Package ‘WaveletANN’
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Type Package
Title Wavelet ANN Model
Version 0.1.0
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Description Fits hybrid Wavelet ANN model for time series forecasting using algorithm by An-
License GPL
Imports stats, wavelets, fracdiff, forecast
LazyData TRUE
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Repository CRAN
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WaveletFitting Wavelet transform using *Maximal overlap discrete wavelet transform (MODWT) algorithm*

Description

Transforms the time series data by using hybrid MODWT algorithm using 'haar' filter.

Usage

```
WaveletFitting(ts,Wlevels,bndry,Flag)
```
WaveletFittingann

Arguments

- `ts`: univariate time series
- `wvlevels`: The level of wavelet decomposition
- `bndry`: The boundary condition of wavelet decomposition
- `fflag`: The FastFlag condition of wavelet decomposition: True or False

Value

WaveletFitting The wavelet transform of the series

References


Examples

```r
N <- 100
PHI <- 0.2
THETA <- 0.1
SD <- 1
M <- 0
D <- 0.2
Seed <- 123

set.seed(Seed)
Sim.Series <- fracdiff::fracdiff.sim(n = N, ar = c(PHI), ma = c(THETA),
                                      d = D, rand.gen = rnorm, sd = SD, mu = M)
simts <- as.ts(Sim.Series$series)
Waveletlevels <- floor(log(length(simts))) # to obtain the maximum level for wavelet decomposition
WS <- WaveletFitting(ts=simts, Wvlevels=Waveletlevels, bndry='periodic', FFlag=TRUE)$WaveletSeries
```

WaveletFittingann Wavelet-ANN hybrid model for forecasting

Description

Fits the time series data by using hybrid Wavelet-ANN algorithm.
WaveletFittingann

Usage

WaveletFittingann(ts, Wavelevels, boundary, FastFlag, nonseaslag, seaslag, NForecast)

Arguments

ts univariate time series
Wavelevels The level of wavelet decomposition
boundary The boundary condition of wavelet decomposition
FastFlag The FastFlag condition of wavelet decomposition: True or False
nonseaslag The maximum non seasonal order
seaslag The maximum seasonal order
NForecast The forecast horizon: A positive integer

Value

WaveletFittingann
The forecast of the series

References


Examples

N <- 100
PHI <- 0.2
THETA <- 0.1
SD <- 1
M <- 0
D <- 0.2
Seed <- 123

set.seed(Seed)
Sim.Series <- fracdiff::fracdiff.sim(n = N, ar = c(PHI), ma = c(THETA),
                                      d = D, rand.gen = rnorm, sd = SD, mu = M)
simts <- as.ts(Sim.Series$series)
#Waveletlevels <- floor(log(length(simts))) # to obtain the maximum level for wavelet decomposition
WaveletForecast <- WaveletFittingann(ts = simts, Waveletlevels = floor(log(length(simts))),
                                       boundary = 'periodic', FastFlag = TRUE, nonseaslag, seaslag, NForecast = 5)
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