Package 'raincpc'

August 29, 2014

Title Obtain and Analyze Rainfall Data from the Climate Prediction Center

Description The Climate Prediction Center's (CPC) rainfall data for the world (1979 to present, 50 km resolution) and the USA (1948 to present, 25 km resolution), is one of the few high quality, long term, observation based, daily rainfall products available for free. Although raw data is available at CPC's ftp site, obtaining,processing and visualizing the data is not straightforward. There are more than 12,000 files for the world and about 24,000 files for the USA. Moreover, file formats and file extensions have not been consistent. This package provides functionality to download, process and visualize over 35 years of global rainfall data and over 65 years of USA rainfall data from CPC.

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Depends R (>= 3.0.2)

Imports SDMTools

Suggests knitr, raster, ggplot2

VignetteBuilder knitr

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LazyData true

NeedsCompilation no

Repository CRAN

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R topics documented:

`cpc_get_rawdata` *Download rainfall data from CPC for the time period of interest*

Description

Download rainfall data from CPC for the time period of interest

Usage

```
cpc_get_rawdata(begYr, begMo, begDay, endYr, endMo, endDay, usa = FALSE)
```

Arguments

`begYr`	beginning year of the time period of interest, 1979/1948 - present
`begMo`	beginning month of the time period of interest, 1 - 12
`begDay`	beginning day of the time period of interest, 1 - 28/29/30/31
`endYr`	ending year of the time period of interest, 1979/1948 - present
`endMo`	ending month of the time period of interest, 1 - 12
`endDay`	ending day of the time period of interest, 1 - 28/29/30/31
`usa`	logical flag to indicate whether global or usa data is desired

Value

downloads either a ".gz" file (2008 or before) or a ".bin" file (2009 - present)

Author(s)

Gopi Goteti

Examples

```
## Not run:
# CPC global data for July 3-5 2014
cpc_get_rawdata(2014, 7, 3, 2014, 7, 5)
# CPC USA data for July 3-5 2014
cpc_get_rawdata(2014, 7, 3, 2014, 7, 5, usa = TRUE)

## End(Not run)
```

`cpc_read_rawdata` *Read downloaded raw rainfall data from CPC*

Description

Read downloaded raw rainfall data from CPC

Usage

```
cpc_read_rawdata(yr, mo, day, raw_data_path = "", usa = FALSE,
  write_output = FALSE)
```

Arguments

`yr`	Year associated with the downloaded file, 1979/1948 - present
`mo`	Month associated with the downloaded file, 1 - 12
`day`	Day associated with the downloaded file, 1 - 28/29/30/31
`raw_data_path`	location of downloaded cpc files
`usa`	logical flag to indicate whether global or usa data is desired
`write_output`	logical flag to indicate whether binary output file should be written or not

Details

For the global data - the output matrix has 360 rows (latitudes) and 720 columns (longitudes) of rainfall/precipitation in units of mm/day; the first data point has the lat, lon values of -89.75 and 0.25 degrees, respectively; spatial resolution of the data is 0.5 degrees. For the USA data - the output matrix has 120 rows (latitudes) and 300 columns (longitudes) of rainfall/precipitation in units of mm/day; the first data point has the lat, lon values of 20.125 and 230.125 degrees, respectively; spatial resolution of the data is 0.25 degrees.

Value

RasterLayer

Author(s)

Gopi Goteti

Examples

```
## Not run:
# CPC global data for July 4 2014
rain1 <- cpc_read_rawdata(2014, 7, 4)
print(rain1)
# CPC USA data for July 4 2014
rain2 <- cpc_read_rawdata(2014, 7, 4, usa = TRUE)
print(rain2)
```

```
## End(Not run)
```

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raincpc *Obtain and analyze rainfall data from the Climate Prediction Center.*

Description

Obtain and analyze rainfall data from the Climate Prediction Center.

Details

The Climate Prediction Center's (CPC) rainfall data for the world (1979 to present, 50 km resolution) and the USA (1948 to present, 25 km resolution), is one of the few high quality, long term, observation based, daily rainfall products available for free. Although raw data is available at CPC's ftp site, obtaining, processing and visualizing the data is not straightforward. There are more than 12,000 files for the world and about 24,000 files for the USA. Moreover, file formats and file extensions have not been consistent. **raincpc** provides functionality to download, process and visualize over 35 years of global rainfall data and over 65 years of USA rainfall data from CPC.

Author(s)

Gopi Goteti

References

Climate Prediction Center's (CPC), www.cpc.ncep.noaa.gov, daily rainfall data, ftp site ftp.cpc.ncep.noaa.gov/precip/CPC_UNI_PRCP/

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