

Package ‘rtide’

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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'.

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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

Encoding UTF-8

LazyData true

RoxygenNote 7.1.1

NeedsCompilation no

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brandywine	<i>Brandywine Tide Height Data</i>
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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	<i>Harmonics</i>
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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.

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	<i>Tide Date Times</i>
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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	<i>Tide Height</i>
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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.

tide_height_data	<i>Tide Height Data</i>
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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	<i>Tide Slack Data</i>
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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	<i>Tide Stations</i>
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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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