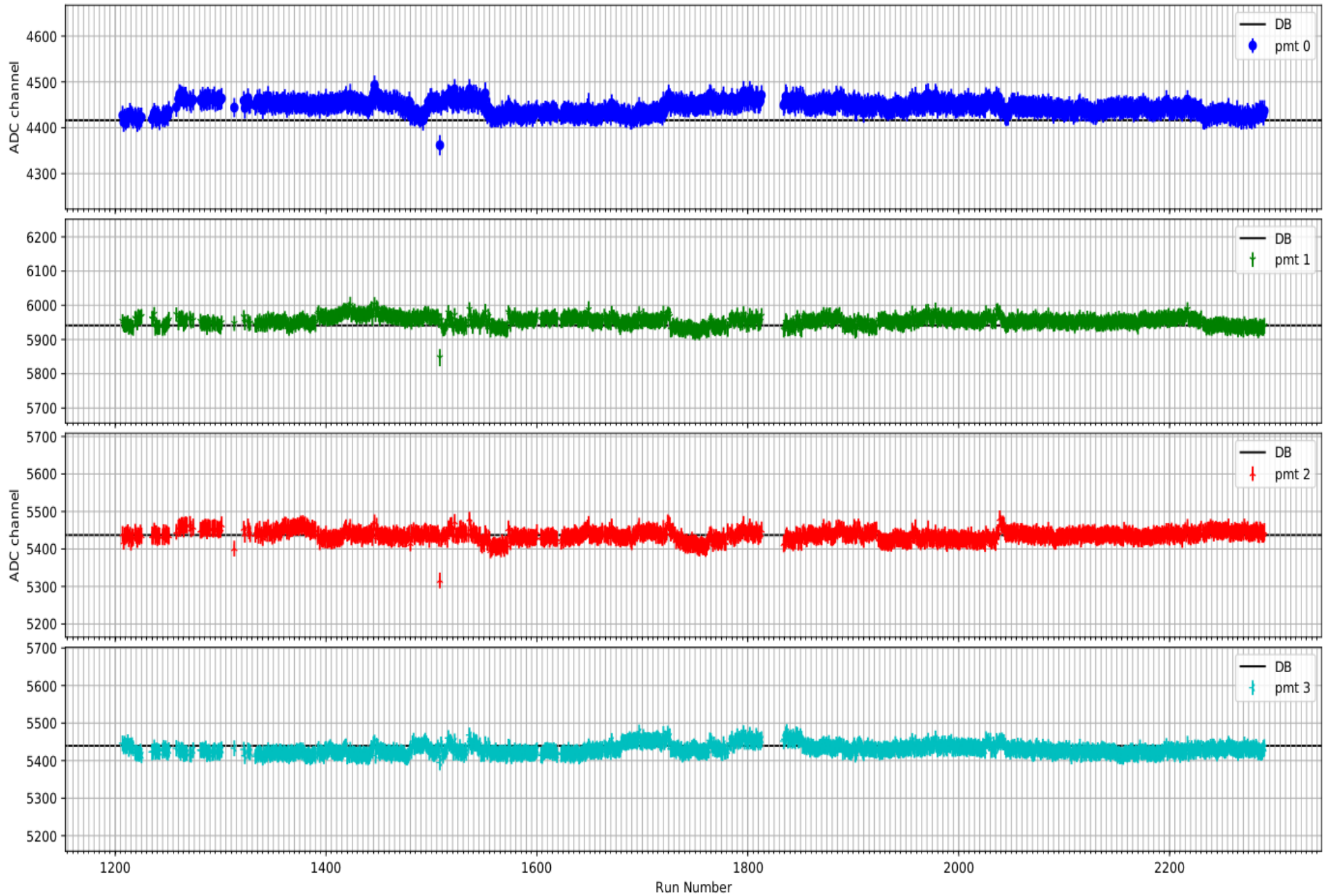
# Python

- Read in the tables of pedestal values from the batch job using python's `read_csv` function
- Manipulate the data arrays to list the pedestal for one PMT over different runs
- Plot those pedestals versus run number
- Add in a line for the DB value of the pedestal.

