Package 'ForecastTB'

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Type Package

Title Test Bench for the Comparison of Forecast Methods

Version 1.0.1

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Description Provides a test bench for the comparison of forecasting methods in uni-variate time series. Forecasting methods are compared using different error metrics. Proposed forecasting methods and alternative error metrics can be used. Detailed discussion is provided in the vignette.

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Imports PSF, decomposedPSF, ggplot2, gridExtra, imputeTestbench, methods, reshape2, forecast, circlize, RColorBrewer, stats, graphics, utils

Encoding UTF-8

LazyData true

RoxygenNote 7.0.2

Suggests knitr, testthat (>= 2.1.0)

VignetteBuilder knitr

NeedsCompilation no

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`append_` *Function to append new methods in the study*

Description

Function to append new methods in the study

Usage

```
append_(object, Method, MethodName, ePara, ePara_name)
```

Arguments

`object` as output of ’prediction_errors()’ function

`Method` as the list of locations of function for the proposed prediction method

`MethodName` as list of names for function for the proposed prediction method in order

`ePara` as type of error calculation (RMSE and MAE are default), add an error parameter of your choice in the following manner: ePara = c("errorparametername") where errorparametername is should be a source/function which returns desired error set

`ePara_name` as list of names of error parameters passed in order

Value

Returns error comparison for additional forecasting methods

Examples

```
## Not run:
library(forecast)
test3 <- function(data, nval){return(as.numeric(forecast(ets(data), h = nval)$mean))}
a <- prediction_errors(data = nottem)
b <- append_(object = a, Method = c(”test3(data,nval)”), MethodName = c('ETS'))
choose_(object = a)

## End(Not run)
```

choose_ *Function to select the desired methods in the study*

Description

Function to select the desired methods in the study

Usage

```
choose_(object)
```

Arguments

`object`	as output of 'prediction_errors()' function

Value

Returns error comparison for selected forecasting methods

Examples

```
## Not run:
a <- prediction_errors(data = nottem)
choose_(object = a)

## End(Not run)
```

monte_carlo *Function to use Monte Carlo strategy*

Description

Function to use Monte Carlo strategy

Usage

```
monte_carlo(object, size, iteration, fval = 0, figs = 0)
```

Arguments

`object`	as output of 'prediction_errors()' function
`size`	as volume of time series used in Monte Carlo strategy
`iteration`	as number of iterations models to be applied
`fval`	as a flag to view forecasted values in each iteration (default: 0, don't view values)
`figs`	as a flag to view plots for each iteration (default: 0, don't view plots)

Value

Error values with provided models in each iteration along with the mean values

Examples

```
## Not run:
library(forecast)
test3 <- function(data, nval){return(as.numeric(forecast(ets(data), h = nval)$mean))}
a <- prediction_errors(data = nottem,
    Method = c("test3(data, nval)"),
    MethodName = c("ETS"), append_ = 1)
monte_carlo(object = a1, size = 144, iteration = 10)

## End(Not run)
```

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plot.prediction_errors

Function to plot comparison of Prediction methods

Description

Function to plot comparison of Prediction methods

Usage

```
## S3 method for class 'prediction_errors'
plot(x, ...)
```

Arguments

x	as output object of 'prediction_errors()' function
...	arguments passed to or from other methods

Value

Returns error comparison plots for forecasting methods

Examples

```
a <- prediction_errors(data = nottem)
b <- plot(a)
```

plot_circle *Function to plot comparison of Predicted values in a circular ring*

Description

Function to plot comparison of Predicted values in a circular ring

Usage

```
plot_circle(x, ...)
```

Arguments

x	as output object of 'prediction_errors()' function
...	arguments passed to or from other methods

Value

Returns error comparison plots for forecasting methods

Examples

```
a <- prediction_errors(data = nottem)
plot_circle(a)
```

prediction_errors *Function working as testbench for comparison of Prediction methods*

Description

Function working as testbench for comparison of Prediction methods

Usage

```
prediction_errors(
  data,
  nval,
  ePara,
  ePara_name,
  Method,
  MethodName,
  strats,
  dval,
  append_
)
```

Arguments

`data` as input time series for testing

`nval` as an integer to decide number of values to predict

`ePara` as type of error calculation (RMSE and MAE are default), add an error parameter of your choice in the following manner: ePara = c("errorparametername") where errorparametername is should be a source/function which returns desired error set

`ePara_name` as list of names of error parameters passed in order

`Method` as the list of locations of function for the proposed prediction method (should be recursive) (default:arima)

`MethodName` as list of names for function for the proposed prediction method in order

`strats` as list of forecasting strategies. Available : recursive and dirrec

`dval` as last d values of the data to be used for forecasting

`append_` suggests if the function is used to append to another instance

Value

Returns error comparison for forecasting methods

Examples

```
prediction_errors(data = nottem)
```

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