

Package ‘SpatGRID’

December 13, 2023

Type Package

Title Spatial Grid Generation from Longitude and Latitude List

Version 0.1.0

Depends R(>= 2.10)

Suggests knitr, rmarkdown, testthat (>= 3.0.0)

Description

The developed function is designed for the generation of spatial grids based on user-specified longitude and latitude coordinates. The function first validates the input longitude and latitude values, ensuring they fall within the appropriate geographic ranges. It then creates a polygon from the coordinates and determines the appropriate Universal Transverse Mercator zone based on the provided hemisphere and longitude values. Subsequently, transforming the input Shapefile to the Universal Transverse Mercator projection when necessary. Finally, a spatial grid is generated with the specified interval and saved as a Shapefile.

For method details see, Brus,D.J.(2022).<[DOI:10.1201/9781003258940](https://doi.org/10.1201/9781003258940)>. The function takes into account crucial parameters such as the hemisphere (north or south), desired grid interval, and the output Shapefile path.

The developed function is an efficient tool, simplifying the process of empty spatial grid generation for applications such as, geo-statistical analysis, digital soil mapping product generation, etc. Whether for environmental studies, urban planning, or any other geo-spatial analysis, this package caters to the diverse needs of users working with spatial data, enhancing the accessibility and ease of spatial data processing and visualization.

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Encoding UTF-8

Imports raster,sp,sf,qpdf

RoxygenNote 7.2.3

VignetteBuilder knitr

NeedsCompilation no

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SpatialGridR	<i>Create a Spatial Grid from the list of longitude and latitude</i>
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Description

Create a Spatial Grid from the list of longitude and latitude

Usage

```
SpatialGridR(lon_list, lat_list, hemisphere, interval, outputShape)
```

Arguments

lon_list	A list of longitudes
lat_list	A list of latitudes
hemisphere	Either 'north' or 'south'
interval	Desired interval for the grid in meter
outputShape	Path to the output shapefile

Value

A spatial grid shapefile

References

1. Brus,D.J.(2022). Spatial Sampling with R (1st ed.).Chapman and Hall/CRC.<DOI:10.1201/9781003258940>
2. Hijmans, R. J. (2022). raster: Geographic Data Analysis and Modeling. R package version 3.5-13.

Examples

```
## Not run:  
library(SpatGRID)  
lon_list<-c(78,78,79,79,78)  
lat_list<-c(20,21,21,20,20)  
hemisphere <- 'north'  
outputShape <- 'C:\\path\\to\\your\\data\\grid.shp'  
interval <- 1000  
Spatial_GRID <- SpatialGridR(lon_list, lat_list, hemisphere, interval, outputShape)  
  
## End(Not run)
```

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