MPL Plotter Documentation

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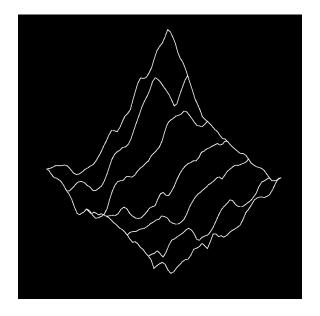




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Making plots for technical documents can be a time sink. MPL Plotter aims to reduce that overhead by allowing you to effortlessly and concisely

- Generate publication quality figures with a single call
- Compare data by plotting different curves in a single plot
- Visualize different kinds of data in figures with many plots

It is opinionated but built with flexibility in mind, which practically means that no default cant be changed, and any and all further customization with Matplotlib is compatible. From ticks to legends to extra axes to whatever suits your needs. Theres two ways to use MPL Plotter:

- Calls to the 2D and 3D plotting functions
- Using presets, either those shipped with the library, or custom ones

It does the job for me and I expand it when it cant. Hope you find some use in it!

Submodules:

CHAPTER

ONE

COMPARISONS

comparison(x, y, f=None, show=False, autocolor=True, top=None, bottom=None, left=None, right=None, wspace=None, hspace=None, **kwargs)

Inputs The panes function supports numerical inputs in the following forms: |x|y| result | notes |||| | | array | array | 1 | || array | [array, array] | 2 | Both y 's share 'x || [array, array] | [array, array] | 2 | Each y has an x || [n*[array]] | [n*[array]] | n | Each y has an x |

where

- array: List or NumPy array with numerical values
- []: List containing
- result: <curves>

Arguments Arguments are internally classified as FIGURE arguments, AXIS arguments, PLURAL arguments and CURVE arguments, namely:

• **Figure** Select few arguments which may be input only once in the plotting process, so as to avoid conflicts. Ieg: passing *grid=True* twice (*plt.grid()*) will result in no grid being drawn. These are removed from the keyword arguments and used in the last *comparison* call.

Plural

Arguments with a keyword equal to any of the arguments which can be passed to the *line*

2D plotter, in plural tense. The line plotter is chosen as it shares all general arguments with the other 2D plotter functions. The plural arguments are assumed to be

lists of length equal to the number of curves

and thus modify each curve. Ieg: colors=[red, green, blue] will set the color of each curve to red, green and blue respectively in a 3-curve plot.

• Curve

Defaults The limits of the plot will be adjusted to the upper and lower limits of all `x`s and `y`s.

Parameters

- **x** (list of list or list of np.ndarray) Domains.
- y (list of list or list of np.ndarray) Values.



- \mathbf{f} (list of plot) Functions used to plot y(x)
- **kwargs** MPL Plotter plotting class keyword arguments for further customization

CHAPTER

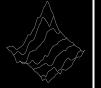
TWO

PLOTTING METHODS

```
class canvas
     Bases: object
     method_backend()
     method_fonts()
         Fonts Reference:
           • https://matplotlib.org/2.0.2/users/customizing.html
         Pyplot method: plt.rcParams[<category>.<item>] = <>
     method_setup()
     method_figure()
     method_grid()
class attributes
     Bases: object
     method_background_color()
     method_workspace_style()
     method_cb()
     method_legend()
     method_resize_axes()
     method_title()
     method_axis_labels()
     method_spines()
     method_ticks()
         Defaults
class plot
     Bases: mpl_plotter.two_d.methods.canvas, mpl_plotter.two_d.methods.attributes
     init()
```



```
run()
     main()
     finish()
     method_save()
     method_show()
class line(x=None, y=None, line_width=2, color='darkred', cmap='RdBu_r', alpha=None, norm=None,
             backend='Qt5Agg', font='serif', math_font='dejavuserif', font_color='black',
             font_size_increase=0, fig=None, ax=None, figsize=None, shape_and_position=111,
             resize_axes=True, scale=None, aspect=1, workspace_color=None, workspace_color2=None,
             background_color_figure='white', background_color_plot='white', background_alpha=1,
             style=None, light=None, dark=None, spine_color=None, spines_removed=(0, 0, 1, 1),
             x_upper_bound=None, x_lower_bound=None, y_upper_bound=None, y_lower_bound=None,
             x_bounds=None, y_bounds=None, demo_pad_plot=False, x_upper_resize_pad=0,
             x_lower_resize_pad=0, y_upper_resize_pad=0, y_lower_resize_pad=0, grid=True,
             grid_color='lightgrey', grid_lines='-.', title=None, title_size=12, title_y=1.025,
             title_weight=None, title_font=None, title_color=None, x_label=None, x_label_size=12,
             x_label_pad=10, x_label_rotation=None, x_label_weight=None, y_label=None,
             y_label_size=12, y_label_pad=10, y_label_rotation=None, y_label_weight=None,
             x_tick_number=5, y_tick_number=5, x_label_coords=None, y_label_coords=None,
             tick_color=None, tick_label_pad=5, ticks_where=(1, 1, 0, 0), tick_label_size=10,
             x_tick_label_size=None, y_tick_label_size=None, x_custom_tick_locations=None,
             y_custom_tick_locations=None, fine_tick_locations=True, x_custom_tick_labels=None,
             y_custom_tick_labels=None, x_date_tick_labels=False, date_format='%Y-\%m-\%d',
             tick ndecimals=1, x tick ndecimals=None, y tick ndecimals=None, x tick rotation=None,
             y_tick_rotation=None, tick_labels_where=(1, 1, 0, 0), color_bar=False, cb_pad=0.2,
             cb_axis_labelpad=10, shrink=0.75, extend='neither', cb_title=None, cb_orientation='vertical',
             cb_title_rotation=None, cb_title_style='normal', cb_title_size=10, cb_top_title_y=1,
             cb_ytitle_labelpad=10, cb_title_weight='normal', cb_top_title=False, cb_y_title=False,
             cb_top_title_pad=None, x_cb_top_title=0, cb_vmin=None, cb_vmax=None,
             cb_hard_bounds=False, cb_outline_width=None, cb_tick_number=5, cb_ticklabelsize=10,
             cb_tick_ndecimals=None, plot_label=None, legend=False, legend_loc='upper right',
             legend_bbox_to_anchor=None, legend_size=13, legend_weight='normal',
             legend_style='normal', legend_handleheight=None, legend_ncol=1, show=False,
             zorder=None, filename=None, dpi=None, suppress=True)
     Bases: mpl_plotter.two_d.methods.plot
     plot()
     mock()
```



