

Package ‘rtide’

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Title Tide Heights

Version 0.0.5

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Description Calculates tide heights based on tide station harmonics.

It includes the harmonics data for 637 US stations.

The harmonics data was con-

verted 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'.

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

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

Depends R (>= 3.3.0)

Imports abind, checkr, lubridate, utils

Suggests ggplot2, scales, tibble, testthat

License GPL-3

Encoding UTF-8

LazyData true

RoxygenNote 6.1.0

NeedsCompilation no

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brandywine	<i>Brandywine Tide Height Data</i>
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Description

High/Low Tide Predictions from 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).

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	<i>Is tide_harmonics</i>
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Description

Tests if object inherits from class tide_harmonics.

Usage

```
is.tide_harmonics(x)
```

Arguments

x The object to test.

monterey	<i>Monterey Tide Height Data</i>
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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	<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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