Package 'WaveletETS'

July 21, 2025

Type Package

Title Wavelet Based Error Trend Seasonality Model

Version 0.1.0

Author Dr. Ranjit Kumar Paul [aut],
Dr. Md Yeasin [aut, cre]

Maintainer Dr. Md Yeasin <yeasin.iasri@gmail.com>

Description ETS stands for Error, Trend, and Seasonality, and it is a popular time series forecasting method. Wavelet decomposition can be used for denoising, compression, and feature extraction of signals. By removing the high-frequency components, wavelet decomposition can remove noise from the data while preserving important features. A hybrid Wavelet ETS (Error Trend-Seasonality) model has been developed for time series forecasting using algorithm of Anjoy and Paul (2017) <DOI:10.1007/s00521-017-3289-9>.

License GPL-3

Encoding UTF-8

Imports dplyr, Metrics, tseries, stats, wavelets, forecast, caretForecast

RoxygenNote 7.2.1

NeedsCompilation no

Repository CRAN

Date/Publication 2023-04-05 18:23:22 UTC

Contents

`WaveletETS` *Wavelet Based Error Trend Seasonality Model*

Description

Wavelet Based Error Trend Seasonality Model

Usage

```
WaveletETS(ts, split_ratio = 0.8, wlevels = 3)
```

Arguments

`ts`	Time Series Data
`split_ratio`	Training and Testing Split
`wlevels`	Number of Wavelet Levels

Value

- Train_actual: Actual train series
- Test_actual: Actual test series
- Train_fitted: Fitted train series
- Test_predicted: Predicted test series
- Accuracy: RMSE and MAPE of the model

References

- Aminghafari, M. and Poggi, J.M. 2012. Nonstationary time series forecasting using wavelets and kernel smoothing. Communications in Statistics-Theory and Methods, 41(3),485-499.
- Paul, R.K. A and Anjoy, P. 2018. Modeling fractionally integrated maximum temperature series in India in presence of structural break. Theory and Applied Climatology 134, 241–249.

Examples

```
library("WaveletETS")
data<- rnorm(100,100, 10)
WG<-WaveletETS(ts=data)
```

Index