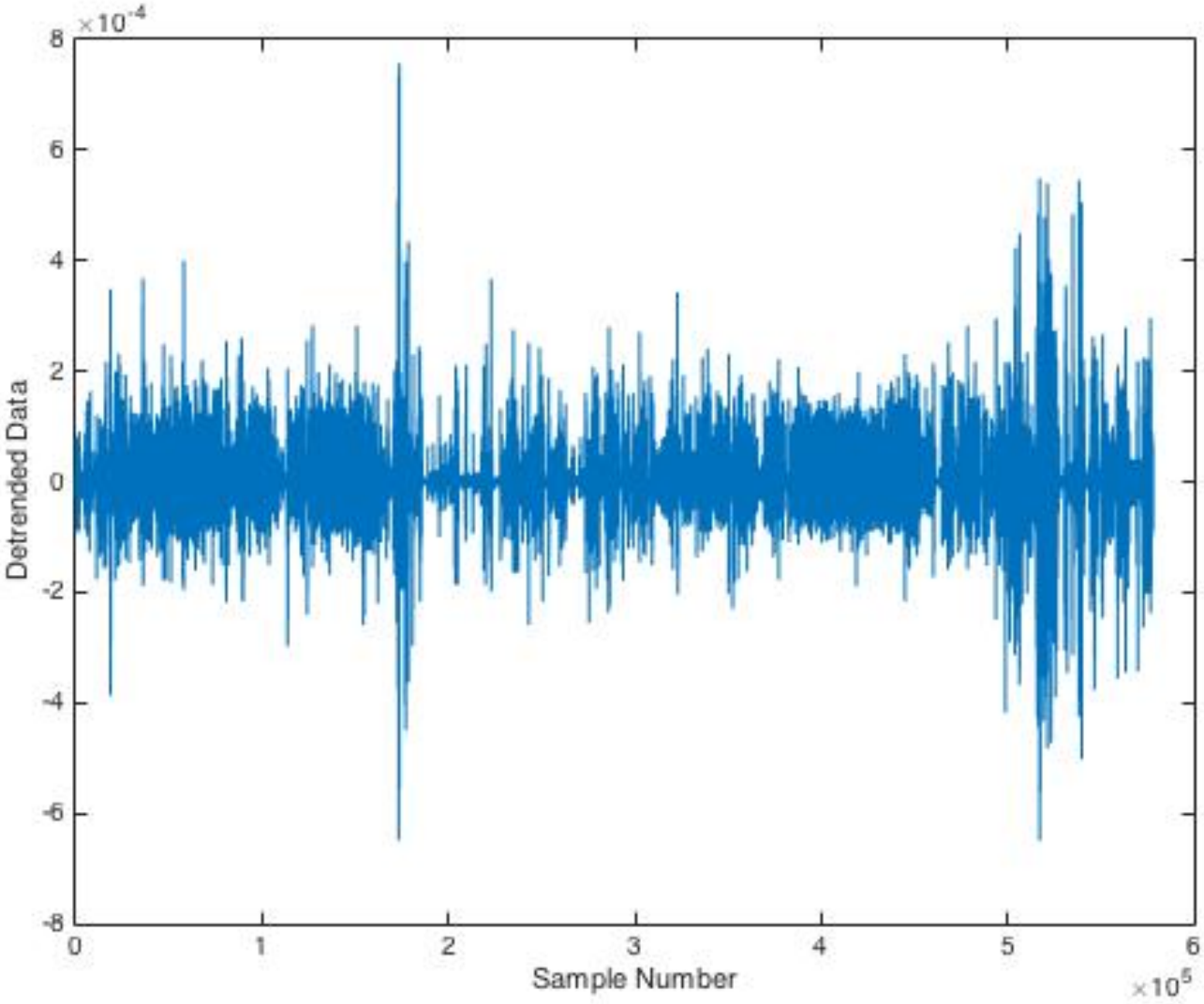
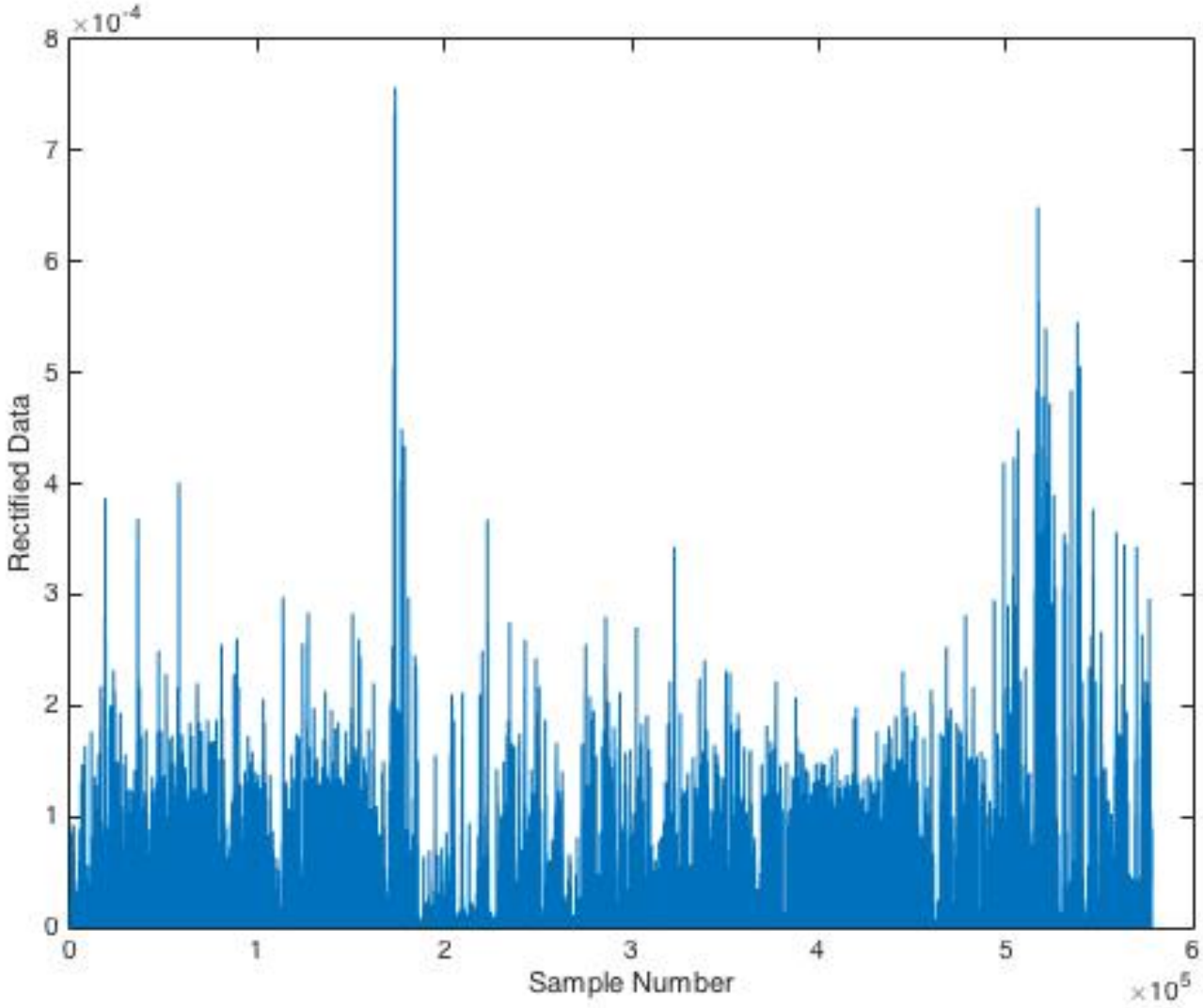