class scatter(*x*=*None*, *y*=*None*, *point_size*=5, *marker*='o', *facecolors*=*None*, *color*='C0', cmap='RdBu_r', alpha=None, norm=None, backend='Qt5Agg', font='serif', math_font='dejavuserif', font_color='black', font_size_increase=0, fig=None, ax=None, figsize=None, shape_and_position=111, resize_axes=True, scale=None, aspect=1, workspace_color=None, workspace_color2=None, background_color_figure='white', background_color_plot='white', background_alpha=1, style=None, light=None, dark=None, spine_color=None, spines_removed=(0, 0, 1, 1), x_upper_bound=None, *x_lower_bound=None*, *y_upper_bound=None*, *y_lower_bound=None*, *x_bounds=None*, y_bounds=None, demo_pad_plot=False, x_upper_resize_pad=0, x_lower_resize_pad=0, y_upper_resize_pad=0, y_lower_resize_pad=0, grid=True, grid_color='lightgrey', grid_lines='-.', title=None, title_size=12, title_y=1.025, title_weight=None, title font=None, title color=None, x label=None, x label size=12, x label pad=10, $x_label_rotation=None, x_label_weight=None, y_label_None, y_label_size=12,$ *y_label_pad=10*, *y_label_rotation=None*, *y_label_weight=None*, *x_tick_number=5*, *y_tick_number=5*, *x_label_coords=None*, *y_label_coords=None*, *tick_color=None*, tick_label_pad=5, ticks_where=(1, 1, 0, 0), tick_label_size=10, x_tick_label_size=None, y_tick_label_size=None, x_custom_tick_locations=None, y_custom_tick_locations=None, fine_tick_locations=True, x_custom_tick_labels=None, y_custom_tick_labels=None, $x_date_tick_labels=False, date_format='\%Y-\%m-\%d', tick_ndecimals=1,$ x_{tick} _ndecimals=None, y_{tick} _ndecimals=None, x_{tick} _rotation=None, y_tick_rotation=None, tick_labels_where=(1, 1, 0, 0), color_bar=False, cb_pad=0.2, cb_axis_labelpad=10, shrink=0.75, extend='neither', cb_title=None, cb_orientation='vertical', cb_title_rotation=None, cb_title_style='normal', cb_title_size=10, cb_top_title_y=1, cb_ytitle_labelpad=10, cb_title_weight='normal', cb_top_title=False, cb_y_title=False, cb_top_title_pad=None, x_cb_top_title=0, cb_vmin=None, cb_vmax=None, cb_hard_bounds=False, cb_outline_width=None, cb_tick_number=5, cb_ticklabelsize=10, cb_tick_ndecimals=None, plot_label=None, legend=False, legend_loc='upper right', legend_bbox_to_anchor=None, legend_size=13, legend_weight='normal', legend_style='normal', legend_handleheight=None, legend_ncol=1, show=False, zorder=None, filename=None, dpi=None, suppress=True)