# S0 Pedestals



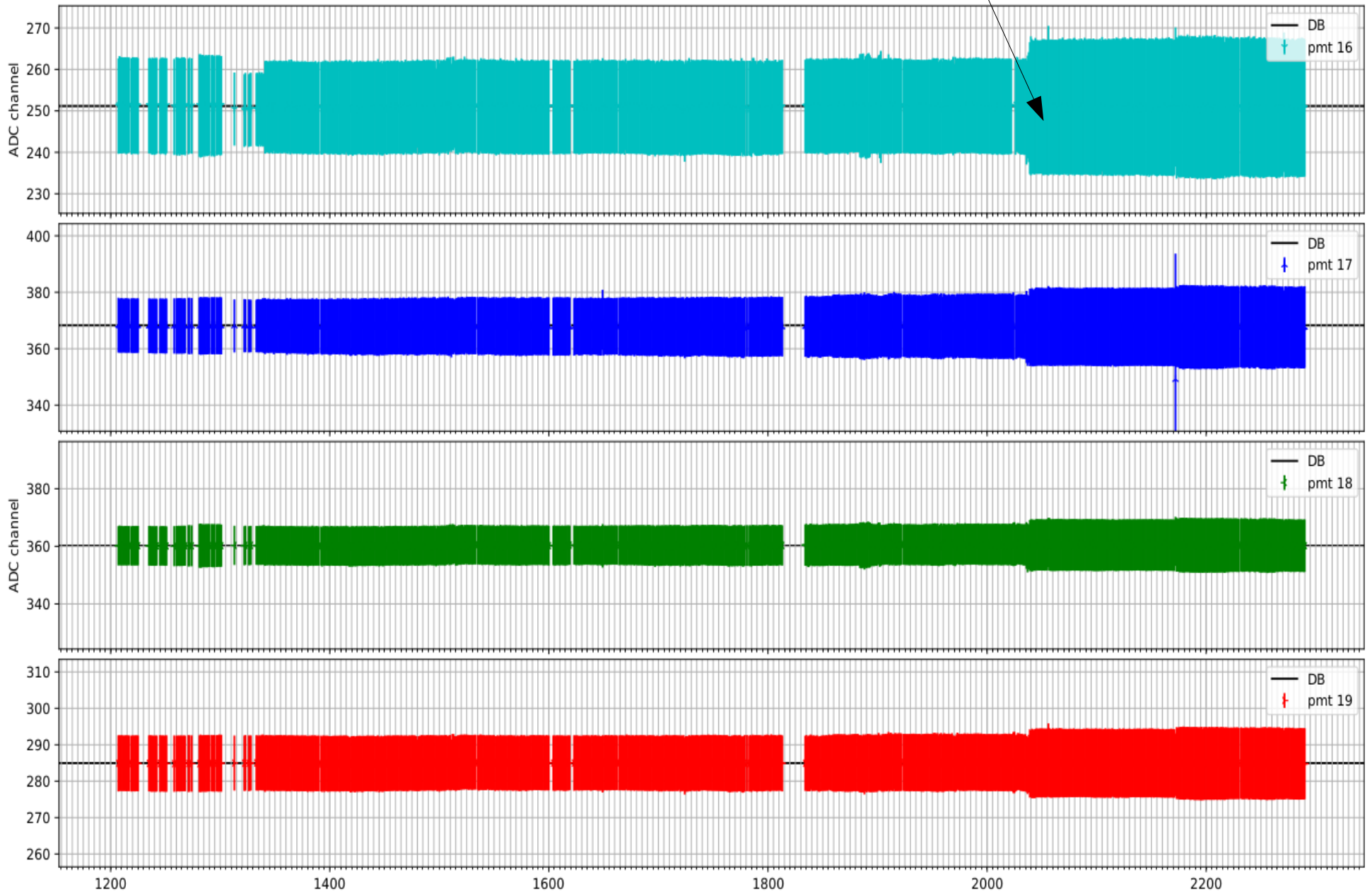
# S2 L pedestals



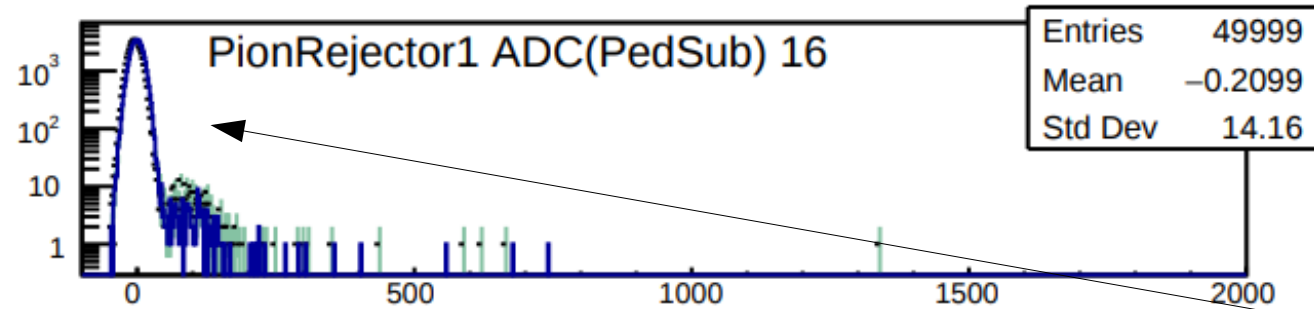
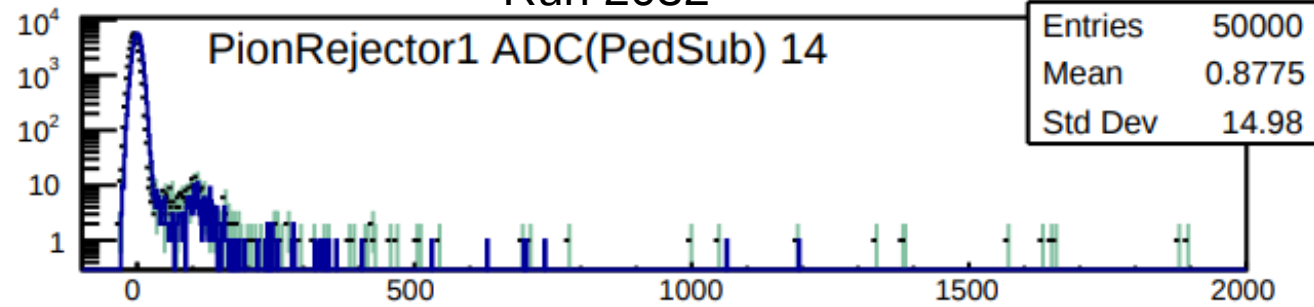


L.pr1.a pedestals

Large increase in fitting error.

