Package 'ggquiver'

October 13, 2022

Version 0.3.2

Title Quiver Plots for 'ggplot2'

Description An extension of 'ggplot2' to provide quiver plots to visualise vector fields. This functionality is implemented using a geom to produce a new graphical layer, which allows aesthetic options. This layer can be overlaid on a map to improve visualisation of mapped data.

Depends R (>= 3.2.0)

Imports ggplot2

Suggests dplyr, ggmap, maps, pkgdown, testthat

URL https://github.com/mitchelloharawild/ggquiver, https://pkg.mitchelloharawild.com/ggquiver/

BugReports https://github.com/mitchelloharawild/ggquiver/issues

License GPL-3

Encoding UTF-8

ByteCompile true

RoxygenNote 7.1.2

NeedsCompilation no

Author Mitchell O'Hara-Wild [aut, cre]

Maintainer Mitchell O'Hara-Wild <mail@mitchelloharawild.com>

Repository CRAN

Date/Publication 2021-12-06 08:00:02 UTC

R topics documented:

geom_quiver *Quiver plots for ggplot2*

Description

Displays the direction and length of vectors on a graph.

Usage

```
geom_quiver(
  mapping = NULL,
  data = NULL,
  stat = "quiver",
  position = "identity",
  center = FALSE,
  rescale = FALSE,
  vecsize = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE,
  ...
)

GeomQuiver

stat_quiver(
  mapping = NULL,
  data = NULL,
  geom = "quiver",
  position = "identity",
  center = FALSE,
  rescale = FALSE,
  vecsize = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE,
  ...
)

StatQuiver
```

Arguments

mapping	Set of aesthetic mappings created by aes() or aes_(). If specified and inherit.aes = TRUE (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.

data	The data to be displayed in this layer. There are three options: If NULL, the default, the data is inherited from the plot data as specified in the call to ggplot(). A data.frame, or other object, will override the plot data. All objects will be fortified to produce a data frame. See fortify() for which variables will be created. A function will be called with a single argument, the plot data. The return value must be a data.frame, and will be used as the layer data. A function can be created from a formula (e.g. ~ head(.x, 10)).
stat	The statistical transformation to use on the data for this layer, as a string.
position	Position adjustment, either as a string, or the result of a call to a position adjustment function.
center	If FALSE (the default), the vector lines will start at the specified x and y. If TRUE, the arrows will be centered about x and y.
rescale	If FALSE (the default), the vectors will not be rescaled. If TRUE, the vectors given by (u, v) will be rescaled using the scale function.
vecsize	By default (NULL), vectors sizing is automatically determined. If a grid can be identified, they will be scaled to the grid, if not, the vectors will not be scaled. By specifying a numeric input here, the length of all arrows can be adjusted. Setting vecsize to zero will prevent scaling the arrows.
na.rm	If FALSE (the default), removes missing values with a warning. If TRUE silently removes missing values.
show.legend	logical. Should this layer be included in the legends? NA, the default, includes if any aesthetics are mapped. FALSE never includes, and TRUE always includes. It can also be a named logical vector to finely select the aesthetics to display.
inherit.aes	If FALSE, overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. borders().
...	Other arguments passed on to layer(). These are often aesthetics, used to set an aesthetic to a fixed value, like colour = "red" or size = 3. They may also be parameters to the paired geom/stat.
geom	The geometric object to use display the data

Format

An object of class GeomQuiver (inherits from GeomSegment, Geom, ggproto, gg) of length 2.

An object of class StatQuiver (inherits from Stat, ggproto, gg) of length 3.

Computed variables

x centered x start position for velocity arrow

y centered y start position for velocity arrow

xend centered x end position for velocity arrow

yend centered y end position for velocity arrow

Examples

```
library(ggplot2)
# Quiver plots of mathematical functions
field <- expand.grid(x=seq(0,pi,pi/12), y=seq(0,pi,pi/12))
ggplot(field, aes(x=x,y=y,u=cos(x),v=sin(y))) +
  geom_quiver()

# Removing automatic scaling
ggplot(seals, aes(x=long, y=lat, u=delta_long, v=delta_lat)) +
  geom_quiver(vecsize=NULL) +
  borders("state")


# Centering arrows is useful for plotting on maps.
library(dplyr)
library(ggmap)
wind_data <- wind %>% filter(between(lon, -96, -93) & between(lat, 28.7, 30))
qmplot(lon, lat, data=wind_data, extent="panel", geom = "blank", zoom=8, maptype = "toner-lite") +
  geom_quiver(aes(u=delta_lon, v=delta_lat, colour = spd), center=TRUE)
```

Index