Bases: mpl_plotter.two_d.methods.plot

plot()



class heatmap(x=None, y=None, z=None, normvariant='SymLog', color=None, cmap='RdBu_r', alpha=None, norm=None, backend='Qt5Agg', font='serif', math_font='dejavuserif', font_color='black', font_size_increase=0, fig=None, ax=None, figsize=None, shape_and_position=111, resize_axes=True, scale=None, aspect=1, workspace_color=None, workspace_color2=None, background_color_figure='white', background_color_plot='white', background_alpha=1, style=None, light=None, dark=None, spine_color=None, spines_removed=(0, 0, 1, 1), x_upper_bound=None, *x_lower_bound=None*, *y_upper_bound=None*, *y_lower_bound=None*, *x_bounds=None*, y_bounds=None, demo_pad_plot=False, x_upper_resize_pad=0, x_lower_resize_pad=0, y_upper_resize_pad=0, y_lower_resize_pad=0, grid=True, grid_color='lightgrey', grid_lines='-.', title=None, title_size=12, title_y=1.025, title_weight=None, title font=None, title color=None, x label=None, x label size=12, x label pad=10, $x_label_rotation=None, x_label_weight=None, y_label_None, y_label_size=12,$ *y_label_pad=10*, *y_label_rotation=None*, *y_label_weight=None*, *x_tick_number=5*, *y_tick_number=5*, *x_label_coords=None*, *y_label_coords=None*, *tick_color=None*, tick_label_pad=5, ticks_where=(1, 1, 0, 0), tick_label_size=10, x_tick_label_size=None, y_tick_label_size=None, x_custom_tick_locations=None, y_custom_tick_locations=None, fine_tick_locations=True, x_custom_tick_labels=None, y_custom_tick_labels=None, $x_date_tick_labels=False, date_format='\%Y-\%m-\%d', tick_ndecimals=1,$ x_{tick} _ndecimals=None, y_{tick} _ndecimals=None, x_{tick} _rotation=None, y_tick_rotation=None, tick_labels_where=(1, 1, 0, 0), color_bar=False, cb_pad=0.2, cb_axis_labelpad=10, shrink=0.75, extend='neither', cb_title=None, cb_orientation='vertical', cb_title_rotation=None, cb_title_style='normal', cb_title_size=10, cb_top_title_y=1, cb_ytitle_labelpad=10, cb_title_weight='normal', cb_top_title=False, cb_y_title=False, cb_top_title_pad=None, x_cb_top_title=0, cb_vmin=None, cb_vmax=None, cb_hard_bounds=False, cb_outline_width=None, cb_tick_number=5, cb_ticklabelsize=10, cb_tick_ndecimals=None, plot_label=None, legend=False, legend_loc='upper right', legend_bbox_to_anchor=None, legend_size=13, legend_weight='normal', legend_style='normal', legend_handleheight=None, legend_ncol=1, show=False, zorder=None, filename=None, dpi=None, suppress=True)

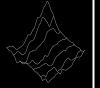
Bases: mpl_plotter.two_d.methods.plot

plot()



class quiver(*x*=None, *y*=None, *u*=None, *v*=None, color=None, cmap='RdBu_r', alpha=None, norm=None, rule=None, custom_rule=None, vector_width=0.01, vector_min_shaft=2, vector_length_threshold=0.1, backend='Qt5Agg', font='serif', math_font='dejavuserif', font_color='black', font_size_increase=0, fig=None, ax=None, figsize=None, shape_and_position=111, resize_axes=True, scale=None, aspect=1, workspace_color=None, workspace_color2=None, background_color_figure='white', background_color_plot='white', background_alpha=1, style=None, light=None, dark=None, $spine_color=None, spines_removed=(0, 0, 1, 1), x_upper_bound=None,$ $x_lower_bound=None, y_upper_bound=None, y_lower_bound=None, x_bounds=None,$ y_bounds=None, demo_pad_plot=False, x_upper_resize_pad=0, x_lower_resize_pad=0, y_upper_resize_pad=0, y_lower_resize_pad=0, grid=True, grid_color='lightgrey', grid_lines='-.', title=None, title_size=12, title_y=1.025, title_weight=None, title_font=None, $title_color=None, x_label=None, x_label_size=12, x_label_pad=10,$ *x_label_rotation=None*, *x_label_weight=None*, *y_label=None*, *y_label_size=12*, y_label_pad=10, y_label_rotation=None, y_label_weight=None, x_tick_number=5, *y_tick_number=5*, *x_label_coords=None*, *y_label_coords=None*, *tick_color=None*, tick_label_pad=5, ticks_where=(1, 1, 0, 0), tick_label_size=10, x_tick_label_size=None, y_tick_label_size=None, x_custom_tick_locations=None, y_custom_tick_locations=None, fine_tick_locations=True, x_custom_tick_labels=None, y_custom_tick_labels=None, $x_date_tick_labels=False, date_format='\%Y-\%m-\%d', tick_ndecimals=1,$ *x_tick_ndecimals=None*, *y_tick_ndecimals=None*, *x_tick_rotation=None*, y_tick_rotation=None, tick_labels_where=(1, 1, 0, 0), color_bar=False, cb_pad=0.2, cb_axis_labelpad=10, shrink=0.75, extend='neither', cb_title=None, cb_orientation='vertical', cb_title_rotation=None, cb_title_style='normal', cb_title_size=10, cb_top_title_y=1, cb_ytitle_labelpad=10, cb_title_weight='normal', cb_top_title=False, cb_y_title=False, cb_top_title_pad=None, x_cb_top_title=0, cb_vmin=None, cb_vmax=None, cb_hard_bounds=False, cb_outline_width=None, cb_tick_number=5, cb_ticklabelsize=10, cb_tick_ndecimals=None, plot_label=None, legend=False, legend_loc='upper right', legend_bbox_to_anchor=None, legend_size=13, legend_weight='normal', legend_style='normal', legend_handleheight=None, legend_ncol=1, show=False, zorder=None, filename=None, dpi=None, suppress=True) Bases: mpl_plotter.two_d.methods.plot plot() mock()