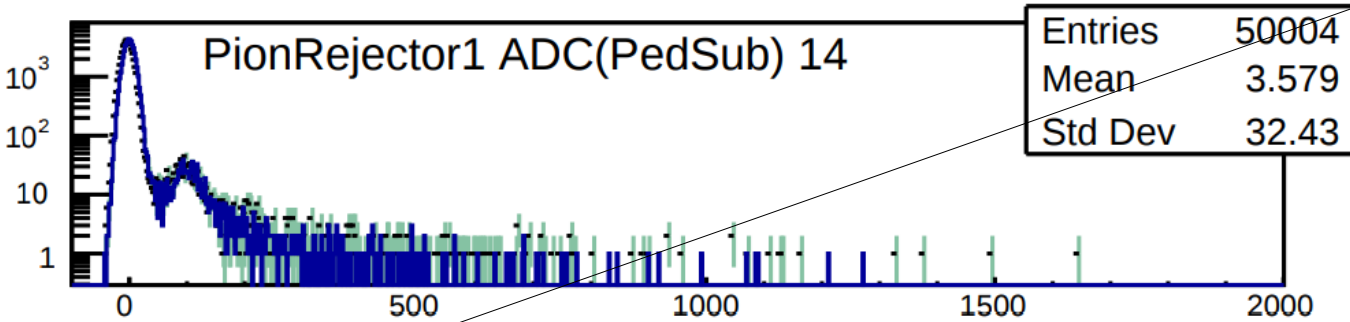


### Run 2032

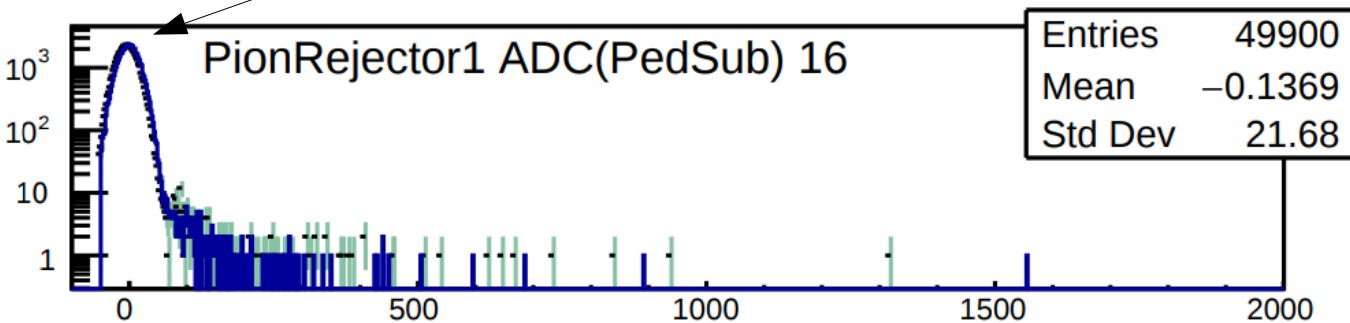


This increase of Pedestal size was noticed before. There was discussion of investigating some of the calorimeter blocks over the summer.

