Package ‘forsearch’

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Version 2.3.0

Title Outlier Diagnostics for Some Linear Effects and Linear Mixed Effects Models

Description Identifies potential data outliers and their impact on estimates and analyses. Uses the forward search approach of Atkinson and Riani, “Robust Diagnostic Regression Analysis”, 2000, ISBN: 0-387-95017-6) to prepare descriptive statistics of a dataset that is to be analyzed by stats::lm(), stats::glm(), or nlme::lme(). Includes graphics functions to display the descriptive statistics.

License GPL (>= 3)

SystemRequirements gmp (>= 4.1)

Imports Hmisc (>= 4.6-0), Cairo (>= 1.5-14), ggplot2 (>= 3.3.5), nlme (>= 3.1-152), tibble (>= 3.1-152), tibble (>= 3.1-6)

Encoding UTF-8

RoxygenNote 7.1.2

Depends R (>= 2.10)

Suggests rmarkdown, knitr

VignetteBuilder knitr

NeedsCompilation no

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Diagnostic Analysis Using Forward Search Procedure for Various Models Outlier Diagnostics for Some Linear Effects and Linear Mixed Effects Models

Description

Identifies potential data outliers and their impact on estimates and analyses. Uses the forward search approach of Atkinson and Riani, "Robust Diagnostic Regression Analysis", 2000, ISBN: o-387-95017-6) to prepare descriptive statistics of a dataset that is to be analyzed by stats::lm(), stats::glm(), or nlme::lme(). Includes graphics functions to display the descriptive statistics.

Details

The DESCRIPTION file:

Package: forsearch
Version: 2.3.0
Title: Outlier Diagnostics for Some Linear Effects and Linear Mixed Effects Models
Authors@R: person("William", "Fairweather", email = "wrf343@flowervalleyconsulting.com", role = c("aut", "cre")
Description: Identifies potential data outliers and their impact on estimates and analyses. Uses the forward search approach of Atkinson and Riani, "Robust Diagnostic Regression Analysis", 2000, ISBN: o-387-95017-6) to prepare descriptive statistics of a dataset that is to be analyzed by stats::lm(), stats::glm(), or nlme::lme(). Includes graphics functions to display the descriptive statistics.
License: GPL (>= 3)
SystemRequirements: gmp (>= 4.1)
Imports: Hmisc(>= 4.6-0), Cairo(>= 1.5-14), ggplot2(>= 3.3.5), nlme(>= 3.1-152), tibble(>= 3.1.6)
Encoding: UTF-8
Roxygen: list(markdown = TRUE)
RoxygenNote: 7.1.2
Depends: R (>= 2.10)
LazyData: TRUE
forsearch-package

Suggests: rmarkdown, knitr
VignetteBuilder: knitr
Author: William Fairweather [aut, cre]
Maintainer: William Fairweather <wrf343@flowervalleyconsulting.com>

Index of help topics:

forsearch-package     Diagnostic Analysis Using Forward Search
                      Procedure for Various Models Outlier
                      Diagnostics for Some Linear Effects and Linear
                      Mixed Effects Models
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forsearch_lm          Create Statistics Of Forward Search in a Linear
                      Model Database
forsearch_lme         Create Statistics Of Forward Search In a Linear
                      Mixed Effects Database
identifyCoeffs        Index To Identify Fixed and Random Coefficients
                      To Appear Together on Plot
identifyFixedCoeffs   Index To Identify Fixed Coefficients To Appear
                      Together on Plot
plotdiag.AICX         Plot Diagnostic AIC Statistics
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                      Distance
plotdiag.deviance.residuals
                      Plot Diagnostic Statistics Of Deviance
                      Residuals
plotdiag.deviances    Plot Diagnostic Deviance Statistics
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plotdiag.params.fixed
                      Plot Diagnostic Statistics of Fixed
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plotdiag.phihatx      Plot Diagnostic PhiHat Statistics
plotdiag.residuals    Plot Diagnostic Statistics Of Residuals Or
                      Squared Residuals
plotdiag.s2           Plot Diagnostic Statistics Of Residual
                      Variation
plotdiag.tstats       Plot Diagnostic T Statistics
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                      Function
showmegl              Display Abbreviated Output Of FORSEARCH_GLM
                      Function
showmelme  

