

# Package ‘fastpseudo’

February 20, 2015

**Title** Fast Pseudo Observations

**Version** 0.1

**Description** Computes pseudo-observations for survival analysis on right-censored data based on restricted mean survival time.

**Depends** R (>= 3.1.1)

**Suggests** geepack

**License** GPL-2

**LazyData** true

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**NeedsCompilation** no

**Repository** CRAN

**Date/Publication** 2015-02-20 23:55:47

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fast\_pseudo\_mean      *Calculate pseudo-observations.*

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## Description

Computes pseudo-observations for survival analysis on right-censored data based on restricted mean survival time.

**Usage**

```
fast_pseudo_mean(time, event, tmax)
```

**Arguments**

**time** - Vector of follow-up times.  
**event** - Vector of binary event statuses (0 = alive, 1 = dead).  
**tmax** - Cut-off point for restricted mean survival time. Defaults to maximum follow-up time.

**Details**

Using a jackknife procedure and restricted mean survival time, this function calculates pseudo-observations for right-censored survival data. These pseudo-observations can be used as the response variable in a generalized estimating equations model. Missing values are not allowed in the time or event vector. The function is equivalent to the `pseudomean()` function in the 'pseudo' package, but can handle data sets that are orders of magnitude larger.

**Examples**

```
# Dummy data

id <- c(1, 2, 3, 4)
female <- c(0, 1, 1, 0)
time <- c(23, 45, 38, 66)
event <- c(1, 0, 0, 0)

# Compute pseudo-observations

pseudo = fast_pseudo_mean(time, event, 50)

# Create a data frame

test <- data.frame(id, female, pseudo)

# Fit a regression model

library(geepack)

summary(fit <- geese(pseudo ~ female,
  data = test, id=id, jack = TRUE, family=gaussian,
  corstr="independence", scale.fix=FALSE))
```

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