Package 'MCTrend'

January 20, 2025

Type Package

Title Monte Carlo Trend Analysis

Version 1.0.1

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Description Application of a test to rule out that trends detected in hydrological time series are explained exclusively by the randomness of the climate. Based on: Richetti, (2018) <https://repositorio.uchile.cl/handle/2250/168487>.

License GPL-3

Encoding UTF-8

LazyData true

Imports trend, reshape2, ggplot2, magrittr, lmomco, dplyr

Suggests rmarkdown, knitr,

VignetteBuilder knitr

Depends R (>= 2.10)

RoxygenNote 7.2.3

NeedsCompilation no

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Contents

example *example*

Description

A data frame with annual max daily rainfall series

Usage

```
example
```

Format

A object with 30 rows and 34 variable:

example annual max daily rainfall in mm

MCTrend *Monte Carlo Trend Analysis*

Description

This function performs Monte Carlo trend analysis on input data and generates plots.

Usage

```
MCTrend(x, n_rep, plot_title, int = 0.25, opt)
```

Arguments

x	A data frame containing the input data. The first raw expected to contain model names or time series names.
n_rep	Number of replications for the Monte Carlo simulation.
plot_title	Title for the plot.
int	A number indicating lower threshold value of the interval within which no trend is defined, the upper value is calculated based on this value, by default a lower value of 0.25 is considered.
opt	A number indicating type of results, for opt = 1 returns test result, opt = 2 returns plot

Value

A data frame and a plot containing results of the trend analysis.

Examples

```
 # file for example
 file <- MCTrend::example

 # Apply the test
MCTrend::MCTrend(x = file, n_rep = 100, plot_title = 'Precipitaciones', int = 0.1, opt = 1)

 # plot of the result of the test
MCTrend::MCTrend(x = file, n_rep = 100, plot_title = 'Precipitaciones', int = 0.1, opt = 2)
```

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