Inter-run stability
13590 / 13535

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Runs characteristics

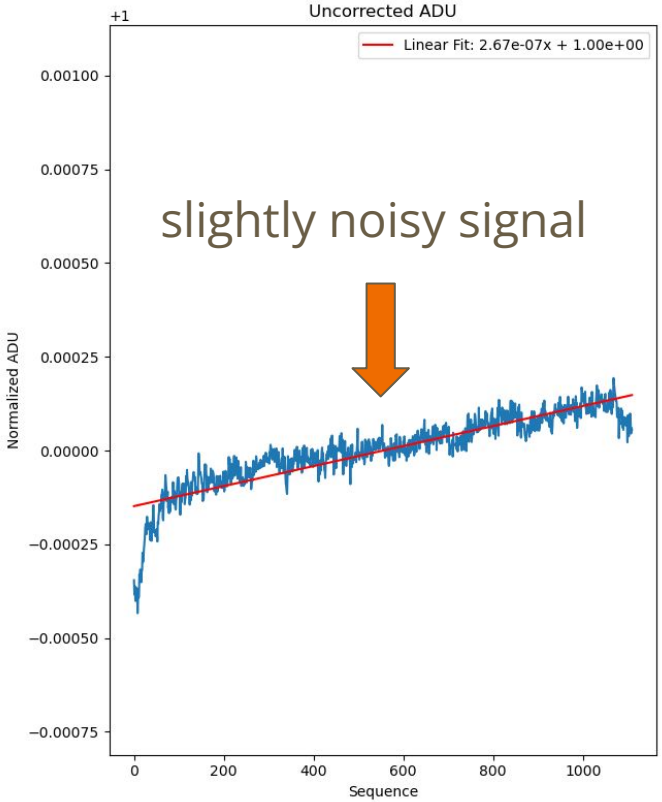
Similarities :

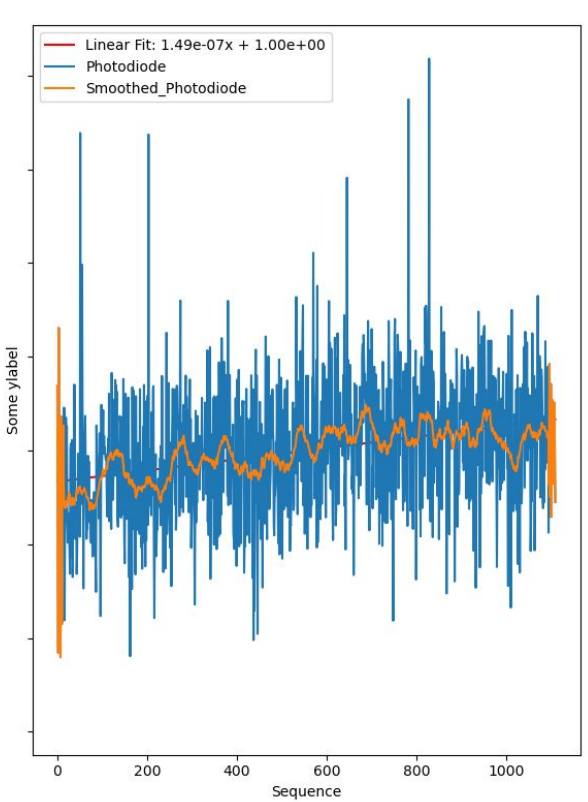
- Stability flat
- CCOB LED : 750 nm
- ~ a day of observations
- more than 1000 obs
- ADU ~ 15000
- ilt configuration

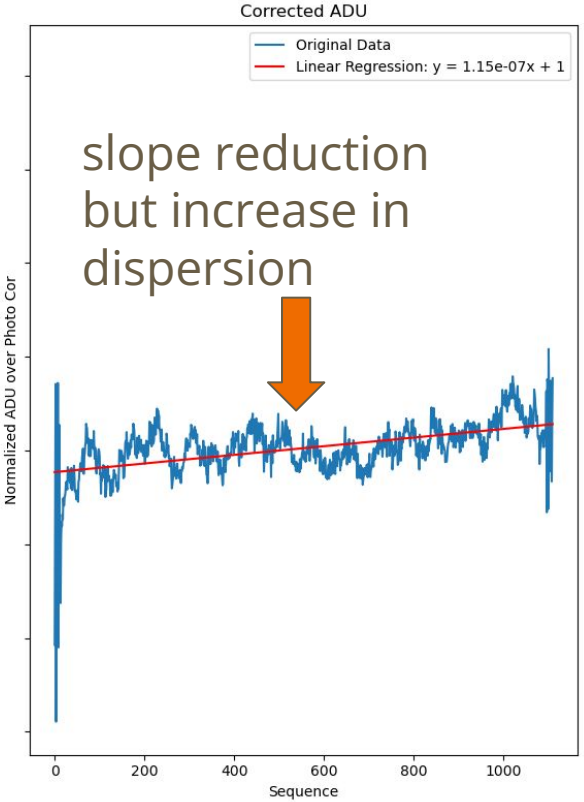
Differences :

