CO2 leak test progress

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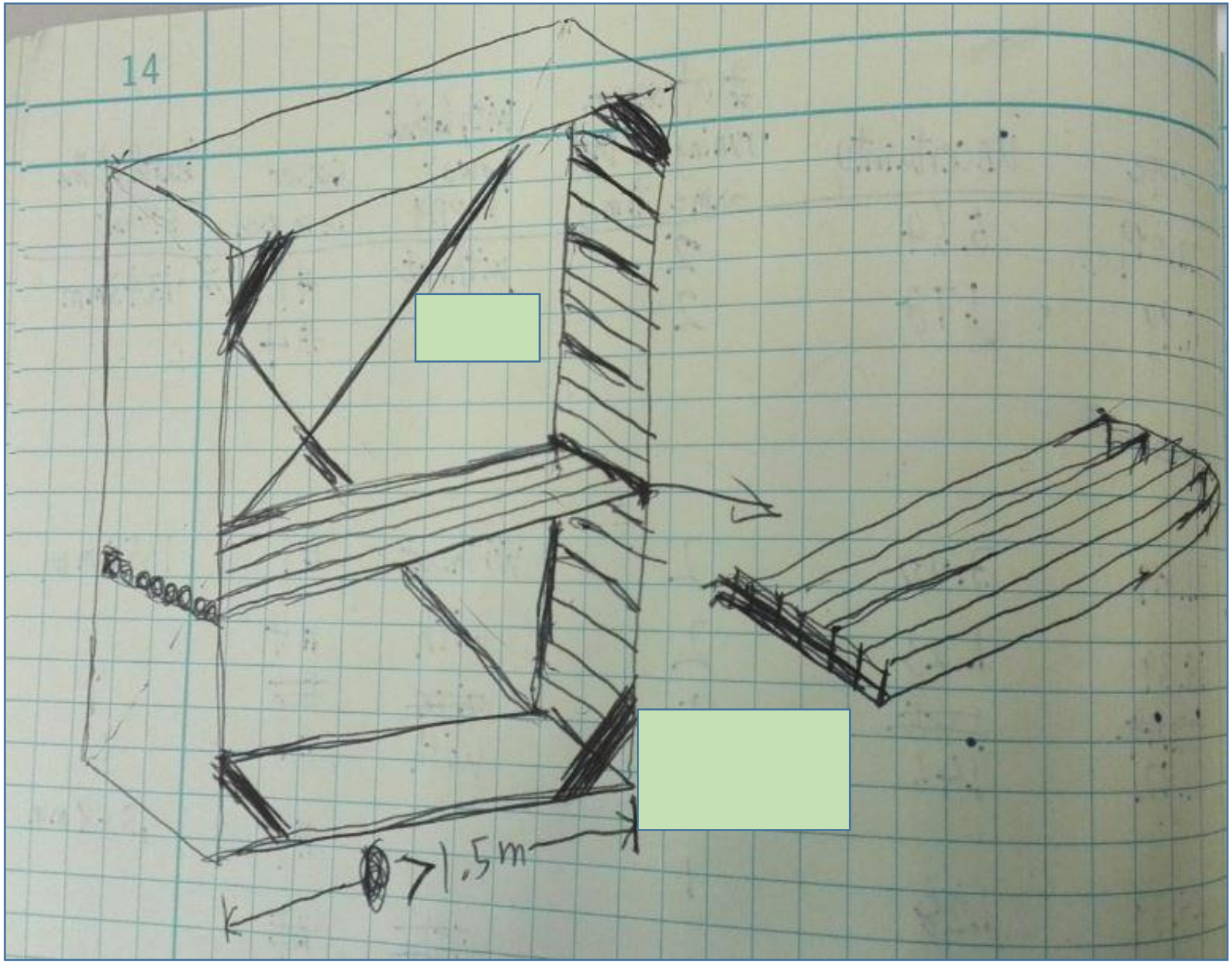
Straw shelf design



It would be best to make a drawer which can be get out smoothly.

If we can't, we can just make each board fixed.

