Analyzing Fluorescent Data

-Group 2G

Method:

This project was done with four major parts:

1)Checking for peaks and finding location in side scatter data
2)Checking if peak found correspond to another peak in forward scatter data
3)Finding the Full Width Half Maximum of a peak
4)Finding the times between cells

We checked for peaks by two conditions-
1)Maximum value in circular buffer should occur there
2)It should be above a threshold value from base line

Reasons for choosing threshold as 8: After applying a moving average filter, the data smoothened out enough to confidently say that the height from base line would never exceed threshold value unless a peak occurs nearby.

Also, we used circular buffers to store things such as peaks, FWHMs, time intervals and of course, data. This is suited for runtime operation.

Peak Correlation: It was simply a matter of ensuring that peaks occurred at nearly the same time

This is the raw data given for both forward and side scatter…
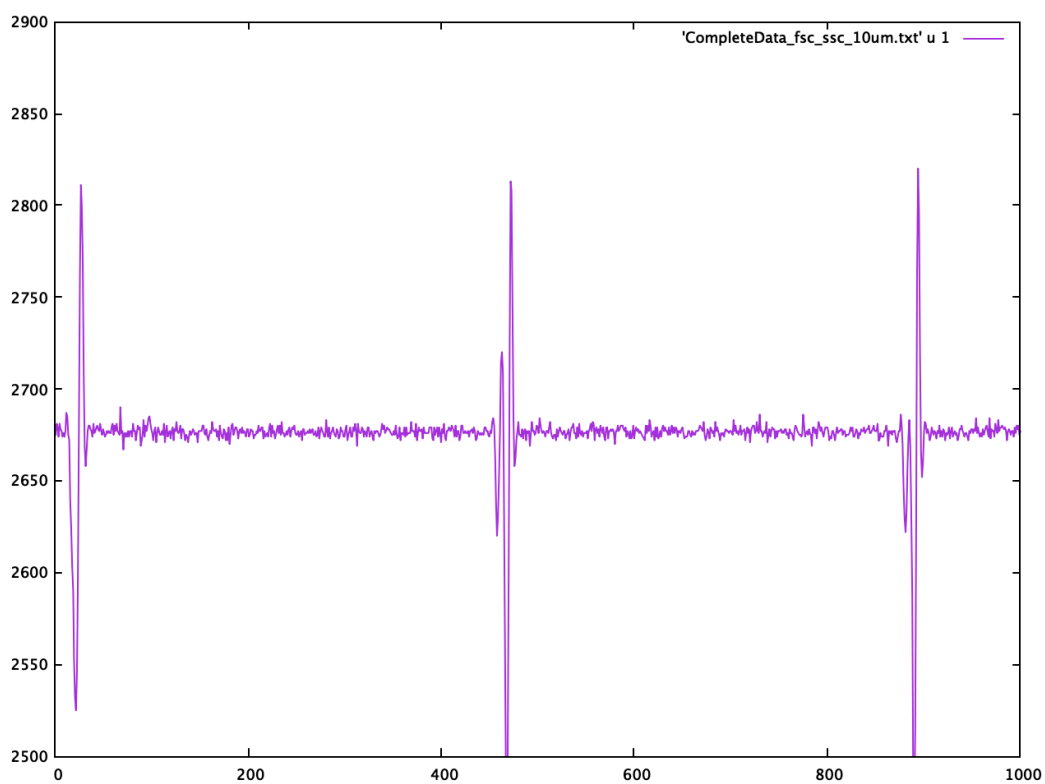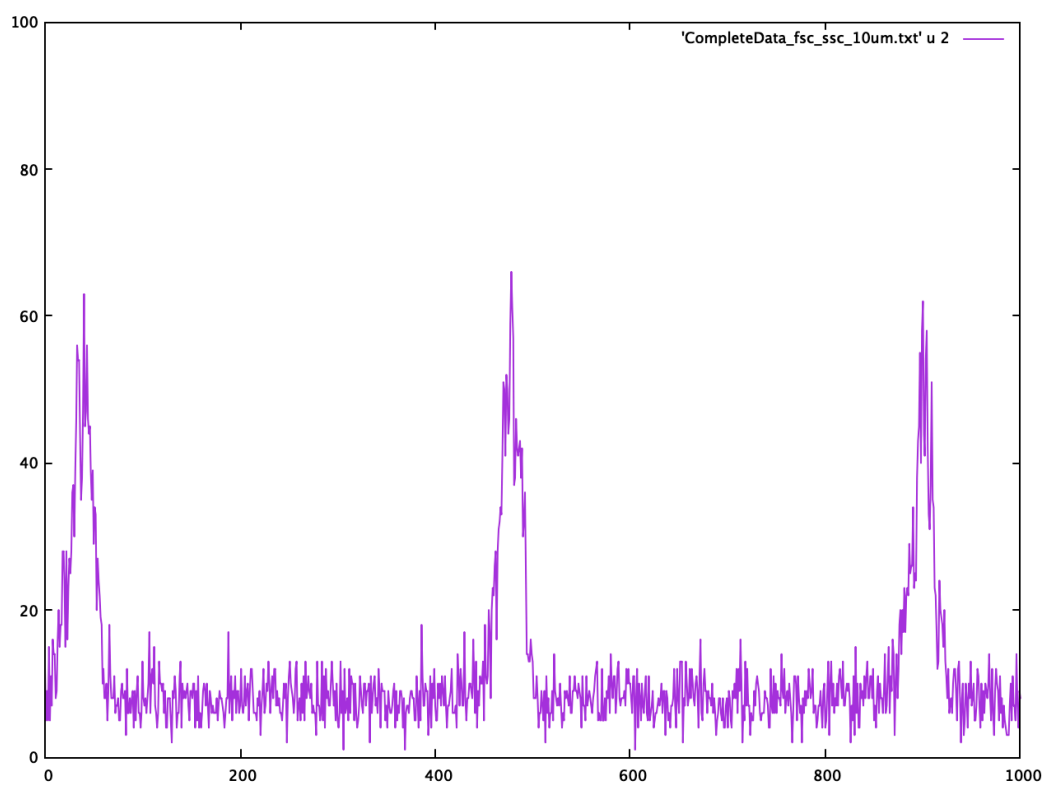