Display Abbreviated Output Of FORSEARCH_LME Function

Ensure that data frame has a leading column of observation numbers. Run forsearch_xxx to create a file of diagnostic statistics to be used as input to such plotting functions as plotdiag.residuals, plotdiag.params.fixed, plotdiag.params.random, plotdiag.s2, plotdiag.leverage, and plotdiag.Cook. The file of diagnostic statistics can be voluminous, and utility functions of showme, showmelme, and showmegl (for lm, lme and glm analyses, respectively) display the output more succinctly. Plotting of statistics for fixed and for random coefficients is limited by graphical restraints in some cases. The function identifyCoeffs provides a set of indexing codes so that plotdiag.params.random can display diagnostics for selected fixed or random model parameters. The function identifyFixedCoeffs does the same for lm models.

Author(s)

William R. Fairweather, Flower Valley Consulting, Inc., Silver Spring MD USA NA
Maintainer: NA William R. Fairweather <wrf343 at flowervalleyconsulting.com>

References


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forsearch_glm  

Create Statistics Of Forward Search in a Generalized Linear Model Database

Description

Prepares summary statistics at each stage of forward search for subsequent plotting. Forward search is conducted in three steps: Step 1 to identify minimal set of observations to estimate unknown parameters, and Step 2 to add one observation at each stage such that observations in the set are best fitting at that stage. A preliminary step (Step 0) contains code for pre-processing of the data.

Usage

forsearch_glm(initial.sample, cobs, response.cols, indep.cols, family, data, estimate.phi=TRUE, skip.step1=NULL, diagnose=FALSE, verbose=TRUE)

Arguments

initial.sample  

Number of random sets of observations in Step 1 of forward search

cobs  

Number of observations to include in each innermost subset of Step 1

response.cols  

Column number(s) of response(s)

indep.cols  

Column number(s) of independent variables

family  

Error distribution and link
forsearch_glm

data Name of database
estimate.phi TRUE causes phi to be estimated; FALSE causes phi to be set = 1
skip.step1 NULL, or vector of observation numbers to include at end of Step 1
diagnose TRUE causes printing of intermediate steps of function
verbose TRUE causes function identifier to display before and after run

Details
No compounding of independent variables is performed within this function. Cross products of two or more variables, functions of single variables, etc. must be explicit and must be represented by another variable in the independent set.

Value

LIST
Rows in stage Observation numbers of rows included at each stage
Family Family and link
Number of model parameters Number of fixed effect parameters
Fixed parameter estimates Matrix of parameter estimates at each stage
Residual deviance Vector of deviances
Null deviance Vector of null deviances
PhiHat Vector of values of phi parameter
Deviance residuals and augments Deviance residuals with indication of whether each is included in fit
AIC Vector of AIC values
Leverage Matrix of leverage of each observation at each stage
Call Call to this function

Author(s)
William R. Fairweather

References

Examples
forsearch_lm

Create Statistics Of Forward Search in a Linear Model Database

Description

Prepares summary statistics at each stage of forward search for subsequent plotting. Forward search is conducted in two steps: Step 1 to identify minimal set of observations to estimate unknown parameters, and Step 2 to add one observation at each stage such that observations in the set are best fitting at that stage.

Usage

forsearch_lm(formula, data, initial.sample, diagnose = FALSE, verbose = TRUE)

Arguments

- formula: Fixed effects formula as described in stats::lm
- data: Name of database
- initial.sample: Number of observations in Step 1 of forward search
- diagnose: TRUE causes printing of intermediate steps of function
- verbose: TRUE causes function identifier to display before and after run

Value

LIST

- Rows in stage: Observation numbers of rows included at each stage
- Standardized residuals: Matrix of errors at each stage
- Number of model parameters: Rank of model
- Sigma: Estimate of random error at final stage; used to standardize all residuals
- Fixed parameter estimates: Matrix of parameter estimates at each stage
- s^2: Estimate of random error at each stage
- Leverage: Matrix of leverage of each observation at each stage
- Modified Cook distance: Estimate of sum of squared changes in parameter estimates at each stage
- Call: Call to this function

Author(s)

William R. Fairweather
References


Examples

forsearch_lme

Create Statistics Of Forward Search In a Linear Mixed Effects Database

Description

Prepares summary statistics at each stage of forward search for subsequent plotting. Forward search is conducted in three steps: Step 0 to set up accounting for group structure, Step 1 to identify minimal set of observations to estimate unknown parameters, and Step 2 to add one observation at each stage such that observations in the set are best fitting at that stage.

