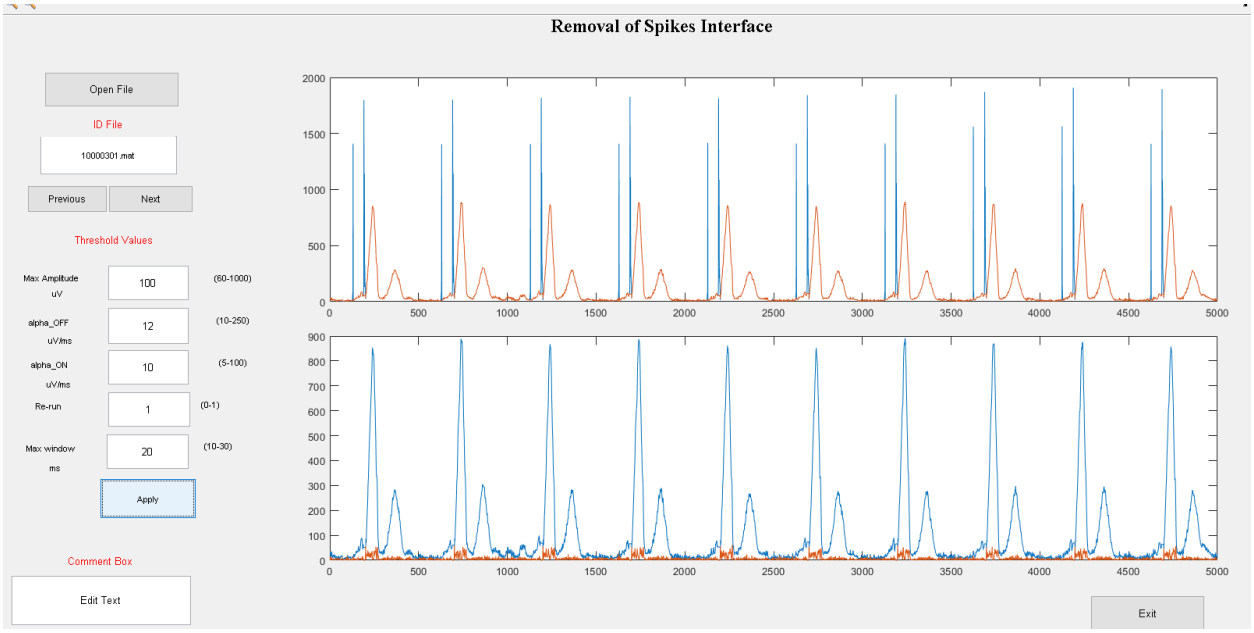
Manual for the Removal of Spikes User Interface

1. Open the MATLAB application and use removespikegui.m and removespikegui.fig files.
2. Save the .mat ECG files to the same folder with theremovespikegui.m and removespikegui.fig files.
3. Click the "Open File" button to open Windows Explorer.
4. Open an ECG Matlab file by selecting the desired file and pressing the open button on the lower right corner of the Windows Explorer window.
5. Click the "Apply" button with the given values to see if changes are to made the the threshold values.
6. Select a value for the Max Amplitude between 60 – 1000 μV. The Maximum amplitude defines the range of the upper limit value of the signal. Start with a value of 100 and go up or down by 20.
7. Select a value for the alpha_OFF between 10-250 μV/ms. The alpha_OFF defines the offset of spike: the smaller the value the wider window of the spike duration. Start with a value of 20 μV/ms and go up or down by 5 μV/ms.
8. Select a value for the alpha_ON between 5-100 μV/ms. The alpha_ON defines the spike onset slope: the larger the value the steeper slope is assumed at the onset. Start with a value of 10 and go up or down by about 5.
9. Select a value for the Re-run to 1. Re-run allows re-run of the algorithm recursively if a satisfactory result cannot be obtained by altering the thresholds several times.
10. Select a value for the Max window between 10-30 ms. The Maximum window size defines the range of the sample points considered as the time window of the pacing spike. Generally the value will be 30 ms.
11. Click the "Apply" button with adjusted values to see if additional changes need to be made.
12. If more changes need to be made, repeat steps 6-11 as needed. If not, click the next button to see the next file.
13. Repeat steps 6-12 for every file.
14. The "Exit" button will clear the figure as well as the command window

Example:



Please use the threshold values shown in figure and using the sample data (10000301.mat) you will get the spike removed as shown in the figure.