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**Documentation for function ‘subfig\_plot’**

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**Usage:**

subfig\_plot(subfig\_general, subfigs);

**Parameters:**

subfig\_general  
structure containing main parameters, such as figure proportions, printer settings, x axis settings, and global legend settings.

subfigs{k}  
cell field consisting of plot data for each subfigure `k’. It contains the data for each plotted line, the plot settings, local legend, and y axis settings.

**subfig\_general: figure size and proportions**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1  x1  x2  C:\Q2L-PWM\Dissertation\latex\10-Einleitung\gen_figs\fig3.png  y1  1  g  g  y3[3]  y2[2]  y2[1] | | | | | | |  |  | | --- | --- | | x1 | subfig\_general.x\_begin | | x2 | subfig\_general.x\_length | | y1 | subfig\_general.y\_begin | | y2[k] | subfig\_general.y\_sizes\_rel[k] | | g | subfig\_general.y\_gap | |
| **subfig\_general: figure size and proportions** | | | | | |  |
| **Parameter** | **Value** | **Value Example** | **Optional** | **Units** | **Description** | | |
| size | [x, y] | [5, 6] | **no** | cm | Size of the output figure in cm. | | |
| x\_begin | x | 0.1 | **no** | relative | Offset of the all axes from left (relative to figure size). | | |
| y\_begin | y | 0.05 | **no** | relative | Offset of the first axis from top (relative to figure size). | | |
| x\_length | x | 0.7 | **no** | relative | Length of the x-axis (relative to figure size). | | |
| subfig\_y\_sizes\_rel | [a b c…] | [0.2 0.4 0.2] | **no** | relative | The length of the y-axis for each subplot (relative to figure size). The length of the vector determines the number of subplots. | | |
| subfig\_y\_gap | g | 0 | **no** | relative | The gap between the subplots (relative to figure size). | | |

**subfig\_general: general settings**

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| **Parameter** | **Value** | **Value Example** | **Optional** | **Units** | **Description** |
| x\_limit | [x1 x2] | [0 2] | **no** | x axis units | The part of x axis which should be displayed |
| xticks | [x1 x2…] | [1 2 2.5 3] | yes | x axis units | Specifies at which positions, the x ticks will be placed. |
| xticklabel | {s1,s2…} | {‘a’, ‘b’, ‘c’, ‘x’} | yes | - | Adds the labels for ticks specified in xticks. |
| do\_log\_axis\_x | logic 1/0 | 0 | yes | - | Forces x axis to be logarithmic. (Might cause problems with decimal comma.) |
| do\_grids | logic 1/0 | 1 | yes | - | Turns the grid on/off in all subplots. |
| x\_label | string | ‘Time (ms)’ | yes | - | Adds the x axis label |
| fontsize | f | 12 | yes | pt | Sets the font size |
| legend\_fontsize | f | 10 | yes | pt | Sets the legend font size |
| font | string | ‘Times-Roman’ | yes | - | Sets the font used in figure |
| figure\_number | n | 3 | yes | - | Determines which figure number will be used to generate the figure (the figure will be closed after generation). |
| align\_y\_labels | logic 1/0 | 1 | yes | - | Determines whether the y axis labels should be aligned. By default, this is turned on. |
| interpreter | str | ‘tex’ | yes | - | Determines the interpreter for labels. (Options: ‘tex’, ‘latex’,’none’; default: ‘tex’) |
| decimal\_comma | logic 1/0 | 1 | yes | - | If set to 1, decimal comma is used at the axes instead of decimal point. |
| default\_linewidth | d | 0.8 | yes | - | Default plot line width. |
| default\_markersize | d | 3 | yes | - | Default marker size. |

**subfig\_general: print settings**

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| **Parameter** | **Value** | **Value Example** | **Optional** | **Units** | **Description** |
| figure\_name | string | ‘figure’ | **no** | - | Name of the output file. |
| output\_file\_type | string | ‘PDFemb’ | yes | - | Determines the output file type.  Currently supported: ‘PDFemb’, ‘PDFemb2’, ‘PDF’, ‘PNG’.  ‘PDFemb’ produces a PDF with embedded fonts. Ghostscript needed (included in MikTex)!  ‘PDFemb2’ fixes the problems with new version of MikTex . |
| DPI | string | ‘-r400’ | yes | - | Specifies printer DPI. |
| printer | string | ‘-opengl’ | yes | - | Specifies printer.  Currently supported: ‘-painters’, ‘-opengl’ |

**subfig\_general.global\_legend: global legend (optional)**

If subfig\_general.global\_legend is specified, the software will try to generate a global legend above the subplots. Note that if the local legend is generated for the subplot, the global legend won’t be generated.