method_rule()



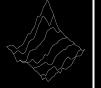
class streamline(x=None, y=None, u=None, v=None, line_width=1, line_density=2, color=None, cmap='RdBu_r', alpha=None, norm=None, backend='Qt5Agg', font='serif', math_font='dejavuserif', font_color='black', font_size_increase=0, fig=None, ax=None, figsize=None, shape_and_position=111, resize_axes=True, scale=None, aspect=1, workspace_color=None, workspace_color2=None, background_color_figure='white', background_color_plot='white', background_alpha=1, style=None, light=None, dark=None, spine_color=None, spines_removed=(0, 0, 1, 1), x_upper_bound=None, *x_lower_bound=None*, *y_upper_bound=None*, *y_lower_bound=None*, *x_bounds=None*, *y_bounds=None*, *demo_pad_plot=False*, *x_upper_resize_pad=0*, *x_lower_resize_pad=0*, *y_upper_resize_pad=0*, *y_lower_resize_pad=0*, *grid=True*, grid_color='lightgrey', grid_lines='-.', title=None, title_size=12, title_y=1.025, title weight=None, title font=None, title color=None, x label=None, x_label_size=12, x_label_pad=10, x_label_rotation=None, x_label_weight=None, *y_label=None*, *y_label_size=12*, *y_label_pad=10*, *y_label_rotation=None*, *y_label_weight=None*, *x_tick_number=5*, *y_tick_number=5*, *x_label_coords=None*, y_label_coords=None, tick_color=None, tick_label_pad=5, ticks_where=(1, 1, 0, 0), tick_label_size=10, x_tick_label_size=None, y_tick_label_size=None, *x_custom_tick_locations=None*, *y_custom_tick_locations=None*, fine_tick_locations=True, x_custom_tick_labels=None, y_custom_tick_labels=None, $x_date_tick_labels=False, date_format='\%Y-\%m-\%d', tick_ndecimals=1,$ *x_tick_ndecimals=None*, *y_tick_ndecimals=None*, *x_tick_rotation=None*, y_tick_rotation=None, tick_labels_where=(1, 1, 0, 0), color_bar=False, cb_pad=0.2, cb_axis_labelpad=10, shrink=0.75, extend='neither', cb_title=None, cb_orientation='vertical', cb_title_rotation=None, cb_title_style='normal', cb_title_size=10, cb_top_title_y=1, cb_ytitle_labelpad=10, cb_title_weight='normal', cb_top_title=False, cb_y_title=False, cb_top_title_pad=None, x_cb_top_title=0, cb_vmin=None, cb_vmax=None, cb_hard_bounds=False, cb_outline_width=None, cb_tick_number=5, cb_ticklabelsize=10, cb_tick_ndecimals=None, plot_label=None, legend=False, legend_loc='upper right', legend_bbox_to_anchor=None, legend_size=13, legend_weight='normal', legend_style='normal', *legend_handleheight=None*, *legend_ncol=1*, *show=False*, *zorder=None*, *filename=None*, *dpi=None*, *suppress=True*)

Bases: mpl_plotter.two_d.methods.plot

plot()

mock()

method_rule()



