Package ‘antarcticR’

June 23, 2017

Title Visualisation tools for Antarctica, including some clustering methods

Version 0.0.0.9000

Description This package mainly contains functions to plot longitude-latitude points onto the Antarctic continent. antarcticR can convert CSV files into data frames for plotting, or into Haversine distance matrices for clustering. The results can be combined and visualised on the bottom of a globe, or other views.

Depends R (>= 3.3.3)

License None currently

Encoding UTF-8

LazyData true

RoxygenNote 6.0.1.9000

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`clusterResult` *A function to use some clustering methods from the dbscan package*

Description

A function to use some clustering methods from the dbscan package

Usage

```
clusterResult(haversineMatrix, eps = 2e+05, minPts, eps_cl)
```

---

csvToDF *Turn a longitude, latitude csv file into a dataframe*

Description

Generate a dataframe from a longitude-latitude csv file

Usage

```
csvToDF(csvFile)
```

Arguments

csvFile	Your csv file

Value

A dataframe

Examples

```
df <- csvToHaversineMat("myData.csv")
```

---

csvToHaversineMat *A function to generate a Haversine matrix from a csv file*

Description

Generate a distance matrix of great-circle distances from a csv file with longitude and latitude distances

Usage

```
csvToHaversineMat(csvFile)
```

Arguments

csvFile	Your csv file

Value

A haversine distance matrix

Examples

```
mat <- csvToHaversineMat("myData.csv")
```

drawAntarctica *Set up the drawing of a map of Antarctica*

Description

Set up the drawing of a map of Antarctica

Usage

```
drawAntarctica()
```

Examples

```
world3 <- drawAntarctica()
world3
```

drawBedmap *Set up the drawing of a map of Antarctica BEDMAP2*

Description

Set up the drawing of a map of Antarctica BEDMAP2

Usage

```
drawBedmap(BEDMAP_GRAD = "thickness", reduceResolutionBy = 5)
```

Examples

```
world3 <- drawAntarctica()
world3
```

genCartesianMat *A function to generate a Cartesian matrix from a dataframe*

Description

Generate a distance matrix of x-y-z distances from a dataframe with longitude and latitude points

Usage

```
genCartesianMat(df)
```

Arguments

`df`	Your data frame

Value

A Cartesian distance matrix

Examples

```
points <- read.csv("dividedEvents1.csv",header=T, sep=",")
df.points <- as.matrix(points)
antFrame = data.frame(df.points)
print("Computing distance matrix...")
d  <- genCartesianMatrix(antFrame)
```

`genHaversineMat` *A function to generate a Haversine matrix from a dataframe*

Description

Generate a distance matrix of great-circle distances from a dataframe with longitude and latitude distances

Usage

```
genHaversineMat(df)
```

Arguments

`df`	Your data frame

Value

A haversine distance matrix

Examples

```
points <- read.csv("dividedEvents1.csv",header=T, sep=",")
df.points <- as.matrix(points)
antFrame = data.frame(df.points)
print("Computing distance matrix...")
require(geosphere)
d  <- genHaversineMat(antFrame)
```

`longLatToSimpleBEDMAP` *A function to convert from lon/lat to the BEDMAP grid*

Description

A function to convert from lon/lat to the BEDMAP grid

Usage

```
longLatToSimpleBEDMAP(longLatDataFrame)
```

Value

bedmapFrame

`plotAntarctica` *Plot points on the antarctic map*

Description

Plot points on the antarctic map

Usage

```
plotAntarctica(antMap, df, clusterPlot = FALSE, selfClusterPlot = FALSE,
  pointSize = 2, shapes = TRUE, newSetPlot = 0, BEDMAP = FALSE,
  BEDMAP_GRAD = "thickness", reduceResolutionBy = 5)
```

Arguments

`antMap`	your map made from drawAntarctica
`df`	Your lon/lat data frame

Examples

```
world4 <- plotAntarctica(map, dataFrame)
world4
```

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