- separated by ~ 2 weeks
- e2v configuration

First ADU correction : exemple 13590

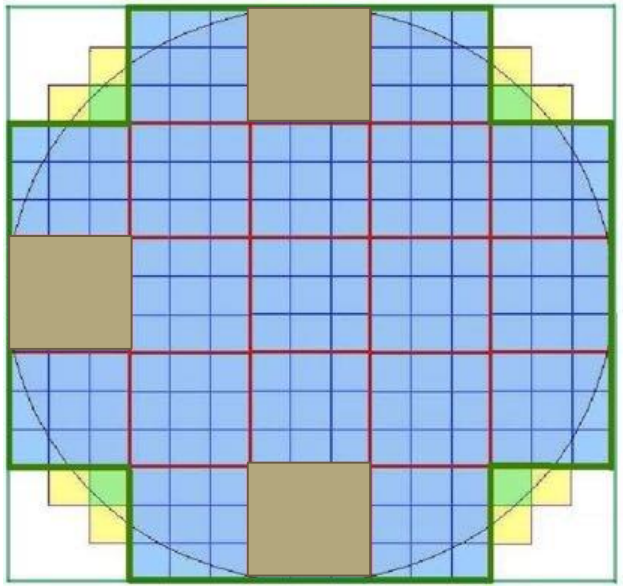


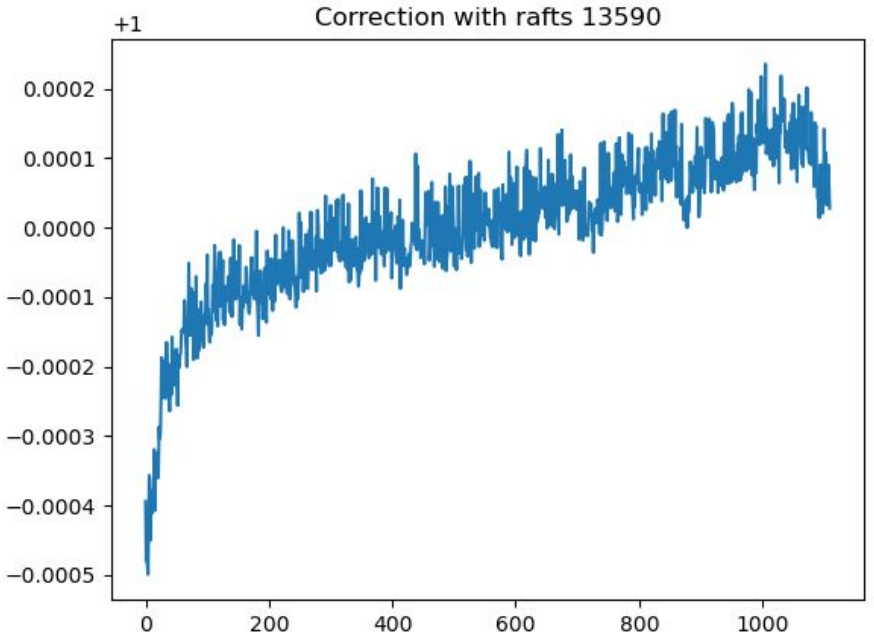




Correction 2 : correction by itl

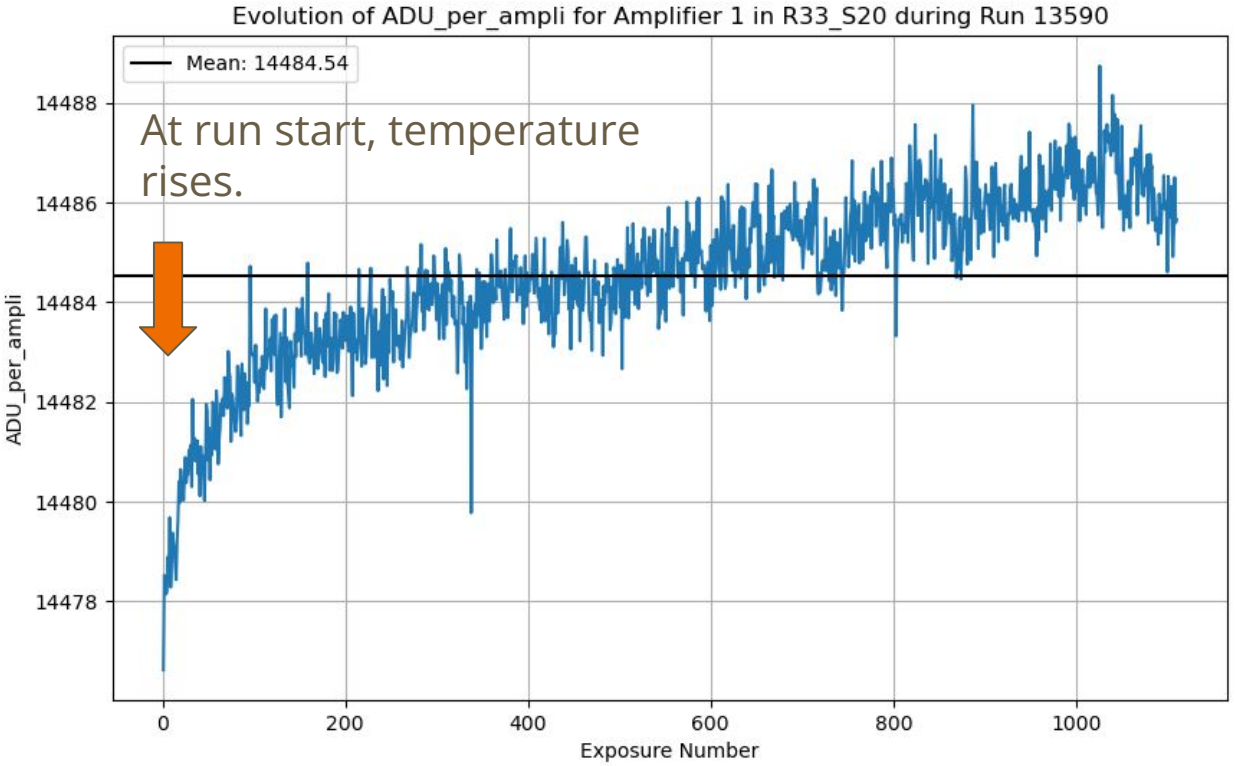
correction rafts = ['R02', 'R20', 'R42'] removing common temp/flux modes





Median ADU across the run for an ampli

This study ignores start/end run effects, focusing on in-run stability.

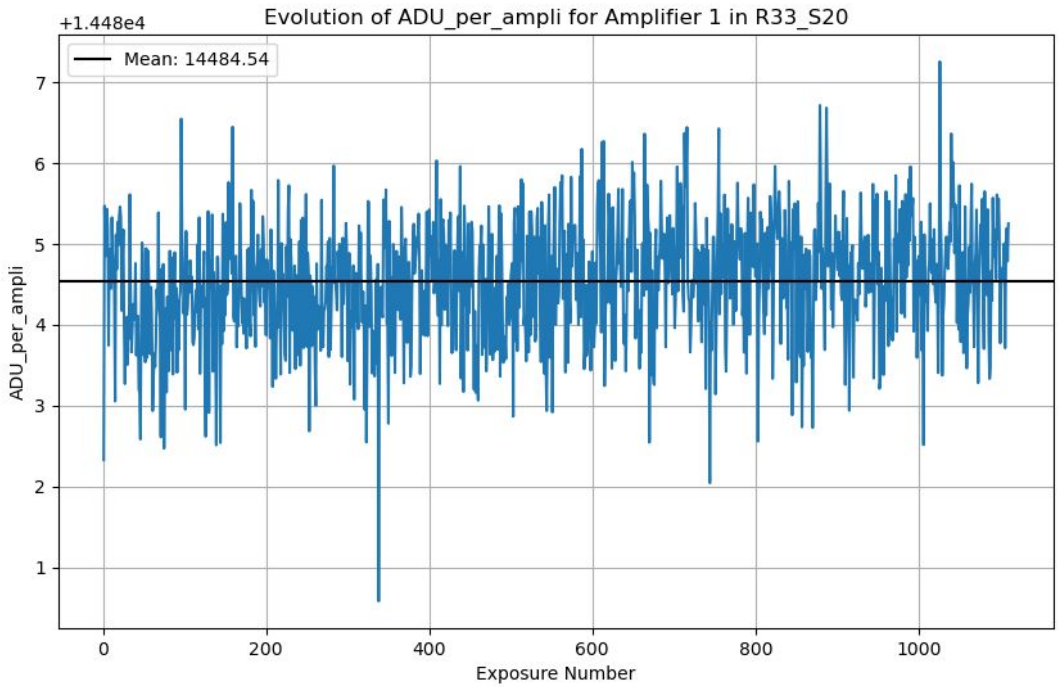


Median ADU corrected by itl rafts

After ITL raft correction :

