Package 'dhReg'

October 13, 2022

Type Package

Title Dynamic Harmonic Regression

Version 0.1.1

Author Pranay Gaikwad

Maintainer Pranay Gaikwad <pranay3113@gmail.com>

Description Building and forecasting time series data with multiple seasonality using Dynamic Harmonic Regression.

License GPL-3

Encoding UTF-8

LazyData false

RoxygenNote 6.1.1

Depends forecast, future.apply, stats, future, testthat

URL https://otexts.com/fpp2/dhr.html

NeedsCompilation no

Repository CRAN

Date/Publication 2021-02-28 12:30:02 UTC

R topics documented:

dhr *Dynamic Harmonic Regression*

Description

Building model for time series data with multiple seasonality using Dynamic Harmonic Regression

Usage

```
dhr(Data, Range, XREG = NULL, Frequency, Criteria = "aicc", maxp = 5,
  maxq = 5, maxd = 5)
```

Arguments

Data	a time series data
Range	Range of k in fourier series
XREG	independent variable if any
Frequency	seasonal frequency(can be multiple)
Criteria	can be "aicc", "aic", "bic"
maxp	maximum value of Auto regressive term in auto.arima
maxq	maximum value of Moving average term in auto.arima
maxd	maximum value of integrated term in auto.arima

Value

summary of Dynamic harmonic regression model

Examples

```
Data1 <- runif(runif(200,100,1000)) #To generate random number for example
Data_ts <- ts(Data1)
M <- dhr(Data=Data_ts,XREG=NULL,Range=list(1:2,1),Frequency=c(24,168),Criteria="aicc")
```

fc *forecast using Dynamic Harmonic Regression*

Description

forecasting the time series data using Dynamic Harmonic Regression

Usage

```
fc(Frequency, XREG_test = NULL, h, Fit, Data)
```

Arguments

Frequency	seasonal frequency(can be multiple frequency)
XREG_test	independent variable of test data, if any
h	how much further to forecast
Fit	Model fitted using dhr function
Data	a time series data used while building a model

Value

forecasted values

Examples

```
Data1 <- runif(runif(200,100,1000))#To generate random number for example
Data_ts <- ts(Data1)
M <- dhr(Data=Data_ts,XREG=NULL,Range=list(1:2,1),Frequency=c(24,168),Criteria="aicc")
Fcast <- fc(Frequency = c(24,168), XREG_test = NULL, h = 10, Fit = M, Data = Data_ts)
plot(Fcast)
```

fourier_K *Fourier K*

Description

function to get best value of K used in dhr function

Usage

```
fourier_K(Fit)
```

Arguments

Fit	Model built using dhr function

Value

optimal value of K used in dhr function

Examples

```
Data1 <- runif(runif(200,100,1000))#To generate random number for example
Data_ts <- ts(Data1)
M <- dhr(Data=Data_ts,XREG=NULL,Range=list(1:2,1),Frequency=c(24,168),Criteria="aicc")
fourier_K(M)
```

Index