Package 'monitor'

April 13, 2006

Title Dynamic Systems Estimation - monitoring extensions

Description Multivariate Time Series - monitoring extensions

Depends R (>= 2.0.0), tframe (>= 2006.4-1), dse1 (>= 2006.4-1), dse2 (>= 2006.4-1), dsepadi (>= 2006.4-1), syskern (>= 2006.4-1)

Suggests setRNG (>= 2004.4-1)

Version 2006.4-1

LazyLoad yes

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Author Paul Gilbert <pgilbert@bank-banque-canada.ca>

Maintainer Paul Gilbert <pgilbert@bank-banque-canada.ca>

URL http://www.bank-banque-canada.ca/pgilbert

R topics documented:

checkForValueChanges

Simple Monitoring Utility Functions

Description

Utility functions for simple monitoring.

Usage

```
checkForValueChanges(data.names, verification.data,
     discard.current=FALSE, ignore.before= NULL, fuzz=1e-10)
checkForFileDateChanges(data.names, verification.dates)
watch.data(data.names, previous.data=NULL, mail.list="gilp", error.mail.list=NUL
   message.title="Data Monitor\n", message.subject="Data Monitor", message.footn
```

Details

Internal functions, not to be called by user.

Value

depends

See Also

simpleMonitoring

combinationMonitoring

Combination Monitoring

Description

Automatic monitoring with e-mail of results

Usage

```
combinationMonitoring(model, data.names,
   previous.data=NULL,
   overriding.data.names=NULL,
   restrict.overriding.data=TRUE, overriding.horizon=0,
   mail.list=NULL,
   error.mail.list=NULL,
   message.title="Combination Monitoring",
   message.subject="Combination Monitoring",
   message.footnote=NULL,
   show.start= c(0,-3),
   show.end  = c(0,12),
   report.variables=seriesNames(data.names),
```

```
        data.sub.heading=NULL,
        data.tag=" ",
        future.inputData.tag="p",
        overriding.data.tag="m",
        overlapping.period.forecast.tag="g",
        forecast.tag="f",
        run.again=FALSE,
        save.as=NULL)
```

Arguments

`model`	see `simpleMonitoring`.
`data.names`	see `simpleMonitoring`.
`previous.data`	see `simpleMonitoring`.
`overriding.data.names`	a TSdata (names) object.
`restrict.overriding.data`	a logical indicating if `restrict.overriding.data` should be used to truncate the resticion.
`overriding.horizon`	an integer indicating the horizon of the restriction.
`mail.list`	see `simpleMonitoring`.
`error.mail.list`	see `simpleMonitoring`.
`message.title`	see `simpleMonitoring`.
`message.subject`	see `simpleMonitoring`.
`message.footnote`	see `simpleMonitoring`.
`show.end`	see `simpleMonitoring`.
`show.start`	see `simpleMonitoring`.
`report.variables`	see `simpleMonitoring`.
`data.sub.heading`	see `simpleMonitoring`.
`data.tag`	see `simpleMonitoring`.
`future.inputData.tag`	.
`overriding.data.tag`	.
`overlapping.period.forecast.tag`	.
`forecast.tag`	see `simpleMonitoring`.
`run.again`	see `simpleMonitoring`.
`save.as`	.

Details

This function allows for -combining forecasts (ie. monitoring or other forecast data) -input (policy) projections If these feature are not need see simpleMonitoring. `mail.list` and `error.mail.list` should be single strings (not vectors) but the string can contain multiple user ids for mail. `overriding.data.names=` indicates a source for data which should be used in place of model forecasts (e.g. preliminary data from a source or data from another forecast). If `overriding.data.names=NULL` then no overriding data is used. report.variables indicates output variables which are reported. If NULL, then all outputs are reported. show.end is min of this and `overriding.data$input` if needed.

This functions allow for the use of over-riding data which may come from other forecasts or monitoring and can be used to augment (and replace) actual data. Overriding data is used in place of data and model forecasts to the horizon for which it is available. Also, input (policy) variable forecasts can be used. NB. The combination is not in the sense of averaging together forecasts.

