

Package: polylabelr (via r-universe)

September 13, 2024

Title Find the Pole of Inaccessibility (Visual Center) of a Polygon

Version 0.2.0

Description A wrapper around the C++ library 'polylabel' from 'Mapbox', providing an efficient routine for finding the approximate pole of inaccessibility of a polygon, which usually serves as an excellent candidate for labeling of a polygon.

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Encoding UTF-8

LazyData true

URL <https://github.com/jolars/polylabelr>,
<https://jolars.github.io/polylabelr>

BugReports <https://github.com/jolars/polylabelr/issues>

Depends R (>= 3.3.0)

LinkingTo Rcpp

Imports Rcpp

Roxygen list(markdown = TRUE)

RoxygenNote 7.1.0

Suggests covr, testthat, spelling, sf

Language en-US

Repository <https://jolars.r-universe.dev>

RemoteUrl <https://github.com/jolars/polylabelr>

RemoteRef HEAD

RemoteSha e474d7b0add6dd72945f0260ae8937dc9a9af98b

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| | |
|-----|---|
| poi | <i>Pole of Inaccessibility (Visual Center) of a Polygon</i> |
|-----|---|

Description

This function computes and returns the approximate pole of inaccessibility for a polygon using a quadtree-based algorithm developed by the people from Mapbox.

Usage

```
poi(x, y = NULL, precision = 1)
```

Arguments

| | |
|-----------|---|
| x | a vector of x coordinates or a matrix or data.frame of x and y coordinates, a list of components x and y, a time series (see <code>grDevices::xy.coords()</code> for details), or a simple features object from package <code>sf</code> . |
| y | a vector of y coordinates. Only needs to be provided if x is vector. |
| precision | the precision to use when computing the center |

Details

If there are any NA values in the input, they will be treated as separators for multiple paths (rings) of the polygon, mimicking the behavior of `graphics::polypath()`.

Value

A list with items

| | |
|------|-----------------------------------|
| x | x coordinate of the center |
| y | y coordinate of the center |
| dist | distance to the enclosing polygon |

Source

Garcia-Castellanos & Lombardo, 2007. Poles of inaccessibility: A calculation algorithm for the remotest places on earth *Scottish Geographical Journal*, Volume 123, 3, 227-233. <https://dx.doi.org/10.1080/14702540801897809>

<https://github.com/mapbox/polylabel>

<https://blog.mapbox.com/a-new-algorithm-for-finding-a-visual-center-of-a-polygon-7c77e6492fbc>

See Also

`grDevices::xy.coords()`, `graphics::polypath()`

Examples

```
plot_path <- function(x, y, ...) {
  plot.new()
  plot.window(range(x, na.rm = TRUE), range(y, na.rm = TRUE))
  polypath(x, y, ...)
}

x <- c(5, 10, 10, 5, 5, 6, 6, 7, 7, 6, 8, 8, 9, 9, 8)
y <- c(5, 5, 10, 10, 5, 6, 7, 7, 6, 6, 8, 9, 9, 8, 8)

plot_path(x, y, col = "grey", border = NA)

points(poi(x, y))

## Not run:
# Find visual centers for North Carolina counties
library(sf)
nc <- st_read(system.file("shape/nc.shp", package="sf"))
locations = do.call(rbind, poi(nc, precision=0.01))
plot(st_geometry(nc))
points(locations)

## End(Not run)
```

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