

# Package ‘CIFsmry’

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**Type** Package

**Title** Weighted summary of cumulative incidence functions

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**Depends** R(>= 3.0.1)

**Description** Estimate of cumulative incidence function in two samples. Provide weighted summary statistics based on various methods and weights.

**License** GPL (>= 2)

**NeedsCompilation** yes

**Repository** CRAN

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CIFsm	<i>Cumulative incidence function estimate and weighted summary statistics</i>
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## Description

Estimate the cumulative incidence function for cause of interest in two-sample study. Provide the weighted summary statistics based on given method and weight.

**Usage**

```
CIFsm(ds,method="dif",pp = 0,qq = 0,conf.bd=T,n.sim=500)
```

**Arguments**

ds	ds is a dataset contains the time, cause of event and group. For cause, 0 means censoring, 1 is the cause of event, 2 is all other causes. Two groups need to be coded as 1 and 2.
method	method can be chosen from "dif"=risk difference, "rr"=risk ratio and "or"=odds ratio
pp	first parameter of weight function
qq	second parameter of weight function
conf.bd	logical; if TRUE, create confidence band cut point. Set to FALSE if the confidence band is not needed, which reduces the computational time
n.sim	number of simulations used in creating confidence band; will be ineffective if conf.bd is FALSE

**Details**

The estimates and summary statistics are described in Zhang and Fine (2008).

**Value**

sample	Total sample size from both groups
used	Sample used in analysis. Subject with missing value in any of the three variables (time, cause or group) will be excluded from analysis
size	Sample size for each group
njp	Total number of unique event time points in two groups
tjp	Unique event time points from both groups
ny1	Number of subject at risk in group 1
f1	Estimate of cumulative incidence function for group 1
f1.se	Standard error of cumulative incidence function for group 1
ny2	Number of subject at risk in group 2
f2	Estimate of cumulative incidence function for group 2
f2.se	Standard error of cumulative incidence function for group 2
dif	Estimate of difference in cumulative incidence (risk difference) between the 2 groups
dif.se	Standard error of the risk difference
dif.pv	P-value of the risk difference
rr	Risk ratio of the cumulative incidence between the 2 groups
rr.se	Standard error of the risk ratio
rr.pv	P-value of the risk ratio

or	Odds ratio of the cumulative incidence between the 2 groups
or.se	Standard error of the odds ratio
or.pv	P-value of the odds ratio
cbcut	95% confidence band cut point of risk difference, risk ratio and odds ratio based on simulation method.
method	Method used for the weighted summary statistics
weight	Weight used for the weighted summary statistics
region	Time range of the data
nbd	Index of beginning and end of the data. For internal use only
ave	Time integrated weighted summary statistics
avese	Standard error of the time integrated weighted summary statistics
ci95	95% confidence interval of the time integrated weighted summary statistics
avepval	P-value of the time integrated weighted summary statistics
wt	Weight assigned at each unique event time point

### Author(s)

Jianing Li

### References

M.J. Zhang and J.P. Fine. Summarizing difference in cumulative incidence functions. *Statistics in Medicine*, 27:4939-4949, 2008.

J. Li, M.J. Zhang and J. Le-Rademacher. Weighted Summary of two Cumulative Incidence Functions with R-CIFsmry Package. *Computer Methods and Programs in Biomedicine*[Submitted].

### Examples

```
library(CIFsmry)
data(sim.dat)
out <- CIFsm(sim.dat,pp=0,qq=0)
out$avepval
plot(out$tjtp,out$f1,type="s",ylim=c(0,1),yaxt="n",xaxt="n",xlab="Time",ylab="CIF",
      lty=1,lwd=1)
points(out$tjtp,out$f2,type="s",lty=1,lwd=3)
axis(1,at=seq(0,6,by=1),cex=0.6)
axis(2,at=seq(0,1,by=0.2),cex=0.6)
legend("bottomright",c("1","2"),title="group",lty=1,lwd=c(1,3))

out10 <- CIFsm(sim.dat,pp=1,qq=0)
out10$avepval
```

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print.CIFsm	<i>Print CIFsm object</i>
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### Description

Print the estimated of cumulative incidence functions and point-wise summary statistics.

### Usage

```
## S3 method for class 'CIFsm'
print(x, ...)
```

### Arguments

x	CIFsm object from function CIFsm
...	additional arguments to print()

### Details

Risk set, cumulative incidence function estimate, standard error and p-value of each group. Point-wise summary statistics estimate, standard error and p-value.

### See Also

[CIFsm](#)

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sim.dat	<i>Simulated competing risk data</i>
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### Description

Simulated data with 100 subjects and 3 variates: time, cause and group.

### Format

The data has 100 rows and 3 columns.

**time** a numeric vector. Survival time.

**cause** a numeric vector code. Survival status. 1: failure from the cause of interest; 2: failure from other causes; 0: censored.

**group** a numeric vector code. 1: group 1; 2: group 2.

### Source

Simulated data

**Examples**

```
data(sim.dat)
names(sim.dat)
table(sim.dat$cause)
table(sim.dat$group)
tapply(sim.dat$time, sim.dat$group, summary)
```

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summary.CIFsm

*Summary of weighted time-integrated summary statistics*

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**Description**

Summary statistic estimate, standard error, 95% confidence interval, p-value depending the method and weight.

**Usage**

```
## S3 method for class 'CIFsm'
summary(object, ...)
```

**Arguments**

object	object of function CIFsm
...	additional arguments to summary()

**See Also**

[CIFsm](#)

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