Summary of example:

The input data file ("131117-C2_short.dat") contains one trace obtained from a ca1 layer pyramidal cell by using current clamp.

The cell was excited by a short 500pA and by a long 10pA pulse injected into the soma, so you have to use the provided stimuli file (for this, select the "Custom Waveform" option from the dropdown menu on the stimuli layer and then load the file: "cell2_stim.dat").

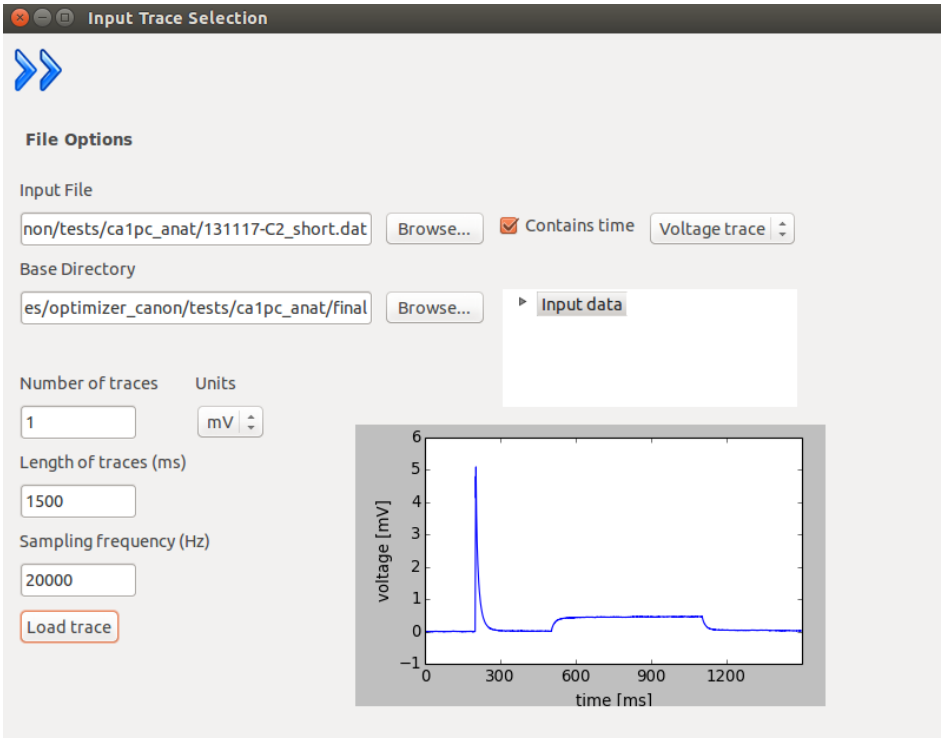
The data trace is 1500ms long and the sampling frequency was 20kHz.

The provided model is a passive one and it's based on a precise reconstruction, and we are interested in the cm, Ra, g_pas parameters.