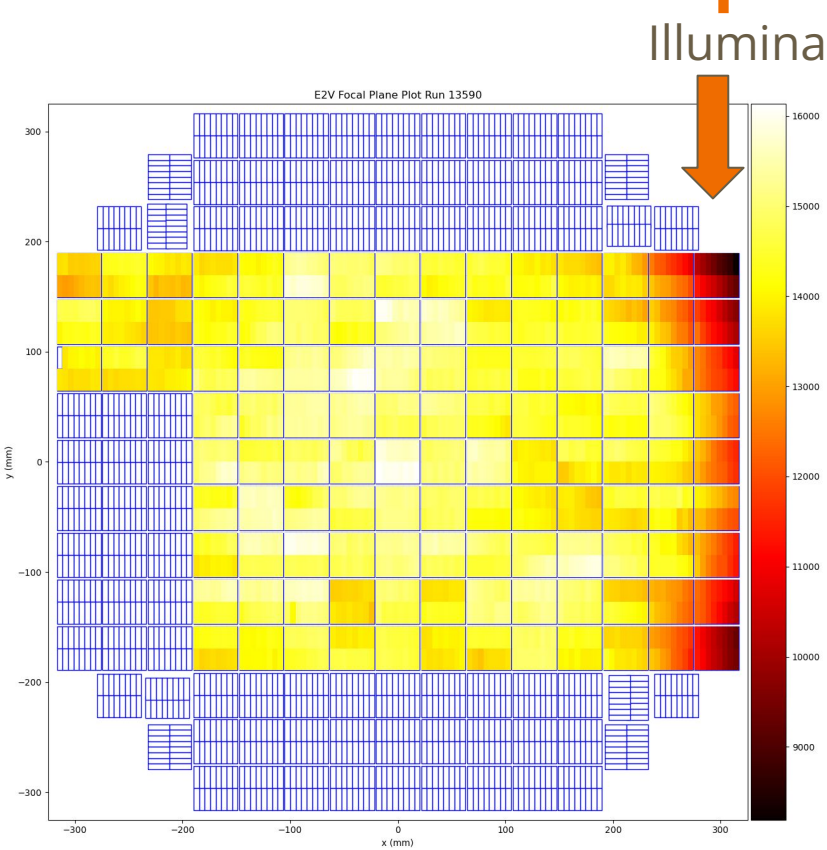
Deviation ~ 2*10^{-}4 during the run

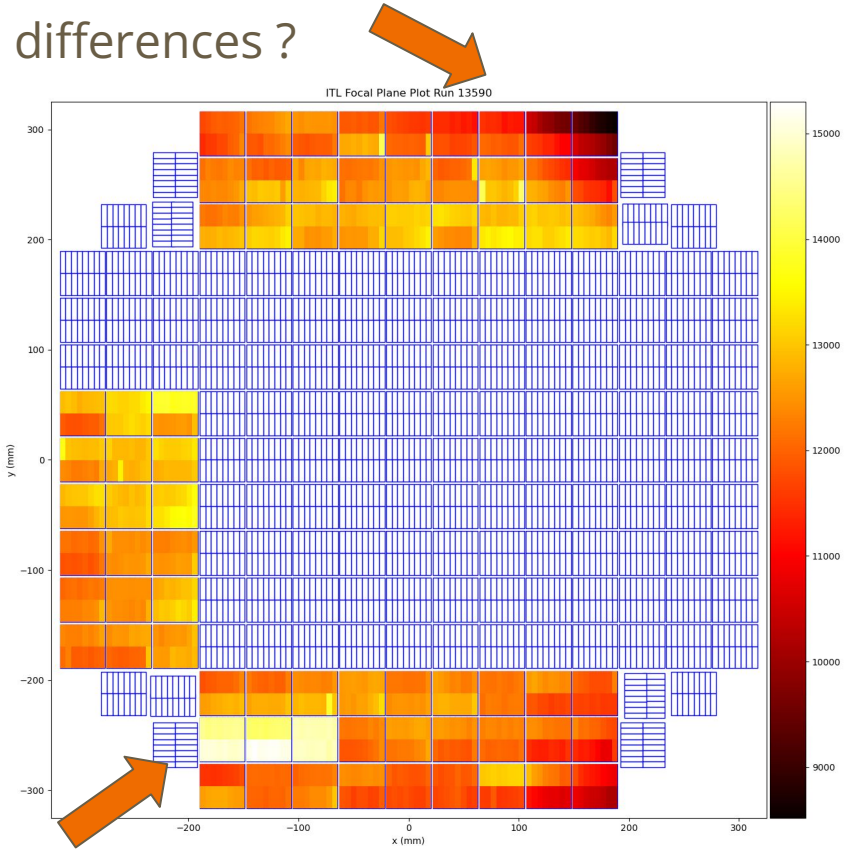
The slope is no longer visible



Corrected ADU on focal plane

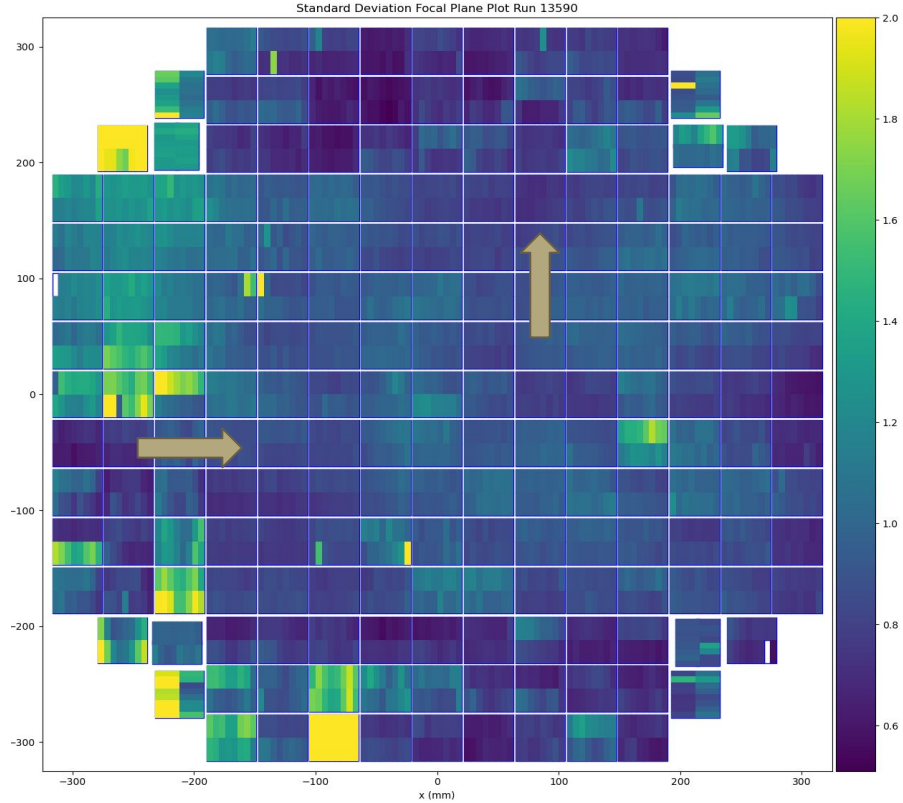
Illumination differences ?

