Package ‘dyncomp’

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Type Package
Title Complexity of Short and Coarse-Grained Time Series
Version 0.0.2-1
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Depends zoo
Description While there are many well-established measures for identifying critical fluctuations and phase transitions, these measures only work with many points of measurement and thus are unreliable when studying short and coarse-grained time series. This package provides a measure for complexity in a time series that does not rely on long time series (Kaiser (2017), <doi:10.17605/OSF.IO/GWTKX>).
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LazyData TRUE
RoxygenNote 6.0.1
Suggests testthat
NeedsCompilation no
Repository CRAN
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complexity

Calculate dynamic complexity of time series

Description

A function to calculate the dynamic complexity of a series of observations, resulting from the degree of fluctuation and the degree of scattering. This measure is calculated in moving windows of a specified width, resulting in a series of values of a length equal to the length of the series of observations.

Usage

complexity(xL scaleminL scaleMaxL width = 7L measure = "complexity"L rescale = false)

Arguments

x 
The data to be used (representing a series of observations).

scaleMin 
Theoretical minimum of the data. Will default to the observed minimum of x.

scaleMax 
Theoretical maximum of the data. Will default to the observed maximum of x.

width 
Width of the moving window. Default is 7.

measure 
Either "complexity", "fluctuation" or "distribution". Indicates which value should be returned. Default is "complexity".

rescale 
If TRUE, rescales the returned values to scale minimum and maximum. This is sometimes useful for graphical interpretation or plotting. Default: FALSE.

Author(s)

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References


Examples

t <- runif(100, 0, 10)
c <- complexity(x = t, scaleMin = 0, scaleMax = 10, width = 5, measure = "complexity", rescale = TRUE)
plot(t, type = "l")
lines(c, col = "red", lty = 4)
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