If there are lots of straws need to be stored, we can add more board in the cabinet and draw a hole for each straw on the left side or right side.

We may also get the straw out from the back side of the shelf.

Chamber #2 leak test result

```
Please input name of input file : 0.txt
Number of sensors running:1
            Number of -1     -1 percentage
Sensor #2       0                0%
**************  871 data for each sensor in total    **************

For oringinal data:          slope
Sensor #2 :                 -3.0253

                Sigma        reduced chi square
Sensor #2       10.5469      1.00046
*****************************************************************************
*The data beyond 3 sigma from the fitted line has been deleted.*
*****************************************************************************

Please type in the interval and the step(minutes):90 90

Sensor #2 slope and uncertainty table:
start       slope          uncertainty
  0         -3.04          1.32
 90         -0.70          1.26
Over all:  -3.09          0.34
```

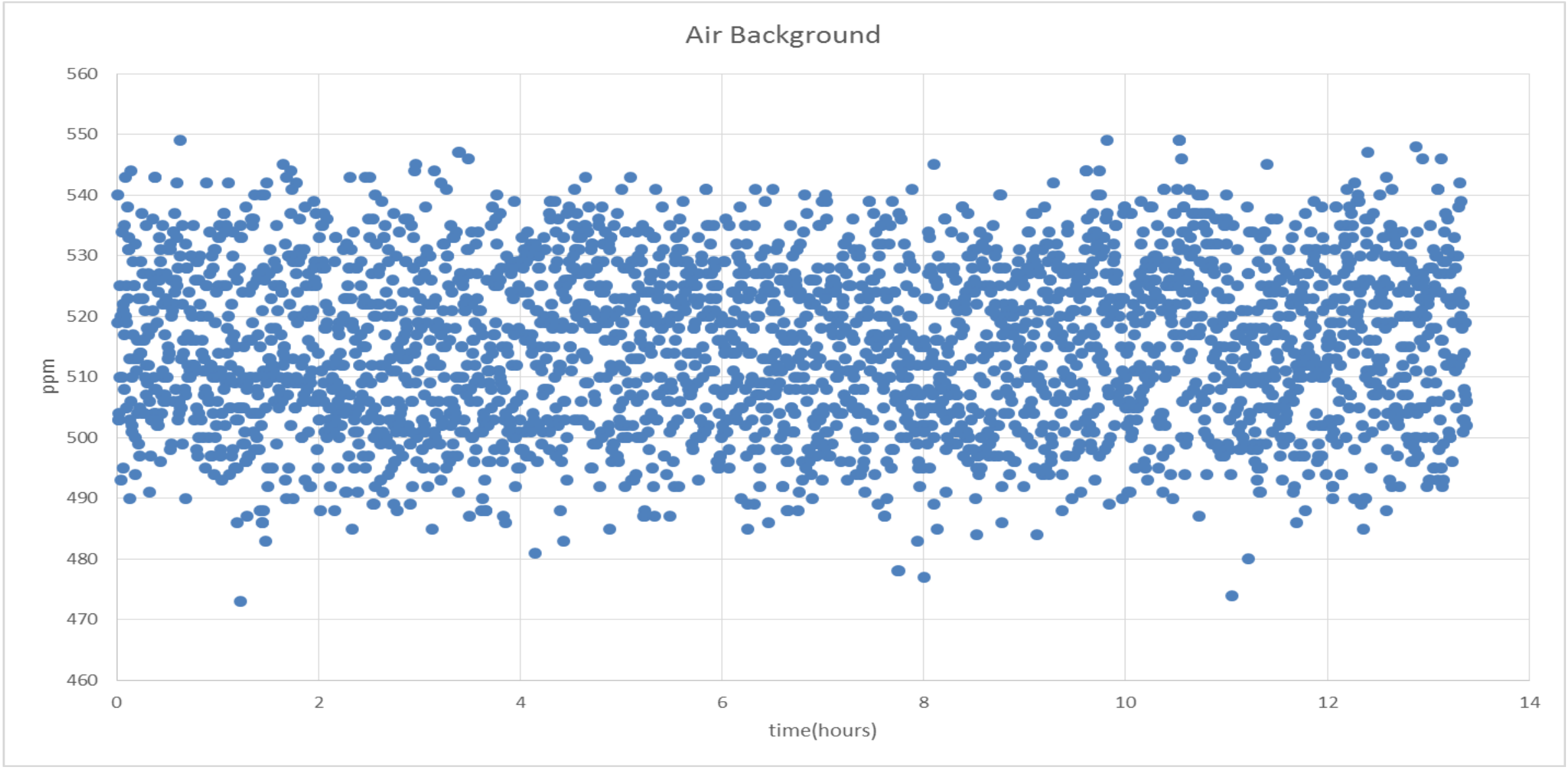
Chamber#2 Air Background Test (Left:120min interval Right:90 min interval)

