Package ‘dhReg’

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Title Dynamic Harmonic Regression
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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**

```r
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**

```r
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)
```

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**fourier_K**

*Fourier K*

**Description**

Function to get best value of K used in dhr function.

**Usage**

```r
fourier_K(Fit)
```
Arguments

Fit Model built using dhr function

Value optimal value of K used in dhr function

Examples

```r
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)
```
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