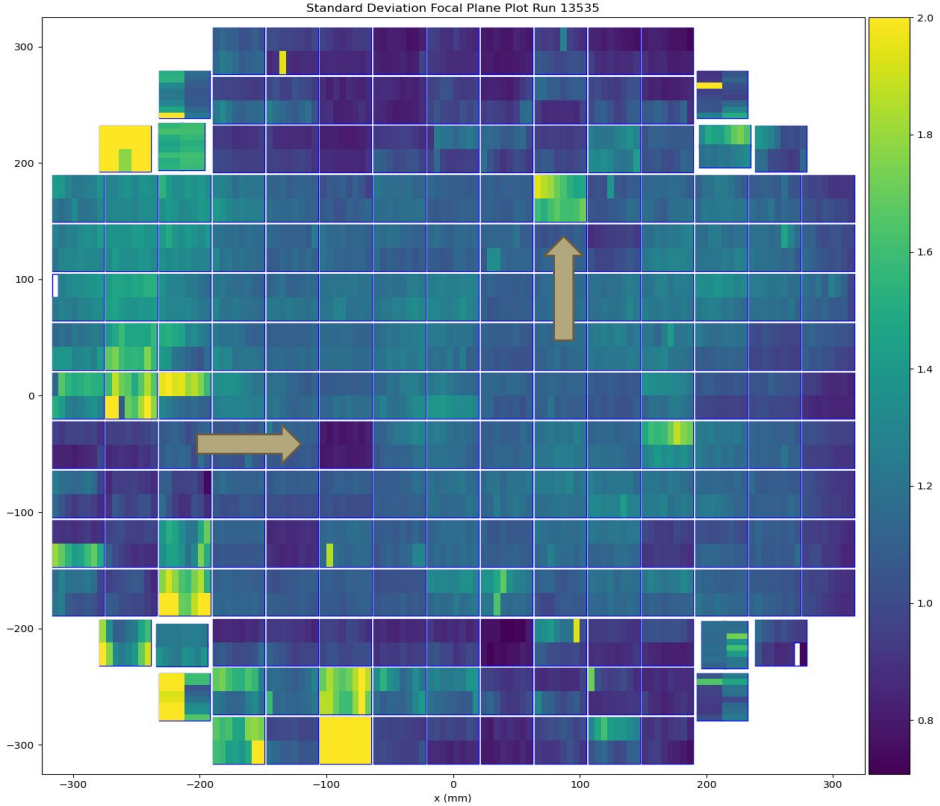




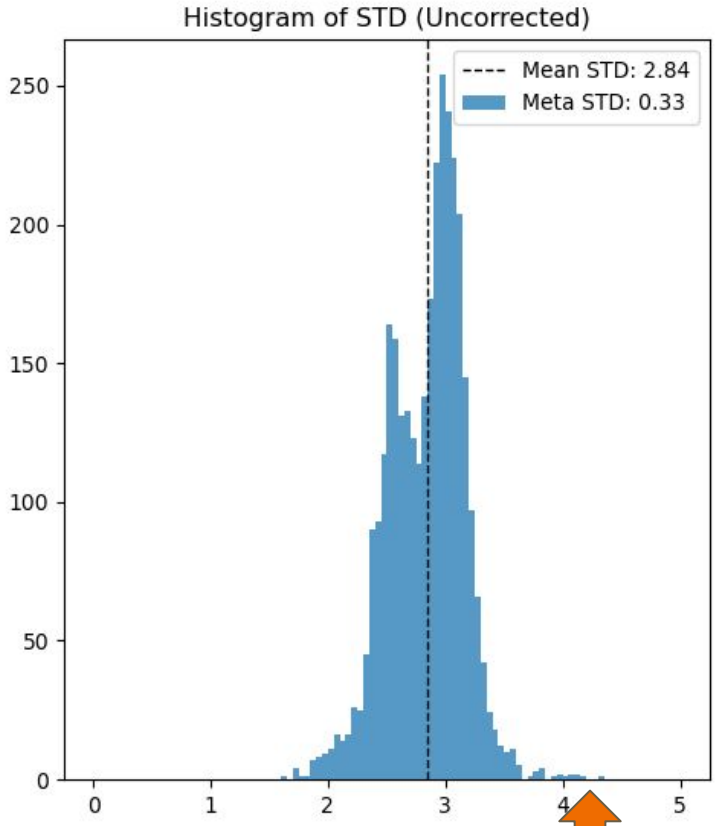
Gain differences

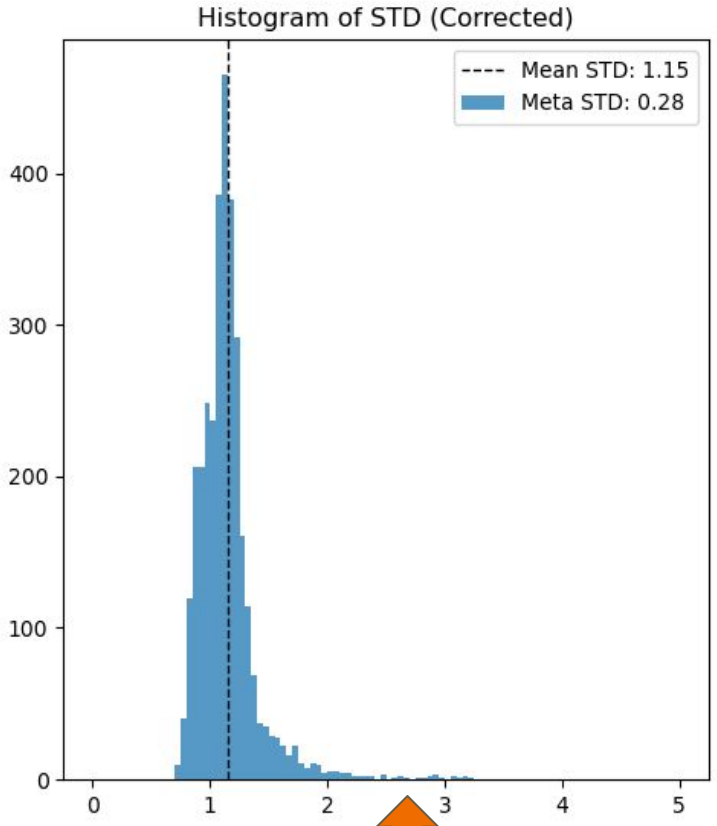
Focal plane std : 13590 and 13535





Histogram of standard deviations

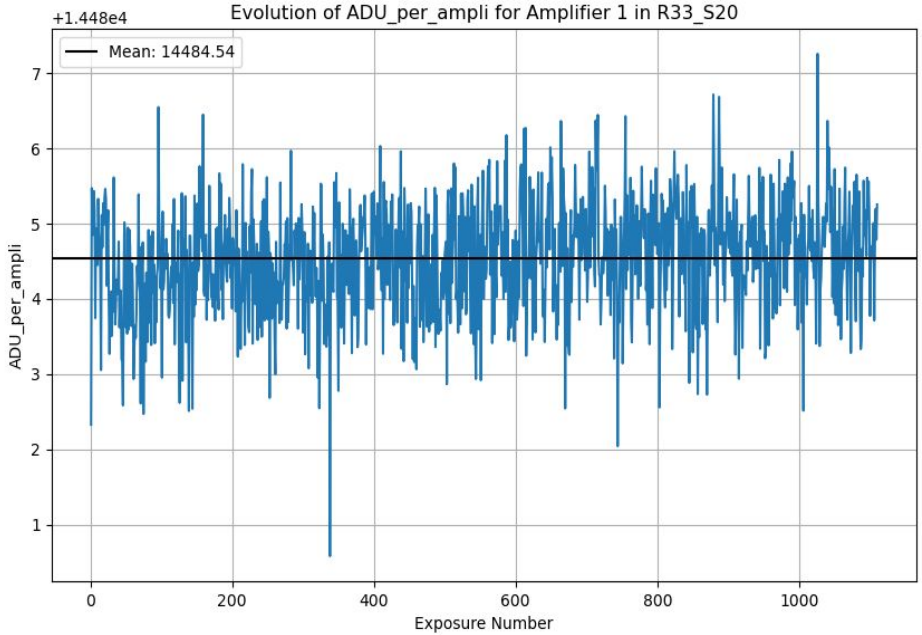




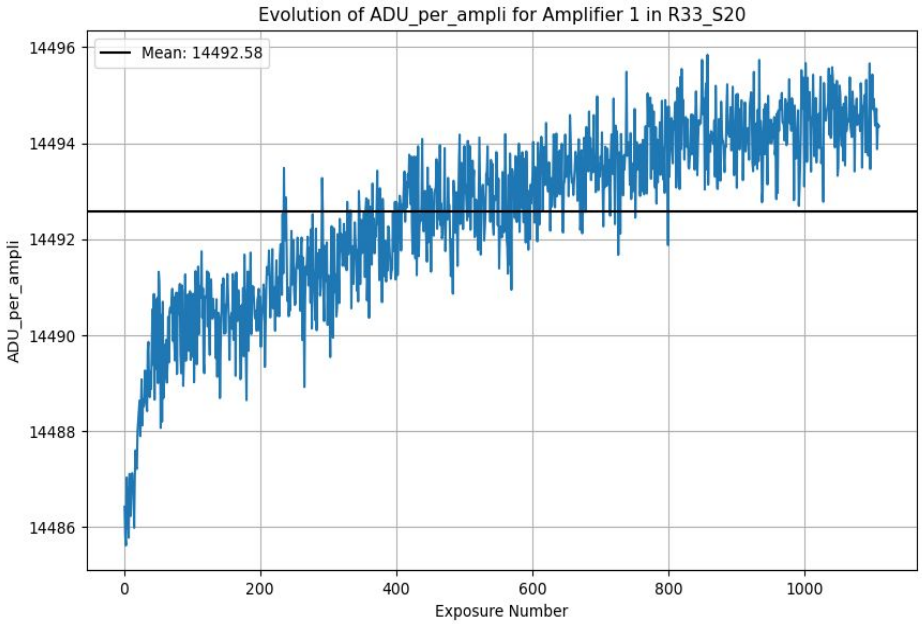
Distribution's tail

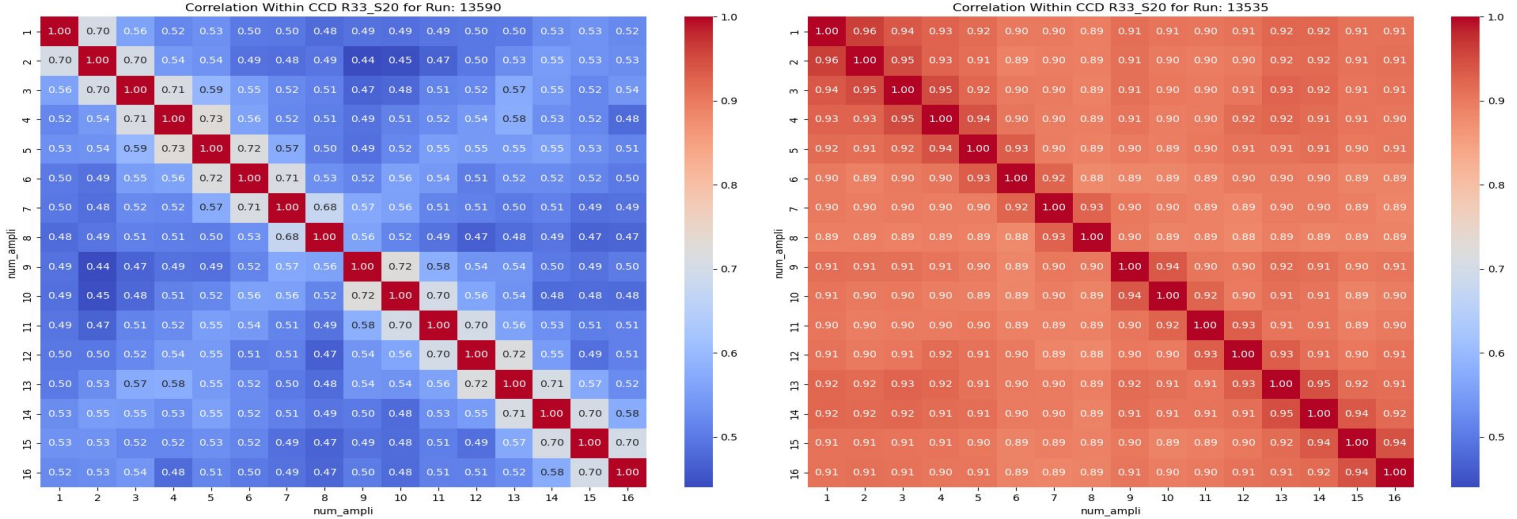
R33_S02

13590



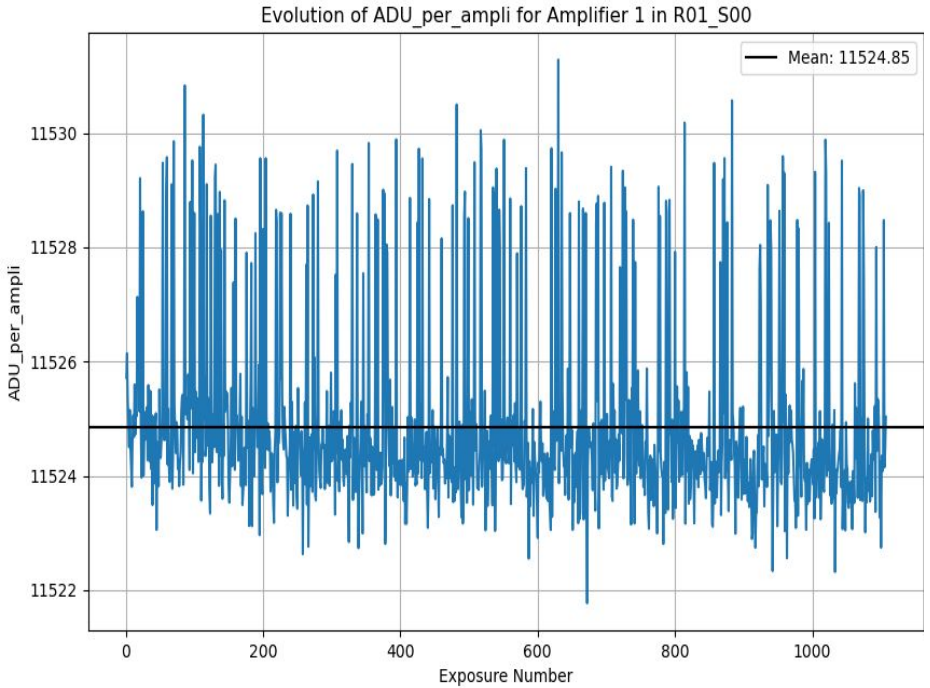
13535



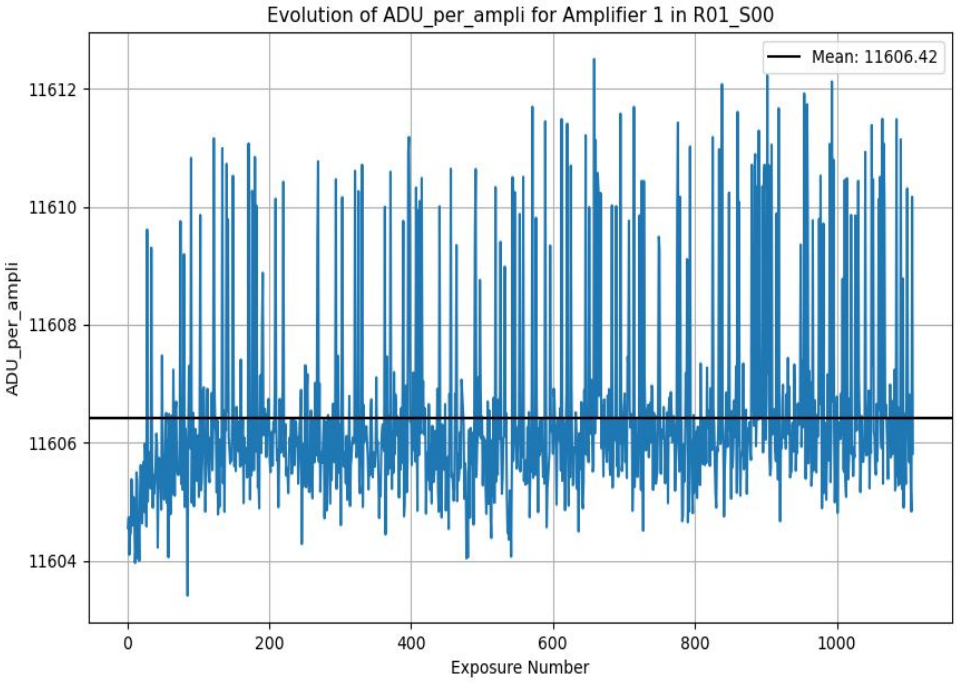

Correlation Within CCD R33_S20 for Run: 13590
num_ampli
1 1.00 0.70 0.56 0.52 0.53 0.50 0.50 0.48 0.49 0.49 0.49 0.50 0.50 0.53 0.53 0.52
2 0.70 1.00 0.70 0.54 0.54 0.49 0.48 0.49 0.44 0.45 0.47 0.50 0.53 0.55 0.53 0.53
3 0.56 0.70 1.00 0.71 0.59 0.55 0.52 0.51 0.47 0.48 0.51 0.52 0.57 0.55 0.52 0.54
4 0.52 0.54 0.71 1.00 0.73 0.56 0.52 0.51 0.49 0.51 0.52 0.54 0.58 0.53 0.52 0.48
5 0.53 0.54 0.59 0.73 1.00 0.72 0.57 0.50 0.49 0.52 0.55 0.55 0.55 0.55 0.53 0.51
6 0.50 0.49 0.55 0.56 0.72 1.00 0.71 0.53 0.52 0.56 0.54 0.51 0.52 0.52 0.52 0.50
7 0.50 0.48 0.52 0.52 0.57 0.71 1.00 0.68 0.57 0.56 0.51 0.51 0.50 0.51 0.49 0.49
8 0.48 0.49 0.51 0.51 0.50 0.53 0.68 1.00 0.56 0.52 0.49 0.47 0.48 0.49 0.47 0.47
9 0.49 0.44 0.47 0.49 0.49 0.52 0.57 0.56 1.00 0.72 0.58 0.54 0.54 0.50 0.49 0.50
10 0.49 0.45 0.48 0.51 0.52 0.56 0.56 0.52 0.72 1.00 0.70 0.56 0.54 0.48 0.48 0.48
11 0.49 0.47 0.51 0.52 0.55 0.54 0.51 0.49 0.58 0.70 1.00 0.70 0.56 0.53 0.51 0.51
12 0.50 0.50 0.52 0.54 0.55 0.51 0.51 0.47 0.54 0.56 0.70 1.00 0.72 0.55 0.49 0.51
