Package 'QuantileNPCI'

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Type Package

Title Nonparametric Confidence Intervals for Quantiles

Version 0.9.0

Maintainer Li Yan <li.yan@roswellpark.org>

Description Based on Alan D. Hutson (1999) <doi:10.1080/02664769922458>, ``Calculating nonparametric confidence intervals for quantiles using fractional order statistics", Journal of Applied Statistics, 26:3, 343-353.

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Encoding UTF-8

LazyData true

Imports

Suggests dplyr, kableExtra, knitr, rmarkdown, testthat (>= 2.1.0)

Depends R (>= 2.10)

RoxygenNote 6.1.1

VignetteBuilder knitr

NeedsCompilation no

Author Nicholas Hutson [aut],
Alan Hutson [aut],
Li Yan [aut, cre]

Repository CRAN

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R topics documented:

`exactBeta` *Calculate lower and upper CI of a given quantile using exact method, based on beta distribution*

Description

Calculate lower and upper CI of a given quantile using exact method, based on beta distribution

Usage

```
exactBeta(n, q, alpha)
```

Arguments

`n`	sample size
`q`	quantile
`alpha`	desired significance level

Value

a list of the lower and upper confidence limit of the quantiles.Values are between [0,1]

`u1`	lower confidence limit of the quantile
`u2`	upper confidence limit of the quantile

Examples

```
QuantileNPCI:::exactBeta(25, 0.5, 0.05)
```

`flood` *The flood rate of Feature River and Blackstone River.*

Description

A dataset containing the flood rate data, as presented in Hutson 1999 paper. Original source: Pericchi and Rodreiguez-Iturbe (1995)

Usage

```
flood
```

Format

A data frame with 96 rows and 3 variables:

loc River name

year year of the record

discharge flood discharge rate

`quantCI` *quantCI*

Description

Calculate nonparametric confidence intervals for quantiles using fractional order statistics,

Usage

```
quantCI(x, q, alpha, method)
```

Arguments

`x`	vector of data
`q`	the quantile
`alpha`	the significance level
`method`	the method used for calculate the confidence interval. Options are "exact" or "approximate".

Value

returns a list of 5 values:

`u1`	the lower confidence limit of the quantile
`u2`	the upper confidence limit of the quantile
`lower.ci`	the estimated x value at u1
`qx`	the estimate x value of at the quantile q
`upper.ci`	the estimated x value at u2

Author(s)

Nicholas Hutson

Examples

```
x <- c(3.5,2.4,2.1,1.3,1.2,2.2,2.6,4.2)
quantCI(x, q=0.5, alpha=0.05, method = "exact")
```

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