Data Analysis A5
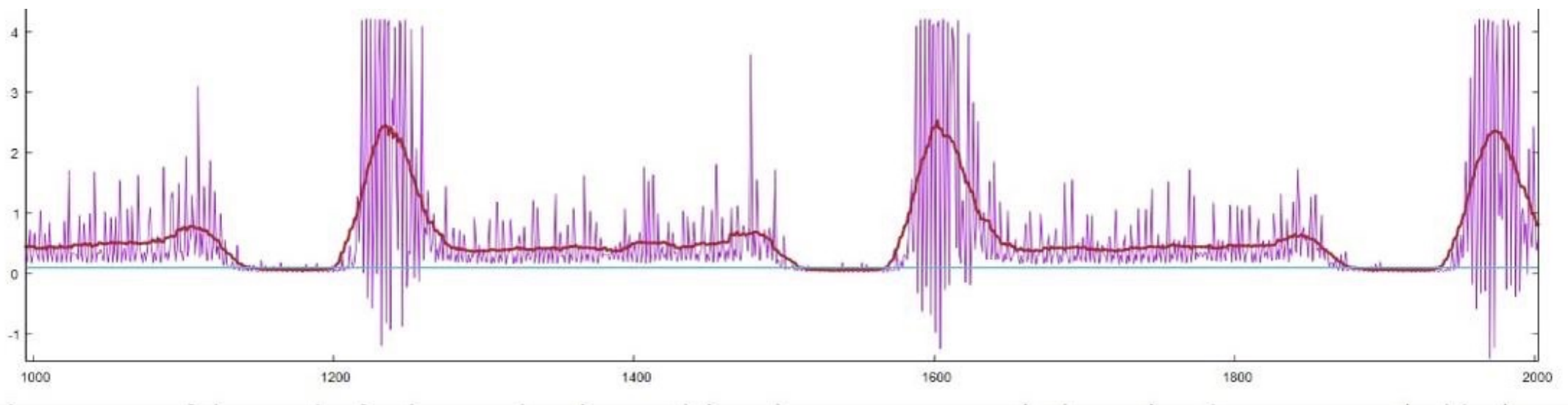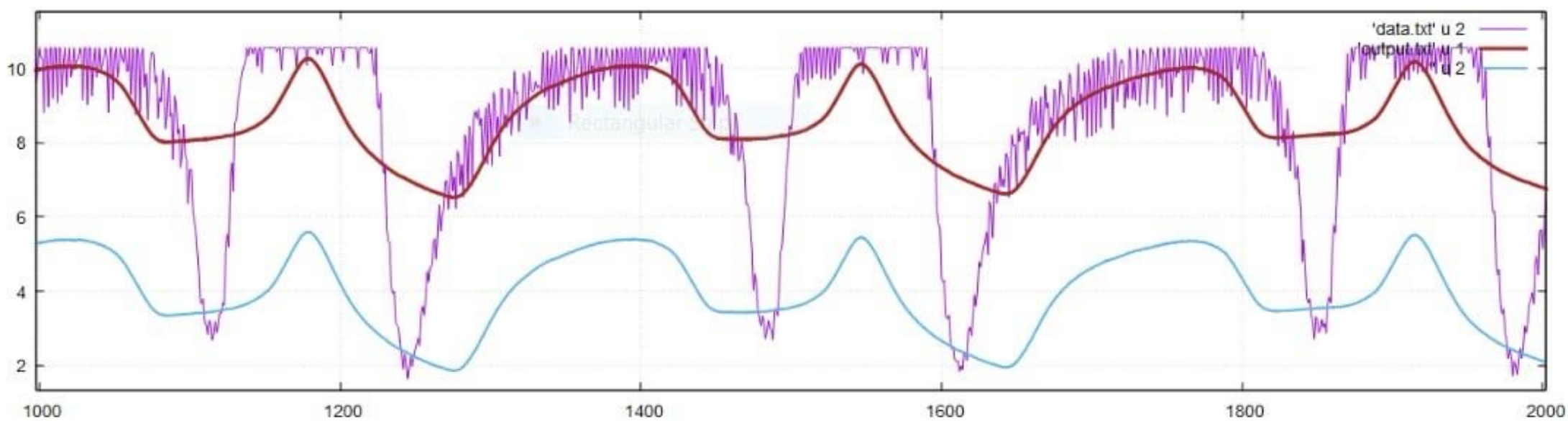