

Package ‘QuantileNPCI’

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Type Package

Title Nonparametric Confidence Intervals for Quantiles

Version 0.9.0

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Description Based on Alan D. Hutson (1999) <[doi:10.1080/02664769922458](https://doi.org/10.1080/02664769922458)>, ``Calculating non-parametric 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

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

Depends R (>= 2.10)

RoxygenNote 6.1.1

VignetteBuilder knitr

NeedsCompilation no

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Repository CRAN

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exactBeta	<i>Calculate lower and upper CI of a given quantile using exact method, based on beta distribution</i>
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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	<i>The flood rate of Feature River and Blackstone River.</i>
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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	<i>quantCI</i>
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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)

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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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