

# The vioplot Package

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**Title** Violin plot

**Author** Daniel Adler <dadler@uni-goettingen.de>

**Maintainer** Daniel Adler <dadler@uni-goettingen.de>

**Depends** sm

**Description** A violin plot is a combination of a box plot and a kernel density plot.

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**URL** <http://wsopuppenkiste.wiso.uni-goettingen.de/~dadler>

## R topics documented:

vioplot . . . . . 1

**Index** . . . . . 4

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vioplot	<i>violin plot</i>
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## Description

Produce violin plot(s) of the given (grouped) values.

## Usage

```
vioplot( x, ..., range=1.5, h, ylim, names, horizontal=FALSE,  
         col="magenta", border="black", lty=1, lwd=1, rectCol="black",  
         colMed="white", pchMed=19, at, add=FALSE, wex=1,  
         drawRect=TRUE)
```

**Arguments**

<code>x</code>	data vector
<code>...</code>	additional data vectors
<code>range</code>	a factor to calculate the upper/lower adjacent values
<code>h</code>	the height for the density estimator, if omit as explained in <code>sm.density</code> , <code>h</code> will be set to an optimum
<code>ylim</code>	y limits
<code>names</code>	one label, or a vector of labels for the datas must match the number of datas given
<code>col, border, lty, lwd</code>	Graphical parameters for the violin passed to lines and polygon
<code>rectCol, colMed, pchMed</code>	Graphical parameters to control the look of the box
<code>drawRect</code>	logical. the box is drawn if TRUE.
<code>at</code>	position of each violin. Default to <code>1:n</code>
<code>add</code>	logical. if FALSE (default) a new plot is created
<code>wex</code>	relative expansion of the violin.
<code>horizontal</code>	logical. horizontal or vertical violins

**Details**

A violin plot is a combination of a box plot and a kernel density plot. Specifically, it starts with a box plot. It then adds a rotated kernel density plot to each side of the box plot.

**Author(s)**

Daniel Adler <dadler@uni-goettingen.de>

Romain Francois <francoisromain@free.fr> ; <http://francoisromain.free.fr>: horizontal violins and additionnal graphical parameters

**References**

Hintze, J. L. and R. D. Nelson (1998). *Violin plots: a box plot-density trace synergism*. The American Statistician, 52(2):181-4.

**See Also**

[boxplot sm](#)

**Examples**

```
# box- vs violin-plot
par(mfrow=c(2,1))
mu<-2
si<-0.6
bimodal<-c(rnorm(1000,-mu,si),rnorm(1000,mu,si))
```

```
uniform<-runif(2000,-4,4)
normal<-rnorm(2000,0,3)
vioplot(bimodal,uniform,normal)
boxplot(bimodal,uniform,normal)

# add to an existing plot
x <- rnorm(100)
y <- rnorm(100)
plot(x, y, xlim=c(-5,5), ylim=c(-5,5))
vioplot(x, col="tomato", horizontal=TRUE, at=-4, add=TRUE,lty=2, rectCol="gray")
vioplot(y, col="cyan", horizontal=FALSE, at=-4, add=TRUE,lty=2)
```

# Index

\*Topic **hplot**  
vioplot, 1

boxplot, 2

sm, 2

vioplot, 1