13 0.50 0.53 0.57 0.58 0.55 0.52 0.50 0.48 0.54 0.54 0.56 0.72 1.00 0.71 0.57 0.52
14 0.53 0.55 0.55 0.53 0.55 0.52 0.51 0.49 0.50 0.48 0.53 0.55 0.71 1.00 0.70 0.58
15 0.53 0.53 0.52 0.52 0.53 0.52 0.49 0.47 0.49 0.48 0.51 0.49 0.57 0.70 1.00 0.70
16 0.52 0.53 0.54 0.48 0.51 0.50 0.49 0.47 0.50 0.48 0.51 0.51 0.52 0.58 0.70 1.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
num_ampli
1.0 0.9 0.8 0.7 0.6 0.5
Correlation Within CCD R33_S20 for Run: 13535
num_ampli
1 1.00 0.96 0.94 0.93 0.92 0.90 0.90 0.89 0.91 0.91 0.90 0.91 0.92 0.92 0.91 0.91
2 0.96 1.00 0.95 0.93 0.91 0.89 0.90 0.89 0.91 0.90 0.90 0.90 0.92 0.92 0.91 0.91
3 0.94 0.95 1.00 0.95 0.92 0.90 0.90 0.89 0.91 0.90 0.90 0.91 0.93 0.92 0.91 0.91
4 0.93 0.93 0.95 1.00 0.94 0.90 0.90 0.89 0.91 0.90 0.90 0.92 0.92 0.91 0.91 0.90
5 0.92 0.91 0.92 0.94 1.00 0.93 0.90 0.89 0.90 0.89 0.90 0.91 0.91 0.91 0.90 0.91
6 0.90 0.89 0.90 0.90 0.93 1.00 0.92 0.88 0.89 0.89 0.89 0.90 0.90 0.90 0.89 0.89
7 0.90 0.90 0.90 0.90 0.90 0.92 1.00 0.93 0.90 0.90 0.89 0.89 0.90 0.90 0.89 0.89
8 0.89 0.89 0.89 0.89 0.89 0.88 0.93 1.00 0.90 0.89 0.89 0.88 0.89 0.89 0.89 0.89
9 0.91 0.91 0.91 0.91 0.90 0.89 0.90 0.90 1.00 0.94 0.90 0.90 0.92 0.91 0.90 0.91
10 0.91 0.90 0.90 0.90 0.89 0.89 0.90 0.89 0.94 1.00 0.92 0.90 0.91 0.91 0.89 0.90
11 0.90 0.90 0.90 0.90 0.90 0.89 0.89 0.89 0.90 0.92 1.00 0.93 0.91 0.91 0.89 0.90
12 0.91 0.90 0.91 0.92 0.91 0.90 0.89 0.88 0.90 0.90 0.93 1.00 0.93 0.91 0.90 0.91
13 0.92 0.92 0.93 0.92 0.91 0.90 0.90 0.89 0.92 0.91 0.91 0.93 1.00 0.95 0.92 0.91
14 0.92 0.92 0.92 0.91 0.91 0.90 0.90 0.89 0.91 0.91 0.91 0.91 0.95 1.00 0.94 0.92
