MuTE Graphical User Interface (GUI) overview

1. Introduction

The MuTE GUI has been developed to make the MuTE toolbox more user-friendly. Please be aware that this tutorial only provides information on how to use the GUI. More information regarding the analysis methods can be found at the mute website and references therein (http://mutetoolbox.guru/). It is strongly recommended to get familiarized with these methods before using the toolbox. In order to use the GUI, the latest version of the MuTE toolbox must be downloaded and added to your MATLAB® path (add with subfolders). The most recent version of MuTE can be downloaded at the following address for free: http://mutetoolbox.guru/downloads/
To launch the GUI, type 'mute' at the MATLAB command prompt. The following window should appear (fig. 1).

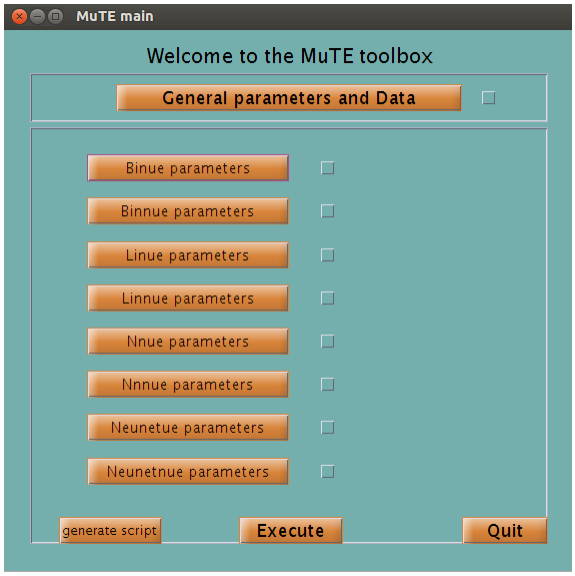

Fig. 1 The MuTE GUI main window.

2. How to use the MuTE GUI

The workflow can be separated into 3 parts: 1) Setting the general parameters and data selection, 2) setting method specific parameters and 3) generate script/execute the analysis.

2.1 General parameters and Data.

The general parameters refer to those parameters that apply to all the methods used (i.e. the methods selected in the 2nd step). These can be set by clicking the 'General parameters and Data' button on top of the main window. A new window should appear where the data can be selected and general parameters can be set (fig 2). In the new window, all the relevant parameter that need to be specified are listed. Most of the parameters have default values. In addition, every parameter is accompanied with a info ('?') button. More info regarding specific parameters can be obtained by clicking on the info button. Once all the relevant parameters are set, you can save the settings by clicking the 'Save settings' button. The default values can be restored by clicking the 'Restore default' button.

The GUI does an automatic check with respect to the selected data. The number of data files selected by the MuTE GUI will be displayed at the command prompt. If for some reason the GUI is unable to find the data files, an error will pop up. If no data is found, it will be impossible to save the settings and thus also to generate a script/execute the analysis.
Once the correct general parameters are saved, the general parameters window will be closed and the checkbox next to the 'general parameters and data' button in the main window will be checked.

