Package 'CompLognormal'

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Type Package

Title Functions for actuarial scientists

Version 3.0

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Description Computes the probability density function, cumulative distribution function, quantile function, random numbers of any composite model based on the lognormal distribution.

License GPL (>= 2)

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`CompLognormal-package` *Computes functions for actuarial use*

Description

Computes the probability density function, cumulative distribution function, quantile function, random numbers of any composite model based on the lognormal distribution

Details

Package:	CompLognormal
Type:	Package
Version:	3.0
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License:	GPL(>=2)

probability density function, cumulative distribution function, quantile function, random numbers

Author(s)

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References

S. Nadarajah, S. A. A. Bakar, CompLognormal: An R Package for Composite Lognormal Distributions, submitted

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`dcomplnorm` *Composite lognormal pdf*

Description

Computes the pdf of the composite lognormal distribution

Usage

```
dcomplnorm(x, spec, sigma = 1, theta = 1, log=FALSE, ...)
```

Arguments

`x`	scale or vector of positive values at which the pdf needs to be computed
`sigma`	the value of sigma parameter of the lognormal distribution, must be positive
`theta`	the value of theta parameter, the cutoff point, must be positive
`spec`	the specific distribution with which the lognormal distribution should be composited with
`log`	if TRUE then log(pdf) are returned
`...`	other parameters

Value

An object of the same length as `x`, giving the pdf values computed at `x`

Author(s)

Saralees Nadarajah

References

S. Nadarajah, S. A. A. Bakar, CompLognormal: An R Package for Composite Lognormal Distributions, submitted

Examples

```
x=runif(10,min=0,max=1)
y=dcomplnorm(x,"exp",rate=1)
```

`pcomplnorm` *Composite lognormal cdf*

Description

Computes the cdf of the composite lognormal distribution

Usage

```
pcomplnorm(x, spec, sigma = 1, theta = 1, log.p=FALSE, lower.tail=TRUE, ...)
```

Arguments

`x`	scale or vector of positive values at which the cdf needs to be computed
`sigma`	the value of sigma parameter of the lognormal distribution, must be positive
`theta`	the value of theta parameter, the cutoff point, must be positive
`spec`	the specific distribution with which the lognormal distribution should be composited with
`log.p`	if TRUE then log(cdf) are returned
`lower.tail`	if TRUE then cdf are returned else 1-cdf are retured
`...`	other parameters

Value

An object of the same length as `x`, giving the cdf values computed at `x`

Author(s)

Saralees Nadarajah

References

S. Nadarajah, S. A. A. Bakar, CompLognormal: An R Package for Composite Lognormal Distributions, submitted

Examples

```
x=runif(10,min=0,max=1)
y=pcomplnorm(x,"exp",rate=1)
```

qcomplnorm *Composite lognormal quantile*

Description

Computes the quantile function of the composite lognormal distribution

Usage

```
qcomplnorm(p, spec, sigma = 1, theta = 1, log.p=FALSE, lower.tail=TRUE, ...)
```

Arguments

p	scale or vector of probabilities at which the quantile function needs to be computed
sigma	the value of sigma parameter of the lognormal distribution, must be positive
theta	the value of theta parameter, the cutoff point, must be positive
spec	the specific distribution with which the lognormal distribution should be composited with
log.p	if TRUE then quantiles are returned for exp(p)
lower.tail	if TRUE then quantiles are returned for p else quantiles are returned for 1-p
...	other parameters

Value

An object of the same length as p, giving the quantile values computed at p

Author(s)

Saralees Nadarajah

References

S. Nadarajah, S. A. A. Bakar, CompLognormal: An R Package for Composite Lognormal Distributions, submitted

Examples

```
p=runif(10,min=0,max=1)
y=qcomplnorm(p,"exp",rate=1)
```

`rcomplnorm` *Composite lognormal random numbers*

Description

Generates random numbers from the composite lognormal distribution

Usage

```
rcomplnorm(n, spec, sigma = 1, theta = 1, ...)
```

Arguments

`n`	number of random numbers to be generated
`sigma`	the value of sigma parameter of the lognormal distribution, must be positive
`theta`	the value of theta parameter, the cutoff point, must be positive
`spec`	the specific distribution with which the lognormal distribution should be composited with
`...`	other parameters

Value

An object of the length `n`, giving the random numbers from the composite lognormal distribution

Author(s)

Saralees Nadarajah

References

S. Nadarajah, S. A. A. Bakar, CompLognormal: An R Package for Composite Lognormal Distributions, submitted

Examples

```
y=rcomplnorm(100,"exp",rate=1)
```

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