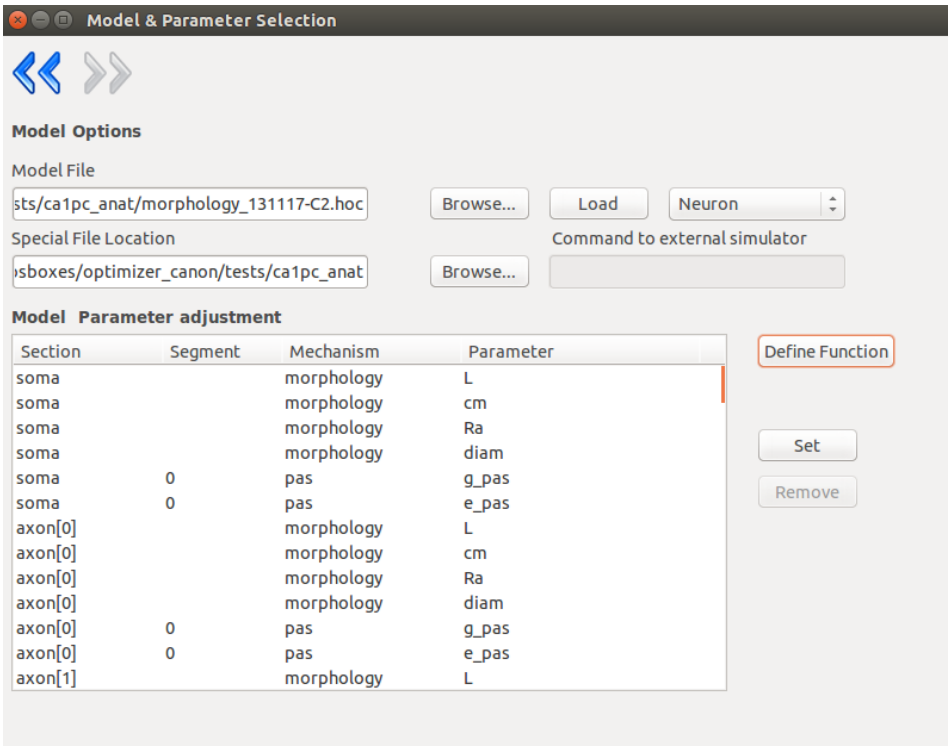
Because we had to set the e_pas parameter to 0 and we wanted to optimize the previous parameters in every section, we created a function to do this for us (see "udeffun_pyr_3param.txt"), you can load this on the model selection layer.

Step-by-step instructions to run the example from the Optimizer GUI:

Run „python optimizer.py -g" to start the GUI

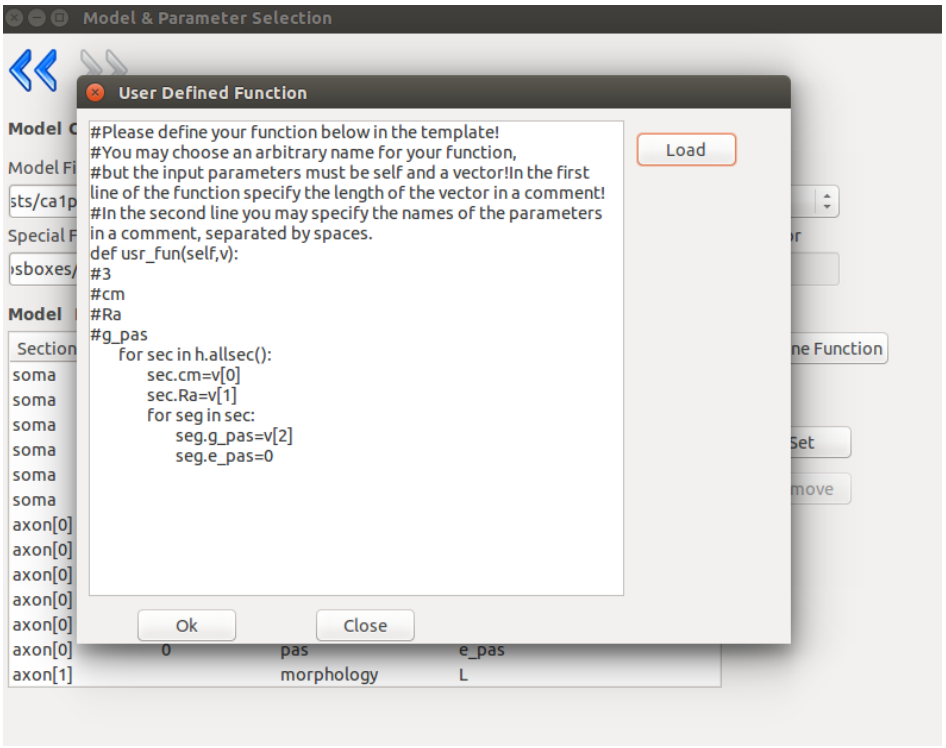


At 'Input File' load the target data, at 'Base Directory' choose the directory where you want to save the results. Fill out all the cells and press 'Load trace'. Go on by pressing the blue arrow.