Usage

forsearch_lme(fixed, data, random, formula, response.column, initial.sample, robs, skip.step1=NULL, XmaxIter = 1000, XmsMaxIter = 1000, Xtolerance = 0.01, XniterEM = 1000, XmsMaxEval = 400, XmsTol = 1e-05, Xopt = "optim", diagnose = FALSE, verbose = TRUE)

Arguments

fixed 2-sided formula for fixed effects
data data frame, first column of which must be "Observation"
random 1-sided formula for random effects
formula a formula of the form resp ~ cov | group where resp is the response, cov is the primary covariate, and group is the (non-nested) grouping factor
response.column Column number of response variable
initial.sample Number of observations in Step 1 of forward search
robs Number of observations to include in Step 1 of forward search from each sub-group
skip.step1 NULL or a vector of integers for rows to be included in Step 1
XmaxIter lme control parameter
XmsMaxIter lme control parameter
Xtolerance lme control parameter
XniterEM lme control parameter
XmsMaxEval lme control parameter
XmsTol       lme control parameter
Xopt         lme control parameter
diagnose     TRUE causes printing of intermediate steps of function
verbose      TRUE causes function identifier to display before and after run

Details

Group structure is ignored in calculating errors of fit in Step 1. That is, predictions derive from lm fit and not lme fit. Diagnostic statistics are obtained from lme fits. Argument 'formula' is used to identify the innermost group structure and the observations in each level.

Value

LIST

Rows in stage    Observation numbers of rows included at each stage
Standardized residuals
    Matrix of errors at each stage
Number of model parameters
    Rank of model
Sigma             Estimate of random error at final stage; used to standardize all residuals
Fixed parameter estimates
    Matrix of parameter estimates at each stage
s^2                Estimate of random error at each stage
Leverage          Matrix of leverage of each observation at each stage
Modified Cook distance
    Estimate of sum of squared changes in parameter estimates at each stage
Fit statistics    AIC, BIC, and log likelihood
Call               Call to this function

Author(s)

William R. Fairweather

References

https://CRAN.R-project.org/package=nlme

Examples
identifyCoeffs

Index To Identify Fixed and Random Coefficients To Appear Together on Plot

Description

Runs the defined, grouped linear mixed effects (lme) model. Displays the resulting fixed and random coefficients. Attaches codes for identifying them to the plotting functions of this package.

Usage

identifyCoeffs(fixed, data, random,
    XmaxIter = 1000, XmsMaxIter = 1000,
    Xtolerance = 0.01, XniterEM = 1000, XmsMaxEval = 400, XmsTol = 1e-05,
    Xopt = "optim",
    diagnose = FALSE, verbose = TRUE)

Arguments

fixed 2-sided formula for fixed effects
data Name of file (to be) run by forsearch_lme
random 1-sided formula for random effects
XmaxIter lme control parameter
XmsMaxIter lme control parameter
Xtolerance lme control parameter
XniterEM lme control parameter
XmsMaxEval lme control parameter
XmsTol lme control parameter
Xopt lme control parameter
diagnose If TRUE, displays code to help diagnose main function errors
verbose If TRUE, indicates beginning and end of function

Details

Plotting functions cannot plot more than a few coefficients on one graph. This function prepares an index of the coefficients so that the user can more easily identify which ones should appear together in a plot.

Value

Index of fixed and random coefficients from forsearch_lme.

Author(s)

William R. Fairweather
identifyFixedCoeffs

References

Examples

identifyFixedCoeffs  Index To Identify Fixed Coefficients To Appear Together on Plot

Description
Runs the defined linear (lm) model. Displays the resulting coefficients. Attaches codes for identifying them to the plotting functions of this package.

