Package 'doubcens'

May 8, 2026

Title Survivor Function Estimation for Doubly Interval-Censored Failure Time Data

Version 1.1

Author James McVittie

Maintainer James McVittie <james.mcvittie@mail.mcgill.ca>

Description Contains the discrete nonparametric survivor function estimation algorithm of De Gruttola and Lagakos for doubly interval-censored failure time data and the discrete nonparametric survivor function estimation algorithm of Sun for doubly interval-censored left-truncated failure time data [Victor De Gruttola & Stephen W. Lagakos (1989) <doi:10.2307/2532030>] [Jianguo Sun (1995) <doi:10.2307/2533008>].

Depends R (>= 3.1.1)

License GPL-2

Encoding UTF-8

LazyData true

RoxygenNote 5.0.1.9000

NeedsCompilation yes

Repository CRAN

Date/Publication 2017-09-03 17:55:28 UTC

Contents

DGLwghts 2
Sunwghts 3

Index **4**

DGLwghts *Estimate Survivor Function using Doubly Interval-Censored Failure Time Data*

Description

Estimates the discrete Survivor Function from doubly interval-censored failure time data using the algorithm of De Gruttola and Lagakos.

Usage

```
DGLwghts(X_L, X_R, Z_L, Z_R)
```

Arguments

X_L	The left endpoint of the censoring interval for the initial event time
X_R	The right endpoint of the censoring interval for the initial event time
Z_L	The left endpoint of the censoring interval for the terminating event time
Z_R	The right endpoint of the censoring interval for the terminating event time

Details

Set X_L = X_R if the initial event is observed. Set Z_L = Z_R if the terminating event is observed. Set X_L = -INF if the initial event is left-censored. Set Z_R = INF if the terminating event is right-censored.

Value

DGLwghts returns a list containing the following components

x_val	A vector of mass points for initial event
w_new	A vector of estimated probabilities for x_val
t_val	A vector of mass points for terminating event
f_new	A vector of estimated probabilities for t_val
counter	Number of iterations required for convergence

References

De Gruttola, V. and Lagakos, S. (1989). Analysis of Doubly-Censored Survival Data, with Applications to AIDS. Biometrics 45 (1): 1-11.

Examples

```
test <- DGLwghts(c(1,1,1), c(1,2,1), c(1,2,3), c(Inf, Inf, Inf))
```

`Sunwghts` *Estimate Survivor Function using Doubly Interval-Censored Left-Truncated Failure Time Data*

Description

Estimates the discrete Survivor Function from doubly interval-censored left-truncated failure time data using the algorithm of Sun.

Usage

```
Sunwghts(Ei, Ri, Li, Ui, Bi1, Bi2)
```

Arguments

`Ei`	The left endpoint of the censoring interval for the initial event time
`Ri`	The right endpoint of the censoring interval for the initial event time
`Li`	The left endpoint of the censoring interval for the terminating event time
`Ui`	The right endpoint of the censoring interval for the terminating event time
`Bi1`	The left endpoint of the truncation interval for the terminating event time
`Bi2`	The right endpoint of the truncation interval for the terminating event time

Details

Set Ei = Ri if the initial event is observed. Set Li = Ui if the terminating event is observed. Set Ei = -INF if the initial event is left-censored. Set Ri = INF if the terminating event is right-censored.

Value

Sunwghts returns a list containing the following components

`uj`	A vector of mass points for survival lengths
`fnew`	A vector of estimated probabilities for uj
`counter`	Number of iterations required for convergence

References

Sun, J. (1995). Empirical Estimation of a Distribution Function with Truncated and Doubly Interval-Censored Data and Its Applications to AIDS Studies. Biometrics 51 (3): 1096-1104.

Examples

```
test <- Sunwghts(c(1,2,1), c(4,4,4), c(5,8,9), c(5,9,10),
c(4.4,4.5,8), c(Inf, Inf, Inf))
```

Index

DGLwghts, 2

Sunwghts, 3