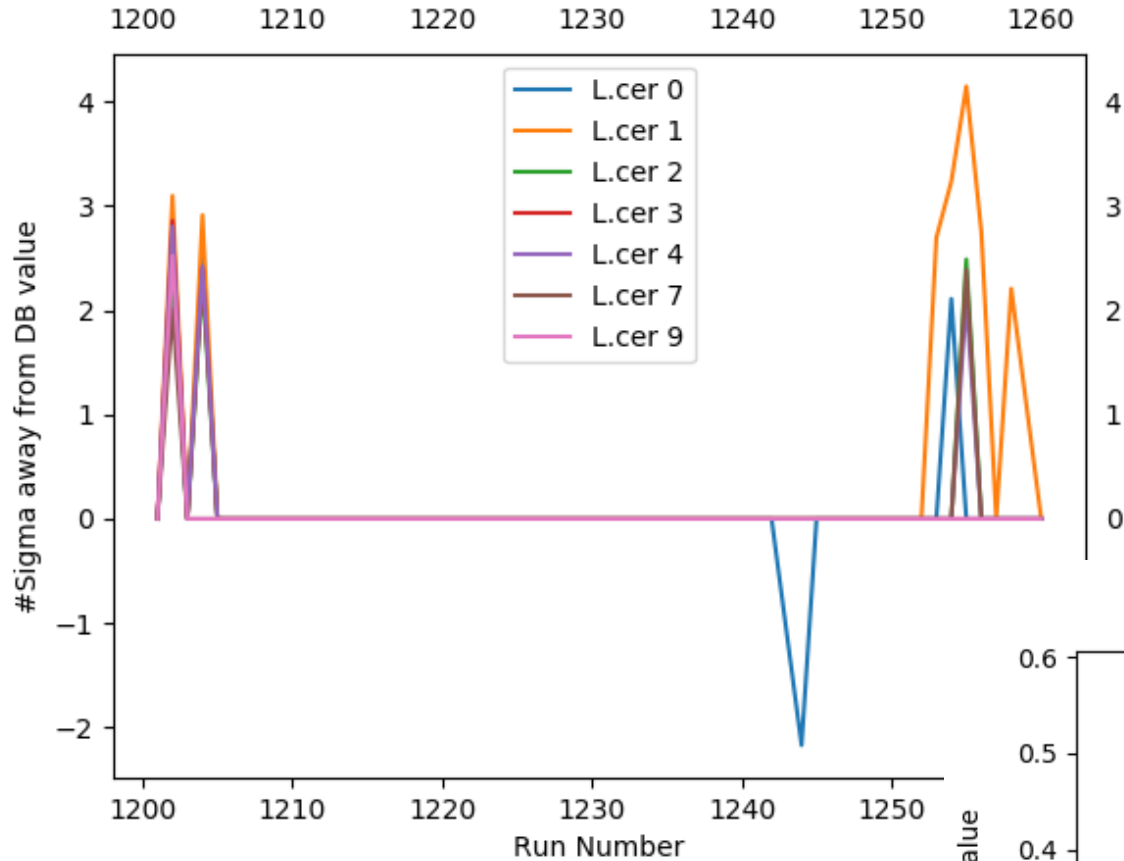
### Run 2600



Looks like, <https://logbooks.jlab.org/entry/3579492>. Addressed all calorimeter blocks