Usage
identifyFixedCoeffs(formula, data, diagnose = FALSE, verbose = TRUE)

Arguments
formula  2-sided formula for fixed effects
data  Name of file (to be) run by forsearch_lm
diagnose  If TRUE, displays code to help diagnose main function errors
verbose  If TRUE, indicates beginning and end of function

Details
Plotting functions cannot plot more than a few coefficients on one graph. This function prepares an index of the coefficients so that the user can more easily identify which ones should appear together in a plot.

Value
Index of coefficients from forsearch_lm.

Author(s)
William R. Fairweather

References

Examples
Description

Plot output from forsearch_glm to show change in AIC statistics as the number of observations in the forward search procedure increases. Save plot in folder containing working directory.

Usage


Arguments

- **forn**: Name of output file from forsearch_glm
- **maintitle**: Main title of plot
- **subtitle**: Subtitle of plot
- **caption**: Content of caption
- **wmf**: File name of stored plot; omit ‘.wmf’
- **Cairo**: TRUE causes use of Cairo graphics
- **printgraph**: TRUE causes graph to print to file and closes device
- **loess**: TRUE causes plot of loess line, otherwise straight line
- **diagnose**: If TRUE, displays code to help diagnose main function errors
- **verbose**: If TRUE, indicates beginning and end of function

Value

Process and plot AIC statistics from forsearch_glm

Author(s)

William R. Fairweather

References


Examples
plotdiag.Cook  

Plot Diagnostic Statistics of Modified Cook’s Distance

Description
Plot output from forsearch_lm or forsearch_lme to show change in Modified Cook’s distance as the number of observations in the forward search procedure increases. Save plot in folder containing working directory.

Usage

Arguments
- forn: Name of forward search output file
- maintitle: Main title of plot
- subtitle: Subtitle of plot
- caption: Content of caption
- wmf: File name of stored plot; omit ".wmf"
- Cairo: TRUE causes use of Cairo graphics
- printgraph: TRUE causes graph to print to file and closes device
- loess: If TRUE, adds loess curve to plot, otherwise, straight line
- diagnose: If TRUE, displays code to help diagnose main function errors
- verbose: If TRUE, indicates beginning and end of function

Value
Process and plot Cook distance statistics from forsearch_lm or forsearch_lme

Author(s)
William R. Fairweather

References

Examples
Description

Plot output from forsearch_glm to show change in deviance residuals or augmented deviance residuals, either of which can be squared, as the number of observations in the forward search procedure increases. Save plot in folder containing working directory.

Usage

plotdiag.deviance.residuals(forn, squared = FALSE, augmented = TRUE, hilos = c(1, 0), maintitle = "Put main title here", subtitle = "Put subtitle here", caption = "Put caption here", wmf = "Put_graph_title_here", Cairo = TRUE, printgraph = TRUE, legend = "Dummy legend name", diagnose = FALSE, verbose = TRUE)

Arguments

forn Name of forward search output file
squared TRUE causes residuals to be squared before plotting
augmented TRUE causes graphing of augmented deviance residuals, see Details
hilos Number of observations having high and number having low values of residuals to identify. No low values are identified for squared residual plot
maintitle Main title of plot
subtitle Subtitle of plot
caption Caption of plot
wmf File name of stored plot; omit ".wmf"
Cairo TRUE causes use of Cairo graphics
printgraph TRUE causes graph to print to file and closes device
legend Legend title
diagnose If TRUE, displays code to help diagnose main function errors
verbose If TRUE, indicates beginning and end of function

Details

We reserve the use of the term 'Deviance residuals' to deviance residuals of the observations that were used to create the model fit, and use the term 'Augmented deviance residuals' to refer to deviance residuals of all available observations. The latter are created by predicting the fit of the model to all observations.

Value

Process and plot changes in deviance residuals or squared deviance residuals from forsearch_glm
Author(s)

William R. Fairweather

References


Examples

```
plotdiag.deviances  Plot Diagnostic Deviance Statistics
```

Description

Plot output from forsearch_glm to show change in deviances as the number of observations in the forward search procedure increases. Save plot in folder containing working directory.