15 0.91 0.91 0.91 0.91 0.90 0.89 0.89 0.89 0.90 0.89 0.89 0.90 0.92 0.94 1.00 0.94
16 0.91 0.91 0.91 0.90 0.91 0.89 0.89 0.89 0.91 0.90 0.90 0.91 0.91 0.92 0.94 1.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
num_ampli
1.0 0.9 0.8 0.7 0.6 0.5
Correlation Between CCDs for Raft: R33 & Run: 13590
ccd
R33_S00 1.00 0.49 0.57 0.44 0.42 0.38 0.48 0.41 0.45
R33_S01 0.49 1.00 0.48 0.31 0.33 0.30 0.37 0.36 0.33
R33_S02 0.57 0.48 1.00 0.44 0.43 0.41 0.46 0.42 0.44
R33_S10 0.44 0.31 0.44 1.00 0.62 0.57 0.46 0.36 0.46
R33_S11 0.42 0.33 0.43 0.62 1.00 0.54 0.47 0.40 0.41
R33_S12 0.38 0.30 0.41 0.57 0.54 1.00 0.41 0.39 0.43
R33_S20 0.48 0.37 0.46 0.46 0.47 0.41 1.00 0.57 0.54
R33_S21 0.41 0.36 0.42 0.36 0.40 0.39 0.57 1.00 0.52
R33_S22 0.45 0.33 0.44 0.46 0.41 0.43 0.54 0.52 1.00
R33_S00 R33_S01 R33_S02 R33_S10 R33_S11 R33_S12 R33_S20 R33_S21 R33_S22
ccd
1.0 0.9 0.8 0.7 0.6 0.5 0.4
Correlation Between CCDs for Raft: R33 & Run: 13535
ccd
R33_S00 1.00 0.75 0.78 0.73 0.51 0.67 0.55 0.73 0.73
R33_S01 0.75 1.00 0.74 0.65 0.42 0.61 0.50 0.67 0.67
R33_S02 0.78 0.74 1.00 0.70 0.48 0.64 0.54 0.71 0.72
R33_S10 0.73 0.65 0.70 1.00 0.68 0.75 0.52 0.72 0.71
R33_S11 0.51 0.42 0.48 0.68 1.00 0.60 0.42 0.55 0.54
R33_S12 0.67 0.61 0.64 0.75 0.60 1.00 0.47 0.66 0.65
R33_S20 0.55 0.50 0.54 0.52 0.42 0.47 1.00 0.62 0.70
R33_S21 0.73 0.67 0.71 0.72 0.55 0.66 0.62 1.00 0.80
R33_S22 0.73 0.67 0.72 0.71 0.54 0.65 0.70 0.80 1.00
R33_S00 R33_S01 R33_S02 R33_S10 R33_S11 R33_S12 R33_S20 R33_S21 R33_S22
ccd
1.0 0.9 0.8 0.7 0.6 0.5 0.4