class fill_area(x=None, y=None, z=None, between=False, below=False, above=False, color=None, cmap='RdBu_r', alpha=None, norm=None, backend='Qt5Agg', font='serif', math_font='dejavuserif', font_color='black', font_size_increase=0, fig=None, ax=None, figsize=None, shape_and_position=111, resize_axes=True, scale=None, aspect=1, workspace_color=None, workspace_color2=None, background_color_figure='white', background_color_plot='white', background_alpha=1, style=None, light=None, dark=None, spine_color=None, spines_removed=(0, 0, 1, 1), x_upper_bound=None, *x_lower_bound=None*, *y_upper_bound=None*, *y_lower_bound=None*, *x_bounds=None*, y_bounds=None, demo_pad_plot=False, x_upper_resize_pad=0, x_lower_resize_pad=0, y_upper_resize_pad=0, y_lower_resize_pad=0, grid=True, grid_color='lightgrey', grid_lines='-.', title=None, title_size=12, title_y=1.025, title_weight=None, title font=None, title color=None, x label=None, x label size=12, x label pad=10, $x_label_rotation=None, x_label_weight=None, y_label=None, y_label_size=12,$ *y_label_pad=10*, *y_label_rotation=None*, *y_label_weight=None*, *x_tick_number=5*, *y_tick_number=5*, *x_label_coords=None*, *y_label_coords=None*, *tick_color=None*, tick_label_pad=5, ticks_where=(1, 1, 0, 0), tick_label_size=10, x_tick_label_size=None, *y_tick_label_size=None*, *x_custom_tick_locations=None*, y_custom_tick_locations=None, fine_tick_locations=True, x_custom_tick_labels=None, y_custom_tick_labels=None, x_date_tick_labels=False, date_format='\%Y-\%m-\%d', tick_ndecimals=1, x_tick_ndecimals=None, y_tick_ndecimals=None, x_{tick} -rotation=None, y_{tick} -rotation=None, $tick_{labels}$ -where=(1, 1, 0, 0), color_bar=False, cb_pad=0.2, cb_axis_labelpad=10, shrink=0.75, extend='neither', *cb_title=None*, *cb_orientation='vertical'*, *cb_title_rotation=None*, cb_title_style='normal', cb_title_size=10, cb_top_title_y=1, cb_ytitle_labelpad=10, cb_title_weight='normal', cb_top_title=False, cb_y_title=False, cb_top_title_pad=None, *x_cb_top_title=0*, *cb_vmin=None*, *cb_vmax=None*, *cb_hard_bounds=False*, cb_outline_width=None, cb_tick_number=5, cb_ticklabelsize=10, cb_tick_ndecimals=None, plot_label=None, legend=False, legend_loc='upper right', legend_bbox_to_anchor=None, legend_size=13, legend_weight='normal', legend_style='normal', legend_handleheight=None, legend_ncol=1, show=False, *zorder=None*, *filename=None*, *dpi=None*, *suppress=True*) Bases: mpl_plotter.two_d.methods.plot plot() Fill the region below the intersection of S and Z i_below() i_above() intersection() mock()

floating_text(ax, text, font='serif', x=0.5, y=0.5, size=20, weight='normal', color='darkred')



CHAPTER

THREE

PLACEHOLDERS

CHAPTER

FOUR

PANES

panes(x, y, f=None, fig=None, show=False, rows=1, top=None, bottom=None, left=None, right=None, wspace=None, hspace=None, **kwargs)

where

- array: List or NumPy array with numerical values
- []: List containing
- result: <panes><curves per pane>
- # Arguments Arguments are internally classified as FIGURE arguments, PLURAL arguments and CURVE arguments, namely:
 - **Figure arguments** Select few arguments which may be input only once in the plotting process, so as to avoid conflicts. Ieg: passing *grid=True* twice (*plt.grid()*) will result in no grid being drawn. These are removed from the keyword arguments and used in the last *comparison* call.
 - Special arguments

Select few arguments (ieg: *plot_labels***), which satisfy the condition of being** *lists with a length different to that of y*

and which, for aesthetic purposes, must be applied only once.

In the case of *plot_labels*, if *plot_labels* is a list of length different to that of y, it is assumed that

- The nth curve of each pane shares a label with the nth curve of all other panes
- and so a legend displaying the labels of the last pane will be displayed.
- · Plural arguments

Arguments with a keyword equal to any of the arguments which can be passed to the *line*



2D plotter, in plural tense. The line plotter is chosen as it shares all general arguments with the other 2D plotter functions. The plural arguments are assumed to be

lists of length equal to the number of panes

and thus modify each pane. Ieg: $x_{\text{labels}}=[1, 2, 3]$ will set the tick labels of the x axes to 1, 2 and 3 respectively in a 3-pane plot.

• Curve arguments

Curve arguments are passed as plurals to the comparison function, as they are lists with a length different to that of y

(thus they cant apply to each pane) and they are assumed to have a length equal to the number of curves in each plot.

