Package: kwb.satellite (via r-universe)

September 18, 2024

Title R Package for Working with Satellite Data from Various Providers (Copernicus, GoogleEarthEngine)

Version 0.1.0

Description R Package with functions for working with satellite data of Copernicus Climate Data Store (https://cds.climate.copernicus.eu) or GoogleEarthEngine (https://earthengine.google.com/).

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URL https://github.com/KWB-R/kwb.satellite

BugReports https://github.com/KWB-R/kwb.satellite/issues

Imports dplyr, ecmwfr, gdalUtilities, gdata, kwb.utils, magrittr, rlang, stringr, tidyr

Suggests covr, cubelyr, knitr, kwb.pkgbuild, raster, reticulate, rgee, rmarkdown, stars

VignetteBuilder knitr

Remotes github::kwb-r/kwb.utils, github::kwb-r/kwb.pkgbuild

Encoding UTF-8

LazyData true

Roxygen list(markdown = TRUE)

RoxygenNote 7.1.2

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

RemoteUrl https://github.com/KWB-R/kwb.satellite

RemoteRef HEAD

RemoteSha 2fdef78038e1af7eed279d2af3bfa47b5c9aae5e

Contents

`copernicus_cds` *Copernicus Climate Data Store: Single Query*

Description

Run request (may take a while as nothing happens because many requests R are queued (in addition: maximum request data amount limited to 140000 data points). To check queue status: "https://cds.climate.copernicus.eu/cdsapp#!/yourrequests?tab=form"

Usage

```
copernicus_cds(
  variable = "2m_temperature",
  dataset_short_name = "reanalysis-era5-single-levels",
  product_type = "reanalysis",
  years = as.character(seq(2010, 2020)),
  area = c(40, 116, 39, 117),
  file_format = "grib",
  export_dir = "."
)
```

Arguments

`variable`	variable to query "2m_temperature"
`dataset_short_name`	"reanalysis-era5-single-levels"
`product_type`	default: "reanalysis"
`years`	character vector of years (default: as.character(seq(2010, 2020)))
`area`	area coordinates in latitude/longitude (default: c(40, 116, 39, 117))
`file_format`	"grib" or "netcdf"
`export_dir`	default: "."

Value

path to file with exported data

copernicus_cds_parallel

Copernicus Climate Data Store: Multi Query

Description

Runs copernicus_cds in parallel for all variables defined in parameter "variables" on all machine cores minus one

Usage

```
copernicus_cds_parallel(
  variables = c("2m_temperature", "evaporation", "potential_evaporation",
    "precipitation_type", "runoff", "sub_surface_runoff", "surface_runoff",
    "total_precipitation"),
  dataset_short_name = "reanalysis-era5-single-levels",
  product_type = "reanalysis",
  years = as.character(seq(2010, 2020)),
  area = c(40, 116, 39, 117),
  file_format = "grib",
  export_dir = "."
)
```

Arguments

variables	default: c("2m_temperature", "evaporation", "potential_evaporation", "precipitation_type", "runoff", "sub_surface_runoff", "surface_runoff", "total_precipitation")
dataset_short_name	"reanalysis-era5-single-levels"
product_type	default: "reanalysis"
years	character vector of years (default: as.character(seq(2010, 2020)))
area	area coordinates in latitude/longitude (default: c(40, 116, 39, 117))
file_format	"grib" or "netcdf"
export_dir	default: "."

Value

list with paths to downloaded files

`get_metadata_era5` *Copernicus: get metadata for ERA5*

Description

Copernicus: get metadata for ERA5

Usage

```
get_metadata_era5(grib_file)
```

Arguments

`grib_file`	path to GRIB file

Value

metadata

See Also

Code taken from https://gis.stackexchange.com/a/360652

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