

Package ‘wtss’

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Title An R Client for a Web Time-Series Service

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Description An R client that provides remote access to satellite image time series.

The client allows Earth observation users to obtain time series from data sets available in a Web Time Series Server.

The functions include: (a) listing the data sets available in the server;

(b) describing the contents of a data set; (c) retrieving a time series based on spatial location and temporal filters.

Depends R (>= 3.0.0)

License GPL-3

Imports methods, roxygen2, RCurl, jsonlite, lubridate, zoo

RoxygenNote 6.0.1

URL <https://github.com/e-sensing/wtss>

BugReports <https://github.com/e-sensing/wtss/issues>

Suggests knitr, rmarkdown

VignetteBuilder knitr

NeedsCompilation no

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| | |
|------------------|--------------------------|
| describeCoverage | <i>Describe coverage</i> |
|------------------|--------------------------|

Description

Describe coverage

Usage

```
describeCoverage(object, coverages)
```

```
## S4 method for signature 'WTSS'
describeCoverage(object, coverages)
```

Arguments

| | |
|-----------|--------------------------------------|
| object | A WTSS object |
| coverages | A character vector of coverage names |

Examples

```
ts.server = WTSS("http://www.dpi.inpe.br/tws/wtss")
cv = describeCoverage(ts.server, c("mod13q1_512"))
```

| | |
|--------------|--|
| getServerUrl | <i>Returns the object's server URL</i> |
|--------------|--|

Description

Returns the object's server URL

Usage

```
getServerUrl(object)
```

```
## S4 method for signature 'WTSS'  
getServerUrl(object)
```

Arguments

object A WTSS object

| | |
|---------------|-----------------------|
| listCoverages | <i>List coverages</i> |
|---------------|-----------------------|

Description

List coverages

Usage

```
listCoverages(object)
```

```
## S4 method for signature 'WTSS'  
listCoverages(object)
```

Arguments

object A WTSS object

Examples

```
ts.server = WTSS("http://www.dpi.inpe.br/tws/wtss")  
coverages = listCoverages(ts.server)
```

| | |
|----------------|--------------------------------|
| listTimeSeries | <i>Get list of time series</i> |
|----------------|--------------------------------|

Description

This function retrieves the time series for a list of coordinates.

Usage

```
listTimeSeries(object, coverages, attributes, coordinates, start_date, end_date)

## S4 method for signature 'WTSS'
listTimeSeries(object, coverages, attributes, coordinates,
  start_date, end_date)
```

Arguments

| | |
|-------------|---|
| object | Either a WTSS object or a server URL. |
| coverages | Either a list of coverages and attributes such as retrieved by describe_coverage() or a character with the coverage name. |
| attributes | A character vector of dataset names. |
| coordinates | A list or data frame of longitude latitude coordinates in WGS84 coordinate system. |
| start_date | A character with the start date in the format yyyy-mm-dd or yyyy-mm depending on the coverage. |
| end_date | A character with the end date in the format yyyy-mm-dd or yyyy-mm depending on the coverage. |

Examples

```
ts.server <- WTSS("http://www.dpi.inpe.br/tws/wtss")
bands <- c("ndvi", "evi")
coords <- list(c(-45.00, -12.00), c(-46.00, -11.00))
tsList <- listTimeSeries(ts.server, "mod13q1_512", bands, coords, "2000-02-18", "2016-12-18")
```

| | |
|--------------|-------------------------------------|
| setServerUrl | <i>Sets the object's server URL</i> |
|--------------|-------------------------------------|

Description

Sets the object's server URL

Usage

```
setServerUrl(object, aServerUrl)
```

```
## S4 method for signature 'WTSS'
setServerUrl(object, aServerUrl)
```

Arguments

| | |
|------------|--|
| object | A WTSS object |
| aServerUrl | A character representing the server URL. |

| | |
|------------|------------------------|
| timeSeries | <i>Get time series</i> |
|------------|------------------------|

Description

This function retrieves the time series for a pair of coordinates.es

Usage

```
timeSeries(object, coverages, attributes, longitude, latitude, start_date,
            end_date)
```

```
## S4 method for signature 'WTSS'
timeSeries(object, coverages, attributes, longitude, latitude,
            start_date, end_date)
```

Arguments

| | |
|------------|---|
| object | Either a WTSS object or a server URL |
| coverages | Either a list of coverages and attributes such as retrieved by describe_coverage() or a character with the coverage name. |
| attributes | A character vector of dataset names. |
| longitude | A longitude in WGS84 coordinate system. |
| latitude | A latitude in WGS84 coordinate system. |

| | |
|------------|--|
| start_date | A character with the start date in the format yyyy-mm-dd or yyyy-mm depending on the coverage. |
| end_date | A character with the end date in the format yyyy-mm-dd or yyyy-mm depending on the coverage. |

Examples

```
ts.server = WTSS("http://www.dpi.inpe.br/tws/wtss")
ts = timeSeries(ts.server, "mod13q1_512", c("ndvi","evi"),
               longitude = -45.00, latitude = -12.00,
               start_date = "2000-02-18", end_date = "2016-12-18")
```

WTSS

The WTSS class

Description

Use this class for creating a connection to a Web Time Series Service (WTSS)
Creates a WTSS object

Usage

```
WTSS(serverUrl)
```

Arguments

serverUrl A server URL

Slots

serverUrl: Object of class "character", URL of the server.
listCoverages: Object of class "character", list of coverages.

Note

No notes

Author(s)

Victor Maus, Alber Sanchez, Luiz Fernando Assis, Pedro Andrade, Gilberto Ribeiro

Examples

```
ts.server = WTSS("http://www.dpi.inpe.br/tws/wtss")
ts.server
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