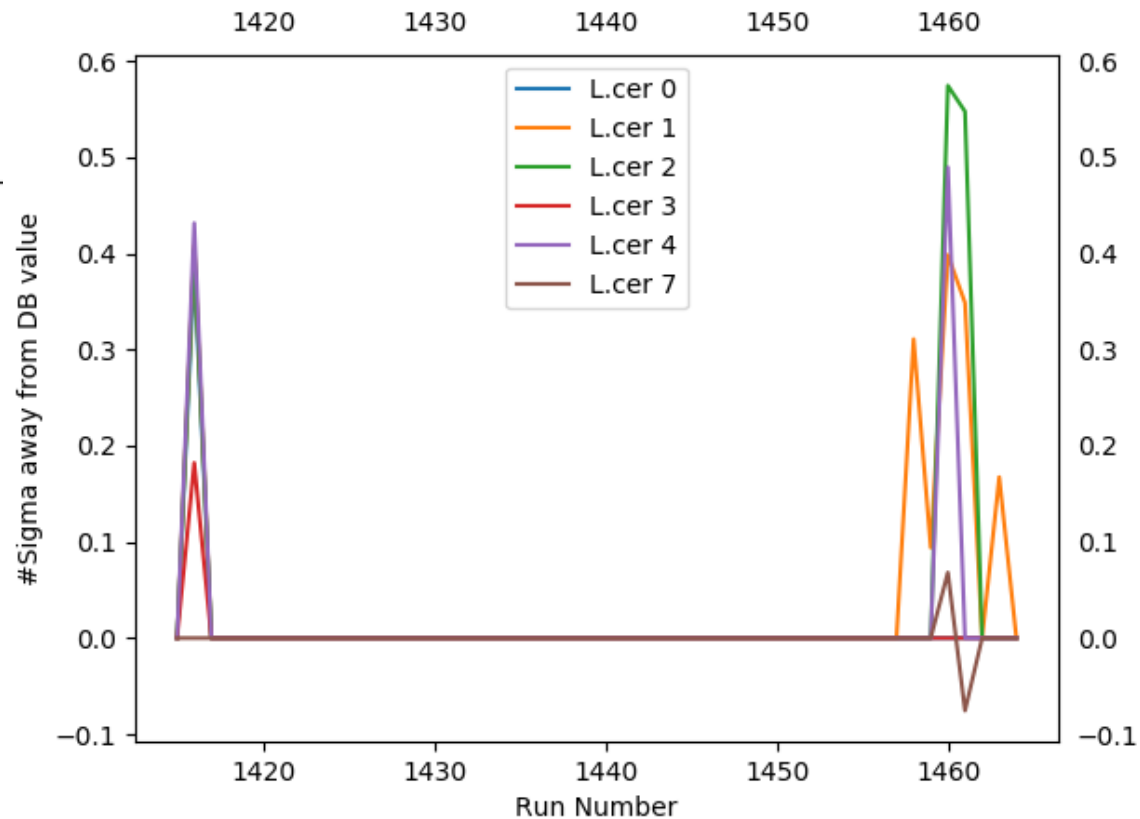


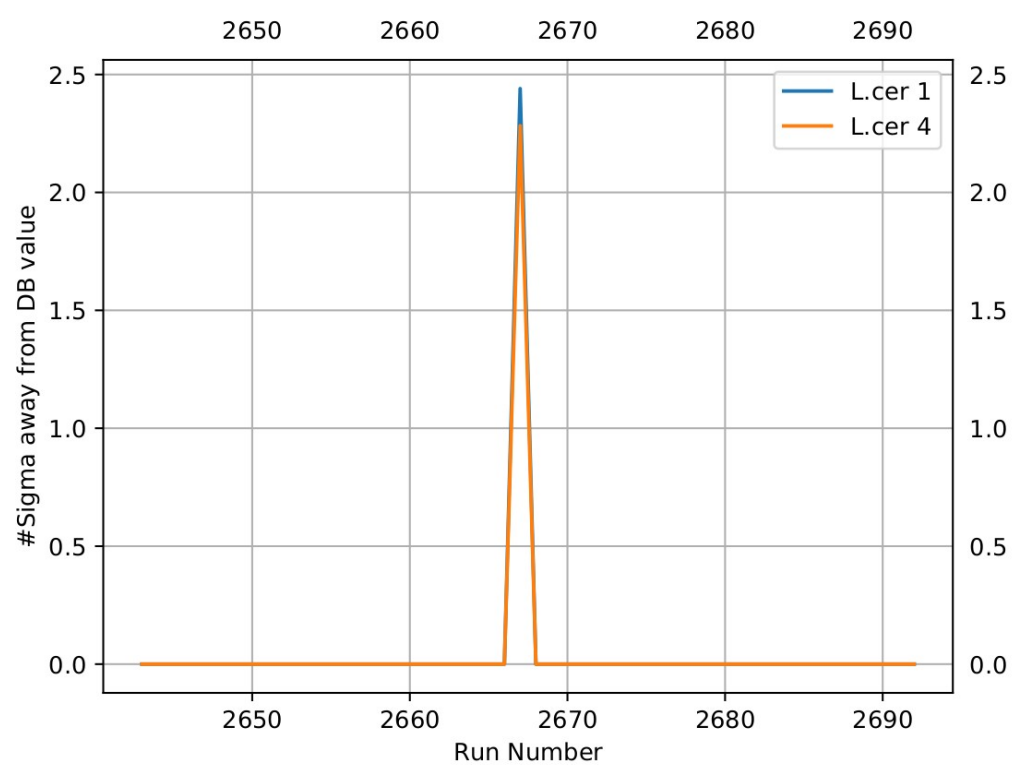