Usage

```
plotdiag.deviances(forn, devtype, maintitle = "Put main title here",
subtitle = "Put subtitle here", caption="Put caption here",
wmf = "Put_plot_file_title_here",
Cairo=TRUE, printgraph=TRUE,loess=FALSE,
diagnose = FALSE,verbose = TRUE)
```

Arguments

- `forn` Name of output file from forsearch_glm
- `devtype` Type of deviance: "R" or "N" for Residual deviance or Null deviance
- `maintitle` Main title of plot
- `subtitle` Subtitle of plot
- `caption` Content of caption
- `wmf` File name of stored plot; omit ".wmf"
- `Cairo` TRUE causes use of Cairo graphics
- `printgraph` TRUE causes graph to print to file and closes device
- `loess` If TRUE, loess line is drawn through points, otherwise straight line
- `diagnose` If TRUE, displays code to help diagnose main function errors
- `verbose` If TRUE, indicates beginning and end of function

Value

Process and plot deviances from forsearch_glm
plotdiag.fit3

Author(s)

William R. Fairweather

References


Examples

plotdiag.fit3

Plot Diagnostic Statistics of AIC, BIC, and Log Likelihood

Description

Plot output from forsearch_lme to show change in AIC, BIC, and log likelihood as the number of observations in the forward search procedure increases. Save plot in folder containing working directory.

Usage

plotdiag.fit3(forn, maintitle = "Put main title here", subtitle = "Put subtitle here", caption = "Put caption here", wmf = "Put_graph_filename_here", Cairo=TRUE,printgraph=TRUE, legend="Dummy legend name", diagnose = FALSE, verbose = TRUE)

Arguments

forn Name of output file from forsearch_lme
maintitle Main title of plot
subtitle Subtitle of plot
caption Content of caption
wmf File name of stored plot; omit ".wmf"
Cairo TRUE causes use of Cairo graphics
printgraph TRUE causes graph to print to file and closes device
legend Legend name
diagnose If TRUE, displays code to help diagnose main function errors
verbose If TRUE, indicates beginning and end of function

Value

Process and plot trends of AIC, BIC, and log likelihood statistics from forsearch_lme
Author(s)

William R. Fairweather

References


Examples

```
plotdiag.leverage
```

Plot Diagnostic Statistics Of Leverage

Description

Plot output from forsearch_lm or forsearch_lme to show change in leverage of each observation as the number of observations in the forward search procedure increases. Save plot in folder containing working directory.

Usage

```
plotdiag.leverage(forn, hilos = c(1, 0), maintitle = "Put main title here", subtitle = "Put subtitle here", caption="Put caption here", wmf = "Put_graph_title_here", Cairo=TRUE, printgraph = TRUE, diagnose = FALSE, verbose = TRUE)
```

Arguments

- `forn` Name of forward search output file
- `hilos` Vector with number of highest observations and number of lowest observations on graph to identify
- `maintitle` Main title of plot
- `subtitle` Subtitle of plot
- `caption` Content of caption
- `wmf` File name of stored plot; omit ".wmf"
- `Cairo` TRUE causes use of Cairo graphics
- `printgraph` TRUE causes graph to print to file and closes device
- `diagnose` If TRUE, displays code to help diagnose main function errors
- `verbose` If TRUE, indicates beginning and end of function

Value

Process and plot Cook distance statistics from forsearch_lm or forsearch_lme
Author(s)
William R. Fairweather

References

Examples

plotdiag.params.fixed  Plot Diagnostic Statistics of Fixed Coefficients

Description
Plot output from forsearch_xxx to show change in random coefficients as the number of observations in the forward search procedure increases. Save plot in folder containing working directory.

Usage
plotdiag.params.fixed(forn, coeff.codenums=NULL, maintitle = "Put main title here", subtitle = "Put subtitle here", caption="Put caption here",wmf = "Put stored_name_here", Cairo=TRUE, printgraph=TRUE,legend = "Dummy legend name", diagnose = FALSE,verbose = TRUE)

Arguments
forn Name of output file from forsearch_xxx
coeff.codenums Numeric vector of coefficients to include together on the plot. Codes are output by identifyFixedCoeffs (for lm files) or by identifyCoeffs function (for lme files)
maintitle Main title of plot
subtitle Subtitle of plot
caption Content of caption
wmf File name of stored plot; omit ".wmf"
Cairo TRUE causes use of Cairo graphics
printgraph TRUE causes graph to print to file and closes device
legend Name of legend
diagnose If TRUE, displays code to help diagnose main function errors
verbose If TRUE, indicates beginning and end of function

Value
Process and plot fixed coefficient statistics from forsearch_lm or forsearch_lme
Author(s)

William R. Fairweather

References


Examples

plotdiag.params.random

Plot Diagnostic Statistics Of Random Coefficients

Description

Plot output from forsearch_lme to show change in root mean squares of random coefficients as the number of observations in the forward search procedure increases. Save plot in folder containing working directory.

