Package ‘rtide’

March 18, 2020

Title Tide Heights

Version 0.0.7

Description Calculates tide heights based on tide station harmonics.
   It includes the harmonics data for 637 US stations.
   The harmonics data was converted from <https://github.com/poissonconsulting/rtide/blob/master/data-raw/harmonics-dwf-20151227-free.tar.bz2>,
   NOAA web site data processed by David Flater for 'XTide'.
   The code to calculate tide heights from the harmonics is based on 'XTide'.

License GPL-3

URL https://github.com/poissonconsulting/rtide

BugReports https://github.com/poissonconsulting/rtide/issues

Depends R (>= 3.3)

Imports abind, chk (>= 0.4.0), dttr2, utils, tibble

Suggests ggplot2, scales, testthat

Encoding UTF-8

LazyData true

RoxygenNote 7.0.2

NeedsCompilation no

Author Joe Thorley [aut, cre] (<https://orcid.org/0000-0002-7683-4592>),
   Luke Miller [aut],
   Abram Fleishman [aut],
   Poisson Consulting [cph]

Maintainer Joe Thorley <joe@poissonconsulting.ca>

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Description

High/Low Tide Predictions from [http://tidesandcurrents.noaa.gov/tide_predictions.html](http://tidesandcurrents.noaa.gov/tide_predictions.html).

Usage

brandywine

Format

A tbl data frame:

- Station  The station name (chr).
- DateTime  The date time (time).
- MLLW      The tide height in m (dbl).

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Description

A object of class tide_harmonics providing tidal harmonic data for US stations.

Usage

harmonics

Format

An object of class tide_harmonics of length 4.
is.tide_harmonics

Details

Converted from harmonics-dwf-20151227-free, NOAA web site data processed by David Flater for XTide.

+-----------------+-----------------
| is.tide_harmonics | Is tide_harmonics |
+-----------------+-----------------

Description

Tests if object inherits from class tide_harmonics.

Usage

is.tide_harmonics(x)

Arguments

x The object to test.

monterey

Monterey Tide Height Data

Description

High/Low Tide Predictions from http://tidesandcurrents.noaa.gov/tide_predictions.html.

Usage

monterey

Format

A tbl data frame:

**Station** The station name (chr).

**DateTime** The date time (time).

**MLLW** The tide height in m (dbl).
tide_datetimes  

Tide Date Times

Description
Generates sequence of date times.

Usage
tide_datetimes(
  minutes = 60L,
  from = as.Date("2015-01-01"),
  to = as.Date("2015-12-31"),
  tz = "PST8PDT"
)

Arguments
- minutes: An integer of the number of minutes between tide heights
- from: A Date of the start of the period of interest
- to: A Date of the end of the period of interest
- tz: A string of the time zone.

Value
A POSIXct vector.

Examples
tide_datetimes()

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tide_height  

Tide Height

Description
Calculates tide height at specified stations based on the supplied harmonics object.

Usage
tide_height(
  stations = "Monterey Harbor",
  minutes = 60L,
  from = as.Date("2015-01-01"),
  to = as.Date("2015-01-01"),
  tz = "UTC",
  harmonics = rtide::harmonics
)
tide_height_data

Arguments

stations A character vector of stations to match - treated as regular expressions.
minutes An integer of the number of minutes between tide heights
from A Date of the start of the period of interest
to A Date of the end of the period of interest
tz A string of the time zone.
harmonics The harmonics object.

Value

A data frame of the tide heights in m by the number of minutes for each station from from to to.

tide_height_data

Description

Calculates tide height at specified stations at particular date times based on the supplied harmonics object.

Usage

tide_height_data(data, harmonics = rtide::harmonics)

Arguments

data A data frame with the columns Station and DateTime.
harmonics The harmonics object.

Value

A data frame of the tide heights in m.
### tide_slack_data  
**Tide Slack Data**

**Description**
Determines the closest slack tide for specified stations at particular date times based on the supplied harmonics object.

**Usage**
```
tide_slack_data(data, harmonics = rtide::harmonics)
```

**Arguments**
- `data`: A data frame with the columns Station and DateTime.
- `harmonics`: The harmonics object.

**Value**
A data frame of the slack tide date times and heights in m.

### tide_stations  
**Tide Stations**

**Description**
Gets vector of matching stations.

**Usage**
```
tide_stations(stations = ".*", harmonics = rtide::harmonics)
```

**Arguments**
- `stations`: A character vector of stations to match - treated as regular expressions.
- `harmonics`: The harmonics object.
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