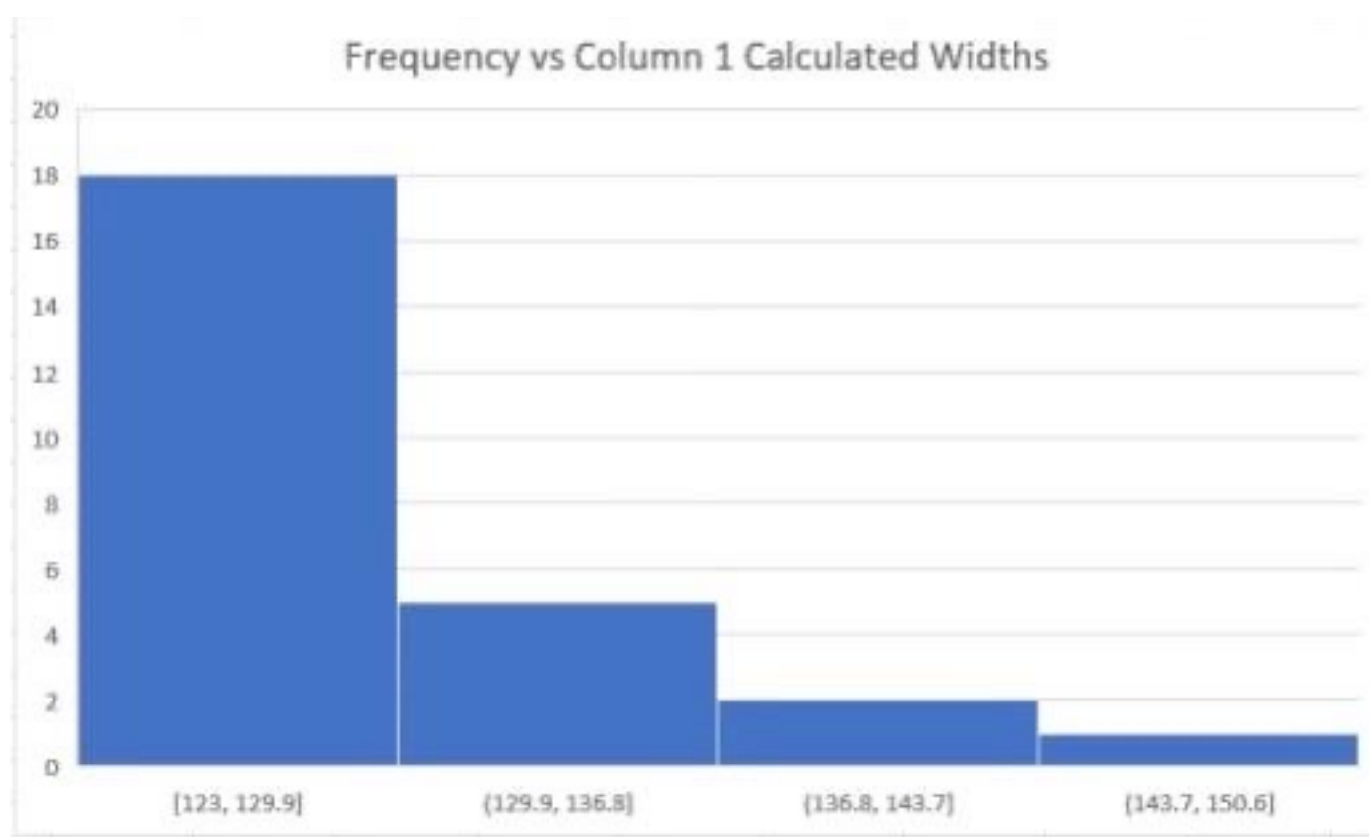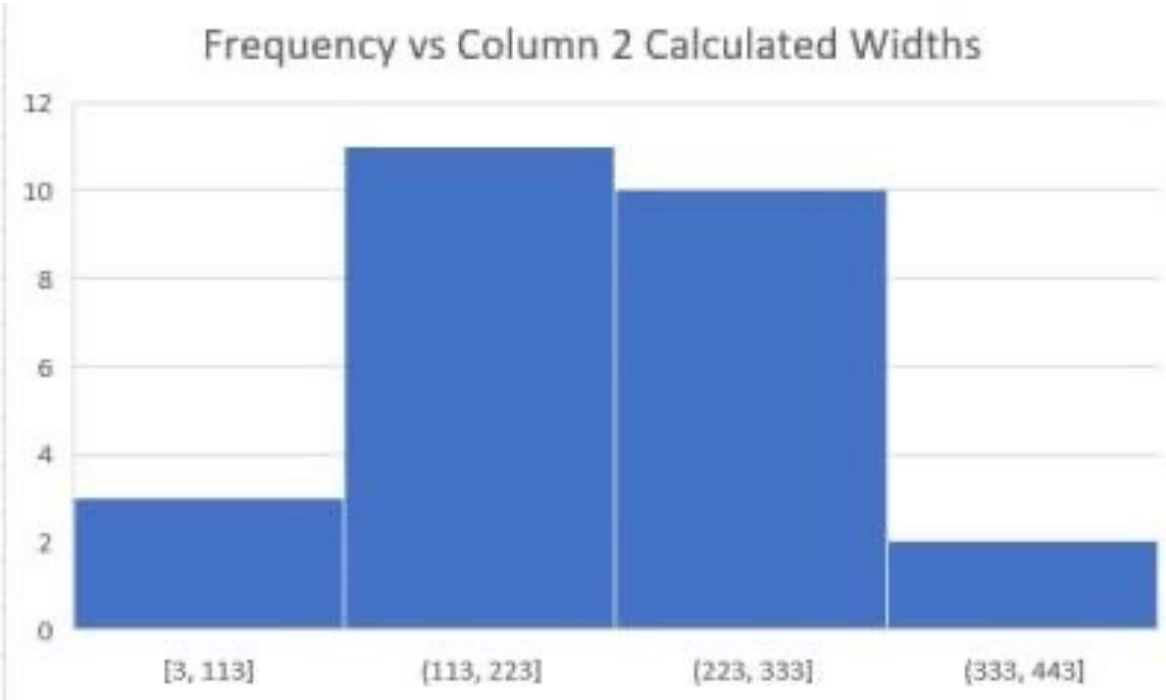

