

Package ‘geospacom’

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Type Package

Title Facilitate Generating of Distance Matrices Used in Package
'spacom' and Plotting Data on Maps

Description Generates distance matrices from shape files and represents spatially weighted multi-level analysis results (see 'spacom')

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License GPL (>= 2)

LazyLoad true

Depends R(>= 2.15-0), rgeos, classInt, sp, maptools, geosphere

Enhances spacom

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R topics documented:

geospacom-package	2
CH1903	2
DistanceMatrix	3
GPS	4
ImagePoly	4
ReadPoly	5
yu.reg	6

Index	8
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geospacom-package *Helper package to facilitate the generation of distance matrices used in the package spacom*

Description

Generates distance matrices from shape files and represents spatially weighted multilevel analysis results (see spacom)

Details

Package: geospacom
 Type: Package
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Author(s)

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See Also

[spacom](#)

CH1903

CH1903

Description

Swiss square projection (CH1903 / LV03)

Usage

```
data(CH1903)
```

Format

The format is: Formal class 'CRS' [package "sp"] with 1 slots ..@ projargs: chr "+init=epsg:21781 +proj=somerc +lat_0=46.95240555555556 +lon_0=7.439583333333333 +k_0=1 +x_0=600000 +y_0=200000 +ellps=bessel +t" | __truncated__

DistanceMatrix	<i>Computes distance matrices</i>
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Description

Computes a distance matrix from a given set of polygons ([SpatialPolygonsDataFrame](#))

Usage

```
DistanceMatrix(poly, id, unit = 1000, longlat = TRUE, fun = distHaversine)
```

Arguments

poly	A SpatialPolygonsDataFrame
id	The id used to as area ids
unit	meters per unit in the distance matrix. The default unit = 1000 outputs a distance matrix in kilometres, in most of the cases. With different type of projections unit can be used to properly calibrate the metric unit.
longlat	if TRUE indicates that the distance is calculated using longitude and latitude coordinates and a spherical distance functions (to be used with CRS GPS). If FALSE, the distance is computed as the euclidean distance on the flat projection (to be used with CRS CH1903). Default is TRUE.
fun	A function to compute distances with longitude and latitude coordinates (e.g., distCosine , distHaversine , distVincenty*) to be passed to distm . It works only if longlat=TRUE

Value

A square distance matrix

Author(s)

Mathieu Cossuta, Davide Morselli, Till Junge, Sandra Penic, Guy Elcheroth

Examples

```
## load the CRS projection definition and a shape file
data(CH1903)
## Not run:
  yu.reg <- ReadPoly("path/to/my/shapfile.shp", proj = CH1903)

data(yu.reg)
names(yu.reg) <- "area.name"
d.geo <- DistanceMatrix(yu.reg, "area.name", longlat = FALSE)

## End(Not run)
```

GPS

GPS

Description

WGS84 projection

Usage

```
data(GPS)
```

Format

The format is: Formal class 'CRS' [package "sp"] with 1 slots ..@ projargs: chr "+init=epsg:4326 +proj=longlat +ellps=WGS84 +datum=WGS84 +no_defs +towgs84=0,0,0"

Examples

```
data(GPS)
str(GPS)
```

ImagePoly*Plots regional data in map plots*

Description

Can be used to display the results of spatially weighted multilevel analysis

Usage

```
ImagePoly(poly,
  dataframe,
  context.id,
  names = NULL,
  show.names = NULL,
  method = "equal",
  nbr = 10,
  ...)
```

Arguments

poly	A SpatialPolygonsDataFrame
dataframe	A data.frame object containing the data to be plotted
context.id	The identifier of the column containing the context ids. Must correspond to the context ids in poly
names	A list of variables in dataframe we want to plot
show.names	A list of names to be added to the plots
method	chooses the style to be passed to classIntervals . It can be "fixed", "sd", "equal", "pretty", "quantile", "kmeans", "hclust", "bclust", "fisher", or "jenks". Default is "equal".
nbr	A numeric vector that specifies the number of intervals to be displayed on the shape file
...	Other options to be passed to classIntervals

Author(s)

Mathieu Cossuta, Davide Morselli

Examples

```
## Not run:
data(CH1903)
yu.reg <- ReadPoly("path/to/my/shapefile.shp", proj = CH1903)

data(yu.reg)
names(yu.reg) <- "area.name"
d.geo <- DistanceMatrix(yu.reg, "area.name", longlat = FALSE)

data(homog_census)
ImagePoly(poly=yu.reg,
  dataframe=homog_census,
  context.id="area.name",
  names ="Homog_00")

## End(Not run)
```

ReadPoly

Read shape files

Description

Generates a [SpatialPolygonsDataFrame](#) from a shape file

Usage

```
ReadPoly(shapefile, proj = GPS, fix.holes = TRUE, ID=NULL)
```

Arguments

shapefile	Path to a shape file
proj	The projection used in the file, default to GPS
fix.holes	By default, tries to fix holes in the polygon frame
ID	A character vector to be passed to readShapePoly . It specifies the name of a column in the .dbf file containing the ID values of the shapes - the values will be converted to a character vector. If NULL (default), the ID of the polygons is taken.

Value

A [SpatialPolygonsDataFrame](#)

Author(s)

Mathieu Cossuta, Davide Morselli

Examples

```
## Not run:  
data(GPS)  
yu.reg <- ReadPoly("path/to/my/shapefile.shp", proj=GPS)  
  
## End(Not run)
```

yu.reg	yu.reg
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Description

A [SpatialPolygonsDataFrame](#) shape file of the Former-Yugoslavia territory, divided in 80 polygons

Usage

```
data(yu.reg)
```

Format

area.name - Character variable. Contains names of the 80 polygons

Source

TRACES. Additional data referring to this shapefile can be found in the TRACES datasets, accessible through the Data and Research Information Services from the Swiss Foundation for Research in the Social Sciences (www.unil.ch/daris).

References

Spini, D., Elcheroth, G., & Fasel, R. (2011). TRACES: Methodological and technical report. *LIVES Working Papers*, 4. DOI: 10.12682/lives.2296-1658.2011.4

Index

*Topic **datasets**

CH1903, [2](#)

GPS, [4](#)

yu.reg, [6](#)

*Topic **package**

geospacom-package, [2](#)

*Topic **spatial**

CH1903, [2](#)

DistanceMatrix, [3](#)

geospacom-package, [2](#)

ImagePoly, [4](#)

ReadPoly, [5](#)

yu.reg, [6](#)

CH1903, [2](#), [3](#)

classIntervals, [5](#)

DistanceMatrix, [3](#)

dism, [3](#)

geospacom (geospacom-package), [2](#)

geospacom-package, [2](#)

GPS, [3](#), [4](#)

ImagePoly, [4](#)

ReadPoly, [5](#)

readShapePoly, [6](#)

spacom, [2](#)

SpatialPolygonsDataFrame, [3](#), [5](#), [6](#)

yu.reg, [6](#)