

# Package ‘tidydr’

March 16, 2022

**Title** Unify Dimensionality Reduction Results

**Version** 0.0.4

**Description** Dimensionality reduction (DR) is widely used in many domain for analyzing and visualizing high-dimensional data. 'tidydr' provides uniform output and is compatible with multiple methods, including 'prcomp', 'mds', 'Rtsne'. etc.

**Imports** ggplot2, grid, rlang, utils

**Suggests** knitr, rmarkdown, prettydoc

**VignetteBuilder** knitr

**ByteCompile** true

**License** Artistic-2.0

**URL** <https://github.com/YuLab-SMU/tidydr/>

**BugReports** <https://github.com/YuLab-SMU/tidydr/issues>

**Encoding** UTF-8

**RoxygenNote** 7.1.2

**NeedsCompilation** no

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**Repository** CRAN

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available_methods	<i>List dimensionality reduction methods currently available</i>
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**Description**

This function shows available methods that worked for `dr()` function.

**Usage**

```
available_methods(method = "all")
```

**Arguments**

method            one of 'data', 'distance' or 'all' (default)

**Value**

A character vector of available DR methods

**Author(s)**

Lang Zhou and Guangchuang Yu

**Examples**

```
available_methods()
```

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dr	<i>dr</i>
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**Description**

dimensional reduction

**Usage**

```
dr(data, fun, ...)
```

**Arguments**

data            input data  
 fun            function to perform dimensional reduction  
 ...            additional parameters passed to 'fun'

**Details**

This function call the user-provided function ('fun') to perform dimensional reduction on the input data ('data')

**Value**

a DrResult object, which contains 'data' (original data), 'drdata' (coordination after dimensionality reduction), eigenvalue (standard deviation explained by each dimension) and stress (evaluate the effect of dimensionality reduction)

**Author(s)**

Guangchuang Yu

**Examples**

```
x = dr(iris[,1:4], prcomp)
autoplot(x, aes(color=.group), metadata=iris$Species)
```

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dr\_extract

*dr\_extract*

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**Description**

dr\_extract generic

**Usage**

```
dr_extract(result)
```

**Arguments**

result            DrResult object

**Value**

a list that contains components to construct a 'DrResult' object.

**Author(s)**

Guangchuang Yu

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element_line2	<i>element_line2</i>
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**Description**

element\_line2 for drawing shorten axis lines

**Usage**

```
element_line2(
  colour = NULL,
  size = NULL,
  linetype = NULL,
  lineend = NULL,
  color = NULL,
  arrow = NULL,
  inherit.blank = FALSE,
  id,
  xlength = 0.3,
  ylength = 0.3,
  ...
)
```

**Arguments**

colour	line colour
size	line size in pts
linetype	line type
lineend	line end style (round, butt, square)
color	alias to colour
arrow	arrow specification, as created by 'grid::arrow()'
inherit.blank	whether inherit 'element_blank'
id	1 or 2, 1 for axis.line.x.bottom and 2 for axis.line.y.left, only these two axes supported
xlength	length of x axis
ylength	length of y axis
...	additional parameters

**Value**

element\_line2 object, which is a tailored element\_line object

**Author(s)**

Guangchuang Yu

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theme_dr	<i>theme_dr</i>
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**Description**

Dimensional reduction scatter plot axis theme

**Usage**

```
theme_dr(  
  xlength = 0.3,  
  ylength = 0.3,  
  arrow = grid::arrow(length = unit(0.15, "inches"), type = "closed")  
)
```

**Arguments**

xlength	length of x axis
ylength	length of y axis
arrow	arrow specification, as created by 'grid::arrow()'

**Value**

a theme object with shorten axes

**Author(s)**

Guangchuang Yu

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theme_noaxis	<i>theme_noaxis</i>
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**Description**

theme that remove axis

**Usage**

```
theme_noaxis(...)
```

**Arguments**

... additional theme setting

**Value**

a theme object that disable axes

**Author(s)**

Guangchuang Yu

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