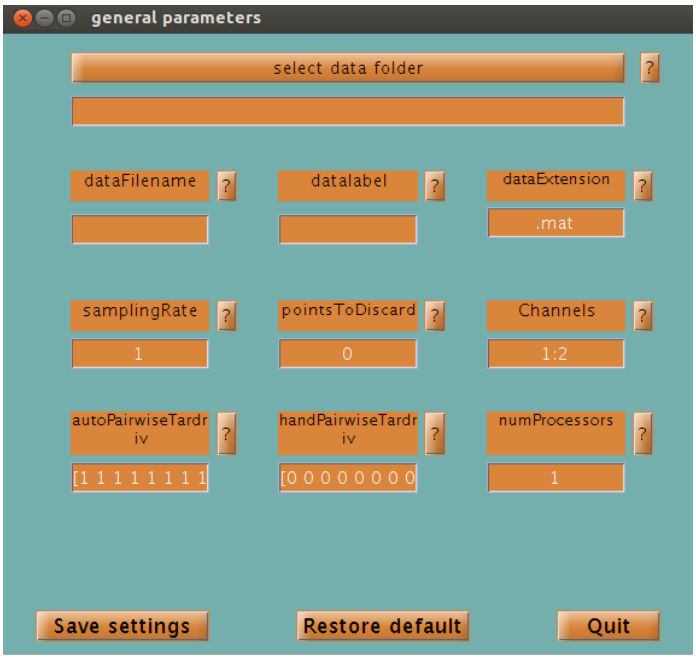

Fig. 2. The general parameters and data pop-up window.

2.2 Method specific parameters.

In the middle of the main window, there are 8 buttons listed vertically. Each of these buttons will open a new window where you can specify method specific parameters (fig. 3).

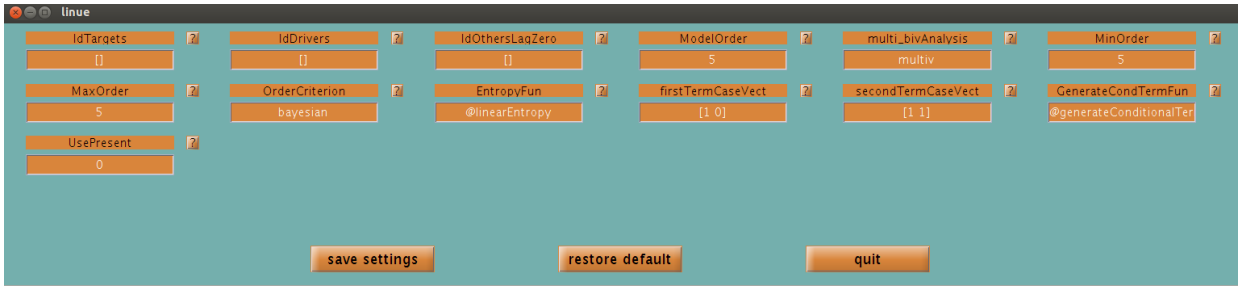

Fig 3. An example of a method specific pop-up window. Here the method specific parameters can be specified (in the figure the linue method settings are displayed).

The methods listed from top to bottom are the following:

Binue: Binning uniform embedding

Binnue: Binning non-uniform embedding
Linue: Linear uniform embedding
Linnue: Linear non-uniform embedding
Nnue: Nearest neighbor, uniform embedding
Nnnue: Nearest neighbor, non-uniform embedding
Neunetue: Neural networks uniform embedding
Neunetnue: Neural networks non-uniform embedding

The method specific window is similar to the general parameters window. All the parameters have default values. It is recommended to keep the default values for most parameters. Each parameter is again provided with a ('?') info button. The info button opens a window where more information regarding that specific parameter can be obtained.
Once the settings are saved, the window will be closed and the checkbox next to the parameter will be checked. If one unchecks one of the method specific checkboxes, then that method will not be performed during the analysis.

2.3 Generate script/execute the analysis

Once all the setting have been set, the user has two options: 1) generate a script or 2) execute the analysis.
When clicking the 'generate' button, a matlab script (a .m file with the date and hour of generation in the name e.g. 'mute_analysis_2016_1_28_9h_56min.m') will be generated in the data folder. The analysis can than be run by simply running the script.
When clicking the 'execute' button, the same script will be generated but now it will also be executed automatically. Our goal of generating a script is to make the transition from point-and- click to command line analysis easier.
The user must specify at least one of the methods and the general parameters, otherwise an error will pop-up and no script will be generated/executed.
The analyses are done once the main window is closed. The results can be found in a folder inside the data directory.

3. Contact

We kindly invite the user to contact us in case an error should occur when using MuTE.
This can be done by filling in the contact form available at http://mutetoolbox.guru/contacts/.
We will try to found a solution to your problem as soon as possible.