

Package ‘batteryreduction’

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Type Package

Title An R Package for Data Reduction by Battery Reduction

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Description Battery reduction is a method used in data reduction. It uses Gram-Schmidt orthogonal rotations to find out a subset of variables best representing the original set of variables.

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NeedsCompilation no

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Macro at <http://www.lexjansen.com/nesug/nesug92/NESUG92090.pdf>)

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batteryreduction	<i>A function for data reduction</i>
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Description

Battery reduction is a method used in data reduction. It uses Gram-Schmidt orthogonal rotations to find out a subset of variables best representing the original set of variables.

Usage

```
batteryreduction(vars, numfact, data)
```

Arguments

vars	a vector of variable names
numfact	numeric, number of variables to be selected
data	a dataframe

Value

If numfact=1, reda matrix and selected variable are returned. If numfact>=2, reda matrix, rota matrix, and selected variables are returned.

References

D'Agostino, R. B., & Zhang, Z. (1992). Data/variable reduction by principal components, battery reduction and variable clustering. *MATRIX*, 7(60), 06.

Hans Werner Borchers (2015). *pracma: Practical Numerical Math Functions*. R package version 1.8.6. <http://CRAN.R-project.org/package=pracma>

Examples

```
## Generate an example dataset
set.seed(1234)
data<-data.frame(x1=rnorm(n=100, mean=14, sd=7),
x2=rnorm(n=100, mean=3, sd=1),
x3=rpois(n=100, lambda=1),
x4=rpois(n=100, lambda=10),
x5=rgamma(n=100, shape=1),
x6=rgamma(n=100, shape=10))
## Demonstrate batteryreduction
vars<-c('x1', 'x2', 'x3', 'x4', 'x5', 'x6')
numfact<-3
batteryreduction(vars, numfact, data)
```

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