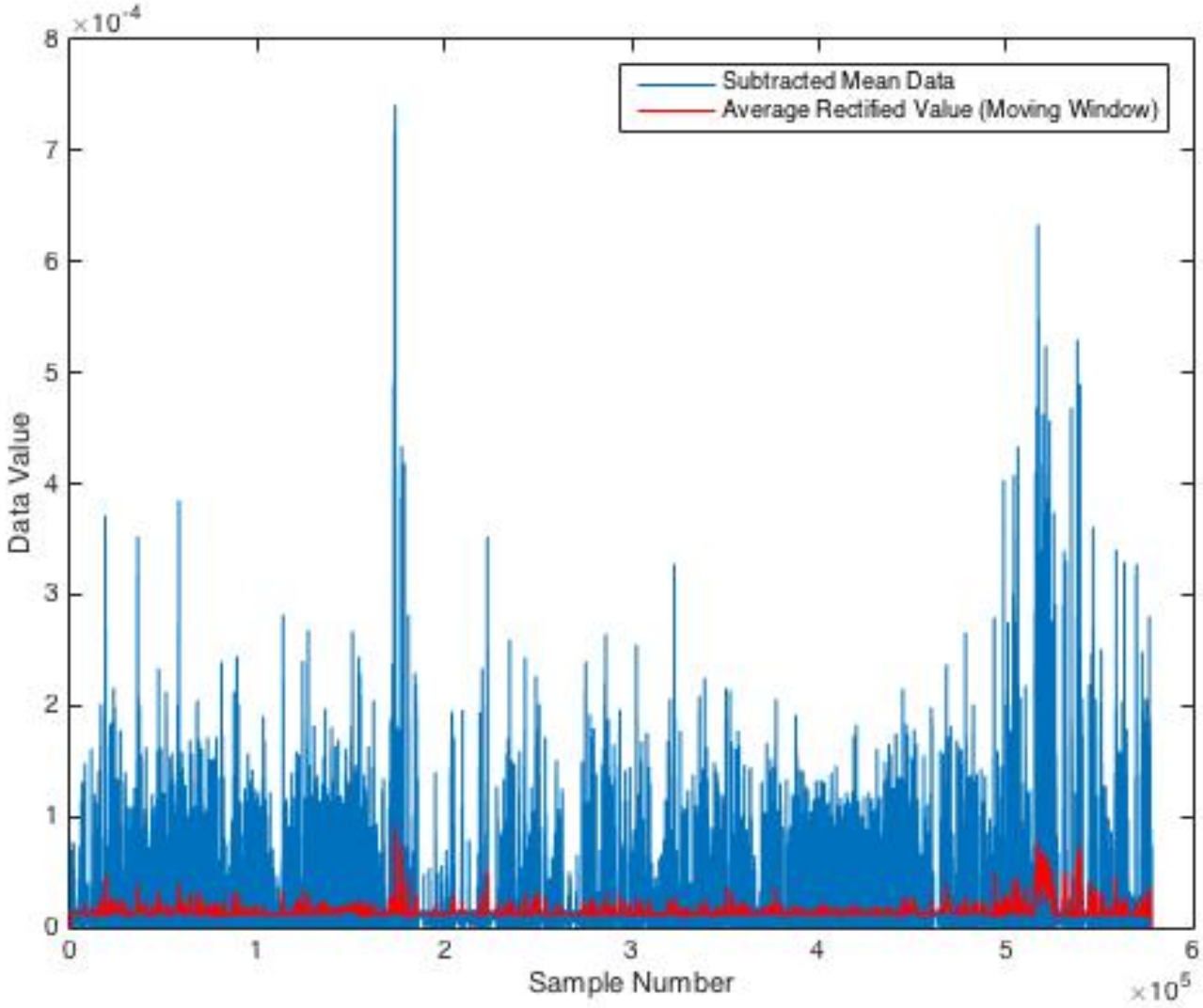
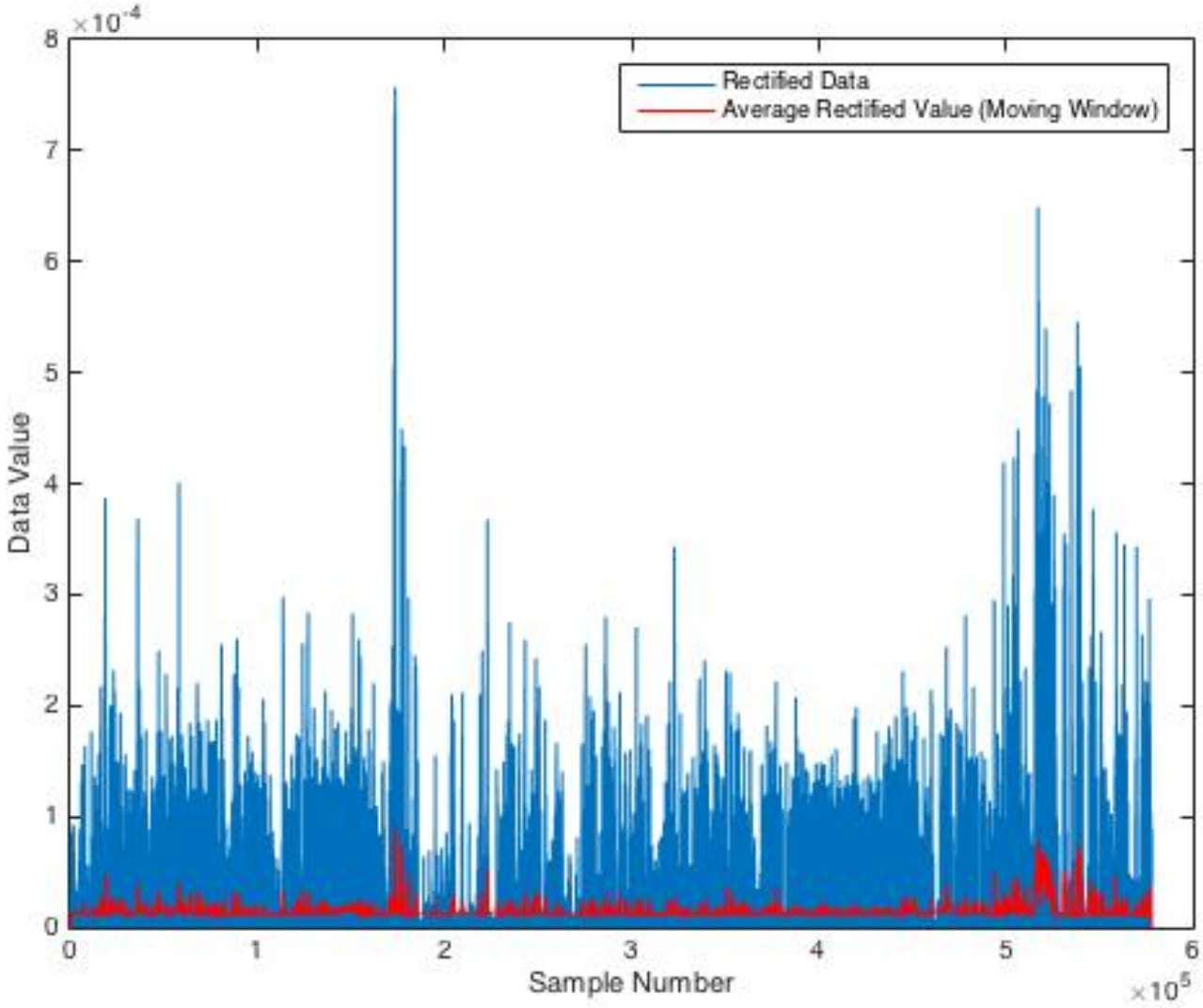
