

# Package ‘batteryreduction’

May 7, 2026

**Type** Package

**Title** An R Package for Data Reduction by Battery Reduction

**Version** 0.1.1

**Depends** R (>= 3.0.2)

**Imports** stats, pracma

**Date** 2015-10-08

**Maintainer** Chunqiao Luo <chunqiaoluo@gmail.com>

**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.

**License** GPL

**NeedsCompilation** no

**Author** Chunqiao Luo [aut, cre],  
Ralph D'Agostino [aut] (This package is derived from Battery Reduction  
Macro at <http://www.lexjansen.com/nesug/nesug92/NESUG92090.pdf>)

**Repository** CRAN

**Date/Publication** 2015-12-23 06:53:04

## Contents

batteryreduction . . . . .	1
<b>Index</b>	<b>3</b>

---

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

---

## 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)
```

# Index

batteryreduction, [1](#)