Package 'LSTModis'

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Type Package

Title Computes MODIS Land Surface Temperature

Version 0.1.0

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Description Automates download of the .tif files (raster files)
and calculates the Land Surface Temperature.The defualt parameters include :-
1. Product:``Surf_Temp_Daily_005dg (M*D11C1)",
2. sensor: ``Terra",
3. prod_version:``6",
4. out_format: ``GTiff",
5. MODIStspVersion: ``1.3.3.1",
6. timeseries_format: ``ENVI Meta Files",
7. Original MODIS Layers: Daytime land surface temperature,
8. Quality Indicators: Mandatory QA flag(day).
Input to the package consists of start_date, end_date, path to shapefiles , path to tif files and aggregate. The output is a dataframe which
has columns with temperature in Celcius.

License GPL (>= 3)

Encoding UTF-8

LazyData true

RoxygenNote 6.1.0

Imports jsonlite,
stringr,
MODIStsp,
sp,
methods,
utils,
raster,
xml2

Suggests knitr,
rmarkdown,
rgdal

SystemRequirements Cairo >= 1.0.0, ATK (>= 1.10.0), Pango (>= 1.10.0), GTK+ (>= 2.8.0), GLib (>= 2.8.0), Curl, GDAL (>= 1.6.3), PROJ.4 (>= 4.4.9)

VignetteBuilder knitr

Depends R (>= 2.10)

R topics documented:

`Compute_ModisLST` *Compute MODIS Land Surface Temperature*

Description

Function automates the computation of MODIS Land Surface Temperature.It creates Shapefiles with Temperature columns appended and it is stored at the path provided by the user.This requires the user to download the raster files first. The user must use Download_tif to download the required raster files.

Usage

```
Compute_ModisLST(path_to_tif, path_to_shapefiles, path_mod_shapefile,
  aggregate)
```

Arguments

`path_to_tif`	Character String; Path to the folder that contains the tif files
`path_to_shapefiles`	Character String; or SpatialPolygonsDataFrames object; The path to the shapefile (.shp) or the shapefile object
`path_mod_shapefile`	Character String; The path where the user wants the Modified Shapefile to be stored
`aggregate`	Character String; Aggregate values 1. daily 2. weekly 3. monthly 4. yearly

Value

Dataframe with new columns appended with Land Surface Temperature in Celcius and modified shapefiles.

Examples

```
shape_dsn <- system.file("vectors", package = "LSTModis")[1]
tif_dsn <- system.file("pictures", package = "LSTModis")[1]
Shapefile <- rgdal::readOGR(dsn=shape_dsn, layer="Shapefile")
pwd <- getwd()
df<-Compute_ModisLST(path_to_tif = tif_dsn,
          path_to_shapefiles = Shapefile,
          path_mod_shapefile = pwd,
          aggregate = "weekly")
```

Download_tif *Download tif files*

Description

Function automates download of the .tif files (raster files).The defualt parameters include :- Product: "Surf_Temp_Daily_005dg (M*D11C1)", sensor: "Terra", prod_version: "6", out_format: "GTiff", MODIStspVersion: "1.3.3.1", timeseries_format: "ENVI Meta Files". Original MODIS Layers: Daytime land surface temperature Quality Indicators: Mandatory QA flag(day) The script doesn't download the .hdf files.

Usage

```
Download_tif(username = "abc", password = "**", start_date, end_date,
  option = 1, path_files)
```

Arguments

username	Character String; Username
password	Character String; Password
start_date	Character String; The start date
end_date	Character String; The end date
option	Numeric value; Takes value 1 or 2 : 1-USE default options 2-USE GUI for personalized options
path_files	Character String; Path where the user wants tif files to be stored

Examples

```
pwd<-getwd()
Download_tif(username="abc",password="**",
                           start_date="2017-12-19",
                           end_date="2017-12-21",
                           option=2,
                           path_files=pwd)
```

Index