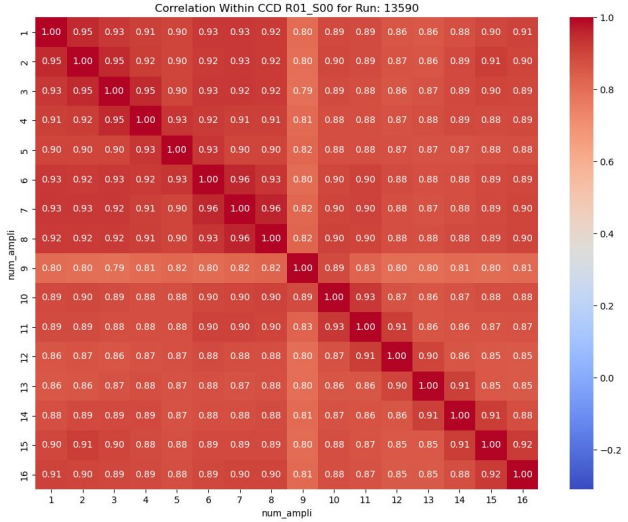
R01_S00

13590



13535




Correlation Within CCD R01_S00 for Run: 13590
num_ampli
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
1.00 0.95 0.93 0.91 0.90 0.93 0.93 0.92 0.80 0.89 0.89 0.86 0.86 0.88 0.90 0.91
0.95 1.00 0.95 0.92 0.90 0.92 0.93 0.92 0.80 0.90 0.89 0.87 0.86 0.89 0.91 0.90
0.93 0.95 1.00 0.95 0.90 0.93 0.92 0.92 0.79 0.89 0.88 0.86 0.87 0.89 0.90 0.89
0.91 0.92 0.95 1.00 0.93 0.92 0.91 0.91 0.81 0.88 0.88 0.87 0.88 0.89 0.88 0.89
0.90 0.90 0.90 0.93 1.00 0.93 0.90 0.90 0.82 0.88 0.88 0.87 0.87 0.87 0.88 0.88
0.93 0.92 0.93 0.92 0.93 1.00 0.96 0.93 0.80 0.90 0.90 0.88 0.88 0.88 0.89 0.89
0.93 0.93 0.92 0.91 0.90 0.96 1.00 0.96 0.82 0.90 0.90 0.88 0.87 0.88 0.89 0.90
0.92 0.92 0.92 0.91 0.90 0.93 0.96 1.00 0.82 0.90 0.90 0.88 0.88 0.88 0.89 0.90
0.80 0.80 0.79 0.81 0.82 0.80 0.82 0.82 1.00 0.89 0.83 0.80 0.80 0.81 0.80 0.81
0.89 0.90 0.89 0.88 0.88 0.90 0.90 0.90 0.89 1.00 0.93 0.87 0.86 0.87 0.88 0.88
0.89 0.89 0.88 0.88 0.88 0.90 0.90 0.90 0.83 0.93 1.00 0.91 0.86 0.86 0.87 0.87
0.86 0.87 0.86 0.87 0.87 0.88 0.88 0.88 0.80 0.87 0.91 1.00 0.90 0.86 0.85 0.85
0.86 0.86 0.87 0.88 0.87 0.88 0.87 0.88 0.80 0.86 0.86 0.90 1.00 0.91 0.85 0.85
0.88 0.89 0.89 0.89 0.87 0.88 0.88 0.88 0.81 0.87 0.86 0.86 0.91 1.00 0.91 0.88
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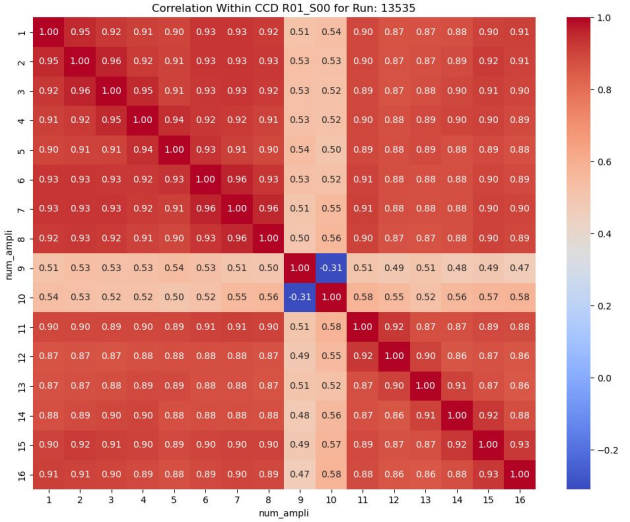
0.91 0.90 0.89 0.89 0.88 0.89 0.90 0.90 0.81 0.88 0.87 0.85 0.85 0.88 0.92 1.00
1.0 0.8 0.6 0.4 0.2 0.0 −0.2