Value

Invisibly return latest data for next comparison. This function is run mainly for its side effects.

See Also

`simpleMonitoring`

`combineAndForecast` *Simple Monitoring Utility Functions*

Description

Utility functions for simple monitoring.

Usage

```
combineAndForecast(model, new.data,
      overlapping.period.forecast.tag="g", forecast.tag="f")
reconstruct.combinedForecast(combinedForecast)
construct.data.to.override.horizon(new.data, model, plot=TRUE, forecast.tag="f")
get.overriding.data(file="overriding.data",
    first.input="",first.output="", second.output="", m=1, p=10)
restrict.overriding.data(data, overriding.horizon=0)
```

Details

Internal functions, not to be called by user.

Value

depends

See Also

`combinationMonitoring`

`fprint` *Formatted Printing of Time Series*

Description

Generate a formatted character matrix of time series data.

Usage

```
fprint(x, super.title=NULL, sub.title=NULL,
      digits=options()$digits, space=" ", file=NULL, append=FALSE)
## S3 method for class 'tagged':
fprint(x, super.title=NULL, sub.title=NULL,
      digits=options()$digits, space=" ", file=NULL, append=FALSE)
```

Arguments

`x`	a matrix of time series data.
`super.title`	a string to be used as top heading.
`sub.title`	a string to be used as second level of headings.
`digits`	number of digits to print.
`space`	a string to be used between columns of data.
`file`	name of a file to generate.
`append`	If TRUE output is appended to the file, otherwise the file is overwritten.

Details

This is a generic method for print a table of time series data with formatting control. Currently the only specific method is fprint.tagged.

Value

A character matrix.

Side Effects

If `file` is specified then a file will be created.

See Also

`print` `tfprint`

`simpleMonitoring` *Simple Monitoring*

Description

Automatic monitoring with e-mail of results.

Usage

```
 simpleMonitoring(model, data.names,
previous.data=NULL,
mail.list=NULL,
error.mail.list=Sys.info()[["user"]],
message.title="Simple Monitoring",
message.subject="Simple Monitoring",
message.footnote=NULL,
show.start= c(0,-3),
show.end  = c(0,12),
report.variables= seriesNames(data.names),
data.sub.heading=NULL,
data.tag=" ",
forecast.tag="f",
run.again=FALSE,
save.as=NULL)
```

Arguments

`model`	a TSmodel.
`data.names`	a TSdata (names) object.
`previous.data`	a TSdata object similar to that returned by freeze(data.names). Used to check if the data has been updated.
`mail.list`	string containing user ids for mail
`error.mail.list`	string contain user ids for mail
`message.title`	string or vectors of strings placed at the top of the message.
`message.subject`	string used as the message subject.
`message.footnote`	string or vectors of strings placed at the bottom of the message.
`show.end`	integer indicating the number of periods after the end of data which should be displayed.(i.e. number of forecast periods)
`show.start`	negative integer indicating the number of periods before the end of data (i.e. history) which should be displayed. It is added to the end (so it should be negative).
`report.variables`	indicates output variables which are reported. It should be a vector of strings corresponding to a subset of names returned by seriesNames.

`data.sub.heading`
: string or vectors of strings placed at the top of the data.

`data.tag`
: matrix of strings placed beside data points in the report.

`forecast.tag`
: matrix of strings placed beside data points in the report.

`run.again`
: logical indicating that the monitoring should be run regardless of data updates.

`save.as`
: optional string giving file name in which to save details of the data and model (useful for debugging).

Details

`mail.list` and `error.mail.list` should be single strings (not vectors) but the string can contain multiple user ids for mail. If mail.list is NULL (default) then mail is not sent (useful for testing). If error.mail.list is NULL then mail is not sent (useful for testing). The default for error.mail.list is the result of Sys.info()[["user"]]. This version does not allow for -combining forecasts (ie. monitoring.data or overriding data) -input (policy) projections See `combinationMonitoring` for these features.

