Package ‘TSF’

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Type Package
Title Two Stage Forecasting (TSF) for Long Memory Time Series in Presence of Structural Break
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Description

The function is used for forecasting long memory time series using TSF approach
Usage

forecastTSF(N0,Xt,bandwidth)

Arguments

N0  lead period of forecast
Xt  univariate time series
bandwidth  the bandwidth used in the regression equation

Value

forecastTSF  the predicted values, the out of sample forecasts and the values of long memory parameter

Author(s)

Sandipan Samanta, Ranjit Kumar Paul and Dipankar Mitra

References


Examples

## Simulating Long Memory Series
N <- 1000
PHI <- 0.2
THETA <- 0.1
SD <- 1
M <- 0
D <- 0.2
Seed <- 123
N0<9
bandwidth<-0.9
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)

Xt <- as.ts(Sim.Series$series)

## Forecasting using TSF method
forecastTSF (N0,Xt,bandwidth)
Predicting fractionally differenced series in presence of structural break

Description

The function is used for prediction of long memory time series in presence of structural break.

Usage

StructuralBrekwithLongmemory(ts, bandwidth)

Arguments

- ts: univariate time series
- bandwidth: the bandwidth used in the regression equation

Value

StructuralBrekwithLongmemory

the updated series at first step of TSF approach, prediction based on TSF approach and the estimate of long memory parameter.

Author(s)

Sandipan Samanta, Ranjit Kumar Paul and Dipankar Mitra

References


Examples

```r
# Simulating Long Memory Series
N <- 1000
PHI <- 0.2
THETA <- 0.1
SD <- 1
M <- 0
D <- 0.2
Seed <- 123
bandwidth <- 0.9
```
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)
Xt <- as.ts(Sim.Series$series)

## Forecasting using TSF method
StructuralBrekwithLongmemory(xt, bandwidth)

TSF

Fractionally differenced series for any value of d

Description

The function fdseries computes the fractional differenced series for any value of d i.e. positive or negative.

Usage

fdseries(x, d)

Arguments

x univariate time series
d The order of fractional differencing to be done

Value

fdseries fractionally differenced series for both positive as well as negative d

Author(s)

Sandipan Samanta, Ranjit Kumar Paul and Dipankar Mitra

References


Examples

```r
## Simulating Long Memory Series
N <- 1000
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)

Xt <- as.ts(Sim.Series$series)

## fractional differencing
fdseries(Xt,d=D)
```
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