Correlation Within CCD R01_S00 for Run: 13535
num_ampli
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
1.00 0.95 0.92 0.91 0.90 0.93 0.93 0.92 0.51 0.54 0.90 0.87 0.87 0.88 0.90 0.91
0.95 1.00 0.96 0.92 0.91 0.93 0.93 0.93 0.53 0.53 0.90 0.87 0.87 0.89 0.92 0.91
0.92 0.96 1.00 0.95 0.91 0.93 0.93 0.92 0.53 0.52 0.89 0.87 0.88 0.90 0.91 0.90
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0.93 0.93 0.93 0.92 0.93 1.00 0.96 0.93 0.53 0.52 0.91 0.88 0.88 0.88 0.90 0.89
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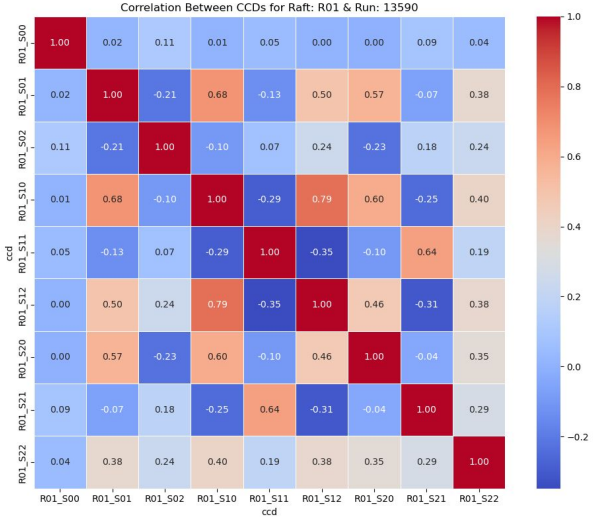
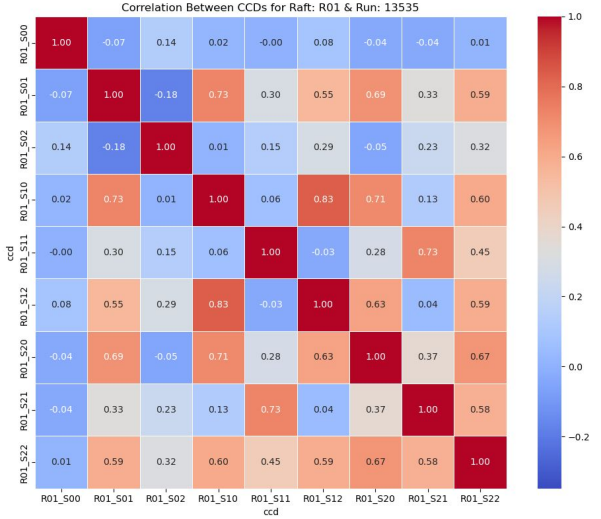
0.92 0.93 0.92 0.91 0.90 0.93 0.96 1.00 0.50 0.56 0.90 0.87 0.87 0.88 0.90 0.89
0.51 0.53 0.53 0.53 0.54 0.53 0.51 0.50 1.00 -0.31 0.51 0.49 0.51 0.48 0.49 0.47
0.54 0.53 0.52 0.52 0.50 0.52 0.55 0.56 -0.31 1.00 0.58 0.55 0.52 0.56 0.57 0.58
0.90 0.90 0.89 0.90 0.89 0.91 0.91 0.90 0.51 0.58 1.00 0.92 0.87 0.87 0.89 0.88
0.87 0.87 0.87 0.88 0.88 0.88 0.88 0.87 0.49 0.55 0.92 1.00 0.90 0.86 0.87 0.86
0.87 0.87 0.88 0.89 0.89 0.88 0.88 0.87 0.51 0.52 0.87 0.90 1.00 0.91 0.87 0.86
0.88 0.89 0.90 0.90 0.88 0.88 0.88 0.88 0.48 0.56 0.87 0.86 0.91 1.00 0.92 0.88
0.90 0.92 0.91 0.90 0.89 0.90 0.90 0.90 0.49 0.57 0.89 0.87 0.87 0.92 1.00 0.93
0.91 0.91 0.90 0.89 0.88 0.89 0.90 0.89 0.47 0.58 0.88 0.86 0.86 0.88 0.93 1.00
1.0 0.8 0.6 0.4 0.2 0.0 −0.2


Correlation Between CCDs for Raft: R01 & Run: 13590
ccd
R01_S00 R01_S01 R01_S02 R01_S10 R01_S11 R01_S12 R01_S20 R01_S21 R01_S22
1.00 0.02 0.11 0.01 0.05 0.00 0.00 0.09 0.04
0.02 1.00 -0.21 0.68 -0.13 0.50 0.57 -0.07 0.38
0.11 -0.21 1.00 -0.10 0.07 0.24 -0.23 0.18 0.24
0.01 0.68 -0.10 1.00 -0.29 0.79 0.60 -0.25 0.40
0.05 -0.13 0.07 -0.29 1.00 -0.35 -0.10 0.64 0.19
0.00 0.50 0.24 0.79 -0.35 1.00 0.46 -0.31 0.38
0.00 0.57 -0.23 0.60 -0.10 0.46 1.00 -0.04 0.35
0.09 -0.07 0.18 -0.25 0.64 -0.31 -0.04 1.00 0.29
0.04 0.38 0.24 0.40 0.19 0.38 0.35 0.29 1.00
1.0 0.8 0.6 0.4 0.2 0.0 −0.2


Correlation Between CCDs for Raft: R01 & Run: 13535
ccd
R01_S00 R01_S01 R01_S02 R01_S10 R01_S11 R01_S12 R01_S20 R01_S21 R01_S22
1.00 -0.07 0.14 0.02 -0.00 0.08 -0.04 -0.04 0.01
-0.07 1.00 -0.18 0.73 0.30 0.55 0.69 0.33 0.59
0.14 -0.18 1.00 0.01 0.15 0.29 -0.05 0.23 0.32
0.02 0.73 0.01 1.00 0.06 0.83 0.71 0.13 0.60
-0.00 0.30 0.15 0.06 1.00 -0.03 0.28 0.73 0.45
0.08 0.55 0.29 0.83 -0.03 1.00 0.63 0.04 0.59
-0.04 0.69 -0.05 0.71 0.28 0.63 1.00 0.37 0.67
-0.04 0.33 0.23 0.13 0.73 0.04 0.37 1.00 0.58
0.01 0.59 0.32 0.60 0.45 0.59 0.67 0.58 1.00
1.0 0.8 0.6 0.4 0.2 0.0 −0.2

13590 on 13535

13590 appears more stable than **13535**

There are several points remaining to be studied