Value

Invisibly return latest data for next comparison. This function is run mainly for its side effects.

Side Effects

Mail is sent.

See Also

`combinationMonitoring` `Sys.mail`

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tags *Tagged Matrices*

Description

Matrices with an decription for each point.

Usage

```
tags(x)
tags(x) <- value
tagged(x, tags)
## Default S3 method:
tagged(x, tags)
## S3 method for class 'TSdata':
tagged(x, tags)
is.tagged(obj)
```

Arguments

x	a matrix or TSdata object.
value	same as tags below.
tags	if x is a matrix then tags should be a matrix of strings of the same dimension or a scalar string which is expanded to the dimension of x. If x is TSdata then tags should be a list with elements input and output, each with tags as for a matrix.
obj	any object.

Details

The matrix of descriptive information is assigned as an attribute of the matrix. Most testing of the methods for this class has been with a single character tag which can be used as a flag, for example, to indicate the different sources for the data points.

Value

A matrix of class "tagged" or a TSdata object with specific class "tagged"

See Also

simpleMonitoring TSdata

Examples

```
x <- tagged(matrix(rnorm(100), 50,2), "r")
is.tagged(x)
```

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testEqual.tagged *Specific Methods for Testing Equality*

Description

See the generic function description.

Usage

```
## S3 method for class 'tagged':
testEqual(obj1, obj2, fuzz= 1e-16)
```

Arguments

obj1	object to be compared with obj2.
obj2	object to be compared with obj1.
fuzz	tolerance for numerical comparisons.

See Also

testEqual

`tfplot.combinedForecast` *Specific Methods for tfplot*

Description

See the generic function description.

Usage

```
## S3 method for class 'combinedForecast':
tfplot(x,
   start=tfstart(x$data$output), end=tfend(x$data$output),
   select.inputs=NULL, select.outputs=NULL,
   Title="Projection", xlab=NULL, ylab=NULL,
   graphs.per.page=5, mar=par()$mar, verbose=FALSE, ...)
```

Arguments

`x`	object to be plotted.
`start`	start of plot. (passed to tfwindow)
`end`	end of plot. (passed to tfwindow)
`select.inputs`	vector of integers or strings indicating inputs to be plotted.
`select.outputs`	vector of integers or strings indicating outputs to be plotted.
`Title`	title for plot.)
`xlab`	xlab for plot.)
`ylab`	ylab for plot.)
`mar`	margins passed to plot. See par.
`graphs.per.page`	integer indicating number of graphs to place on a page.
`verbose`	logical indicating if additional information is provided.
`...`	arguments passed to other methods.

See Also

`tfplot`

`tfwindow.tagged` *Specific Methods for tframed Data*

Description

See the generic function description.

Usage

```
## S3 method for class 'tagged':
tfwindow(x, tf=NULL, start=tfstart(tf), end=tfend(tf), warn=TRUE)
## S3 method for class 'tagged':
tbind(x, mat2, ..., pad.start=TRUE, pad.end=TRUE, warn=TRUE)
## S3 method for class 'tagged':
splice(mat1, mat2, tag1=tags(mat1), tag2=tags(mat2), ...)
## S3 method for class 'tagged':
selectSeries(x, series=seq(ncol(x)))
## S3 method for class 'tagged':
tframe(x) <- value
```

Arguments

`x`	see the generic function.
`start`	see the generic function.
`end`	see the generic function.
`tf`	see the generic function.
`pad.start`	see the generic function.
`pad.end`	see the generic function.
`warn`	see the generic function.
`mat1`	see the generic function.
`mat2`	see the generic function.
`tag1`	tags for the first matrix. See `tags`.
`tag2`	tags for the second matrix. See `tags`.
`series`	see the generic function.
`value`	see the generic function.
`...`	(further arguments, currently disregarded)

See Also

`tfwindow`, `tbind`, `trimNA` `splice` `selectSeries`

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