R documentation
of 'get_earthdata.Rd'

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get_earthdata | *Retrive data from Global Imagery Browse Services (GIBS) using API for Developers*

Description

get_earthdata allows retrieving georeferences optical satellite images of low and moderate spatial resolution (up to 250m per cell) using GIBS API for Developers.

Usage

```
get_earthdata(bbox = NA, res = c("2km", "1km", "500m", "250m"),
              date = NA, product = "", geocode = c("nominatim", "google"),
              expand = 1.05, border = 0, verbose = FALSE)
```

Arguments

bbox
: Numeric of length 4 or character. Spatial extent in the notation c(minx,miny,maxx,maxy). Can be in utits of meters or degrees. If all absolute values are less than 360, then units are in degrees and projection is EPSG:3857, else units are in meters and projection is EPSG:3413. If bbox=NULL, then function return list of available products. If bbox=NA then boundary box is attempted for taking from session grid. If character, then boundary box is taken from geocoding. Default is region of Vaigach Island.

res
: Character or numeric. Parameter, which is responsible for dimension of output raster image. If character, then zoom is selected using keyword list c("2km", "1km", "500m", "250m" for EPSG:3413. If res<10 then it is interpreted as zoom for Web Map Tile Service (WMTS). If res>100 then res is interpeted as preffered image dimension. By default, res=480L.

date
: Character or "Date" object. Date for image retrieving. Default is Sys.Date()-2L.

product
: Character of integer. Data product form GIBS. Currently only MODIS-oriented (corrected reflectance) products are available:

  1. "MODIS_Aqua_CorrectedReflectance_Bands721"
  2. "MODIS_Terra_CorrectedReflectance_Bands721"
  3. "MODIS_Aqua_CorrectedReflectance_TrueColor"

4. "MODIS_Terra_CorrectedReflectance_TrueColor"
5. "VIIRS_SNPP_CorrectedReflectance_TrueColor"
6. "Coastlines"

Please check actual list by calling get_earthdata(bbox=NULL).

If numeric, then index of item among available products. Regular expressions can be used to simplify value of product, e.g., case-insensitive "aqua 721", "terra truecolor", "suomi", "SNNP".

geocode	Character. Keyword for geocode service. Valid values are "google", "nominatim".
expand	Numeric. Multiplier for plotting panel zoom in relation to extent of plotting geometry. Ignored if geocoding is not applied. Default is 1.05.
border	Integer. Value in pixels of fixed margins around plotting geometry. Ignored if geocoding is not applied. Default is 0L.
verbose	Logical. Value TRUE may provide some additional information on console. Default is FALSE.

Details

Argunet method="libcurl" is used in function download.file for tile downloading. Please check capabilities("libcurl").

Valid zoom values (e. g., specified via res argument) are 3:6 for EPSG:3413 and 0:8 for EPSG:3587.

Longitude 180 degrees has a seam in EPSG:3857 (e.g., see bbox=c(170,68,-170,73) and bbox=c(-1600000,1308000,-1370000,1570000) for Wrangel Island. If region crosses longitude 180 degrees in EPSG:3857, then the prior day is taken for Western Hemisphere.

Value

If bbox=NULL, then character vector of available products.

In other cases, object of class ursaRaster with RGBA image.

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References

GIBS API for Developers

Examples

```
session_grid(NULL)
pr <- get_earthdata(bbox=NULL)
print(pr,quote=FALSE)

## Not run:
   a1 <- get_earthdata()
   display(a1)
   a2 <- get_earthdata(product=2,date=Sys.Date()-7L,res=7,bbox=c(57.8,69.4,62.3,70.8))
   display(a2)
## End(Not run)
```

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