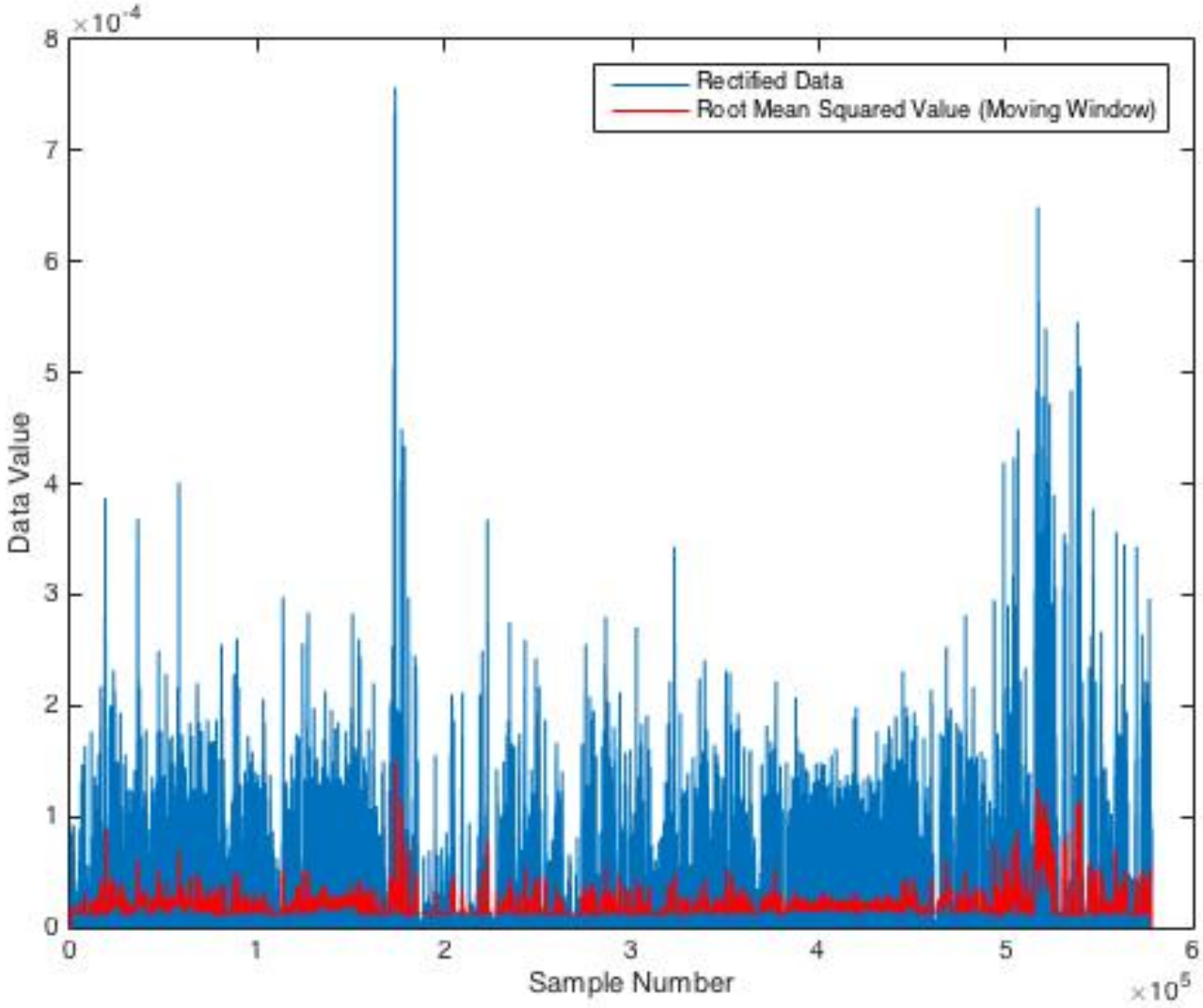
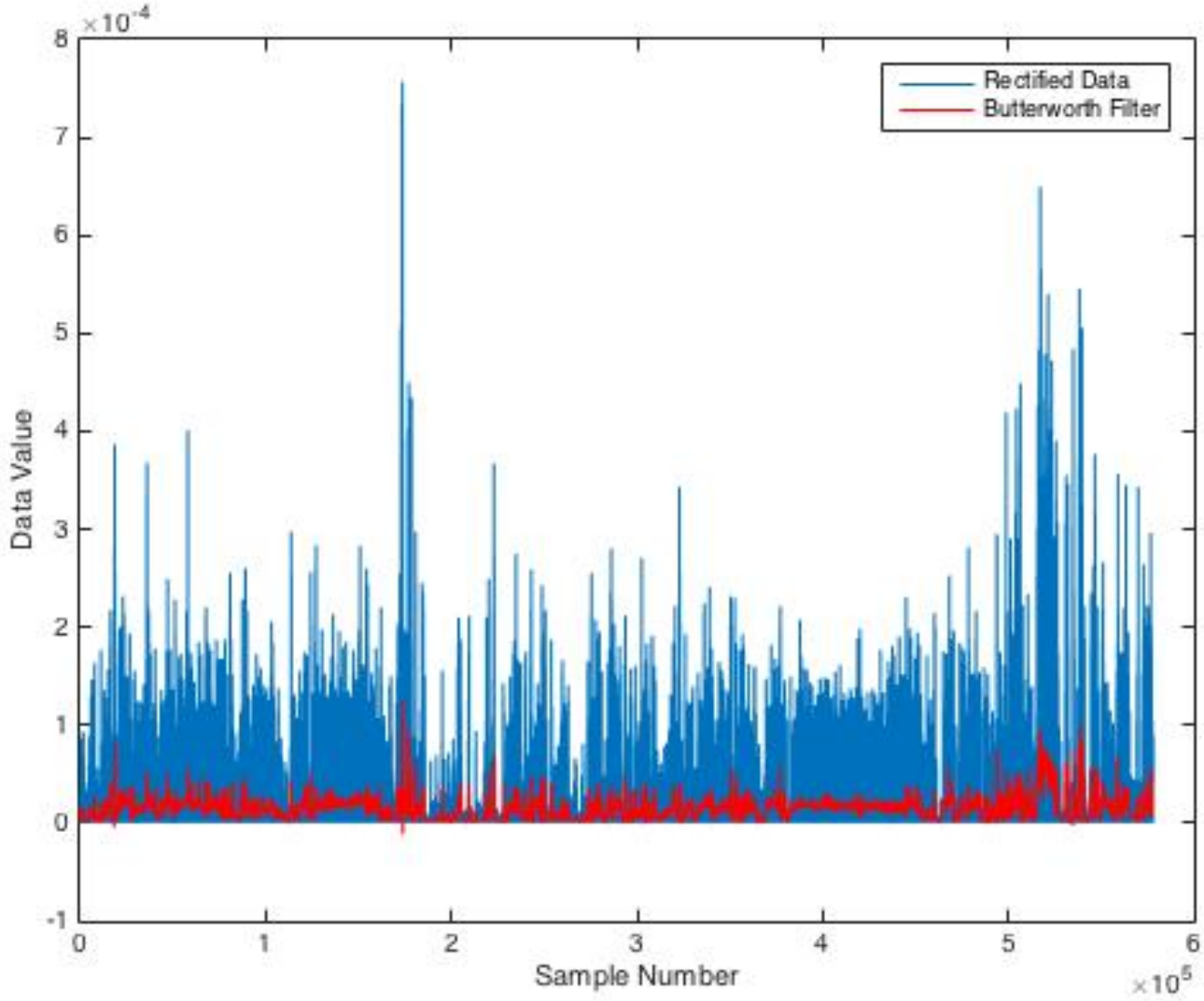