Usage

plotdiag.params.random(forn, coeff.codenums=NULL, asfacets=FALSE, facetdir=c("h","v"), maintitle = "Put maintitle here", subtitle = "Put subtitle here", caption = "Put caption here",wmf = "Put_stored_name_here", Cairo=TRUE,printgraph = TRUE, legend = "Dummy legend name", diagnose = FALSE, verbose = TRUE)

Arguments

forn Name of output file from forsearch_lme
coeff.codenums columns of output file to be included in graph
asfacets TRUE causes printing in facets
facetdir "v" lays out the facets vertically, "h" lays them out horizontally
maintitle Main title of plot
subtitle Subtitle of plot
caption Content of caption
wmf File name of stored plot; omit ".wmf"
Cairo TRUE causes use of Cairo graphics
printgraph TRUE causes graph to print to file and closes device
legend Name of legend
diagnose If TRUE, displays code to help diagnose main function errors
verbose If TRUE, indicates beginning and end of function
Value
Process and plot RMS of random coefficients from forsearch_lme

Author(s)
William R. Fairweather

References

Examples

plotdiag.phihatx

Plot Diagnostic PhiHat Statistics

Description
Plot output from forsearch_glm to show change in phiHat statistics as the number of observations in the forward search procedure increases. Save plot in folder containing working directory.

Usage
plotdiag.phihatx(forn, maintitle = "Put main title here",
subtitle = "Put subtitle here", caption="Put caption here",
wmf = "Put_plot_file_title_here",
Cairo=TRUE, printgraph=TRUE, loess = FALSE,
diagnose = FALSE, verbose = TRUE)

Arguments
forn Name of output file from forsearch_glm
maintitle Main title of plot
subtitle Subtitle of plot
caption Content of caption
wmf File name of stored plot; omit ".wmf"
Cairo TRUE causes use of Cairo graphics
loess TRUE causes print of loess line, otherwise straight line
printgraph TRUE causes graph to print to file and closes device
diagnose If TRUE, displays code to help diagnose main function errors
verbose If TRUE, indicates beginning and end of function
plotdiag.residuals

Value

Process and plot phiHat statistics from forsearch_glm

Author(s)

William R. Fairweather

References


Examples

plotdiag.residuals  

Plot Diagnostic Statistics Of Residuals Or Squared Residuals

Description

Plot output from forsearch_lm or forsearch_lme to show change in residuals or squared residuals as the number of observations in the forward search procedure increases. Save plot in folder containing working directory.

Usage

plotdiag.residuals(forn, squared = FALSE, hilos = c(1, 0), maintitle, subtitle, caption, wmf, Cairo=TRUE,printgraph=TRUE, legend = "Dummy legend name", diagnose = FALSE, verbose = TRUE)

Arguments

forn  
Name of forward search output file

squared  
TRUE causes residuals to be squared before plotting

hilos  
Number of observations having high and number having low values of residuals to identify. No low values are identified for squared residual plot.

maintitle  
Main title of plot

subtitle  
Subtitle of plot

caption  
Caption of plot

wmf  
File name of stored plot; omit ".wmf"

Cairo  
TRUE causes use of Cairo graphics

printgraph  
TRUE causes graph to print to file and closes device

legend  
Legend title

diagnose  
If TRUE, displays code to help diagnose main function errors

verbose  
If TRUE, indicates beginning and end of function
Value

Process and plot changes in residuals or squared residuals from forsearch_lm or forsearch_lme

Author(s)

William R. Fairweather

References


Examples

plotdiag.s2

Plot Diagnostic Statistics Of Residual Variation

Description

Plot output from forsearch_lm to show change in residual variation as the number of observations in the forward search procedure increases. Save plot in folder containing working directory.

