GraphScanner GUI for MATLAB® User Guide

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1 Overview

GraphScanner GUI is a graphical user interface program, written in MATLAB, which allows user to extract particular xy-point(s) from a certain graph. The program supports many known image formats like .jpeg and .png, the complete list for the supported file formats see MATLAB `help fileformats`. This code works only on MATLAB version 7.6 or later. Next section gives you general instructions.

2 How to Use GraphScanner GUI

Below are listed specific guidelines. By following the given steps you'll easily learn how to use the program successfully.

- First start the program by typing GraphScannerGUI on the command window, and the program's main window emerges on the screen. Then load a graph on the figure panel from the menu bar (`Load graph` → `New graph`). Once you have loaded the graph, you can resize the graph either using scale buttons (two buttons on the main window just above the table) or manually setting the size of the graph (`Options` → `Resize...`).
- After loading and placing the graph, you need to define coordinates by selecting from the menu (`New Coordinate` → `New Coordinates`). This causes that the `Set Coordinates` window pops open. In the window, you see the table which encompasses four columns. On the first two columns (`X-Value` and `Y-Value`) you need to define the actual coordinate values (origin, x-axis limit and y-axis limit). After that, specify the previously defined points from the graph by using the three buttons below the table `Point 1`, `Point 2` and `Point 3`. Pressing the button closes the window temporarily so that you can place the point. After placing the point, press enter (or right-mouse button) to verify the selection and this also reopens the set coordinates window. `Point 1` represents origin, `Point 2` x-axis and `Point 3` y-axis. Before exiting check that the XY-scales are correct (either linear or logarithmic). The latest coordinate values remain in the memory (check `New Coordinate` → `Coordinate Settings`). Thus, if you want to reload the same graph or change the graph with a new one which has the same xy-coordinates, you don't need to set the coordinates again.
- Define points from the graph by selecting `Curve` → `New Curve`. Select as many points as you like and to accept the selection either press any key or click right-mouse button. Point values appear on the table. The program also enables you to add points or delete points or move points or select points (`Curve` → `Add Point/Delete Point/Move Point/Select Point`). If you activate one of the selection modes (add, delete, move or select), in order to disable the mode press any key or click right-mouse

button. However, if you have selected the delete mode, pressing right-mouse button the lasso selection feature activates. This enables you to, for example, delete the whole curve simultaneously. The delete mode will be disabled after you have made lasso selection otherwise in order to disable the delete mode press shift+left-mouse button. In case you have a logarithmic xy-scale, the selection stops if you try to make a selection outside the defined axes. If axis is linear, you are able to pick a point outside the defined axes. Below the table there are two boxes which display lastly modified point with enhanced accuracy (move mouse cursor above one of the boxes in order to check the latest modification). You can also select a point from the data table and the selected point will be highlighted.

- Under Settings menu you are able to do some modification which are as follow: specify information about the curve, alter the color of the line/marker(s), draw the grid and define x and y-axis labels (`Options` → `Settings`). If you want to draw the grid and the scale of x or y-axis is not logarithm, you can specify how many grid lines divide the axis (number of spacings option). Fitting menu (`Options` → `Fitting`) opens a new figure and plots the current data. By using this options you are able to fit a curve to the given data. Actual fitting is done by EzyFit curve fitting toolbox (created by Frédéric Moisy). In order to carry out fitting, EzyFit package must be installed in your system (**EzyFit**). Once installed, you can find EzyFit menu on the figure's menubar. The drop-down list just above the scale buttons keeps track of specified curves. This means that you are able to define multiple curves on one (and only one) graph at a time. This way you can, for instance, edit previously declared curves. Pressing right-mouse button opens a context menu which enables you to quickly make some modification of choice. Furthermore, you can save the curve data to an ASCII file for later use or alternatively you can print the figure. Remember that it is advisable to specify curve info and xy labels because they are included in the written file.