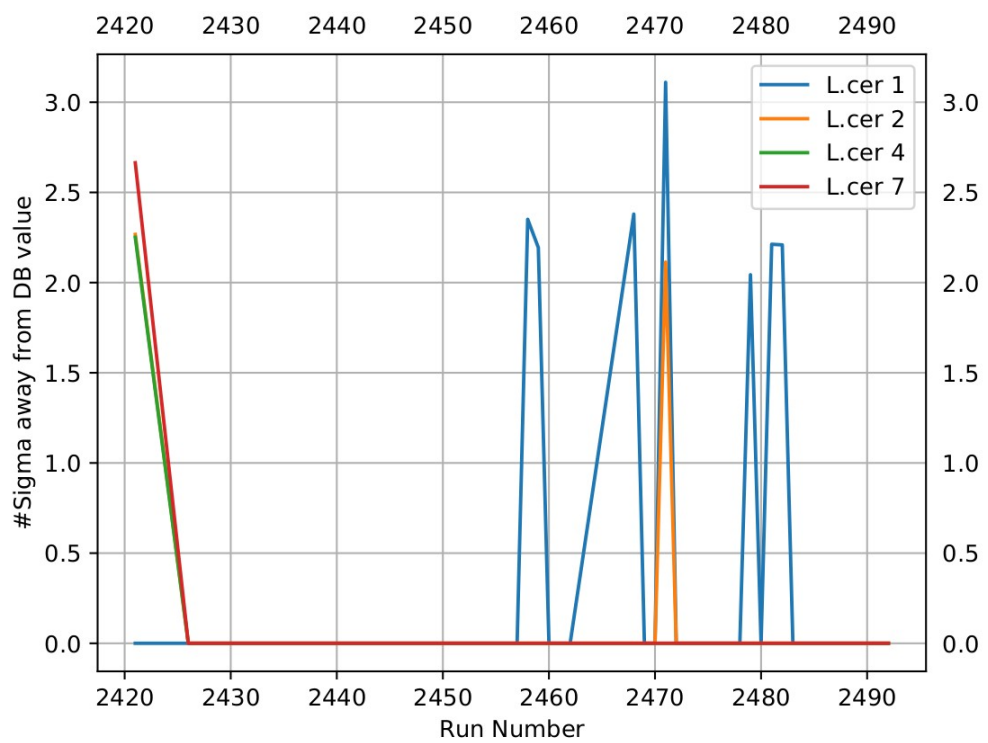
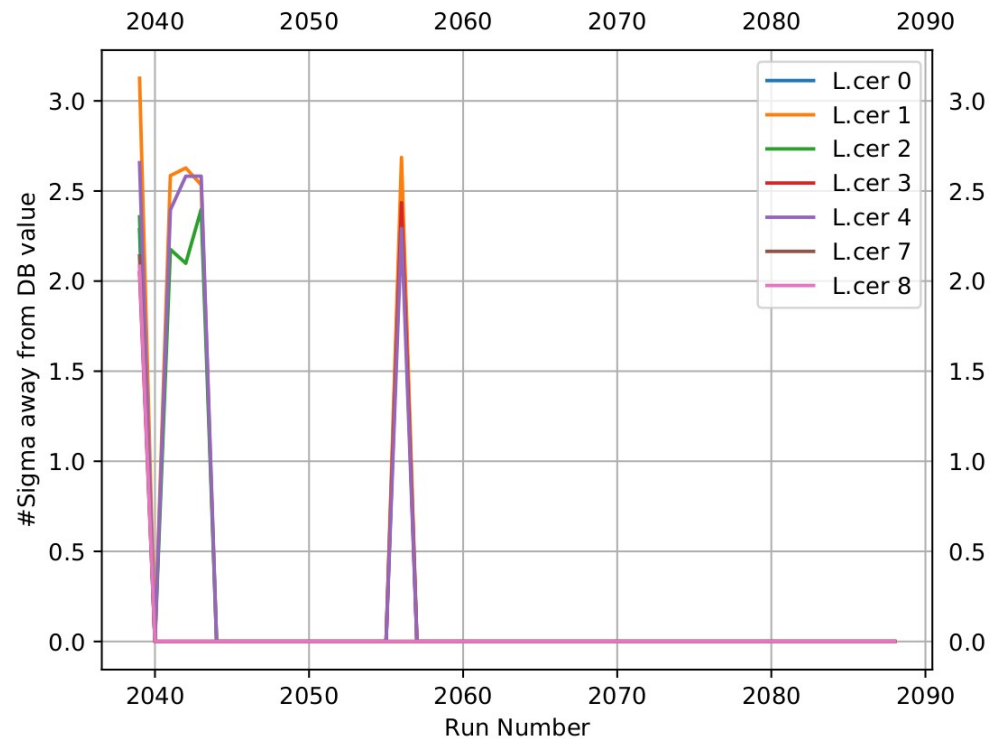
