Package 'SimLT'

November 27, 2025

Type Package

Title What the Package Does (Title Case)

Version 0.1.0

Author Who wrote it

Maintainer The package maintainer <yourself@somewhere.net>

Description More about what it does (maybe more than one line)
Use four spaces when indenting paragraphs within the Description.

License What license is it under?

Encoding UTF-8

LazyData true

RoxygenNote 7.3.1

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`chpwexp` *Piecewise Exponential cumulative hazard function*

Description

Piecewise Exponential cumulative hazard function

Usage

```
chpwexp(x, rate = 1, t = 0)
```

Arguments

x, q	: vector of quantiles.
rate	: vector of rates.
t	: vector of the same length as rate, giving the times at which the rate changes. The first element of t should be 0, and t should be in increasing order.
p	: vector of probabilities.
n	: number of observations. If length(n) > 1, the length is taken to be the number required.
log	: logical; if TRUE, log function is returned.

Value

Piecewise Exponential cumulative hazard function

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hpwexp *Piecewise Exponential hazard function*

Description

Piecewise Exponential hazard function

Usage

```
hpwexp(x, rate = 1, t = 0, log = FALSE)
```

Arguments

x, q	: vector of quantiles.
rate	: vector of rates.
t	: vector of the same length as rate, giving the times at which the rate changes. The first element of t should be 0, and t should be in increasing order.
log	: logical; if TRUE, log function is returned.
p	: vector of probabilities.
n	: number of observations. If length(n) > 1, the length is taken to be the number required.

Value

Piecewise Exponential hazard function

rsim.pwexp *Simulation from a Piecewise Exponential (piece-wise constant rate)*

Description

Simulation from a Piecewise Exponential (piece-wise constant rate)

Usage

```
rsim.pwexp(seed, n, rate = 1, t = 0)
```

Arguments

seed	: seed for simulation
n	: number of observations. If length(n) > 1, the length is taken to be the number required.
rate	: vector of rates.
t	: vector of the same length as rate, giving the times at which the rate changes. The first element of t should be 0, and t should be in increasing order.
x, q	: vector of quantiles.
p	: vector of probabilities.
log	: logical; if TRUE, log function is returned.

Value

generates random numbers from a Piecewise Exponential hazard function

simDesMatrix *Function to simulate a design matrix. Based on real data on colon and lung (male and female) patients in England.*

Description

Function to simulate a design matrix. Based on real data on colon and lung (male and female) patients in England.

Usage

```
simDesMatrix(
  seed = 123,
  n = 100,
  admin.cens = "31-12-2015",
  scale.age = FALSE,
  site = "colon",
  sex = "female"
)
```

Arguments

seed	: seed for simulation ("DD-MM-YYYY")
n	: Sample size
admin.cens	(year of administrative censoring),
site	: cancer site ("lung" or "colon")
sex	: sex ("female", "male")
years.diag	: years of diagnosis in the simulation (scalar or vector)
Returns:	ID, sex (0 = male, 1 = female), dod (date of diagnosis), IMD (Index of Multiple Deprivation),

Value

a design matrix containing the ID, date.diag, dep, gor, age, and fup.time.

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sim_pophaz *Function to simulate survival times from the population hazard*

Description

Function to simulate survival times from the population hazard

Usage

```
sim_pophaz(seed, lst)
```

Arguments

lst	: list with time points at which the piecewise hazard jumps (times) and the values of the piecewise hazard (hrates)
seed:	seed for simulation

Value

a list containing the simulated survival times and the ID

which1 *Which element in a vector is one*

Description

Which element in a vector is one

Usage

```
which1(vec)
```

Arguments

vec:	a vector

Value

which values are 1

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