×10^-4
8
6
4
2
0
-2
-4
-6
-8
Detrended Data
0
1
2
3
4
5
6
Sample Number
×10^5

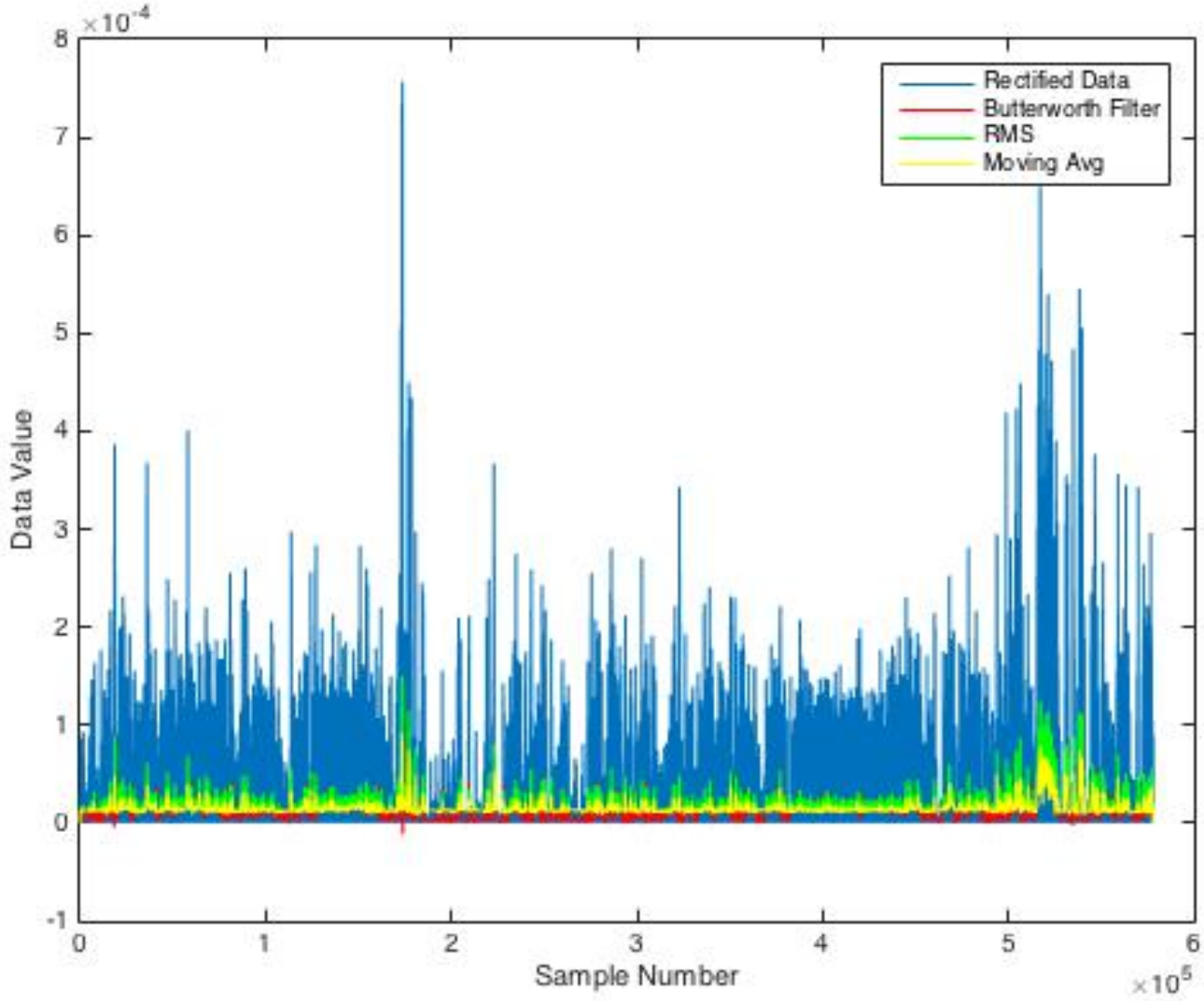

×10^-4
8
7
6
5
4
3
2
1
0
Rectified Data
0
1
2
3
4
5
6
Sample Number
×10^5

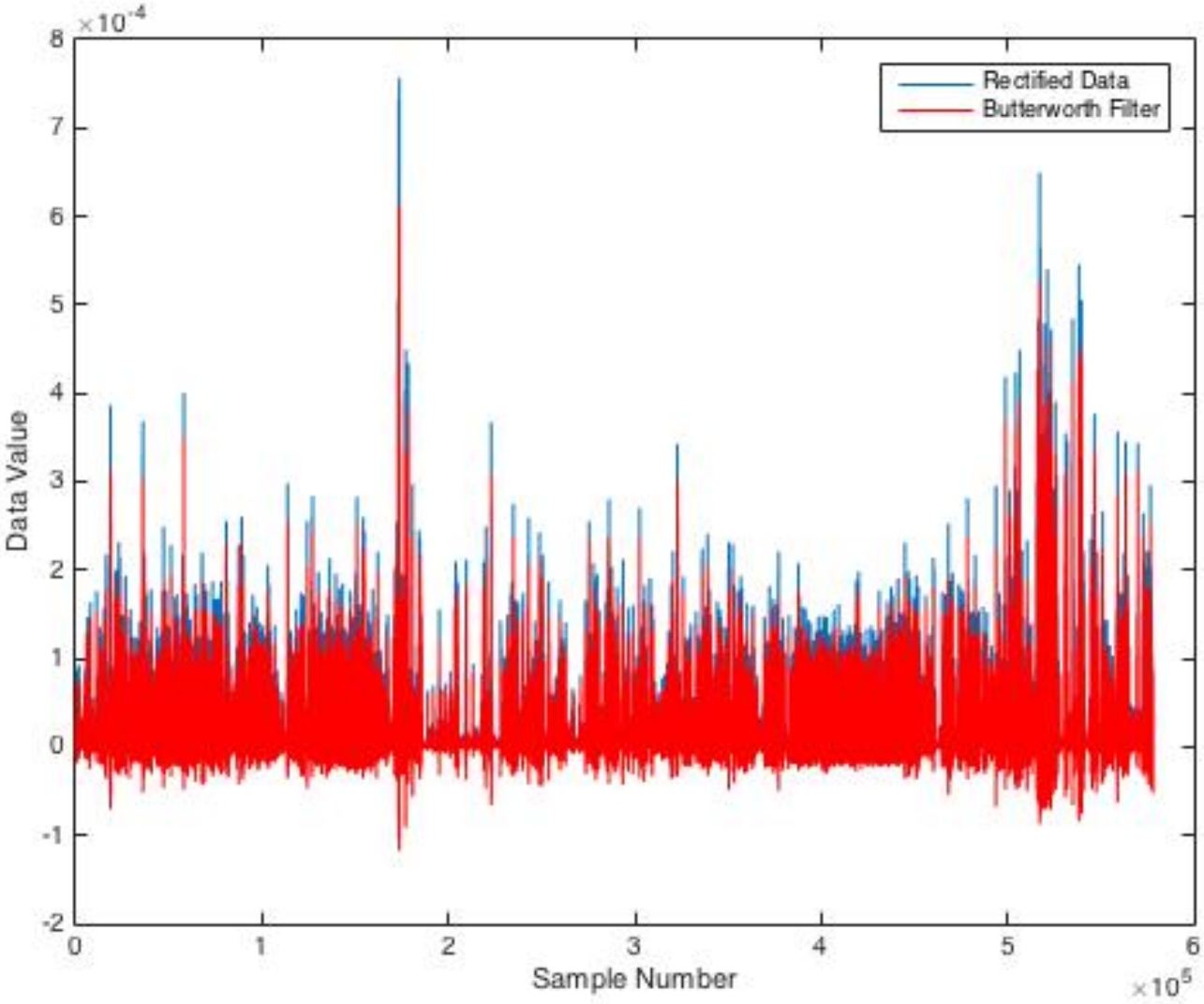

×10^-4
8
7
6
5
4
3
2
1
0
Data Value
Subtracted Mean Data
Average Rectified Value (Moving Window)
0
1
2
3
4
5
6
Sample Number
×10^5