Usage

plotdiag.s2(forn, maintitle = "Put main title here", subtitle = "Put subtitle here",
caption = "Put caption here", wmf = "Put_graph_filename_here",
Cairo=TRUE,printgraph=TRUE, loess = FALSE,
diagnose = FALSE, verbose = TRUE)

Arguments

forn Name of output file from forsearch_lm
maintitle Main title of plot
subtitle Subtitle of plot
caption Content of caption
wmf File name of stored plot; omit ".wmf"
Cairo TRUE causes use of Cairo graphics
printgraph TRUE causes graph to print to file and closes device
loess If TRUE, adds loess curve to plot, otherwise, straight line
diagnose If TRUE, displays code to help diagnose main function errors
verbose If TRUE, indicates beginning and end of function
Value

Process and plot residual variation statistics from forsearch_lm

Author(s)

William R. Fairweather

References


Examples

```
plotdiag.tstats(forn, coeff.codenums=NULL, maintitle = "Put main title here",
subtitle = "Put subtitle here", caption="Put caption here", wmf = "Put_stored_name_here",
Cairo=TRUE, printgraph=TRUE,legend = "Dummy legend name",
diagnose = FALSE,verbose = TRUE)
```

Arguments

- `forn` Name of output file from forsearch_lm or forsearch_lme
- `coeff.codenums` Numeric vector of coefficients to include together on the plot. Codes are output by identifyFixedCoeffs (for lm files) or by identifyCoeffs function (for lme files)
- `maintitle` Main title of plot
- `subtitle` Subtitle of plot
- `caption` Content of caption
- `wmf` File name of stored plot; omit ".wmf"
- `Cairo` TRUE causes use of Cairo graphics
- `printgraph` TRUE causes graph to print to file and closes device
- `legend` Name of legend
- `diagnose` If TRUE, displays code to help diagnose main function errors
- `verbose` If TRUE, indicates beginning and end of function
Value

Process and plot t statistics of fixed coefficients from forsearch_lm or forsearch_lme

Author(s)

William R. Fairweather

References


Examples

| search.history | Create Tabular History Of Forward Search |

Description

The forward search functions output a list of vectors, each of which indicates which observations are in the model at each stage of the search. This function processes that list to create a more easily understood matrix of the observation numbers that are newly entered into the model and any that were temporarily removed from the model over the course of the search.

Usage

search.history(list1, diagnose = FALSE, verbose = TRUE)

Arguments

- list1: Name of a forsearch_xxx output file
- diagnose: If TRUE, displays code to help diagnose main function errors
- verbose: If TRUE, indicates beginning and end of function

Value

Printout of matrix showing evolution of observations to enter or leave the model during the course of the forward search

Author(s)

William R. Fairweather

Examples
showme

Display Abbreviated Output Of FORSEARCH_LM Function

Description

Output of forsearch_lm function can be voluminous. This function displays the output in an abbreviated format. Primarily for programmer use.

Usage

showme(x, verbose = TRUE)

Arguments

x Name of forsearch_lm output file
verbose If TRUE, indicates the beginning and end of function run

Value

Abbreviated printout of output of forsearch_lm function

Author(s)

William R. Fairweather

Examples

showmegl

Display Abbreviated Output Of FORSEARCH_GLM Function

Description

Output of forsearch_glm function can be voluminous. This function displays the output in an abbreviated format. Primarily for programmer use.

Usage

showmegl(x, verbose = TRUE)

Arguments

x Name of forsearch_glm output file
verbose If TRUE, indicates the beginning and end of function run
showmelme

Value
Abbreviated printout of output of forsearch_glm function

Author(s)
William R. Fairweather

Examples

showmelme(x, verbose = TRUE)

Description
Output of forsearch_lme function can be voluminous. This function displays the output in an abbreviated format. Primarily for programmer use.

Usage
showmelme(x, verbose = TRUE)

Arguments
x Name of forsearch_lme output file
verbose If TRUE, indicates the beginning and end of function run

Value
Abbreviated printout of output of forsearch_lme function

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