Seems there is a lot of variation even in air background.

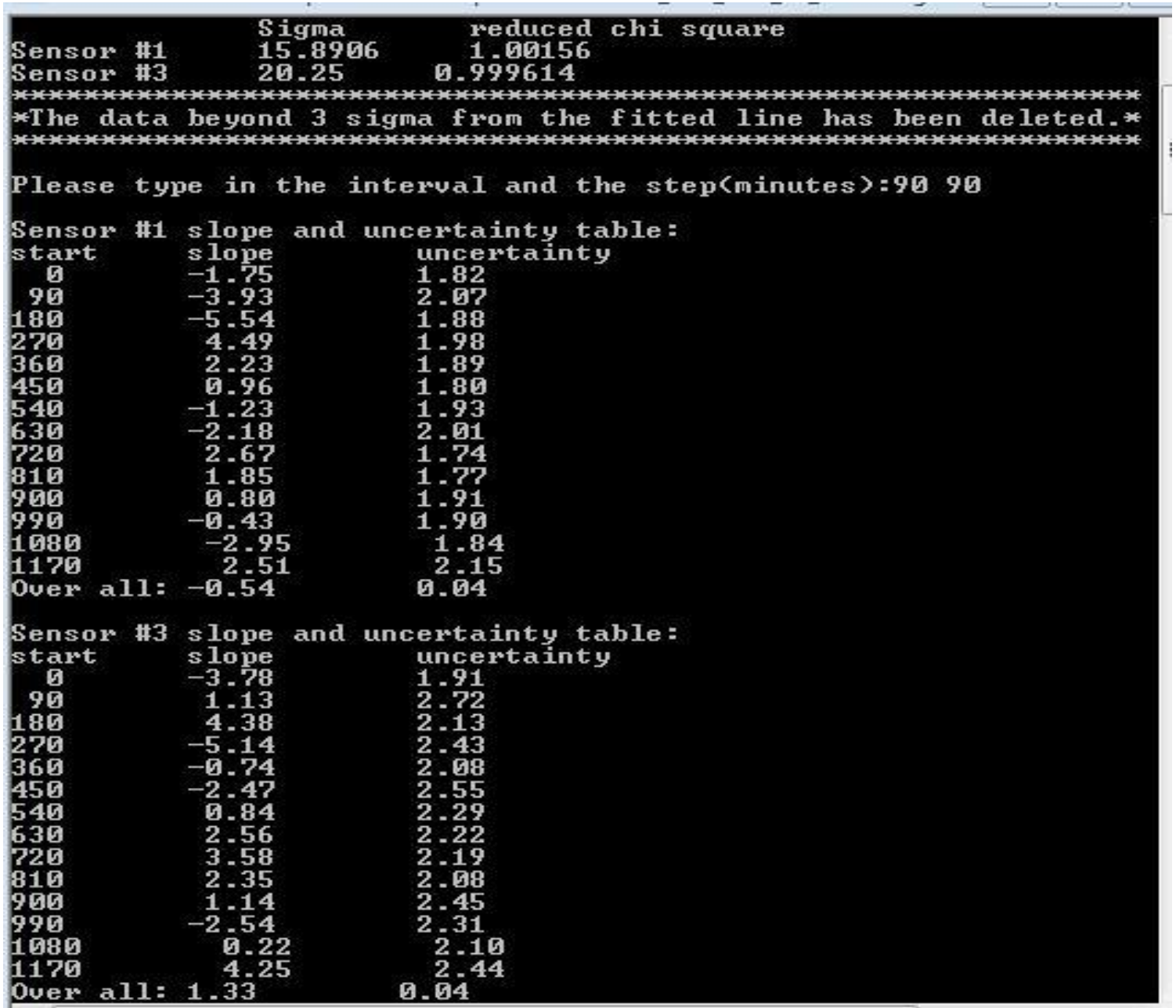
```
Please input name of input file : 0.txt
Number of sensors running:1
          Number of -1    -1 percentage
Sensor #2     0           0%
**********  3212 data for each sensor in total    **********

For oringinal data:        slope
Sensor #2 :                0.182252

             Sigma       reduced chi square
Sensor #2    13.3594     1.00346
*************************************************************
*The data beyond 3 sigma from the fitted line has been deleted.*
*************************************************************

Please type in the interval and the step(minutes):90 90

Sensor #2 slope and uncertainty table:
start     slope        uncertainty
  0       -4.38        1.63
 90       -2.72        1.63
180        1.67        1.64
270       -3.74        1.60
360       -0.53        1.52
450        0.78        1.58
540        1.51        1.61
630       -5.98        1.61
Over all: 0.18        0.06
```

```
Please input name of input file : 0.txt
Number of sensors running:1
          Number of -1    -1 percentage
Sensor #2     0           0%
**********  3212 data for each sensor in total    **********

For oringinal data:        slope
Sensor #2 :                0.182252

             Sigma       reduced chi square
Sensor #2    13.3594     1.00346
*************************************************************
*The data beyond 3 sigma from the fitted line has been deleted.*
*************************************************************

Please type in the interval and the step(minutes):120 120

Sensor #2 slope and uncertainty table:
start     slope        uncertainty
  0       -0.65        1.06
120       -0.33        1.08
240       -1.00        1.05
360       -1.74        1.01
480        4.05        1.03
600       -2.65        1.05
Over all: 0.18        0.06
```