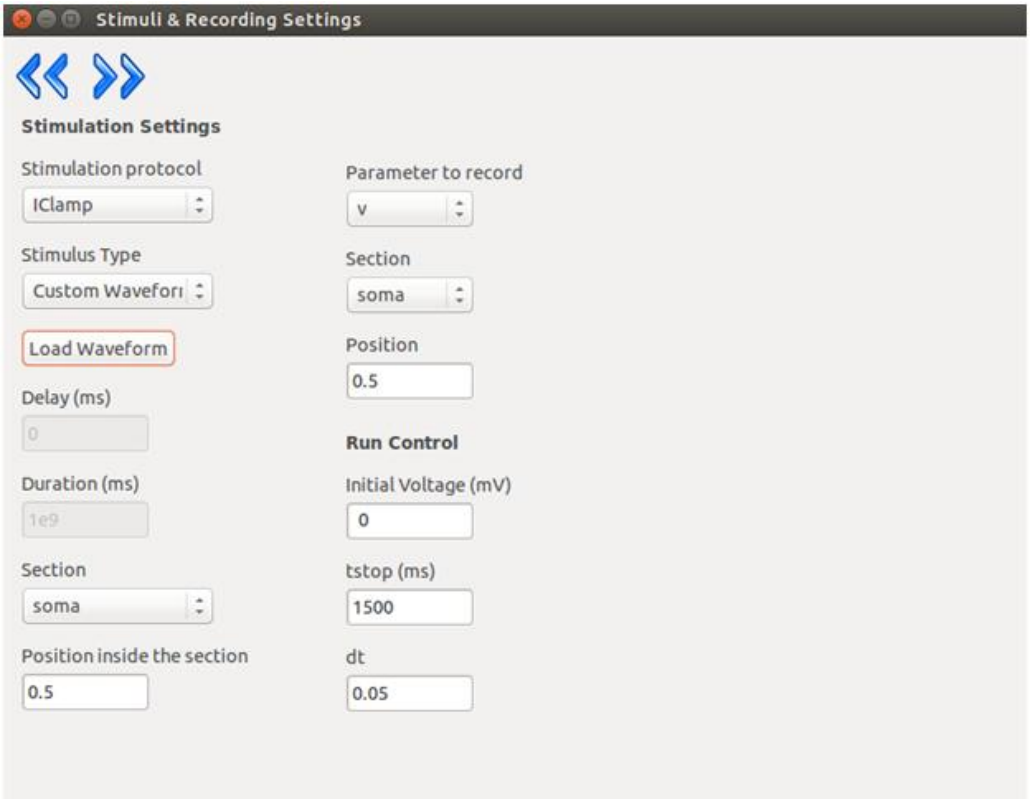


Browse to the model file and load the model.

Press the 'Define Function' button to load the user defined function:

