Package: resourcecodedata (via r-universe)

December 31, 2024

Title Data package with the Resourcecode database configuration data

Version 0.2.0

Description Includes Resourcecode hindcast database (see
<https://resourcecode.ifremer.fr>) configuration data: nodes
locations for both the sea-state parameters and the spectra
data; and examples of time series of 1D and 2D surface
elevation variance spectral density, etc. This work was
supported in part under the framework of the OCEANERA-NET
COFUND project, with funding provided by national and regional
sources and co-funding by the European Union's Horizon 2020
research and innovation program.

License GPL (>= 3)

URL <https://github.com/Resourcecode-project/r-resourcecodedata>

<https://resourcecode-project.r-universe.dev/resourcecodedata>

BugReports <https://github.com/Resourcecode-project/r-resourcecodedata/issues>

Depends R (>= 3.5)

Suggests resourcecode

Encoding UTF-8

LazyData true

LazyDataCompression bzip2

NeedsCompilation no

Roxygen list(markdown = TRUE)

RoxygenNote 7.3.2

Repository https://resourcecode-project.r-universe.dev

RemoteUrl https://github.com/Resourcecode-project/r-resourcecodedata

RemoteRef HEAD

RemoteSha 620771b9bde19b16c501b48a99bf29b2a6fc2702

Contents

`rscd_1d_spectra`   *Resourcecode 1D directional wave spectra*

Description

This data contains the time series of 1D wave spectral data at the 'Pierre noires (6200069) wave buoy from 01-01-1994 to 31-01-1994.

Usage

```
rscd_1d_spectra
```

Format

A list with 12 elements:

longitude Longitude

latitude Latitude

frequency1 Lower frequency

frequency2 Upper frequency

ef Surface elevation variance spectral density

th1m Mean direction from first spectral moment

th2m Mean direction from second spectral moment

sth1m Mean directional spreading from first spectral moment

sth2m Mean directional spreading from second spectral moment

freq Central frequency

forcings A data.frame with 14 variables:

    time Time

    dpt Depth, positive downward

> > **wnd** Wind intensity, at 10m above sea level
> >
> > **wnddir** Wind direction, comes from
> >
> > **cur** Current intensity, at the surface
> >
> > **curdir** Current direction, going to
> >
> > **hs** Significant wave height
> >
> > **fp** Peak wave frequency
> >
> > **f02** Mean wave frequency
> >
> > **f0m1** Mean wave frequency at spectral moment minus one
> >
> > **th1p** Mean wave direction at spectral peak
> >
> > **sth1p** Directional spreading at spectral peak
> >
> > **dir** Mean wave direction
> >
> > **spr** Mean directional spreading
>
> **station** Station name

Source

User Manual of the RESOURCECODE database https://archimer.ifremer.fr/doc/00751/86306/

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rscd_2d_spectra   *Resourcecode 2D directional wave spectra*

Description

This data contains the time series of 1D wave spectral data at the 'Pierre noires (6200069) wave buoy from 01-01-1994 to 31-01-1994.

Usage

    rscd_2d_spectra

Format

A list with 9 elements:

longitude Longitude

latitude Latitude

frequency1 Lower frequency

frequency2 Upper frequency

ef Surface elevation variance spectral density

th1m Mean direction from first spectral moment

th2m Mean direction from second spectral moment

sth1m Mean directional spreading from first spectral moment

sth2m Mean directional spreading from second spectral moment

freq Central frequency

dir Directionnal bins

forcings A data.frame with 6 variables:

>   **time** Time
>   **dpt** Depth, positive downward
>   **wnd** Wind intensity, at 10m above sea level
>   **wnddir** Wind direction, comes from
>   **cur** Current intensity, at the surface
>   **curdir** Current direction, going to

station Station name

Source

User Manual of the RESOURCECODE database https://archimer.ifremer.fr/doc/00751/86306/

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rscd_coastline   *Resourcecode coastline*

Description

This data contains the coastline used to run the RESOURCECODE hindcast. This will be mainly used for ploting purpose.

