Package 'atpolR'

May 7, 2026

Type Package

Title ATPOL Grid Implementation

Version 0.1.1

Description ATPOL is a rectangular grid system used for botanical studies in Poland. The ATPOL grid was developed in Institute of Botany, Jagiellonian University, Krakow, Poland in '70. Since then it is widely used to represent distribution of plants in Poland.
'atpolR' provides functions to translate geographic coordinates to the grid and vice versa. It also allows to create a choreograph map.

License GPL-3

Language en-US

Encoding UTF-8

Depends R (>= 3.5.0)

Imports Rdpack (>= 0.7), sf, stats, stringr, terra

RdMacros Rdpack

RoxygenNote 7.2.1

URL https://github.com/gsapijaszko/atpolR

BugReports https://github.com/gsapijaszko/atpolR/issues

Suggests colorspace, dplyr, knitr, rmarkdown

VignetteBuilder knitr

NeedsCompilation no

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Repository CRAN

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`atpol100k` *atpol100k creates ATPOL grid 100km x 100km and returns it as sf object*

Description

atpol100k creates ATPOL grid 100km x 100km and returns it as sf object

Usage

```
atpol100k()
```

Value

Simple Feature (sf) grid of polygons for 100km x 100km ATPOL grid

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`atpol10k` *atpol10k returns ATPOL grid 10x10 km and returns it as sf object*

Description

atpol10k returns ATPOL grid 10x10 km and returns it as sf object

Usage

```
atpol10k()
```

Value

Simple Feature (sf) grid of polygons for 10km x 10km ATPOL grid

`atpol1k` *atpol1k creates ATPOL grid 1km x 1km and returns it as sf object*

Description

atpol1k creates ATPOL grid 1km x 1km and returns it as sf object

Usage

```
atpol1k(grid)
```

Arguments

`grid`	any valid ATPOL 10km grid like "BE23" or "DC58"

Value

Simple Feature (sf) grid of polygons for 1km x 1km ATPOL grid

Examples

```
atpol1k("BE23")
```

`atpol_div` *atpol_div creates ATPOL grid divided by 2, 4 or 5 (based on divider parameter) and returns it as sf object. Useful for grids like 5 x 5 km (divider = 2), 250 x 250 m (divider = 4) or 20 x 20 m (divider = 5). For details see Verey and Komsta (2018)*

Description

atpol_div creates ATPOL grid divided by 2, 4 or 5 (based on divider parameter) and returns it as sf object. Useful for grids like 5 x 5 km (divider = 2), 250 x 250 m (divider = 4) or 20 x 20 m (divider = 5). For details see Verey and Komsta (2018)

Usage

```
atpol_div(grid, divider)
```

Arguments

`grid`	any valid ATPOL grid like "BE" or "DC5128"
`divider`	divide by parameter: 2, 4, 5

Value

Simple Feature (sf) grid of polygons for ATPOL grid divided by 2, 4 or 5

References

Marek Verey, Łukasz Komsta (2018). "Standaryzacja zapisu podziałów siatki ATPOL." *Fragmenta Floristica et Geobotanica Polonica*, **25**(1), 107–111. Number: 1, http://bomax.botany.pl/pubs-new/#article-4302.

Examples

```
atpol_div("BE", 2)
atpol_div(grid = c("BE23", "DC5128"), divider = 4)
```

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boundaryPL *boundaryPL reads the file data/pl_boundary.Rds with simplified boundary geometry.*

Description

boundaryPL reads the file data/pl_boundary.Rds with simplified boundary geometry.

Usage

```
boundaryPL()
```

Value

Simple Feature (sf) geometry of Poland in EPSG:2180 projection.

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check_atpol_square *Reverse engineering of published ATPOL grids*

Description

check_atpol_square() do a reverse engineering of published ATPOL grids species, especially those published in ()

Usage

```
check_atpol_square(centroid, raster, distance)
```

Arguments

centroid	Simple Feature point geometry for which the check is performed, usually it corresponds to centroid of ATPOL 10km x 10km grid
raster	geocoded raster, it has to be in EPSG:2180 projection
distance	st_buffer distance from centroid point for which the check is done, default 1200 m

Value

"YES" or "?" for given SF point

References

Adam Zając, Maria Zając (eds.) (2001). *Atlas rozmieszczenia roślin naczyniowych w Polsce. Distribution Atlas of Vascular Plants in Poland*. Laboratory of Computer Chorology - Institute of Botany - Jagiellonian University, Kraków. ISBN 978-83-915161-1-9.

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grid_to_latlon *grid_to_latlon converts the ATPOL grid to latitude and longitude. With* xoffset = 0 *and* yoffset = 0 *parameters it returns coordinates of the upper left corner of the grid.*

Description

grid_to_latlon converts the ATPOL grid to latitude and longitude. With xoffset = 0 and yoffset = 0 parameters it returns coordinates of the upper left corner of the grid.

Usage

```
grid_to_latlon(grid, xoffset = 0.5, yoffset = 0.5)
```

Arguments

grid	An ATPOL grid, ex. "GF2345".
xoffset	An offset in X, where 0 is for left, and 1 for right side of the grid. The default value is 0.5, which corresponds to middle of the grid.
yoffset	An offset in Y, where 0 is for top, and 1 for bottom side of the grid. The default value is 0.5, which corresponds to middle of the grid.

Value

latitude and longitude of ATPOL grid (default centroid) as pair of numerics

References

https://atpol.sourceforge.io/

Examples

```
grid_to_latlon("BE21")
grid_to_latlon("BE21", 0, 0)
```

`latlon_to_grid` *latlon_to_grid(lat, lon, length) converts geographical coordinates to ATPOL grid of given length*

Description

latlon_to_grid(lat, lon, length) converts geographical coordinates to ATPOL grid of given length

Usage

```
latlon_to_grid(lat, lon, length)
```

Arguments

`lat`	Latitude in degrees, ex. 51.123456
`lon`	Longitude in degrees, ex. 17.234567
`length`	Desired ATPOL grid length, which can be 2, 4, 6, 8, 10 or 12,

Value

grid, ex. BE, BE23, BE2357, etc.

References

https://atpol.sourceforge.io/

Examples

```
latlon_to_grid(51, 17, 2)
latlon_to_grid(51, 17, 6)
```

`plotPoitsOnAtpol` *plotPoitsOnAtpol() plots the observations on ATPOL 10km x 10km grid*

Description

plotPoitsOnAtpol() plots the observations on ATPOL 10km x 10km grid

Usage

```
plotPoitsOnAtpol(myData, outputType, filename, main, colors, cex, col, pch)
```

Arguments

`myData`	SimpleFeature data frame with point geometry, usually centroid of ATPOL grid square
`outputType`	image output type, either "svg" or "png"; if not specified a standard output device is used (screen)
`filename`	name of the output file
`main`	image title, usually a species name
`colors`	vector of colors to be used as a background, default internal .myCols
`cex`	size of the points, default 0.9
`col`	color of the points, default black
`pch`	shape of the point, default 16 - filled dot

Value

choreograph map of species distribution in Poland.

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