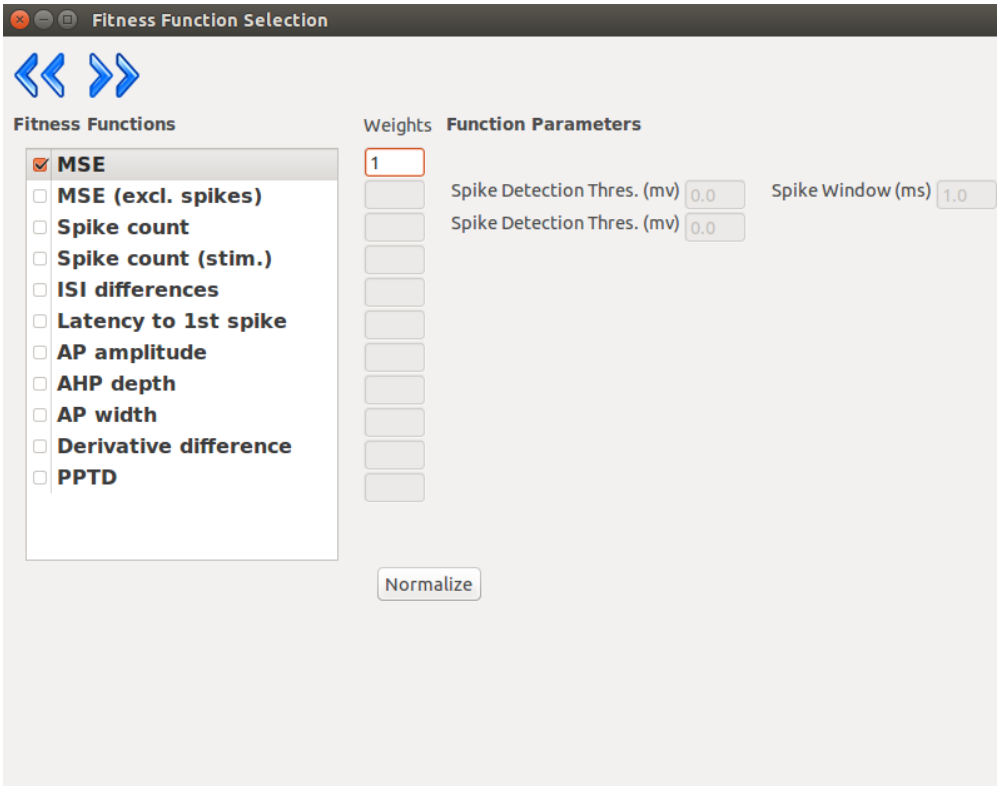


Press 'Ok', then go on by pressing the right arrow.

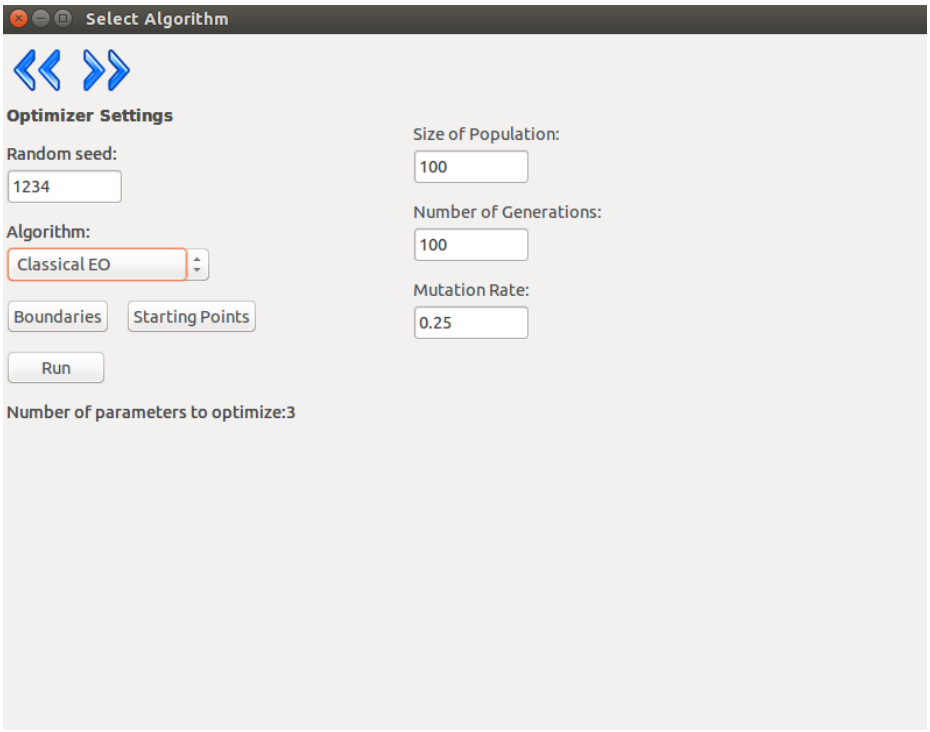


Choose ’Custom Waveform’ as ’Stimulus Type’, then press ’Load Waveform’ to load the file: cell2_stim.dat

Go on by pressing the right arrow.



Choose fitness function(s), and define their weights.



Select an algorithm, and press the ’Boundaries’ button to define the boundaries of the parameters to be optimized:

Press ’Set’.

Start the optimization pressing the ’Run’ button.