Usage

```
rscd_coastline
```

Format

A data frame with 24403 rows and 3 columns:

longitude,latitude coordinates of the border line

depth depth of the border.

Source

User Manual of the RESOURCECODE database https://archimer.ifremer.fr/doc/00751/86306/

rscd_dir   *Resourcecode directional bins*

Description

(equivalent to a directional resolution of 10°;

Usage

```
rscd_dir
```

Format

A vector of length 36 with the directionnal bins

Source

User Manual of the RESOURCECODE database https://archimer.ifremer.fr/doc/00751/86306/

rscd_field   *Resourcecode FIELD grid*

Description

This data contains the location and characteristics of the 328,030 nodes where the RESOURCE-CODE hindcast data is available

Usage

```
rscd_field
```

Format

A data frame with 328,030 rows and 5 columns:

node node number

longitude, latitude coordinates of the nodes

depth depth of the node

d50 Bottom sediment types

Source

User Manual of the RESOURCECODE database https://archimer.ifremer.fr/doc/00751/86306/

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rscd_freq	*Resourcecode frequency vector of 1D and 2D spectra*

Description

The wave spectrum discretization considers 36 frequencies, starting from 0.0339 Hz up to 0.9526 Hz with a frequency increment factor of 1.1

Usage

```
rscd_freq
```

Format

A vector 36 elements with the frequencies values

Source

User Manual of the RESOURCECODE database https://archimer.ifremer.fr/doc/00751/86306/

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rscd_islands	*Resourcecode islands coastline*

Description

This data contains the coastline of the islands used to run the RESOURCECODE hindcast, as data separated from the mainland. This will be mainly used for ploting purpose.

Usage

```
rscd_islands
```

Format

A data frame with 24403 rows and 3 columns:

longitude,latitude coordinates of the border line

depth depth of the border

ID Unique number used to identify the island

Source

User Manual of the RESOURCECODE database https://archimer.ifremer.fr/doc/00751/86306/

`rscd_spectral` *Resourcecode SPEC grid*

Description

This data contains the location and characteristics of the 24,276 nodes where the full 2D spectral data is available in the RESOURCECODE data.

Usage

```
rscd_spectral
```

Format

A data frame with 24,276 rows and 5 columns:

longitude, latitude coordinates of the nodes

name Name of the spectral output point

depth depth of the node

d50 Bottom sediment types

Source

User Manual of the RESOURCECODE database https://archimer.ifremer.fr/doc/00751/86306/

`rscd_stats` *Resourcecode statistical summary*

Description

on the whole period covered by the database, currently 1994-2023.

Usage

```
rscd_stats
```

Format

A data.frame with columns:

hs_mean Mean significant wave height

hs_max Maximal modeled significant wave height

tp_mean Mean peak wave period

wind_speed_mean Mean wind speed at 10m height

wind_speed_max Maximal wind speed at 10m height

cur_speed_mean Mean current speed at surface

cur_speed_max Maximal surface current speed at surface

Wave_Dp_MeanDir Mean wave direction from Dp (direction of mean vector)

Wind_MeanDir Mean wind direction at 10m height (direction of mean vector)

Cur_MeanDir Mean surface current direction (direction of mean vector)

@source User Manual of the RESOURCECODE database https://archimer.ifremer.fr/doc/00751/86306/ and computations made by Nicolas Raillard on original netCDF files.

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rscd_triangles	*Resourcecode triangles*

Description

This data contains the triangles of the unstructured computational mesh. This will be mainly used for ploting purpose.

Usage

```
rscd_triangles
```

Format

A matrix with 3 rows and 566506 columns:

rows verticies of the triangles

columns node number of each vertices

Source

User Manual of the RESOURCECODE database https://archimer.ifremer.fr/doc/00751/86306/

rscd_variables	*Resourcecode variable list*

Description

This data contains the variables available in the FIELD database.

Usage

```
rscd_variables
```

Format

A data frame with 88 rows and 3 columns:

name short name of the variable

longname Full name

unit Unit

Source

User Manual of the RESOURCECODE database https://archimer.ifremer.fr/doc/00751/86306/

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