

Package ‘CIplot’

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Type Package

Title Functions to Plot Confidence Interval

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Author Toshiaki Ara

Maintainer Toshiaki Ara <toshiaki.ara@gmail.com>

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/>

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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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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,
       vltly = 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

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

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

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 matrix classes with four columns.

OR odds ratio

lwr lower confidence interval

upr upper confidence interval

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	<i>Print Methods for Odds Ratios and their Confidence Intervals of ORci object</i>
------------	--

Description

Print odds ratios and their confidence intervals of ORci object.

Usage

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

Arguments

x	ORci object.see also 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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