Package 'loglognorm'

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Version 1.0.2

Title Double Log Normal Distribution Functions

Description Functions to sample from the double log normal distribution and calculate the density, distribution and quantile functions.

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Depends R (>= 4.1.0)

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NeedsCompilation yes

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R topics documented:

`dloglognorm` *The Double Log Normal Distribution*

Description

Density, distribution function, quantile function, random generation and expected value function for the double log normal distribution with mean equal to 'mean' and standard deviation equal to 'sd'.

Usage

```
dloglognorm(x, mean = 0, sd = 1)
ploglognorm(q, mean = 0, sd = 1)
qloglognorm(p, mean = 0, sd = 1)
rloglognorm(n, mean = 0, sd = 1)
mloglognorm(moment, mean, sd)
eloglognorm(mean, sd)
vloglognorm(mean, sd)
```

Arguments

x,q	vector of quantiles.
p	vector of probabilites.
n	number of observations.
mean	vector of means.
sd	vector of standard deviations.
moment	vector of moments

Details

If 'mean' or 'sd' are not specified they assume the default values of '0' and '1', respectively.

Value

'dloglognorm' gives the density, 'ploglognorm' gives the distribution function, 'qloglognorm' gives the quantile function, 'rloglognorm' generates random deviates, 'mloglognorm' returns the rth moment, 'eloglognorm' gives the expected value of the distirbution and vloglognorm the variance.

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References

B. Holland, M. Ahsanullah (1989): Further Resultson the Distribution of Meinhold and Singpurwalla, The American Statistician 43 (4), p. 216-219

Examples

```
x <- seq(0, 1, by=0.05)
## Several different shapes of the density:
par(mfrow=c(3, 1))
curve(dloglognorm(x, -0.2, 0.2), 0, 1, main="DLN(-0.2, 0.2)")
curve(dloglognorm(x,  0.2, 1.0), 0, 1, main="DLN(0.2, 2.0)")
curve(dloglognorm(x,  0.2, 1.8), 0, 1, main="DLN(0.2, 2.0)")

## Check precision:
```

```
z <- x - pnorm(qnorm(x, .2, 1.0), .2, 1.0)
max(z)
```

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