Package 'UGarima'

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Type Package

Title The Unit-Garima Distribution

Version 0.1.0

Description
Density, distribution function, quantile function, and random generating function of the Unit-Garima distribution
based on Ayuyuen, S., & Bodhisuwan, W. (2024)<doi:10.18187/pjsor.v20i1.4307>.

License GPL-3

Language en-US

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Imports graphics, stats, lamW

RoxygenNote 7.3.2

Suggests testthat (>= 3.0.0)

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NeedsCompilation no

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plotUGa *Plot the pdf and cdf of Unit-Garima distribution (UGa)*

Description

To show the pdf (or the cdf) of UGa distribution by specified parameter `theta`.

Usage

```
plotpdfUGa(x, theta)

plotcdfUGa(x, theta)
```

Arguments

`x`	vector of quantile.
`theta`	shape parameter, where $\theta > 0$.

Value

No return value, called for side effects

Examples

```
# library(lamW) is required for rUGa() function
x <- rUGa(101,theta=1.5)
x
plotpdfUGa(x,theta = 1.5)

plotcdfUGa(x,theta = 1.5)
```

UGa *The Unit-Garima distribution (UGa)*

Description

Density, distribution function, quantile function, and random generation function for UGa distribution with one parameter (`theta`). See details in references.

Usage

```
dUGa(x, theta, log = FALSE)

pUGa(q, theta, lower.tail = TRUE, log.p = FALSE)

qUGa(p, theta = 0.5)

rUGa(n, theta)
```

Arguments

x, q	vector of quantile.
theta	shape parameter, where $\theta > 0$.
log, log.p	logical; (default = FALSE), if TRUE, then probabilities are given as log(p).
lower.tail	logical; if TRUE (default), probabilities are $P[X \leq x]$, otherwise, $P[X > x]$.
p	vector of probabilities.
n	number of observations.

Value

dUGa gives the density, pUGa gives the distribution function, qUGa gives the quantile function, and rUGa generates random samples.

References

Ayuyuen, S., & Bodhisuwan, W. (2024). A generating family of unit-Garima distribution: Properties, likelihood inference, and application. Pakistan Journal of Statistics and Operation Research, 20(1), 69-84. doi:10.18187/pjsor.v20i1.4307.

Examples

```
NULL

x <- seq(0.1,1,by=0.1)
dUGa(x,theta=0.5)           #f(x)
dUGa(x,theta=0.5,log=TRUE)  #log(f(x))

pUGa(x,theta=1.5)                         #P(X<x)
pUGa(x,theta=1.5,lower.tail = FALSE )     #P(X>x)

# library(lamW) is required for qUGa() function
x <- seq(0.1,1,by=0.1)
x
p <- pUGa(x,theta=2.5)
p
require(lamW)
q <- qUGa(p,theta=2.5)
q     # q equal to x
```

```
# library(lamW) is required for rUGa() function
require(lamW)
x <- rUGa(100,theta=1)
x     #  0<x<1, for all x
```

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