These same graphs were obtained by applying a moving average filter.
Notice that the locations of peaks are about same.
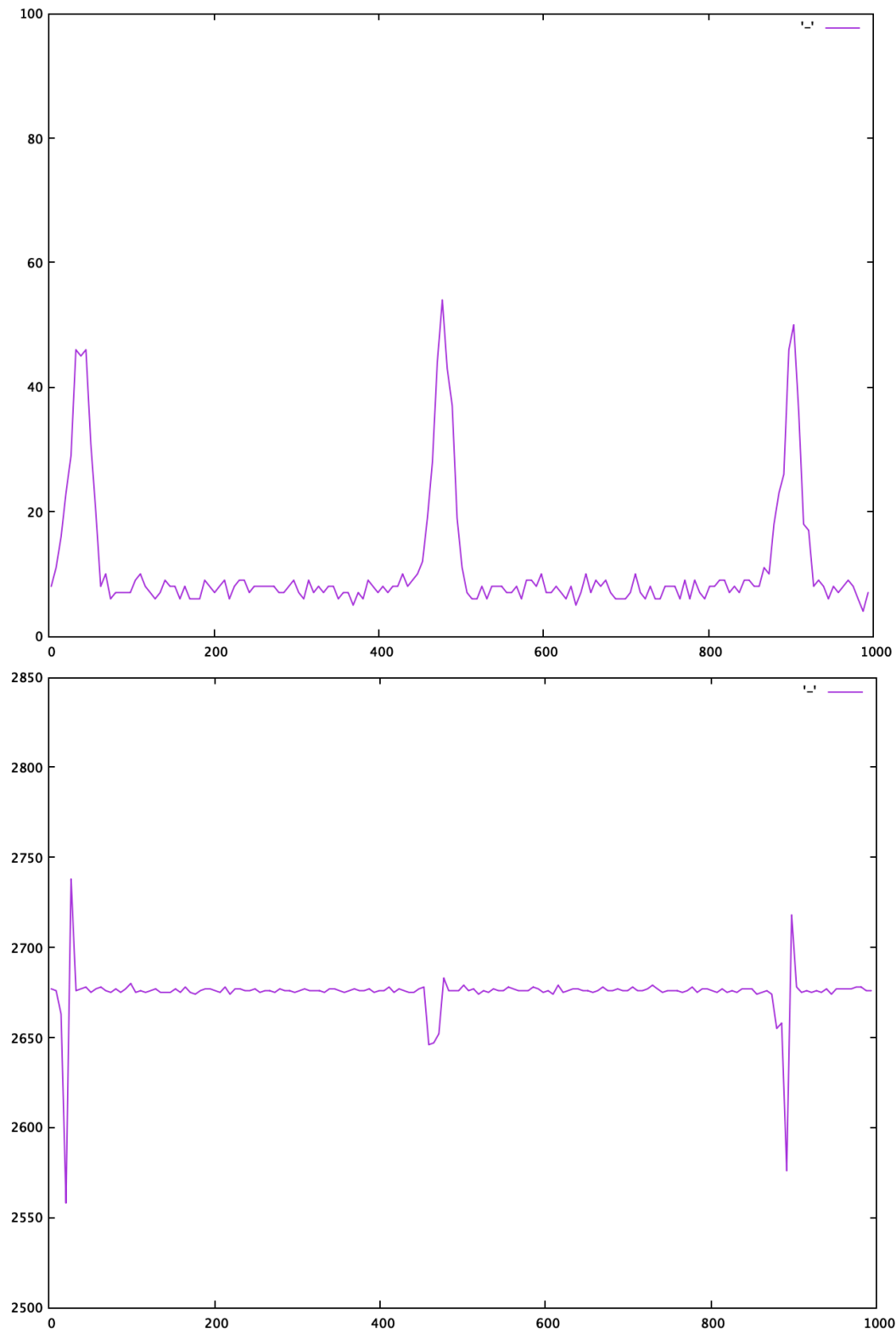
Observations:

Initially, the values produced are a bit inaccurate, but as the buffers get filled and more information is available, the values become more and more precise.

From these columns of peak location and FWHM, we cannot draw any major conclusions, but in the long text file generated on running the program, the FWHM values seem to have a higher probability of lying in a certain range of values.

```
33 44
477 23
903 17
1377 15
2031 31
2997 29
3291 22
3627 17
4215 16
4635 12
5391 15
6879 18
7293 21
7485 16
8379 12
8757 13
9243 15
9513 15
9621 18
10011 14
12765 14
13647 22
13875 20
14145 13
15567 17
16827 13
17373 21
19503 18
20061 18
20265 11
20925 16
21741 19
```

On running the code, the mean and median time intervals, mean width of FWHM and text file locations of peaks and their widths are obtained.

THANK YOU!