CHAPTER

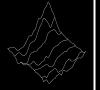
FIVE

3D

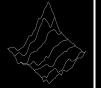
Submodules:

5.1 Plotting Methods

```
class canvas
     Bases: object
     method_backend()
     method_fonts()
         Fonts Reference:
           • https://matplotlib.org/2.0.2/users/customizing.html
         Pyplot method: plt.rcParams[<category>.<item>] = <>
     method_figure()
     method_setup()
     method_grid()
     method_pane_fill()
class attributes
     Bases: object
     method_background_color()
     method_workspace_style()
     method_legend()
     method_resize_axes()
     method_title()
     method_axis_labels()
     method_spines()
```



```
method_ticks()
     method_remove_axes()
     method_scale()
class plot
     Bases: \ mpl\_plotter.three\_d.methods.canvas, mpl\_plotter.three\_d.methods.attributes
     init()
     run()
     main()
     finish()
     method_save()
     method_show()
class color
     Bases: object
     method_cb()
class surf
     Bases: {\it mpl\_plotter.three\_d.methods.color}
     custom()
     method_lighting()
     method_edges_to_rgba()
```



```
class line(x=None, y=None, z=None, line_width=5, color='darkred', cmap='RdBu_r', alpha=1,
             x_scale=None, y_scale=None, z_scale=None, backend='Qt5Agg', font='serif',
             math_font='dejavuserif', font_color='black', font_size_increase=0, fig=None, ax=None,
             figsize=(5, 4), shape_and_position=111, azim=- 138, elev=19, remove_axis=None,
             prune=None, resize_axes=True, aspect_equal=False, box_to_plot_pad=10, spines_juggled=(1,
             0, 2), spine_color=None, blend_edges=False, workspace_color=None,
             workspace_color2=None, background_color_figure='white', background_color_plot='white',
             background_alpha=1, style=None, light=None, dark=None, pane_fill=None,
             x_upper_bound=None, x_lower_bound=None, y_upper_bound=None, y_lower_bound=None,
             z_upper_bound=None, z_lower_bound=None, x_bounds=None, y_bounds=None,
             z_bounds=None, demo_pad_plot=False, x_upper_resize_pad=0, x_lower_resize_pad=0,
             y upper resize pad=0, y lower resize pad=0, z upper resize pad=0,
             z_lower_resize_pad=0, show_axes=True, grid=True, grid_color='lightgrey', grid_lines='-.',
             title=None, title_weight='normal', title_size=12, title_y=1.025, title_color=None,
             title_font=None, x_label='x', x_label_weight='normal', x_label_size=12, x_label_pad=7,
             x_label_rotation=None, y_label='y', y_label_weight='normal', y_label_size=12,
             y_label_pad=7, y_label_rotation=None, z_label='z', z_label_weight='normal',
             z_label_size=12, z_label_pad=7, z_label_rotation=None, x_tick_number=5,
             x_tick_labels=None, x_custom_tick_labels=None, x_custom_tick_locations=None,
             y_tick_number=5, y_tick_labels=None, y_custom_tick_labels=None,
             y_custom_tick_locations=None, z_tick_number=5, z_tick_labels=None,
             z_custom_tick_labels=None, z_custom_tick_locations=None, x_tick_rotation=None,
             y_tick_rotation=None, z_tick_rotation=None, tick_color=None, x_tick_label_pad=4,
             y_tick_label_pad=4, z_tick_label_pad=4, x_tick_ndecimals=1, y_tick_ndecimals=1,
             z_tick_ndecimals=1, tick_label_size=10, x_tick_label_size=None, y_tick_label_size=None,
             z_tick_label_size=None, plot_label=None, legend=False, legend_loc='upper right',
             legend_size=13, legend_weight='normal', legend_style='normal', legend_handleheight=None,
             legend_ncol=1, show=False, newplot=False, filename=None, dpi=None, suppress=True)
     Bases: mpl_plotter.three_d.methods.plot
     plot()
```

