

Package: lmrse (via r-universe)

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Title Linear regression with clustered robust standard errors

Version 0.0.7

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Description Longitudinal analysis of high-dimensional data using linear regression with clustered robust standard errors across markers.

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URL <https://jrs95.github.io/lmrse/>, <https://github.com/jrs95/lmrse>

BugReports <https://github.com/jrs95/lmrse/issues>

Depends R (>= 3.4.0)

Imports Rcpp, RcppEigen, sandwich

LinkingTo Rcpp, RcppEigen

Encoding UTF-8

ByteCompile true

LazyData true

RoxygenNote 7.2.3

Repository <https://mrcieu.r-universe.dev>

RemoteUrl <https://github.com/jrs95/lmrse>

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 coerce.lmrse

Combine lmrse object into a results data.frame

Description

coerce.lmrse constructs a results data.frame from an "lmrse" object, where coefficients, standard errors and p-values for each covariable are placed in consecutive columns.

Usage

```
coerce.lmrse(x)
```

Arguments

x an object of class "lmrse"

Value

coerce.lmrse returns a results data.frame with coefficients, standard errors and p-values for the covariables.

Author(s)

James Staley jrstaley95@gmail.com

 lmrse

Linear regression model with cluster robust standard errors

Description

lmrse fits a linear regression model with cluster robust standard errors for all markers.

Usage

```
lmrse(formula, cluster, data = NULL)
```

Arguments

formula containing the marker matrix as the response and the exposure and covariates as the dependent terms

cluster clustering variable

data an optional data.frame which contains the covariates specified in the formula

Value

lmrse returns a list of coefficients, standard errors and p-values matrices:

coef	a matrix of regression coefficients
se	a matrix of standard errors
p	a matrix of p-values

Author(s)

James Staley jrstaley95@gmail.com

Examples

```
# Data
y <- rnorm(5000000)
y <- matrix(y, ncol = 1000)
colnames(y) <- paste0("var", 1:1000)
x <- rnorm(5000)
cluster <- rep(1:1000, 5)
c1 <- rbinom(5000, 1, 0.5)
c2 <- rnorm(5000)

# Analyses
res <- lmrse(y ~ x + c1 + c2, cluster = cluster)
```

print.lmrse

Print lmrse

Description

print method for class "lmrse".

Usage

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

Arguments

x an object of class "lmrse"

Author(s)

James Staley jrstaley95@gmail.com

```
print.summary.lmrse    Print summary lmrse
```

Description

print.summary method for class "lmrse".

Usage

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

Arguments

x an object of class "lmrse"

Author(s)

James Staley jrstaley95@gmail.com

```
sandwich.se           Sandwich SE
```

Description

sandwich.se fits cluster robust standard errors using a sandwich estimator.

Usage

```
sandwich.se(model, cluster)
```

Arguments

model output from linear model
cluster clustering variable

Value

sandwich.se returns a vector of robust standard errors for the covariables including the intercept.

Author(s)

James Staley jrstaley95@gmail.com

Examples

```
# Data
y <- rnorm(5000)
x <- rnorm(5000)
cluster <- rep(1:1000, 5)
c1 <- rbinom(5000, 1, 0.5)
c2 <- rnorm(5000)

# Analyses
model <- lm(y ~ x + c1 + c2)
se <- sandwich.se(model = model, cluster = cluster)
```

summary.lmrse

Summary of lmrse

Description

summary method for class "lmrse".

Usage

```
## S3 method for class 'lmrse'
summary(x, ...)
```

Arguments

x an object of class "lmrse"

Author(s)

James Staley jrstaley95@gmail.com

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