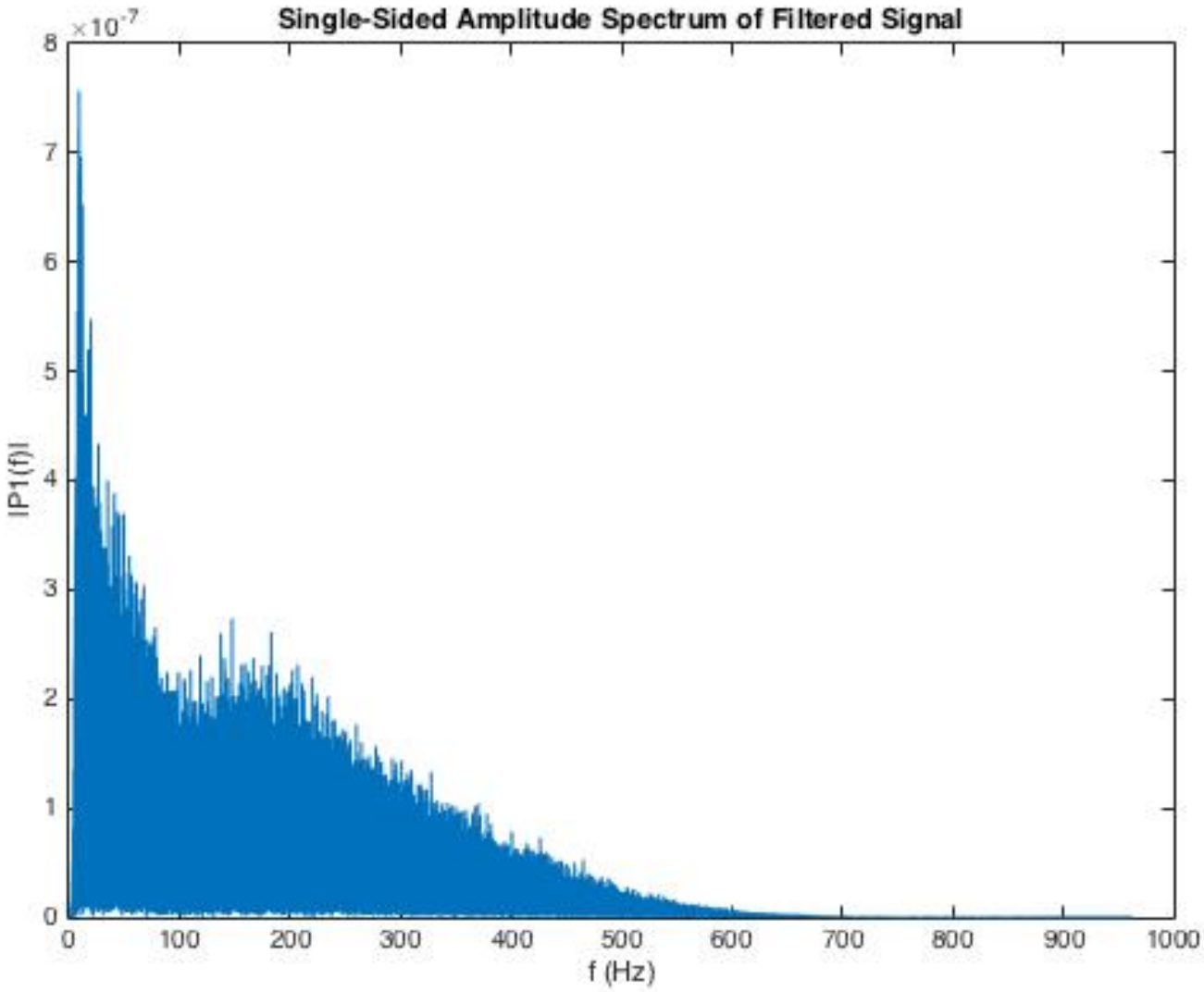

×10^-4
8
7
6
5
4
3
2
1
0
Data Value
Rectified Data
Average Rectified Value (Moving Window)
0
1
2
3
4
5
6
Sample Number
×10^5