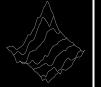
MPL Plotter Documentation



class scatter(*x*=*None*, *y*=*None*, *z*=*None*, *point_size*=30, *marker*='o', *facecolors*=*None*, *alpha*=1, color='darkred', cmap='RdBu_r', color_rule=None, color_bar=False, cb_pad=0.1, extend='neither', cb_title=None, cb_orientation='vertical', cb_axis_labelpad=10, cb_tick_number=5, cb_tick_ndecimals=5, shrink=0.75, cb_outline_width=None, cb_title_rotation=None, cb_title_style='normal', cb_title_size=10, cb_top_title_y=1, cb_ytitle_labelpad=10, cb_title_weight='normal', cb_top_title=False, cb_y_title=False, *cb_top_title_pad=None*, *x_cb_top_title=0*, *cb_vmin=None*, *cb_vmax=None*, cb_ticklabelsize=10, cb_hard_bounds=False, x_scale=None, y_scale=None, z_scale=None, backend='Qt5Agg', font='serif', math_font='dejavuserif', font_color='black', font_size_increase=0, fig=None, ax=None, figsize=(5, 4), shape_and_position=111, azim=- 138, elev=19, remove_axis=None, prune=None, resize_axes=True, aspect equal=False, box to plot pad=10, spines juggled=(1, 0, 2), spine color=None, blend_edges=False, workspace_color=None, workspace_color2=None, background_color_figure='white', background_color_plot='white', background_alpha=1, style=None, light=None, dark=None, pane_fill=None, x_upper_bound=None, *x_lower_bound=None*, *y_upper_bound=None*, *y_lower_bound=None*, z_upper_bound=None, z_lower_bound=None, x_bounds=None, y_bounds=None, z_bounds=None, demo_pad_plot=False, x_upper_resize_pad=0, x_lower_resize_pad=0, y_upper_resize_pad=0, y_lower_resize_pad=0, z_upper_resize_pad=0, *z_lower_resize_pad=0*, *show_axes=True*, *grid=True*, *grid_color='lightgrey'*, grid_lines='-.', title=None, title_weight='normal', title_size=12, title_y=1.025, title_color=None, title_font=None, x_label='x', x_label_weight='normal', x_label_size=12, *x_label_pad=7*, *x_label_rotation=None*, *y_label='y'*, *y_label_weight='normal'*, y_label_size=12, y_label_pad=7, y_label_rotation=None, z_label='z', *z_label_weight='normal'*, *z_label_size=12*, *z_label_pad=7*, *z_label_rotation=None*, *x_tick_number=5*, *x_tick_labels=None*, *x_custom_tick_labels=None*, *x_custom_tick_locations=None*, *y_tick_number=5*, *y_tick_labels=None*, *y_custom_tick_labels=None*, *y_custom_tick_locations=None*, *z_tick_number=5*, z_tick_labels=None, z_custom_tick_labels=None, z_custom_tick_locations=None, x_tick_rotation=None, y_tick_rotation=None, z_tick_rotation=None, tick_color=None, *x_tick_label_pad=4*, *y_tick_label_pad=4*, *z_tick_label_pad=4*, *x_tick_ndecimals=1*, y_tick_ndecimals=1, z_tick_ndecimals=1, tick_label_size=10, x_tick_label_size=None, *y_tick_label_size=None*, *z_tick_label_size=None*, *plot_label=None*, *legend=False*, legend_loc='upper right', legend_size=13, legend_weight='normal', legend_style='normal', legend_handleheight=None, legend_ncol=1, show=False, newplot=False, filename=None, *dpi=None*, *suppress=True*)

 $Bases: \ mpl_plotter.three_d.methods.plot, mpl_plotter.three_d.methods.color$

plot()



class surface(*x*=*None*, *y*=*None*, *z*=*None*, *rstride*=1, *cstride*=1, *line_width*=0.1, *lighting*=*False*, antialiased=False, shade=False, cmap='RdBu_r', cmap_lighting=None, color_rule=None, norm=None, color=None, color_bar=False, cb_pad=0.1, extend='neither', cb_title=None, cb_orientation='vertical', cb_axis_labelpad=10, cb_tick_number=5, cb_tick_ndecimals=5, shrink=0.75, cb_outline_width=None, cb_title_rotation=None, cb_title_style='normal', cb_title_size=10, cb_top_title_y=1, cb_ytitle_labelpad=10, cb_title_weight='normal', cb_top_title=False, cb_y_title=False, cb_top_title_pad=None, x_cb_top_title=0, cb_vmin=None, cb_vmax=None, cb_ticklabelsize=10, cb_hard_bounds=False, alpha=1, edge_color='black', edges_to_rgba=False, x_scale=None, y_scale=None, z_scale=None, backend='Qt5Agg', font='serif', math_font='dejavuserif', font_color='black', font_size_increase=0, fig=None, ax=None, figsize=(5, 4), shape_and_position=111, azim=-138, elev=19, remove axis=None, prune=None, resize axes=True, aspect_equal=False, box_to_plot_pad=10, spines_juggled=(1, 0, 2), spine_color=None, blend_edges=False, workspace_color=None, workspace_color2=None, background_color_figure='white', background_color_plot='white', background_alpha=1, style=None, light=None, dark=None, pane_fill=None, x_upper_bound=None, *x_lower_bound=None*, *y_upper_bound=None*, *y_lower_bound=None*, *z_upper_bound=None*, *z_lower_bound=None*, *x_bounds=None*, *y_bounds=None*, z_bounds=None, demo_pad_plot=False, x_upper_resize_pad=0, x_lower_resize_pad=0, y_upper_resize_pad=0, y_lower_resize_pad=0, z_upper_resize_pad=0, *z_lower_resize_pad=0*, *show_axes=True*, *grid=True*, *grid_color='lightgrey'*, grid_lines='-.', title=None, title_weight='normal', title_size=12, title_y=1.025, title_color=None, title_font=None, x_label='x', x_label_weight='normal', x_label_size=12, x_label_pad=7, x_label_rotation=None, y_label='y', y_label_weight='normal', *y_label_size=12*, *y_label_pad=7*, *y_label_rotation=None*, *z_label='z'*, z_label_weight='normal', z_label_size=12, z_label_pad=7, z_label_rotation=None, *x_tick_number=5*, *x_tick_labels=None*, *x_custom_tick_labels=None*, *x_custom_tick_locations=None*, *y_tick_number=5*, *y_tick_labels=None*, y_custom_tick_labels=None, y_custom_tick_locations=None, z_tick_number=5, z_tick_labels=None, z_custom_tick_labels=None, z_custom_tick_locations=None, *x_tick_rotation=None*, *y_tick_rotation=None*, *z_tick_rotation=None*, *tick_color=None*, *x_tick_label_pad=4*, *y_tick_label_pad=4*, *z_tick_label_pad=4*, *x_tick_ndecimals=1*, y_tick_ndecimals=1, z_tick_ndecimals=1, tick_label_size=10, x_tick_label_size=None, *y_tick_label_size=None*, *z_tick_label_size=None*, *plot_label=None*, *legend=False*, legend_loc='upper right', legend_size=13, legend_weight='normal', legend_style='normal', legend_handleheight=None, legend_ncol=1, show=False, newplot=False, filename=None, *dpi=None*, *suppress=True*) Bases: mpl_plotter.three_d.methods.plot, mpl_plotter.three_d.methods.surf plot()

