

# Package ‘fRLR’

October 13, 2022

**Type** Package

**Title** Fit Repeated Linear Regressions

**SystemRequirements** GNU Scientific Library (GSL). Note: users should have GSL installed.

**Version** 1.2.1

**Date** 2021-07-16

**Author** Lijun Wang [aut, cre, cph]

**Maintainer** Lijun Wang <szcfweiya@gmail.com>

**Description** When fitting a set of linear regressions which have some same variables, we can separate the matrix and reduce the computation cost. This package aims to fit a set of repeated linear regressions faster. More details can be found in this blog Lijun Wang (2017) <<https://stats.hohoweiya.xyz/regression/2017/09/26/An-R-Package-Fit-Repeated-Linear-Regressions/>>.

**License** GPL (>= 2)

**URL** <https://stats.hohoweiya.xyz/regression/2017/09/26/An-R-Package-Fit-Repeated-Linear-Regressions/>

**Imports** Rcpp (>= 0.12.12)

**LinkingTo** Rcpp

**RoxygenNote** 7.1.1

**Encoding** UTF-8

**Suggests** knitr, rmarkdown

**VignetteBuilder** knitr

**NeedsCompilation** yes

**Repository** CRAN

**Date/Publication** 2021-07-29 08:50:09 UTC

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fRLR-package

*A short title line describing what the package does***Description**

A more detailed description of what the package does. A length of about one to five lines is recommended.

**Details**

This section should provide a more detailed overview of how to use the package, including the most important functions.

**Author(s)**

Your Name, email optional.

Maintainer: Your Name <your@email.com>

**References**

This optional section can contain literature or other references for background information.

**See Also**

Optional links to other man pages

**Examples**

```
## Not run:
## Optional simple examples of the most important functions
## These can be in \dontrun{} and \donttest{} blocks.

## End(Not run)
```

fr1r1

*Fit Repeated Linear Regressions with One Variable***Description**

Fit a set of linear regressions which differ only in one variable.

**Usage**

```
fr1r1(R_X, R_Y, R_COV)
```

**Arguments**

R_X	the observation matrix
R_Y	the response
R_COV	common variables

**Value**

the fitting results for each regression.

**Examples**

```
set.seed(123)
X = matrix(rnorm(50), 10, 5)
Y = rnorm(10)
COV = matrix(rnorm(40), 10, 4)
frlr1(X, Y, COV)
```

frlr2

*Fit Repeated Linear Regressions with Two Variables***Description**

Fit a set of linear regressions which differ only in two variables.

**Usage**

```
frlr2(R_X, R_idx1, R_idx2, R_Y, R_COV)
```

**Arguments**

R_X	the observation matrix
R_idx1	the first identical feature
R_idx2	the second identical feature
R_Y	the response variable
R_COV	common variables

**Value**

the fitting results for each regression.

**Examples**

```
set.seed(123)
X = matrix(rnorm(50), 10, 5)
Y = rnorm(10)
COV = matrix(rnorm(40), 10, 4)
idx1 = c(1, 2, 3, 4, 1, 1, 1, 2, 2, 3)
idx2 = c(2, 3, 4, 5, 3, 4, 5, 4, 5, 5)
frlr2(t(X), idx1, idx2, Y, t(COV))
```

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