Package 'rtide'

July 23, 2025

Title Tide Heights

Version 0.0.11

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/main/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'.

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

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

Depends R (>= 4.0)

Imports abind, chk, dttr2, tibble, utils

Suggests covr, ggplot2, scales, spelling, testthat (>= 3.0.0)

Config/testthat/edition 3

Encoding UTF-8

LazyData true

RoxygenNote 7.3.2

Language en-US

NeedsCompilation no

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Repository CRAN

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`brandywine` *Brandywine Tide Height Data*

Description

High/Low Tide Predictions from 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).

`harmonics` *Harmonics*

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.

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.

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 = "America/Los_Angeles"
)
```

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
)
```

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

```
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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