Package 'CIplot'

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Type Package

Title Functions to Plot Confidence Interval

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Description Plot confidence interval from the objects of statistical tests such as t.test(), var.test(), cor.test(), prop.test() and fisher.test() ('htest' class), Tukey test [TukeyHSD()], Dunnett test [glht() in 'multcomp' package], logistic regression [glm()], and Tukey or Games-Howell test [posthocTGH() in 'userfriendlyscience' package].
Users are able to set the styles of lines and points.
This package contains the function to calculate odds ratios and their confidence intervals from the result of logistic regression.

Imports MASS, multcomp

Suggests BSDA, fmsb, userfriendlyscience

License GPL (>= 2)

URL https://github.com/toshi-ara/CIplot

BugReports https://github.com/toshi-ara/CIplot/issues/

RoxygenNote 6.0.1

Collate 'CIplot.R' 'CIplot.default.R' 'CIplot.htest.R' 'CIplot.TukeyHSD.R' 'CIplot.glht.R' 'CIplot.glm.R' 'CIplot.ORci.R' 'CIplot.posthocTGH.R' 'ORci.R' 'print.ORci.R'

NeedsCompilation no

Repository CRAN

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Contents

`CIplot` *Plot Confidential Interval*

Description

A function to plot confidential interval for such as `htest`, `TukeyHSD`, `glht` (**multcomp**), `glm` (logistic regression only!) and `posthocTGH` (**userfriendlyscience**) objects.

Usage

```
CIplot(x, ...)

## Default S3 method:
CIplot(x, xlog = FALSE, xlim = NULL, xlab = NULL,
  yname = TRUE, las = 0, pch = 21, pcol = 1, pcolbg = "white",
  pcex = 1, conf.level = 0.95, cilty = 1, cilwd = 1, cicol = 1, v,
  vlty = 2, vlwd = 1, vcol = 1, main = NULL, ...)

## S3 method for class 'htest'
CIplot(x, xlog = FALSE, xlim = NULL, xlab = NULL,
  yname = FALSE, v = NULL, ...)

## S3 method for class 'TukeyHSD'
CIplot(x, xlab = "Differences in mean", v = 0, ...)

## S3 method for class 'glht'
CIplot(x, xlab = "Differences in mean", v = 0, ...)

## S3 method for class 'glm'
CIplot(x, conf.level = 0.95, xlog = TRUE,
  xlab = "Odds Ratio", v = 1, ...)

## S3 method for class 'ORci'
CIplot(x, xlog = TRUE, xlab = "Odds Ratio", v = 1, ...)

## S3 method for class 'posthocTGH'
CIplot(x, xlab = "Differences in mean", v = 0, ...)
```

Arguments

`x`	`default`: `matrix` or `data.frame` class with 3 columns ('any name', `lwr`, `upr`), or an object: `htest`, `TukeyHSD`, `glht` (**multcomp**), `glm` (logistic regression only!) or `posthocTGH` (**userfriendlyscience**).
`...`	other options for x-axis.
`xlog`	(logical) if `log` is `TRUE`, the x axis is drawn logarithmically. Default is `FALSE`.

xlim	the x limits (x1, x2) of the plot.
xlab	a title for the plot.
yname	If yname is TRUE, the name of comparison between groups are shown.
las	numeric in 0,1,2,3; the style of axis labels. Default is 0. see also par.
pch	plotting 'character', i.e., symbol to use.
pcol	color code or name of the points.
pcolbg	background (fill) color for the open plot symbols given by 'pch = 21:25'.
pcex	character (or symbol) expansion of points.
conf.level	default and glm object only. the confidence interval. Default is 0.95. see also ORci.
cilty	line types of conficence intervals.
cilwd	line width of conficence intervals.
cicol	color code or name of conficence intervals.
v	the x-value(s) for vertical line.
vlty	line types of vertical line.
vlwd	line width of vertical line.
vcol	color code or name of vertical line.
main	a main title for the plot.

