

# Package ‘MCTrend’

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**Type** Package

**Title** Monte Carlo Trend Analysis

**Version** 1.0.1

**Date** 2023-11-28

**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: Ricchetti, (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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**Repository** CRAN

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 example

*example*


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### 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

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MCTrend

*Monte Carlo Trend Analysis*


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### 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 row 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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