Above shown is a plot for data of column 1(shown in purple), with a moving average(shown in brown). There is a reference line taken (shown in blue). The parts of the graph with moving averages below the reference line make up the body of the droplets. We find maximas of the moving average on either side of the body of the droplet, which are the respective dips and peaks, corresponding to the start and the end of the droplets respectively.(those selected Maximas are our peaks)

Above shown is the plot for data of Column 2 (shown in purple) with moving average (shown in brown). The Bollinger Band is equal to Moving Average -2.5 x standard deviation. The thresholding helps us find the required minimas(dips). Out of many points taken, the global minimum is our required peak value.

Frequency vs Column 2 Calculated Widths

output

```
Column 1 Stats -
Location: 0          Width: 128
Location: 369        Width: 129
Location: 733        Width: 128
Location: 1108       Width: 127
Location: 1477       Width: 123
Location: 1843       Width: 129
Location: 2214       Width: 134
Location: 2582       Width: 131
Location: 2952       Width: 125
Location: 3321       Width: 129
Location: 3692       Width: 126
Location: 4056       Width: 127
Location: 4427       Width: 127
Location: 4798       Width: 124
Location: 5164       Width: 125
Location: 5535       Width: 128
Location: 5907       Width: 123
Location: 6271       Width: 126
Location: 6638       Width: 133
Location: 7009       Width: 129
Location: 7378       Width: 125
Location: 7746       Width: 125
Location: 8114       Width: 145
Location: 8489       Width: 133
Location: 8847       Width: 139
Location: 9221       Width: 143
Location: 9594       Width: 136
Mean Width = 129.52           StDev of Width = 5.61
Mean Arrival Time = 369.00    StDev of Time = 3.76
```

output

```
Column 2 Stats -
Location: 9          Width: 367
Location: 504        Width: 237
Location: 875        Width: 240
Location: 1245       Width: 243
Location: 1612       Width: 236
Location: 1980       Width: 242
Location: 2351       Width: 243
Location: 2720       Width: 240
Location: 3089       Width: 237
Location: 3331       Width: 131
Location: 3699       Width: 127
Location: 4061       Width: 5
Location: 4195       Width: 239
Location: 4563       Width: 3
Location: 4801       Width: 5
Location: 4933       Width: 240
Location: 5541       Width: 128
Location: 5917       Width: 126
Location: 6279       Width: 128
Location: 6646       Width: 133
Location: 7017       Width: 129
Location: 7389       Width: 128
Location: 7759       Width: 127
Location: 8127       Width: 128
Location: 8492       Width: 372
Location: 8986       Width: 245
Location: 9600       Width: 129
Mean Width = 178.07           StDev of Width = 92.97
Mean Arrival Time = 368.88    StDev of Time = 106.25
```

Location ~ Location of Peaks and Dips

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