scotchcorner Documentation

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Contents

Documentation for the corner plotting module `scotchcorner`. Contents:

class scotchcorner.**Bounded_2d_kde**(*pts*, *xlow=None*, *xhigh=None*, *ylow=None*, *yhigh=None*, **args*, ***kwargs*)

Represents a two-dimensional Gaussian kernel density estimator for a probability distribution function that exists on a bounded domain (by Ben Farr).

evaluate(*pts*)

Return an estimate of the density evaluated at the given points.

xhigh

The upper bound of the x domain.

xlow

The lower bound of the x domain.

yhigh

The upper bound of the y domain.

ylow

The lower bound of the y domain.

class scotchcorner.**scotchcorner**(*data*, *bins=20*, *ratio=3*, *labels=None*, *truths=None*, *datatitle=None*, *showlims=None*, *limlinestyle='dotted'*, *showpoints=True*, *showcontours=False*, *hist_kwargs={}*, *truths_kwargs={}*, *scatter_kwargs={}*, *contour_kwargs={}*, *contour_levels=[0.5, 0.9]*, *show_level_labels=True*, *use_math_text=True*, *limits=None*, *contour_limits=None*, *figsize=None*, *mplparams=None*, *thinpoints=1.0*, *subtract_truths=None*)

Create a corner-style plot.

data [`numpy.ndarray` or `pandas.DataFrame`] A (*N* x *ndims*) array of values for the *ndims* parameters

bins [int, optional, default: 20] The number of bins in the 1D histogram plots

ratio [int, optional, default: 3] The ratio of the size of 1D histograms to the size of the joint plots

labels [list, optional] A list of names for each of the *ndims* parameters. These are used for the axes labels. If *data* is a `pandas.DataFrame` then the column names of that will be used instead.

truths [list, optional, default: None] A list of the true values of each parameter

datatitle [string, optional] A title for the data set to be added as a legend

showlims [string, optional, default: None] Show edges/borders at the plots limits. Use 'hist' for limits on the 1D histogram plots, 'joint' for borders around 2D joint plots, or 'both' for borders on the 1D and 2D plots. The default (None) is for no borders.

limlinestyle [default: 'dotted'] The line style for the plot borders

hist_kwargs [dict] A dictionary of keywords arguments for the histogram function

truth_kwargs [dict] A dictionary of keyword arguments for plotting true values

showpoints: bool, default: True Show the data points in the 2D joint parameter plots

thinpoints [float, default: 1.0] Thin-down the number of points being plotted in the 2D scatter plots by this factor

scatter_kwargs [dict] A dictionary of keyword arguments for the scatter plot function

showcontours [bool, default: False] Show KDE probability contours for the 2D joint parameter plots (with levels defined by *contour_levels*)

contour_kwargs [dict] A dictionary of keyword argumemts for the contour plot function

contour_levels [list, default: [0.5, 0.9]] A list of values between 0 and 1 indicating the probability contour confidence intervals to plot (defaulting to 50% and 90% contours)

show_level_labels [bool, default: True] Add labels on the contours levels showing their probability

use_math_text [bool, default: True] Use math text scientific notation for parameter tick mark labelling

limits [list, default: None] A list of tuples giving the lower and upper limits for each parameter. If limits for some parameters are not known/required then an empty tuple (or *None* within a two value tuple) must be placed in the list for that parameter

contour_limits [list, default: None] A list of tuples giving the lower and upper limits for each parameter for use when creating credible interval contour for joint plots. If limits for some parameters are not known/required then an empty tuple (or *None* within a two value tuple) must be placed in the list for that parameter

subtract_truths [list or tuple, optional, default: None] A list/tuple of indices of parameters for which you want to show the distribution centred such that true value is zero. This is only relevent if *truths* are supplied.

figsize [tuple] A two value tuple giving the figure size

mplparams [dict] A dictionary containing matplotlib configuration values

`add_data`(*data, hist_kwargs={}, datatitle=None, showpoints=True, showcontours=False, scatter_kwargs={}, contour_kwargs={}, truths=None, truths_kwargs={}, contour_levels=[0.5, 0.9], limits=None, contour_limits=None, show_level_labels=True, thinpoints=1.0*)

Add another data set to the plots, *hist_kwargs* are required.

`fig`

Return the `matplotlib.figure.Figure`

`format_exponents_in_label_single_ax`(*ax*)

Routine for a single axes instance (by Greg Ashton)

`get_axis`(*param*)

Return the axis for the given “param” (for joint axes “param” should be the required parameters separated by “vs”)

`plot_bounded_2d_kde_contours`(*ax*, *pts*, *xlow=None*, *xhigh=None*, *ylow=None*, *yhigh=None*, *transform=None*, *gridsize=250*, *clip=None*)

Function (based on that in *plotutils* by Will Farr and edited by Ben Farr) for plotting contours from a bounded 2d KDE.

`savefig`(*filename*)

Save the figure

filename [str, required] The filename of the figure to save. The figure format is determined by the file extension.

`show`()

Show the figure

`update_label`(*old_label*, *exponent_text*)

Method to transform given label into the new label (this function comes from this patch to corner.py by Greg Ashton)

CHAPTER 1

Indices and tables

- genindex
- modindex
- search

Python Module Index

Index