floating_text(ax, text, font, x, y, z, size=20, weight='normal', color='darkred')

```
MPL Plotter Documentation
```

5.2 Placeholders

```
class MockData
    Bases: object
    waterdrop3d()
    random3d()
    hill()
```



CHAPTER

SIX

COLORS

Submodules:

6.1 Methods

complementary(color, fmt='hex')

Return complementary of [R, G, B] or hex color.

Parameters fmt (*string*) – Output format: hex or rgb.

delta(color, factor, fmt='hex')

Darker or lighten the input color by a percentage of <factor> ([-1, 1]) of the color spectrum (0-255).

Parameters

- **fmt** (*string*) Output format: hex or rgb.
- **factor** (*float*) [-1, 1] Measure in which the color will be modified.

mapstack(maps, fractions=None, ranges=None)

Create a colormap stacking an arbitrary number of conventional Matplotlib colormaps.

Parameters

- maps (list of str) List of colormap NAMES
- **fractions** (*list of float*) For each original colormap, the fraction itll take of the merged colormap. [0<fr_0<1,]
- ranges (list of tuple) For each original colormap, the range taken. [(0=<min<1,0<max<=1)_0,]

Returns mpl.colors.LinearSegmentedColormap

6.2 Color Schemes

colorscheme_one()

custom(red, green, blue, name='coolheat', n=1024)

Parameters

- **red** List of (red fraction, y0, y1) tuples
- **green** List of (red fraction, y0, y1)
- **blue** List of (red fraction, y0, y1)
- name Colormap name
- **n** RBG quantization levels

Returns Colormap



CHAPTER

SEVEN

PRESETS

Submodules:

7.1 Custom

```
class two_d(preset=None, preset_dir='', preset_name='preset_2d')
     Bases: object
     class line(x=None, y=None, **kwargs)
         Bases: mpl_plotter.two_d.methods.line
     class scatter(x=None, y=None, **kwargs)
         Bases: mpl_plotter.two_d.methods.scatter
     class heatmap(x=None, y=None, z=None, **kwargs)
         Bases: mpl_plotter.two_d.methods.heatmap
     class quiver(x=None, y=None, u=None, v=None, **kwargs)
         Bases: mpl_plotter.two_d.methods.quiver
     class streamline(x=None, y=None, u=None, v=None, **kwargs)
         Bases: mpl_plotter.two_d.methods.streamline
     class fill_area(x=None, y=None, z=None, **kwargs)
         Bases: mpl_plotter.two_d.methods.fill_area
class three_d(preset_dir=", preset_name='preset_3d', preset=None)
     Bases: object
     class line(x=None, y=None, z=None, **kwargs)
         Bases: mpl_plotter.three_d.methods.line
     class scatter(x=None, y=None, z=None, **kwargs)
         Bases: mpl_plotter.three_d.methods.scatter
     class surface(x=None, y=None, z=None, **kwargs)
         Bases: mpl_plotter.three_d.methods.surface
find_preset(dest, preset_name)
make_preset_directory(preset_dest, preset_name)
```

generate_preset_2d(preset_dest=", overwrite=False, disable_warning=False, preset_name='preset_2d')

Parameters

- preset_dest Preset destination directory
- **overwrite** Overwrite found presets automatically
- **disable_warning** Disable overwriting warning
- preset_name Name of preset to be created

Returns None

generate_preset_3d(preset_dest=", overwrite=False, disable_warning=False, preset_name='preset_3d')

Parameters

- preset_dest Preset destination directory
- **overwrite** Overwrite found presets automatically
- **disable_warning** Disable overwriting warning
- preset_name Name of preset to be created

Returns None

7.2 Precision

7.3 Publication

Subpackages: Submodules:



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