Note

CIplot was made based on plot.TukeyHSD.

```
#  File src/library/stats/R/TukeyHSD.R
#  Part of the R package, https://www.R-project.org
#
#  Copyright (C) 2000-2001  Douglas M. Bates
#  Copyright (C) 2002-2015  The R Core Team
```

See Also

plot, axis, points, par.

Examples

```
##### default (matrix or data.frame)
require(graphics)
x <- matrix(c(3, 1, 5,
              4, 2, 6), 2, 3, byrow = TRUE)
colnames(x) <- c("esti", "lwr", "upr")
rownames(x) <- c("A", "B")
CIplot(x, xlab = "difference", v = 2, las = 1)

##### 'htest' objects
require(graphics)
```

```
## t test
set.seed(1234)
a <- rnorm(10, 10, 2); b <- rnorm(10, 8, 2)
x <- t.test(a, b)
CIplot(x)

## binomial test
x <- binom.test(5, 20)
CIplot(x, xlim = c(0, 1))

## Fisher's exact test
x <- matrix(c(10, 7, 8, 9), 2, 2, byrow = TRUE)
res <- fisher.test(x)
CIplot(res, xlog = TRUE)


##### 'TukeyHSD' objects
require(graphics)

## Tukey test
aov1 <- aov(breaks ~ tension + wool, data = warpbreaks)
x <- TukeyHSD(aov1)

oldpar <- par(no.readonly = TRUE)
par(mfrow = c(1, 2))
CIplot(x, las = 1)
par(oldpar)

## example of line type and color
aov1 <- aov(breaks ~ tension, data = warpbreaks)
x <- TukeyHSD(aov1)
CIplot(x, las = 1,
       pcol = 2:4, pcolbg = 2:4, cicol = 2:4,
       vlty = 1, vcol = "gray")

##### 'glht' objects
require(graphics)

## Tukey test
require(multcomp)
aov1 <- aov(breaks ~ tension, data = warpbreaks)
x <- glht(aov1, linfct = mcp(tension = "Tukey"))
CIplot(x, las = 1)

## Dunnett test
x <- glht(aov1, linfct = mcp(tension = "Dunnett"))
CIplot(x, las = 1)


##### 'glm' object: logistic regression only!
## odds ratio
require(graphics)
```

```
require(MASS)
data(birthwt)
x <- glm(low ~  age + lwt + smoke + ptl + ht + ui, data = birthwt,
         family = binomial)
CIplot(x, las = 1)


##### 'posthocTGH' object
## Tukey or Games-Howell methos
require(graphics)
if (require(userfriendlyscience)) {
    x <- posthocTGH(warpbreaks$breaks, warpbreaks$tension)
    CIplot(x, las = 1)
}
```

ORci *Calculate odds ratios and their confidence intervals from* glm *object*

Description

Calculate odds ratios and their confidence intervals from glm object

Usage

```
ORci(x, conf.level = 0.95)
```

Arguments

x	glm object (logistic regression only!).
conf.level	the confidence interval. Default is 0.95.

Value

an object ORci and matirix classes with four columns.

OR odds ratio

lwr lower conficence intarval

upr upper conficence intarval

p.value P value by logistic regression

Examples

```
require(graphics)
require(MASS)
data(birthwt)
x <- glm(low ~  age + lwt + smoke + ptl + ht + ui, data = birthwt,
         family = binomial)
OR1 <- ORci(x)
CIplot(OR1, las = 1)
```

print.ORci *Print Methods for Odds Ratios and their Confidence Intervals of* ORci *object*

Description

Print odds ratios and their confidence intervals of ORci object.

Usage

```
## S3 method for class 'ORci'
print(x, ...)
```

Arguments

x	ORci object.see alse ORci.
...	other options for print such as digits.

See Also

glm, ORci.

Examples

```
require(MASS)
data(birthwt)
x <- glm(low ~  age + lwt + smoke + ptl + ht + ui, data = birthwt,
         family = binomial)
OR1 <- ORci(x)
print(OR1, digits = 3)
```

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