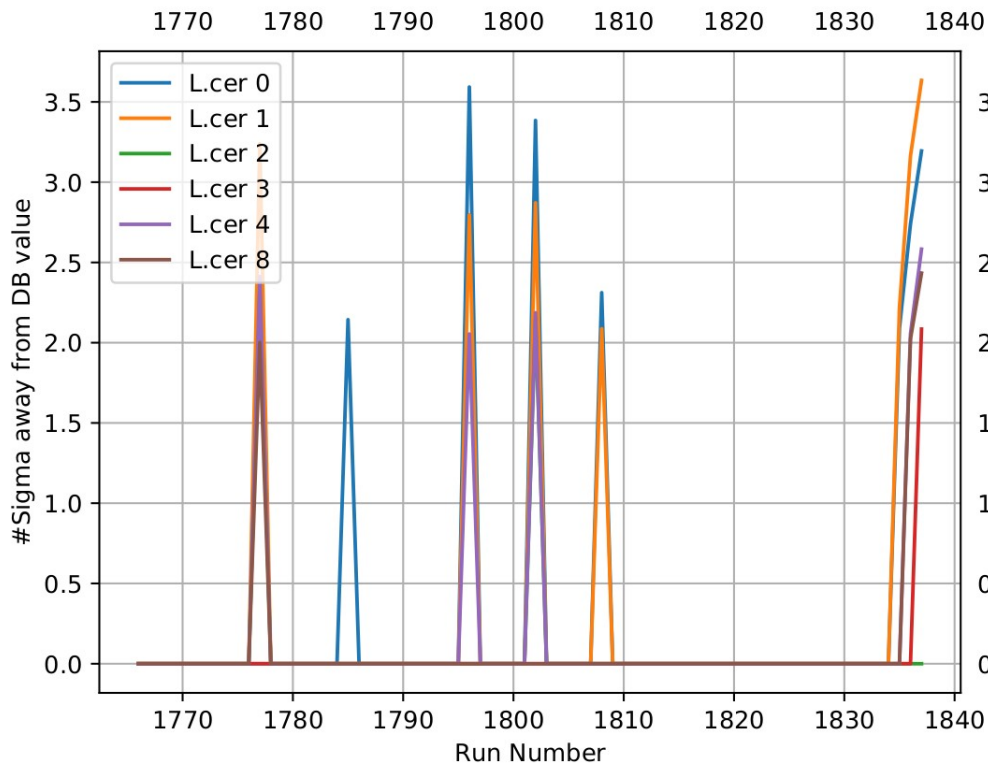
# Identify the outliers



