Package 'linemap'

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Type Package

Title Line Maps

Version 0.2.0

Description Create maps made of lines. The package contains two functions: linemap() and getgrid(). linemap() displays a map made of lines using a data frame of gridded data. getgrid() transforms a set of polygons (sf objects) into a suitable data frame for linemap().

URL https://github.com/riatelab/linemap

BugReports https://github.com/riatelab/linemap/issues

Depends R (>= 3.3.0)

Imports graphics, sf, stats

Suggests tinytest, covr

License GPL-3

Encoding UTF-8

LazyData true

RoxygenNote 7.1.1

NeedsCompilation no

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linemap-package *Line Map Package*

Description

Create maps made of lines. The package contains two functions: `linemap` and `getgrid`.

`linemap` displays a map made of lines using a data frame of gridded data.

`getgrid` transforms a set of polygons (`sf` objects) into a suitable data frame for `linemap`.

Note

These three mains sources gave me the inspiration to create `linemap`:
- Joy Division's 'Unknown Pleasures' Cover (https://en.wikipedia.org/wiki/Unknown_Pleasures)
- the work of James Cheshire (Population Lines: How and Why I Created It - https://jcheshire.com/featured-maps/population-lines-how-and-why-i-created-it/)
- the work of Ryan Brideau (GeospatialLineGraphs - https://github.com/Brideau/GeospatialLineGraphs)

getgrid *Transform a Polygon Layer to a Grid*

Description

Transform a polygon layer to a regular grid data.frame.

Usage

```
getgrid(x, cellsize, var)
```

Arguments

`x`	an sf polygon layer.
`cellsize`	size of the side of a grid cell.
`var`	name of the variable to transform to the grid. It can be a vector of names.

Value

A data frame is returned.

Examples

```
library(linemap)
library(sf)
Bretagne <- st_read(system.file("gpkg/geofla.gpkg", package = "linemap"),
                    layer = "Bretagne")
France <- st_read(system.file("gpkg/geofla.gpkg", package = "linemap"),
                  layer = "France")
# example on an extract of dataset
cotedarmor <- Bretagne[Bretagne$CODE_DEPT == 22, ]
cota <- getgrid(x = cotedarmor, cellsize = 1750, var = "POPULATION")
opar <- par(mar = c(0,0,0,0))
plot(st_geometry(France), col="lightblue3", border = NA, bg = "lightblue2",
     xlim = c(min(cota$X), max(cota$X)), ylim= c(min(cota$Y), max(cota$Y)))
linemap(x = cota, var = "POPULATION", k = 5, threshold = 1,
        col = "lightblue3", border = "white", lwd = 0.8,
        add = TRUE)
par(opar)



# example on the full dataset
Bretagne_grid <- getgrid(x = Bretagne, cellsize = 1750, var = "POPULATION")
opar <- par(mar = c(0,0,0,0))
plot(st_geometry(France), col="lightblue3", border = NA, bg = "lightblue2",
     xlim = range(Bretagne_grid$X), ylim= range(Bretagne_grid$Y))
linemap(x = Bretagne_grid, var = "POPULATION", k = 5, threshold = 1,
        col = "lightblue3", border = "white", lwd = 0.8,
        add = TRUE)
par(opar)
```

`linemap` *Line Map*

Description

Plot a line map.

Usage

```
linemap(
  x,
  var,
  k = 2,
  threshold = 1,
  col = "white",
  border = "black",
  lwd = 0.5,
  add = FALSE
)
```

Arguments

x	a data.frame, two first column must be longitudes and latitudes of gridded data.
var	name of the variable to plot.
k	expension factor.
threshold	threshold of the data to plot.
col	color for the lines areas.
border	color for the lines borders.
lwd	thickness of the lines.
add	if TRUE add the lines to the current plot.

Examples

```
library(linemap)
data("popOcc")
# example on an extract of the gridded data
popToulouse <- popOcc[findInterval(popOcc$X, c(3600234,3659444)) == 1  &
                        findInterval(popOcc$Y, c(2290913,2348192)) == 1, ]
opar <- par(mar=c(0,0,0,0), bg = "ivory1")
linemap(x = popToulouse, var = "pop", k = 2.5, threshold = 50,
        col = "ivory1", border = "ivory4", lwd = 0.6, add = FALSE)
par(opar)


# example on the full dataset
library(sf)
occitanie <- st_read(system.file("gpkg/geofla.gpkg", package = "linemap"),
                     layer = "Occitanie")
opar <- par(mar=c(0,0,0,0), bg = "ivory2")
plot(st_geometry(occitanie), col="ivory1", border = NA)
linemap(x = popOcc, var = "pop", k = 2.5, threshold = 50,
        col = "ivory1", border = "ivory4", lwd = 0.6, add = TRUE)
par(opar)
```

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popOcc *Popultation Data for Occitanie*

Description

Gridded population of Occitanie

Format

data.frame

Fields

`X` longitude

`Y` latitude

`pop` population

Source

Extract from INSEE's gridded population data, Population 2009(?) - https://www.insee.fr/fr/statistiques/1405815

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