Package ‘rtide’

May 29, 2021

Title  Tide Heights
Version  0.0.9
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 (>= 3.4)
Imports  abind, chk, dttr2, tibble, utils
Suggests  covr, ggplot2, scales, testthat
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| brandywine | Brandywine Tide Height Data |

Description

High/Low Tide Predictions from [https://tidesandcurrents.noaa.gov/tide_predictions.html](https://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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| harmonics | Harmonics |

Description

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

Usage

`harmonics`
**is.tide_harmonics**

**Format**

An object of class `tide_harmonics` of length 4.

**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 [https://tidesandcurrents.noaa.gov/tide_predictions.html](https://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()

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.

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**tide_height_data**  
**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**

```r
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**

```r
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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