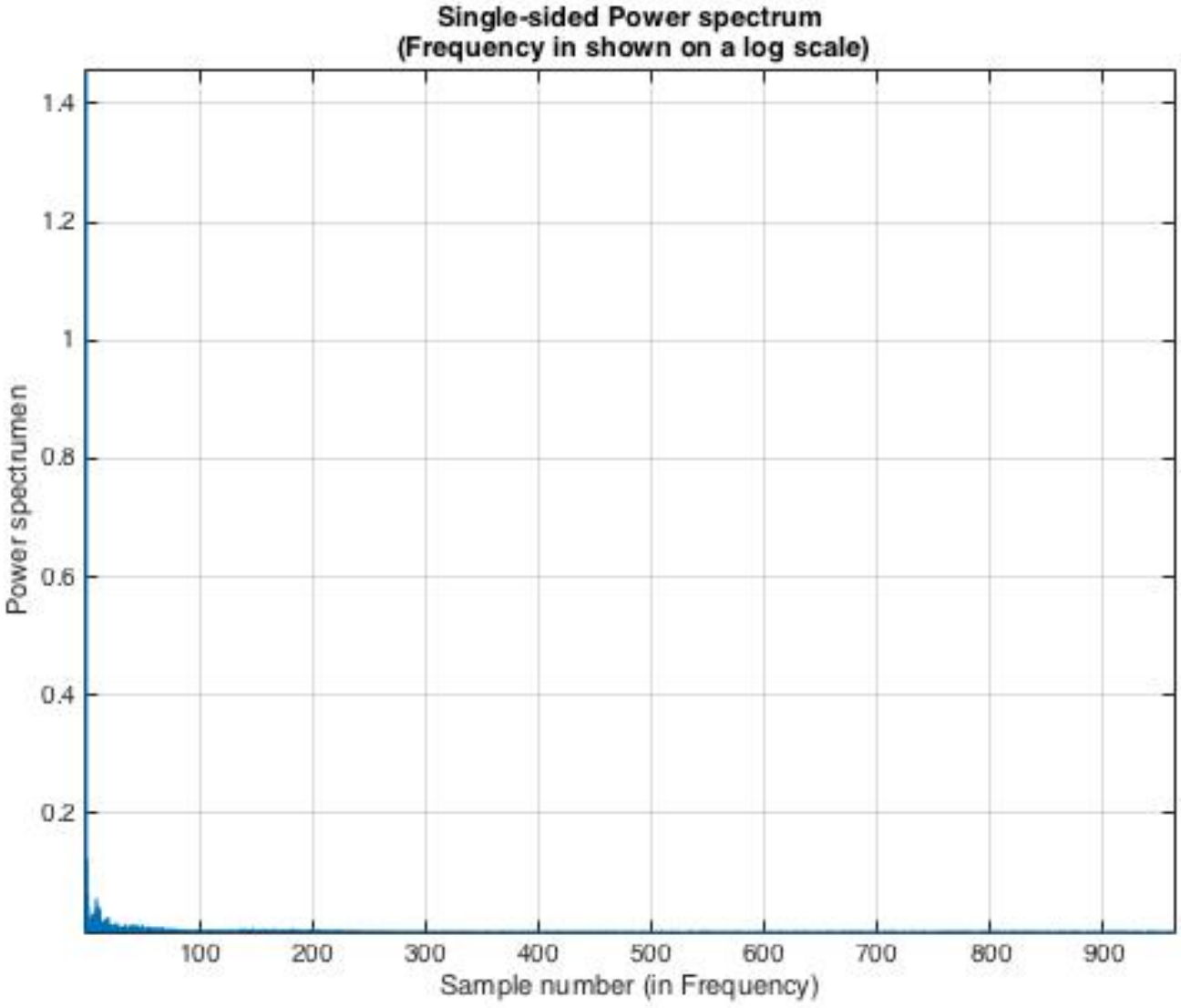

×10^-4
8
7
6
5
4
3
2
1
0
Data Value
Rectified Data
Root Mean Squared Value (Moving Window)
0
1
2
3
4
5
6
Sample Number
×10^5

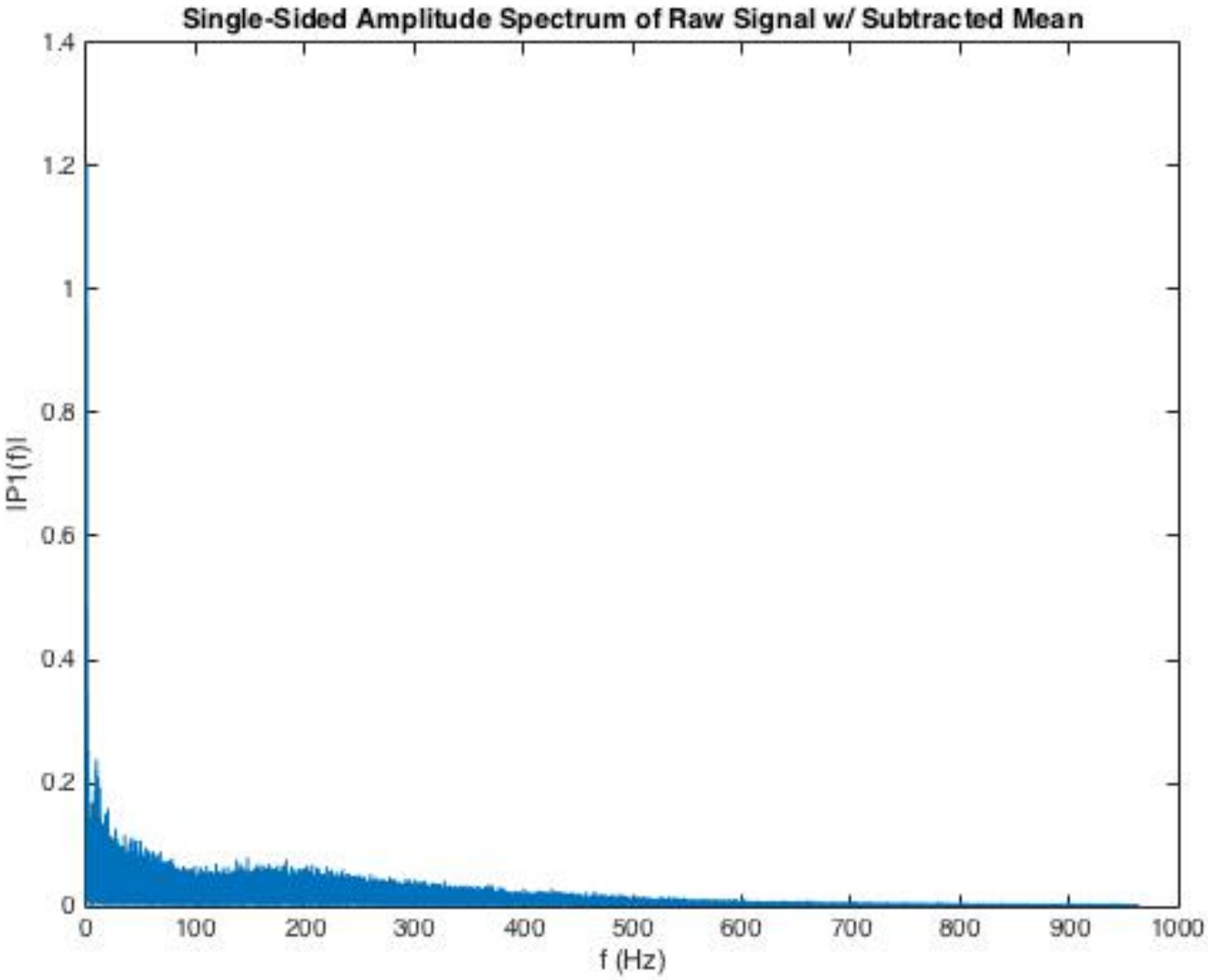

×10^-4
8
7
6
5
4
3
2
1
0
-1
Data Value
Rectified Data
Butterworth Filter
0
1
2
3
4
5
6
Sample Number
×10^5