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| **Parameter** | **Value** | **Value Example** | **Optional** | **Units** | **Description** |
| subfig\_nr | n | 2 | no | - | Specifies which subplot will be used to generate global legend |
| names | {s1, s2,…} | {‘data1’,’data2’} | no | - | The names for the particular plotted data shown in legend. |
| width | w | 0.9 | no | relative | The width of the global legend relative to the length of the x axis. |
| height | h | 0.02 | no | relative | The height of the legend (relative to the figure size). |
| y\_gap | g | 0.03 | no | relative | The gap between the gap and subplots (relative to the figure size). |
| box\_on | logic 1/0 | 0 | yes | - | determines whether the box should be on |
| legendstyle | string | ‘HORIZONTAL’ | yes | - | Specifies the style of the global legend.  Currently available: ‘HORIZONTAL’, ‘VERTICAL’ |

**subfigs{k}**

specifies data for the k-th subfigure.

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| **Parameter** | **Value** | **Value Example** | **Optional** | **Units** | **Description** |
| data{i}.x | [x1 x2…] | [0 1 2 3 4] | **no** | x axis units | The x-data of the i-th line (the number of lines in subfigure is determined by the highest available ‘i’ in the structure). |
| data{i}.y | [y1 y2…] | [1 1 3 3 4] | **no** | y axis units | The y-data of the i-th line (the number of lines in subfigure is determined by the highest available ‘i’ in the structure). |
| data{i}.color | [r g b] | [0.3 0.7 1] | yes | relative | Specifies the line and marker color (or text color with ‘text’ plottype). |
| data{i}.plottype | str | ‘plot’ | yes | - | Specifies the plotting function.  Currently available: ‘plot’, ‘text’, ‘stairs’, ‘bar’ |
| data{i}.plotstyle | str | ‘-xr’ | yes | - | Specifies the plot style in a matlab native form. |
| data{i}.linewidth | a | 1.1 | yes | - | Specifies line width. |
| data{i}.markersize | d | 3.1 | yes | - | Specifies marker size. |
| data{i}.text | {str1, str2,…} | {‘text1’, ‘txt2’} | yes**/no** | - | Specifies the particular texts which will be plotted with ‘text’ plottype at positions specified at x and y. |
| data{i}.text\_size | s | 12 | yes | pt | Specifies the size of the plotted text (with ‘text’ plottype). |
| data{i}.barwidth | a | 0.8 | yes**/no** | relative | Specifies the relative width of the bar plot which will be plotted with ‘bar’ plottype. |
| ylimit | [y1 y2] | [0 7.4] | yes | - | Specifies the y limits. |
| yticks | [y1 y2…] | [1 2 2.5 3] | yes | y axis units | Specifies at which positions the y ticks will be placed. |
| yticklabel | {s1,s2…} | {‘a’, ‘b’, ‘c’, ‘x’} | yes | - | Adds the labels for ticks specified in yticks. |
| do\_log\_axis\_y | logic 1/0 | 0 | yes | - | Forces y axis to be logarithmic. (Might cause problems with decimal comma.) |
| ylabel | {str} | {‘Y axis’,’kA’} | yes | - | Adds y label. |

**subfigs{k}.legend**

if defined, the software will try to invoke the legend for the particular subfigure.

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| **Parameter** | **Value** | **Value Example** | **Optional** | **Units** | **Description** |
| names | {s1, s2,…} | {‘data1’,’data2’} | **no** | - | The names for the particular plotted data shown in legend. |
| height | h | 0.02 | **no** | relative | The height of the legend (relative to the figure size). |
| width | w | 0.9 | yes | relative | The width of the global legend relative to the length of the x axis. |
| legendstyle | str | ‘HORIZONTAL\_UP’ | yes | - | Specifies the style of the legend.  Currently available: ‘HORIZONTAL\_UP’, ‘HORIZONTAL\_DOWN’ |
| box\_on | logic 1/0 | 1 | yes | - | Turns the legend box on/off. |