

Package ‘PROJ’

January 7, 2020

Title Generic Coordinate System Transformations Using 'PROJ'

Version 0.1.0

Description A wrapper around the generic coordinate transformation software 'PROJ' that transforms geospatial coordinates from one coordinate reference system ('CRS') to another. This includes cartographic projections as well as geodetic transformations. Version 6.0.0 or higher is required. The intention is for this package to be used by user-packages such as 'reproj', and that the older 'PROJ.4' and version 5 pathways be provided by the legacy package. The 'PROJ' library is available from <<https://proj.org/>>.

Depends R (>= 2.10)

License GPL-3

Encoding UTF-8

LazyData true

SystemRequirements PROJ (>= 6.0.0)

Suggests testthat (>= 2.1.0), covr, spelling, knitr, rmarkdown

URL <https://github.com/hypertidy/PROJ>

BugReports <https://github.com/hypertidy/PROJ/issues>

RoxygenNote 7.0.2

Language en-US

VignetteBuilder knitr

NeedsCompilation yes

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6)

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Date/Publication 2020-01-07 17:00:13 UTC

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ok_proj6	<i>Is 'PROJ' library >= 6' available</i>
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Description

Test for availability of 'PROJ' system library version 6 or higher.

Usage

```
ok_proj6()
```

Details

On unix-alikes, this function is run in `.onLoad()` to check that version 6 functionality is available. On Windows, the load process sets the data file location with the version 6 API, and that is used as a test instead.

If 'PROJ' library version 6 is not available, the package still compiles and installs but is not functional.

Value

logical, TRUE if the system library 'PROJ >= 6'

Examples

```
ok_proj6()
```

proj_trans_generic	<i>Transform a set of coordinates with 'PROJ'</i>
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Description

A raw interface to `proj_trans_generic` in 'PROJ => 6', if it is available.

Usage

```
proj_trans_generic(x, target, ..., source = NULL, z_ = 0, t_ = numeric(0))
```

Arguments

x	input coordinates (x,y, list or matrix see z_ and t_)
target	projection for output coordinates
...	ignored
source	projection of input coordinates (must be named)
z_	optional z coordinate vector
t_	optional t coordinate vector

Details

Input 'x' is assumed to be 2-columns of "x", then "y" coordinates. If "z" or "t" is required pass these in as named vectors with "z_" and "t_". These are left empty (zero-length) internally by default, if possible but it seems that z must always match the length of x y if 'xyz' is the output, so for safety this is always initialized as a zero value vector.

Value

list of transformed coordinates, with 4-elements x_, y_, z_, t_

References

see the [PROJ library documentation](#) for details on the underlying functionality

Examples

```
if (ok_proj6()) {
  proj_trans_generic(cbind(147, -42), "+proj=laea", source = "epsg:4326")
  proj_trans_generic(cbind(147, -42), z_ = -2, "+proj=laea", source = "epsg:4326")
  proj_trans_generic(cbind(147, -42), z_ = -2, t_ = 1, "+proj=laea", source = "epsg:4326")
}
```

xymap

xymap data for testing

Description

A copy of the xymap data set from the quadmesh package.

Details

A matrix of longitude/latitude values of the world coastline.

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