

Package ‘asVPC’

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Type Package

Title Average Shifted Visual Predictive Checks

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Suggests Hmisc

Imports ggplot2,plyr

Description The visual predictive checks are well-known method to validate the nonlinear mixed effect model, especially in pharmacometrics area. The average shifted visual predictive checks are the newly developed method of Visual predictive checks combined with the idea of the average shifted histogram.

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NeedsCompilation no

Repository CRAN

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asVPC.binW	<i>calculate percentiles of original data using bin-related weight percentiles of simulated data with corresponding confidence interval</i>
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Description

calculate percentiles of original data using bin-related weight percentiles of simulated data with corresponding confidence interval

Usage

```
asVPC.binW(orig.data, sim.data, n.timebin, n.sim, n.hist, q.list = c(0.05,
  0.5, 0.95), conf.level = 0.95, X.name = "TIME", Y.name = "DV",
  opt.DV.point = FALSE, weight.flag = FALSE, Y.min = NULL, Y.max = NULL,
  only.med = FALSE, plot.flag = TRUE)
```

Arguments

orig.data	the original data for model fitting
sim.data	the simulated data from NONMEM
n.timebin	the number of bin in X axis
n.sim	the number of simulation in the simulated data
n.hist	the number of shifted
q.list	numeric vector of probabilities with values in [0,1]
conf.level	confidence level of the interval
X.name	the name of X variable in the original scatter plot
Y.name	the name of Y variable in the original scatter plot
opt.DV.point	option to put data point in the plot
weight.flag	option to use weight in average shifted calculation
Y.min	minimum of Y range in the plot
Y.max	maximum of Y range in the plot
only.med	option to use only median
plot.flag	TRUE: drawing plot / FALSE: generate data for drawing plot

Value

plot or the values to draw plot

Author(s)

Eun-Kyung Lee <lee.eunk@gmail.com>

References

new paper...

See Also

[asVPC.distanceW](#)

Examples

```
data(origdata)
data(simdata)
asVPC.binW(origdata,simdata,n.timebin=10, n.sim=100,n.hist=3)
```

asVPC.distanceW	<i>calculate percentiles of original data using distance-related weight percentiles of simulated data with corresponding confidence interval</i>
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Description

calculate percentiles of original data using distance-related weight percentiles of simulated data with corresponding confidence interval

Usage

```
asVPC.distanceW(orig.data, sim.data, n.timebin, n.sim, n.hist,
  q.list = c(0.05, 0.5, 0.95), conf.level = 0.95, X.name = "TIME",
  Y.name = "DV", opt.DV.point = FALSE, weight.flag = FALSE,
  Y.min = NULL, Y.max = NULL, only.med = FALSE, plot.flag = TRUE)
```

Arguments

orig.data	the original data for model fitting
sim.data	the simulated data from NONMEM
n.timebin	the number of bin in X axis
n.sim	the number of simulation in the simulated data
n.hist	the number of shifted
q.list	numeric vector of probabilities with values in [0,1]
conf.level	confidence level of the interval
X.name	the name of X variable in the original scatter plot
Y.name	the name of Y variable in the original scatter plot
opt.DV.point	option to put data point in the plot
weight.flag	option to use weight in average shifted calculation
Y.min	minimum of Y range in the plot
Y.max	maximum of Y range in the plot
only.med	option to use only median
plot.flag	TRUE: drawing plot / FALSE: generate data for drawing plot

Value

plot or the values to draw plot

Author(s)

Eun-Kyung Lee <lee.eunk@gmail.com>

References

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See Also

[asVPC.binW](#)

Examples

```
data(origdata)
data(simdata)
asVPC.distanceW(origdata,simdata,n.timebin=10, n.sim=100,n.hist=3)
```

makeCOVbin

make the bins with equal number of observations or using user-defined breaks

Description

make the bins with equal number of observations or using user-defined breaks

Usage

```
makeCOVbin(COV.data, N.covbin = NULL, breaks.data = NULL)
```

Arguments

COV.data	numeric vector that need to make bins
N.covbin	the number of bins
breaks.data	user-defined breaks

Value

information of the binning with summary

Author(s)

Eun-Kyung Lee <lee.eunk@gmail.com>

Examples

```
data(origdata)
makeCOVbin(origdata$TIME,7)
```

origdata	<i>sample original data</i>
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Description

sample original data

Usage

```
data("origdata")
```

Format

A data frame with 132 observations on the following 5 variables.

X.ID a numeric vector

AMT a numeric vector

TIME a numeric vector

DV a numeric vector

WT a numeric vector

Examples

```
data(origdata)
## maybe str(orig.data) ; plot(orig.data) ...
```

read_Simdata	<i>calculate percentiles of original data using bin-related weight percentiles of simulated data with corresponding confidence interval</i>
--------------	---

Description

calculate percentiles of original data using bin-related weight percentiles of simulated data with corresponding confidence interval

Usage

```
read_Simdata(sim.file.name, data.n, sim.n, name.DV)
```

Arguments

sim.file.name file name of simulation, generated from NONMEM with 'NOAPPEND ONE-HEAD' options in TABLE statement

data.n number of observations in the original data

sim.n number of simulation

name.DV name of dependent variable in simulated data file

Value

data.n * sim.n matrix with simulated data

Author(s)

Eun-Kyung Lee <lee.eunk@gmail.com>

References

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See Also

[asVPC.distanceW](#)

simdata

sample sim data

Description

sample sim data

Usage

```
data("simdata")
```

Format

The format is: num [1:132, 1:100] 0 2.82 3.14 5.06 4.8 ...

Examples

```
data(simdata)
## maybe str(sim.data) ; plot(sim.data) ...
```

VPC.graph	<i>calculate percentiles of original data using bin-related weight percentiles of simulated data with corresponding confidence interval</i>
-----------	---

Description

calculate percentiles of original data using bin-related weight percentiles of simulated data with corresponding confidence interval

Usage

```
VPC.graph(orig.data, sim.data, N.timebin, N.sim, q.list = c(0.05, 0.5, 0.95),
  alpha = 0.05, X.name = "TIME", Y.name = "DV", main.title = NULL,
  opt.DV.point = FALSE, opt.DV.quantile.line = TRUE,
  opt.SIM.quantile.line = FALSE, opt.SIM.quantile.CI.area = TRUE,
  Y.min = NULL, Y.max = NULL, plot.flag = TRUE)
```

Arguments

orig.data	NONMEM data
sim.data	simulated data from NONMEM
N.timebin	number of time bin
N.sim	number of simulation
q.list	list of quantiles for VPC plot
alpha	significance level of CI for each quantile
X.name	x label in VPC plot
Y.name	y label in VPC plot
main.title	title of plot
opt.DV.point	option for drawing data points
opt.DV.quantile.line	option for drawing quantiles of the original data
opt.SIM.quantile.line	option for drawing quantiles of simulated data
opt.SIM.quantile.CI.area	options for drawing confidence area of quantiles for simulated data
Y.min	minimum of y axis in VPC plot
Y.max	maximum of y axis in VPC plot
plot.flag	TRUE: drawing plot / FALSE: generate data for drawing plot

Value

plot or the values to draw plot

Author(s)

Eun-Kyung Lee <lee.eunk@gmail.com>

References

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Examples

```
data(origdata)
data(simdata)
VPC.graph(origdata,simdata,10,100)
```


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