- Pedestals make this list if they are  $2^*$  width of fit from database value

- If I lower the threshold to  $\frac{1}{2}$  of the width. I pick some of the other detectors.





# The runs to note for all adcs

- 1202 1204 1253 1254 1255 1256 1258 1263 1275 1302 1303  
1308 1309 1310 1314 1315 1316 1317 1318 1319 1324 1326  
1330 1332 1337 1341 1345 1419 1445 1446 1497 1509 1510  
1512 1513 1514 1515 1516 1522 1536 1551 1554 1573 1601  
1620 1649 1671 1697 1720 1724 1725 1764 1765 1777 1785  
1796 1802 1808 1835 1836 1837 1838 1840 1841 1842 1843  
1846 1847 1849 1850 1852 1853 1854 1856 1857 1872 1873  
1874 1878 1882 1884 1886 1888 1889 1891 1901 1902 1903  
1904 1905 1914 1940 1956 1959 1969 1971 1978 2026 2027  
2028 2029 2030 2036 2037 2038 2039 2041 2042 2043 2056  
2105 2172 2217 2271 2319 2320 2344 2345 2382 2383 2390  
2396 2409 2411 2412 2413 2421 2458 2459 2468 2471 2479  
2481 2482 2517 2518 2569 2570 2667 2695

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# "L.cer 2"

- 1202 1204 1255 1302 1308 1309 1310 1314  
1317 1318 1419 1445 1446 1514 1516 1522  
1573 1601 1620 1649 1671 1697 1724 1725  
1764 1765 1777 1802 1886 1888 1889 1901  
1904 1905 1959 2026 2027 2028 2029 2030  
2036 2037 2038 2039 2041 2042 2043 2217  
2409 2421 2471 2517 2518 2695

"L.cer 2"

# What's Next

- Investigate the fits for the run of concern.
- Determine if a pedestal adjustment is needed.