Package: rpaleoclim (via r-universe)

September 2, 2024

Title Download Paleoclimate Data from 'PaleoClim'

Version 1.0.1.9000

Description 'PaleoClim' <http://www.paleoclim.org> (Brown et al. 2019, <doi:10.1038/sdata.2018.254>) is a set of free, high resolution paleoclimate surfaces covering the whole globe. It includes data on surface temperature, precipitation and the standard bioclimatic variables commonly used in ecological modelling, derived from the 'HadCM3' general circulation model and downscaled to a spatial resolution of up to 2.5 minutes. Simulations are available for key time periods from the Late Holocene to mid-Pliocene. Data on current and Last Glacial Maximum climate is derived from 'CHELSA' (Karger et al. 2017, <doi:10.1038/sdata.2017.122>) and reprocessed by 'PaleoClim' to match their format; it is available at up to 30 seconds resolution. This package provides a simple interface for downloading 'PaleoClim' data in R, with support for caching and filtering retrieved data by period, resolution, and geographic extent.

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URL https://rpaleoclim.joeroe.io, https://github.com/joeroe/rpaleoclim

BugReports https://github.com/joeroe/rpaleoclim/issues

Encoding UTF-8

LazyData true

Roxygen list(markdown = TRUE)

RoxygenNote 7.2.3

Imports curl, fs, rlang, terra (>= 1.5-12), utils

Suggests knitr, covr, mockery, raster (>= 3.5-1), testthat (>= 3.0.0), rmarkdown

Config/testthat/edition 3

VignetteBuilder knitr

Repository https://joeroe.r-universe.dev

RemoteUrl https://github.com/joeroe/rpaleoclim

RemoteRef HEAD

RemoteSha b16fcb8dc57e8c6d7c6a71a72e352f89aa276ce3

Contents

`load_paleoclim` *Load data from PaleoClim*

Description

Loads a PaleoClim data file (`.zip` format) into R as a `SpatRaster`.

Usage

```
load_paleoclim(file, as = c("terra", "raster"))
```

Arguments

`file`	Character. Path to a *.zip file downloaded from PaleoClim.
`as`	Character. `as = "raster"` returns a `RasterStack` object (see `raster::stack()`) instead of the default raster from the `terra` package. It is provided for backwards compatibility and will be removed in future versions. Requires the `raster` package.

Value

`SpatRaster` object (see `terra::rast()`) with each bioclimatic variable as a separate named layer.

Examples

```
file <- system.file("testdata", "LH_v1_10m_cropped.zip",
                    package = "rpaleoclim")
load_paleoclim(file)
```

paleoclim *Retrieve data from PaleoClim*

Description

Downloads data from PaleoClim (http://www.paleoclim.org) and loads it into R as a SpatRaster object.

Usage

```
paleoclim(
 period = c("lh", "mh", "eh", "yds", "ba", "hs1", "lig", "mis19", "mpwp", "m2", "cur",
    "lgm"),
  resolution = c("10m", "5m", "2_5m", "30s"),
  region = NULL,
  as = c("terra", "raster"),
  skip_cache = FALSE,
  cache_path = fs::path_temp(),
  quiet = FALSE
)
```

Arguments

period	Character. Time period to retrieve.
resolution	Character. Resolution to retrieve.
region	SpatExtent object or object that can be coerced to SpatExtent (see terra::ext()), describing the region to be retrieved. If NULL, defaults to the whole globe.
as	Character. as = "raster" returns a RasterStack object (see raster::stack()) instead of the default raster from the terra package. It is provided for backwards compatibility and will be removed in future versions. Requires the raster package.
skip_cache	Logical. If TRUE, cached data will be ignored.
cache_path	Logical. Path to directory where downloaded files should be saved. Defaults to R's temporary directory.
quiet	Logical. If TRUE, suppresses messages and download progress information.

Details

See http://www.paleoclim.org for details of the datasets and codings. Data at 30s resolution is only available for 'cur' and 'lgm'.

By default, paleoclim() will read previously downloaded files in R's temporary directory if available. Use skip_cache = TRUE to override this. cache_path can also be set to another directory. This can be useful if you want to reuse downloaded data between sessions.

Value

`SpatRaster` object (see `terra::rast()`) with each bioclimatic variable as a separate named layer.

Examples

```
paleoclim("lh", "10m")
```

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