Package: hydroDCindex (via r-universe)

Type Package

Title Duration Curve Hydrological Model Indexes

Version 1.0.0

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Description Compute duration curves of daily flow series, both real and modeled, to be compared through indexes of flow duration curves. The package functions include comparative plots and goodness of fit tests. Flow duration curve indexes are based on: Yilmaz et al., (2008) <DOI:10.1029/2007WR006716>.

License GPL-3

LazyData true

Encoding UTF-8

RoxygenNote 7.2.3

Imports stats

Suggests rmarkdown, knitr

VignetteBuilder knitr

Depends R (>= 2.10)

Repository https://alobondo.r-universe.dev

RemoteUrl https://github.com/alobondo/hydrodcindex

RemoteRef HEAD

RemoteSha 246fd182474a96ed8b2e1858957ab59984c7e937

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hydroDC_Index   *Duration Curve Hydrological Model Indexes*

Description

Duration Curve Hydrological Model Indexes

Usage

```
hydroDC_Index(Q_obs, Q_sim, c_opt)
```

Arguments

Q_obs	Column with daily observed flows
Q_sim	Column with daily simulated flows
c_opt	Results, default 1 for indexes, 2 for duration curve values, 3 for DC plot and 4 for scatter plot

Details

If c_opt=1, it computes the numerical values of:
'BiasFMS','BiasFHV','BiasFLV','BiasFMM_log','BiasFMM' If c_opt=2, it computes the duration curve values:
'Pexc','Amount_Obs','Amount_Sim' If c_opt=3, it plots the duration curves. If c_opt=4, it plots scattered values and computes the numerical values of:
'r_pearson','MAE','rsq','NSE','KGE'

Value

BiasFMS: Diagnosis of vertical redistribution in the midsection of the duration curve.

BiasFHV: Bias in peak flows.

BiasFLV: Bias at low flows.

BiasFMM_log: Log_Mean Flow Bias.

BiasFMM: Mean Flow Bias.

Pexc: Exceedance probability computed with Weibull formula.

Amount_Obs: Observations in ascending order.

Amount_Sim: Simulations in ascending order.

r_pearson: Imported method from stats package, results in the Pearson product-moment correlation coefficient, $-1 <= r\_pearson <= 1$

MAE: Imported method from ie2misc package, results in the Mean Absolute Error.

rsq: Results in the Coefficient of Determination, estimated as the squared of correlation, $0 <= R2 <= 1$

NSE: Imported method from ie2misc package, results in the Nash-Sutcliffe Efficiency, $-Inf <= NSE <= 1$

KGE: Results in the Kling-Gupta Efficiency, $0 <= KGE <= 1$

Examples

```
Obs <- hydroDCindex::Q_obs
Sim <- hydroDCindex::Q_sim
# option 1 for indexes
hydroDCindex::hydroDC_Index(Obs, Sim, 1)
# option 2 for duration curve values
hydroDCindex::hydroDC_Index(Obs, Sim, 2)
# option 3 for duration curve plot
hydroDCindex::hydroDC_Index(Obs, Sim, 3)
# option 4 for scatter plot with goodness of fit tests
hydroDCindex::hydroDC_Index(Obs, Sim, 4)
```

Q_obs   *Observed daily flows*

Description

A column containing values of observed flow.

Usage

Q_obs

Format

A object with 13514 rows and 1 variable:

Q_obs observations, runoff in mm per day

Q_sim   *Simulated daily flows*

Description

A column containing values of simulated flow.

Usage

Q_sim

Format

A object with 13514 rows and 1 variable:

Q_sim simulations, runoff in mm per day

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