

Package ‘paramsim’

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Type Package

Title Parameterized Simulation

Version 0.1.0

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Description This function obtains a Random Number Generator (RNG) or collection of RNGs that replicate the required parameter(s) of a distribution for a time series of data. Consider the case of reproducing a time series data set of size 20 that uses an autoregressive (AR) model with $\phi = 0.8$ and standard deviation equal to 1. When one checks the `arima.sin()` function's estimated parameters, it's possible that after a single trial or a few more, one won't find the precise parameters. This enables one to look for the ideal RNG setting for a simulation that will accurately duplicate the desired parameters.

Depends R ($\geq 4.2.0$)

Imports forecast, foreach, parallel, doParallel, future, stats, tibble

License GPL (≥ 2)

Encoding UTF-8

RoxygenNote 7.2.3

Suggests knitr, testthat ($\geq 3.0.0$)

Config/testthat/edition 3

VignetteBuilder knitr

NeedsCompilation no

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`arimasim`*Parameterized Simulation*

Description

Parameterized Simulation

Usage

```
arimasim(  
  a,  
  z,  
  n,  
  ar11,  
  ma11,  
  ar22,  
  ma22,  
  ar33,  
  ma33,  
  p,  
  d,  
  q,  
  sd = sd,  
  j1,  
  k1,  
  j2,  
  k2,  
  j3,  
  k3,  
  arr1,  
  maa1,  
  arr2,  
  maa2,  
  arr3,  
  maa3  
)
```

Arguments

| | |
|-------------------|--|
| <code>a</code> | first seed boundary |
| <code>z</code> | last seed boundary |
| <code>n</code> | number of samples |
| <code>ar11</code> | character to search for in third coefficient of autoregressive |
| <code>ma11</code> | character to search for in third coefficient of autoregressive |
| <code>ar22</code> | character to search for in third coefficient of autoregressive |

| | |
|------|---|
| ma22 | character to search for in third coefficient of autoregressive |
| ar33 | character to search for in third coefficient of autoregressive |
| ma33 | character to search for in third coefficient of autoregressive |
| p | order of the autoregressive |
| d | degree of difference |
| q | degree of moving average |
| sd | standard deviation of the series |
| j1 | length of character to search for in first coefficient of autoregressive |
| k1 | length of character to search for in third coefficient of autoregressive |
| j2 | length of character to search for in second coefficient of autoregressive |
| k2 | length of character to search for in third coefficient of autoregressive |
| j3 | length of character to search for in third coefficient of autoregressive |
| k3 | length of character to search for in third coefficient of autoregressive |
| arr1 | character to search for in first coefficient of autoregressive |
| maa1 | character to search for in third coefficient of autoregressive |
| arr2 | character to search for in second coefficient of autoregressive |
| maa2 | character to search for in third coefficient of autoregressive |
| arr3 | character to search for in third coefficient of autoregressive |
| maa3 | character to search for in third coefficient of autoregressive |

Value

A data frame get printed to the console with its first column being the rank and the next few column could be the coefficients of AR or MA both with varying orders depending on the order and classes of ARIMA model being searched for. The last column of the data frame could be the intercept if any exist within the range of the search.

Functions

- `arimasim()`: `arimasim` helps to Search for righth seeds for the righth AR simulation with `arma.sin()` function using `auto.arma()` function
Search for righth seeds for the righth ARIMA simulation with `arma.sin()` function using `auto.arma()` function
This function obtains a Random Number Generator (RNG) or collection of RNGs that replicate the required parameter(s) of a distribution for a time series of data. Consider the case of reproducing a time series data set of size 20 that uses an autoregressive (AR) model with $\phi = 0.8$ and standard deviation equal to 1. When one checks the `arma.sin()` function's estimated parameters, it's possible that after a single trial or a few more, one won't find the precise parameters. This enables one to look for the ideal RNG setting for a simulation that will accurately duplicate the desired parameters.

Examples

```
arimasim(a= 289805,z= 289806,n= 10,p= 1,d= 0,q= 0,ar11= 0.8,sd = 1,j1= 4,arr1= "0.80")
```

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