

Package ‘overlapping’

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Type Package

Title Estimation of Overlapping in Empirical Distributions

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Author Massimiliano Pastore

Maintainer Massimiliano Pastore <massimiliano.pastore@unipd.it>

Description Functions for estimating the overlapping area of two or more empirical distributions.

Depends lattice

License GPL-2

NeedsCompilation no

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cutnumeric	<i>Numerical conversion</i>
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Description

It divides a numerical variable x in classes, and returns for each class the central value.

Internal function, generally not to be called by the user.

Usage

```
cutnumeric(x, n = 1000)
```

Arguments

x	numeric vector
n	number of classes

Details

It calls the `cut` function, and then converts factor classes in numeric classes, returning for each class its central value.

Value

It returns a numerical vector, in which values are the central points of classes obtained by the function `cut`.

Note

This function is called from the function [overlap](#).

Author(s)

Massimiliano Pastore

See Also

[cut](#)

Examples

```
x <- rnorm(50)
cutnumeric(x,5)
```

final.plot

Final plot

Description

Graphical representation of estimated densities and overlapping area.

Usage

```
final.plot(DD, OV)
```

Arguments

DD	Data frame obtained by function overlap
OV	Vector of overlapping areas obtained by overlap

Details

It requires the function `xyplot` of the package `lattice`.

Author(s)

Massimiliano Pastore

See Also

[xyplot](#)

Examples

```
set.seed(20150605)
x <- list(X1=rnorm(100),X2=rt(50,8),X3=rchisq(80,2))
out <- overlap(x)
final.plot(out$DD,out$OV)
```

overlap

Overlapping estimation

Description

It gives the overlapped estimated area of two or more empirical distributions.

Usage

```
overlap(x, nbins = 1000, plot = FALSE, partial.plot = FALSE)
```

Arguments

<code>x</code>	list of distributions to be compared; each distribution is an element of the list
<code>nbins</code>	number of equally spaced points at which the overlapping density is evaluated
<code>plot</code>	logical, if TRUE, final plot of estimated densities and overlapped areas is produced
<code>partial.plot</code>	logical, if TRUE, partial paired distributions are plotted

Details

If the list `x` contains more than two elements (i.e. more than two distributions) it computes all overlapping between all paired distributions. Partial plots refer to these coupled distributions.

If `plot=TRUE`, all overlapped areas are plotted. It requires `lattice`.

Value

It returns a list containing the following components:

DD	Data frame with information used for computing overlapping, containing the following variables: x, coordinates of the points where the density is estimated; y, density; j, index of the distribution in the list x; xclass, class of x; xnum, numerical class of x (obtained by cutnumeric); dominance, indicates which distribution has the highest density; w, flag 0-1 for normalizing area; k, label indicating which distributions are compared
OV	Estimates of overlapped areas relative to each couple of distributions.

Note

Call functions [cutnumeric](#) e [final.plot](#).

Author(s)

Massimiliano Pastore

Examples

```
set.seed(20150605)
x <- list(X1=rnorm(100),X2=rt(50,8),X3=rchisq(80,2))
out <- overlap(x,plot=TRUE)
```

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