Chamber #2 Air Background Test



Chamber #1 #3 Air Background test



```
                Sigma        reduced chi square
Sensor #1       15.8906      1.00156
Sensor #3       20.25       0.999614
**************************************************************************
*The data beyond 3 sigma from the fitted line has been deleted.*
**************************************************************************

Please type in the interval and the step(minutes):90 90

Sensor #1 slope and uncertainty table:
start       slope          uncertainty
  0         -1.75          1.82
 90         -3.93          2.07
180         -5.54          1.88
270          4.49          1.98
360          2.23          1.89
450          0.96          1.80
540         -1.23          1.93
630         -2.18          2.01
720          2.67          1.74
810          1.85          1.77
900          0.80          1.91
990         -0.43          1.90
1080         -2.95          1.84
1170          2.51          2.15
Over all: -0.54           0.04

Sensor #3 slope and uncertainty table:
start       slope          uncertainty
  0         -3.78          1.91
 90          1.13          2.72
180          4.38          2.13
270         -5.14          2.43
360         -0.74          2.08
450         -2.47          2.55
540          0.84          2.29
630          2.56          2.22
720          3.58          2.19
810          2.35          2.08
900          1.14          2.45
990         -2.54          2.31
1080          0.22          2.10
1170          4.25          2.44
Over all: 1.33          0.04
```

Short straw leak test

Short straw#1

```
Sensor #2 slope and uncertainty table:
start      slope          uncertainty
Over all: 1.73203     0.660792
```

Short straw#2 interval: 90 step:10

```
Sensor #2 slope and uncertainty table:
start      slope          uncertainty
  0       -10.20          1.42
 10       -11.08          1.35
 20       -13.37          1.34
 30       -12.79          1.35
Over all: -9.69           0.87
```

Short straw#3

```
Sensor #1 slope and uncertainty table:
start      slope          uncertainty
  0         1.69          1.15
 10         2.14          1.16
 20         0.81          1.18
Over all: 0.99          0.85
```