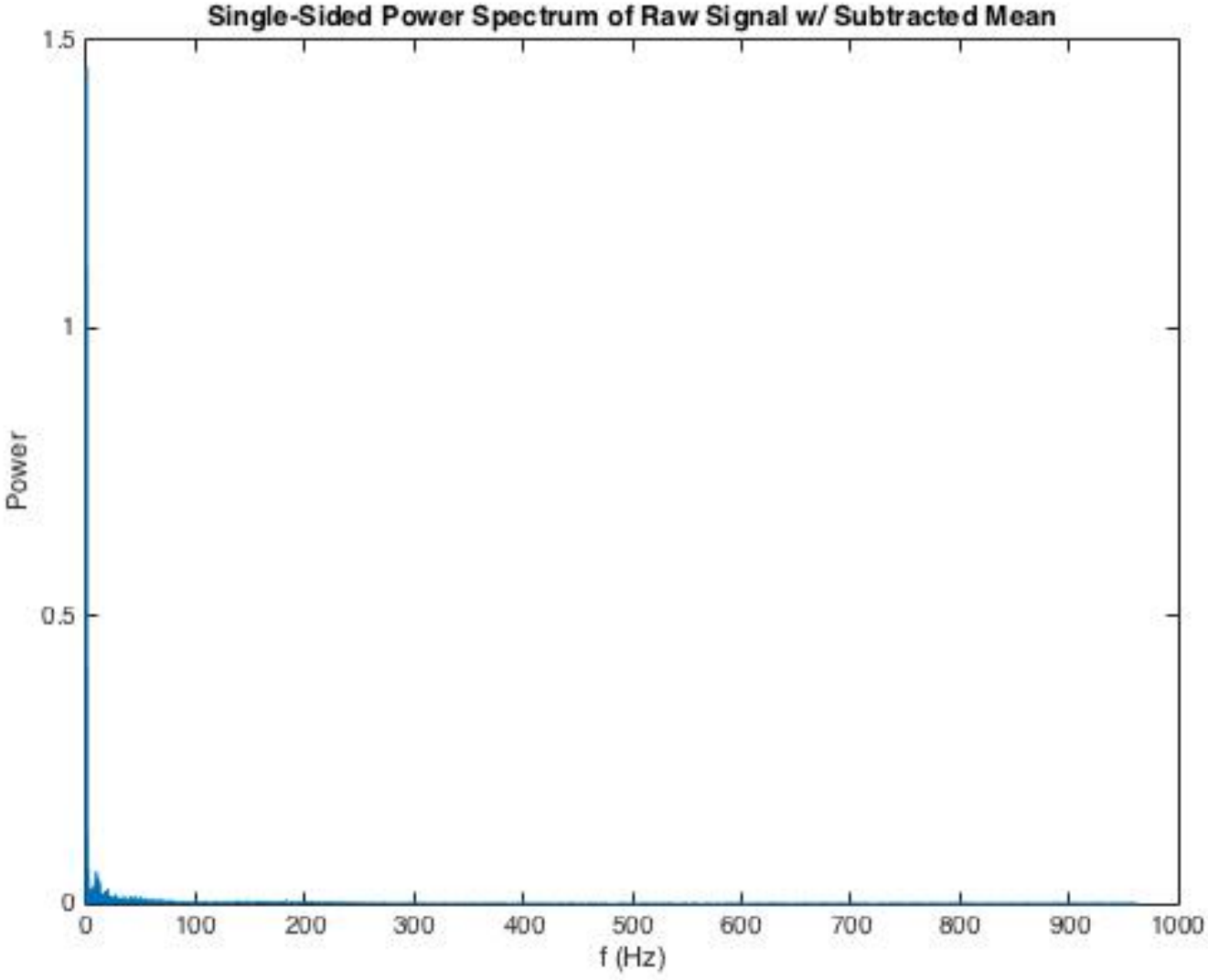

×10^-4
8
7
6
5
4
3
2
1
0
-1
Data Value
0
1
2
3
4
5
6
Sample Number
×10^5
Rectified Data
Butterworth Filter
RMS
Moving Avg

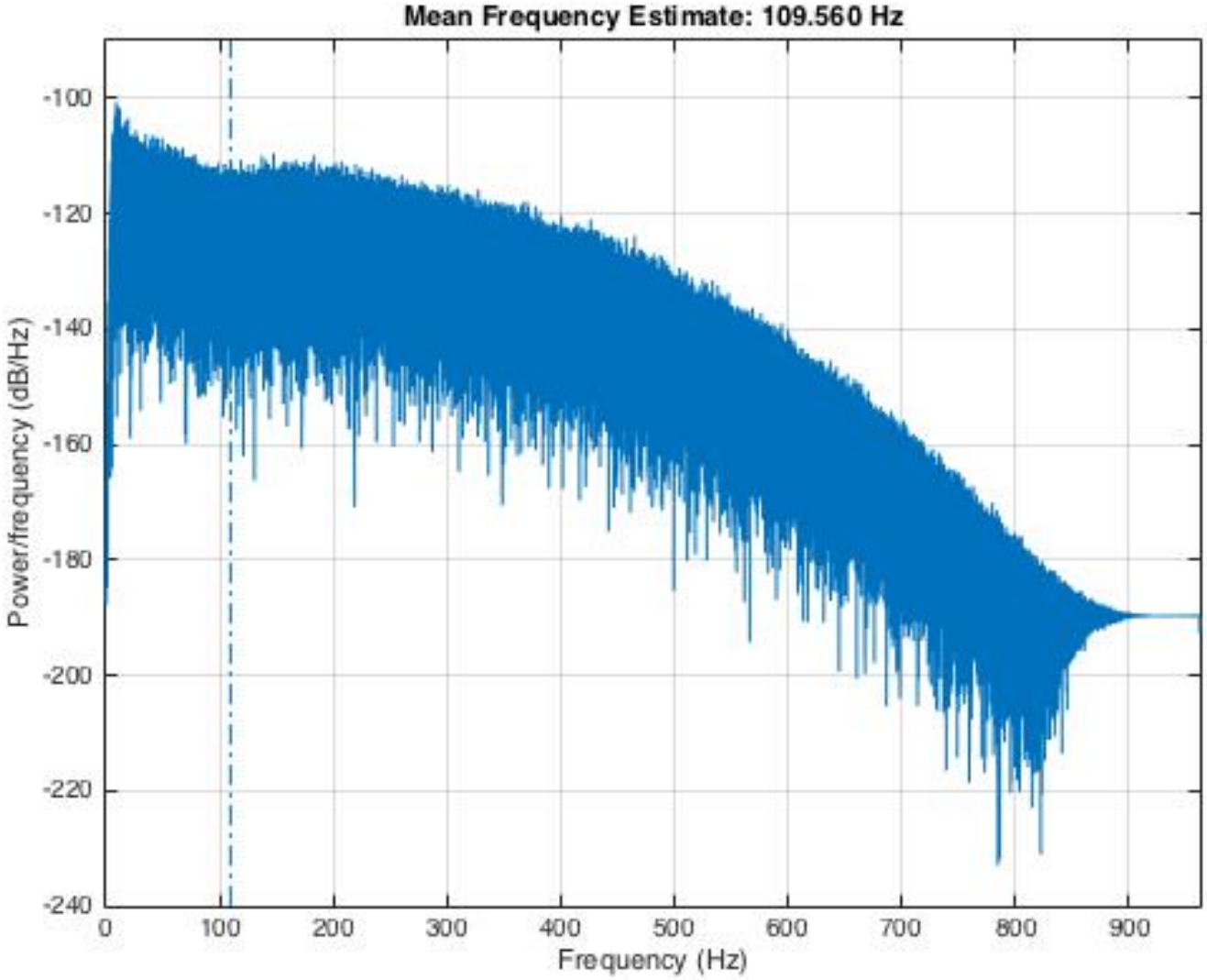

×10^-4
8
7
6
5
4
3
2
1
0
-1
-2
Data Value
0
1
2
3
4
5
6
Sample Number
×10^5
Rectified Data
Butterworth Filter

