

ClassifyWave.m Manual

Calcium dynamics

Goal: Calcium transients are exponential decay like waveforms that are often rated as only peak values with a threshold (s.d.) or normalization (df/f). Despite the mean lifetime of a transient is generally centered around the peak values, prolonged activations (bursts) can be underrated by discarding the temporal content. To complete the information, we calculate the envelopes of transients and compared it with the peak values of each transient (this part has not been added yet).

Stand-alone usage:

```
>>ClassifyWave (sampling  
rate,'start_time','end_time','first_cell','last cell'); %basically  
same with dataread() function.
```

GUI usage:

Click ClassifyWave.m and desired data then RUN.

1-Move top left cursor to select a single cell response (each cell will be analyzed separately).

2-Adjust the middle cursor from sharp to smooth depending on peak intervals (sharper→closer to original, smoother→more LP filtered)

3- In order to qualify only interested peaks, amplitude and time width entries must be entered. Time width determines the required time interval between qualified peaks in terms of seconds. For instance, if you enter 2 sec and there is bursting activity with same amplitude within 2 seconds, only first peak will be rated (Envelope will contain the entire information though).

4- Enter Threshold button.

5-Return to cell# cursor to select another cell and follow the same workflow.