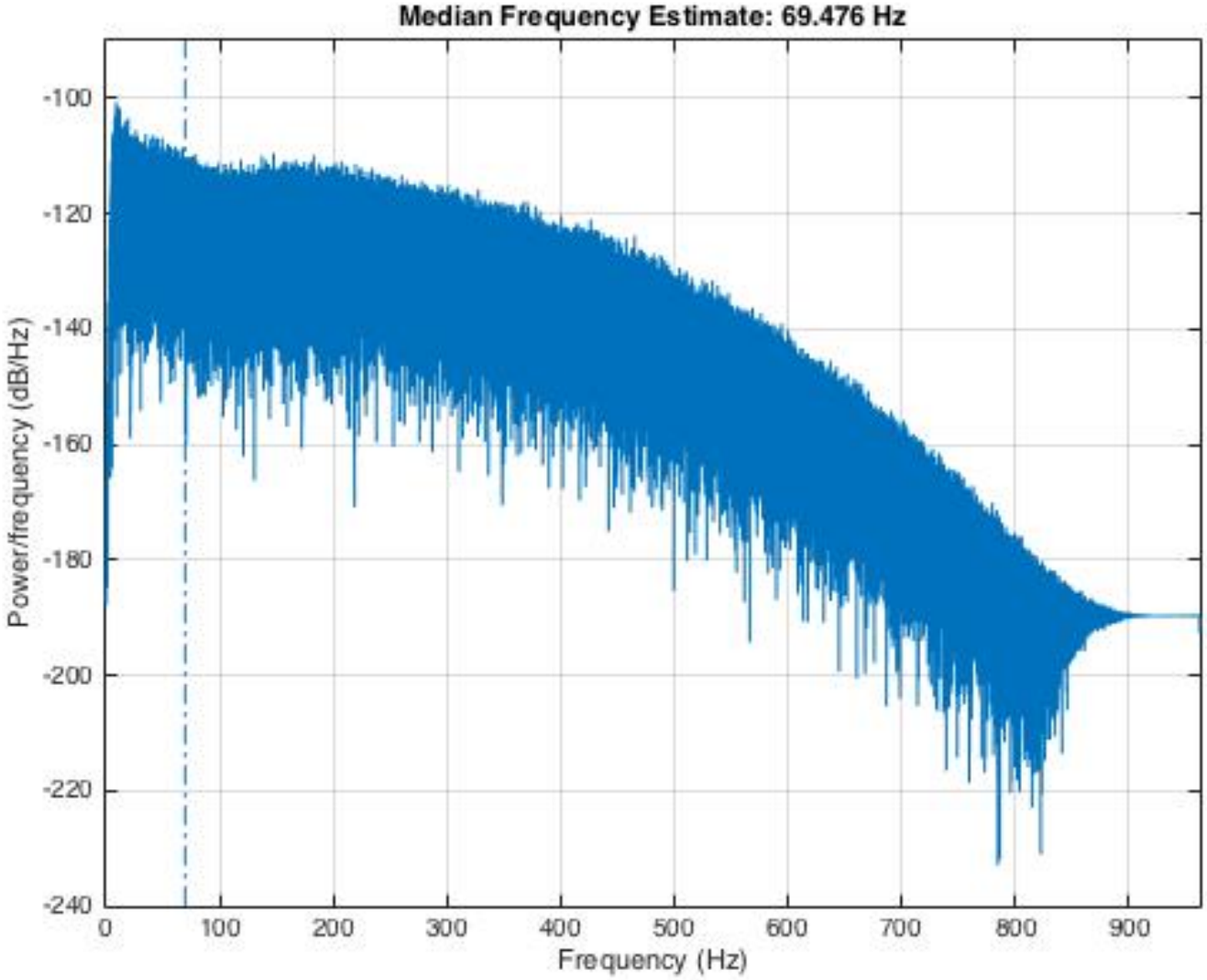

Single-Sided Amplitude Spectrum of Filtered Signal
×10^-7
8
7
6
5
4
3
2
1
0
|P1(f)|
0
100
200
300
400
500
600
700
800
900
1000
f (Hz)

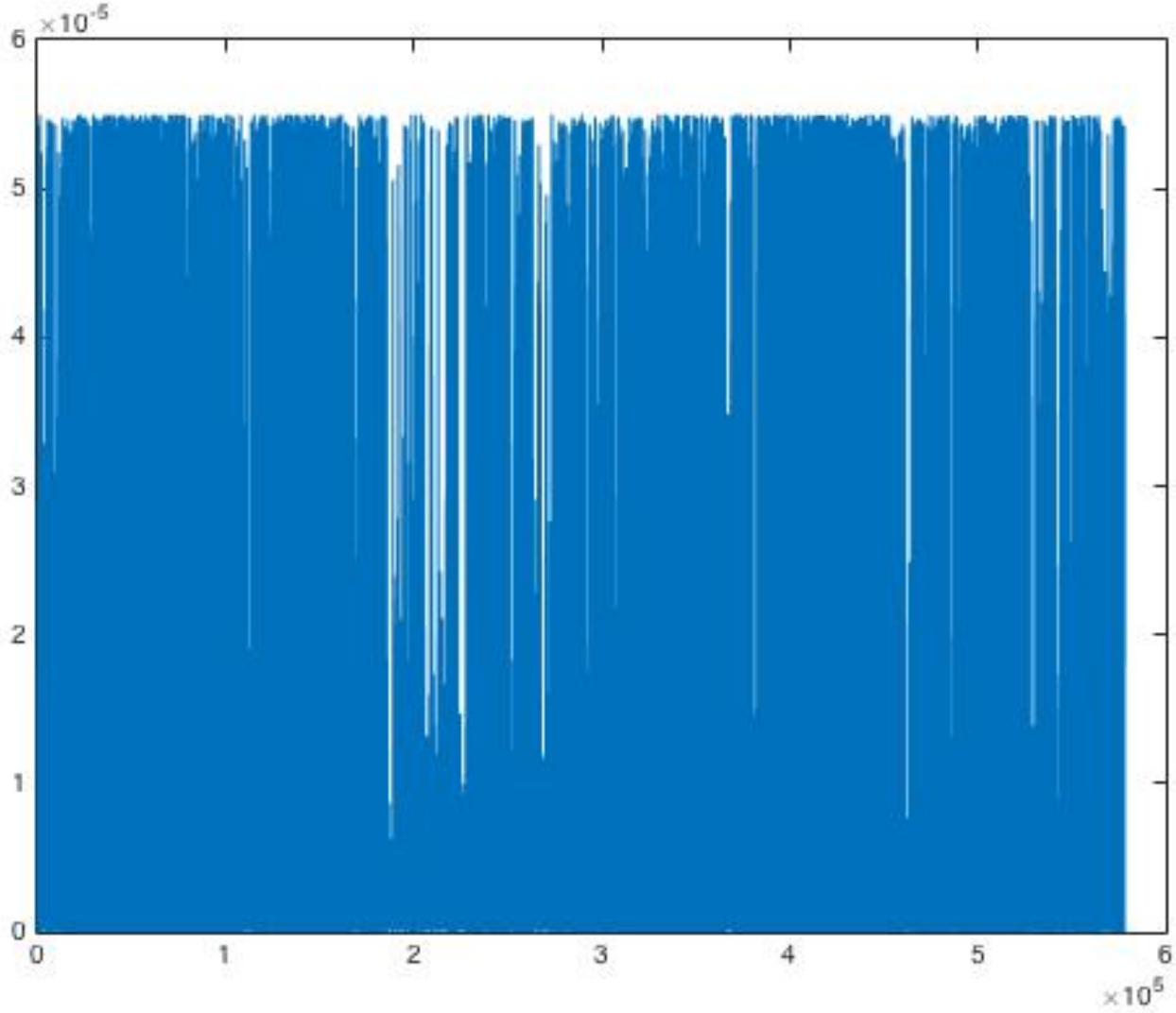

Single-sided Power spectrum
(Frequency in shown on a log scale)
Power spectrumen
1.4
1.2
1
0.8
0.6
0.4
0.2
100
200
300
400
500
600
700
800
900
Sample number (in Frequency)


Single-Sided Amplitude Spectrum of Raw Signal w/ Subtracted Mean
|P1(f)|
f (Hz)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
0
100
200
300
400
500
600
700
800
900
1000


Single-Sided Power Spectrum of Raw Signal w/ Subtracted Mean
Power
f (Hz)
0
0.5
1
1.5
0
100
200
300
400
500
600
700
800
900
1000


Mean Frequency Estimate: 109.560 Hz
Power/frequency (dB/Hz)
-100
-120
-140
-160
-180
-200
-220
-240
0
100
200
300
400
500
600
700
800
900
Frequency (Hz)


Median Frequency Estimate: 69.476 Hz
-100
-120
-140
-160
-180
-200
-220
-240
Power/frequency (dB/Hz)
0
100
200
300
400
500
600
700
800
900
Frequency (Hz)


×10^-5
6
5
4
3
2
1
0
0
1
2
3
4
5
6
×10^5

Command Window

```
>> Driver_Feature_Extraction

mean_freq =

  109.5595


median_freq =

   69.4761


ans =

  109.5595


ans =

   69.4761


Gap_Count =

      542515


Gap_Freq =

   1.8076e+03

>>
```