

Package ‘kehra’

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Type Package

Title Collect, Assemble and Model Air Pollution, Weather and Health Data

Version 0.1

Date 2016-06-09

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URL https://github.com/kehraProject/r_kehra

BugReports https://github.com/kehraProject/r_kehra/issues

Description Collection of utility functions used in the KEHRA project (see <http://www.brunel.ac.uk/ife/britishcouncil>). It refers to the multidimensional analysis of air pollution, weather and health data.

Depends R (>= 2.14.0)

Imports Hmisc, raster, reshape2, stringr, sp, xts, zoo

License GPL-3

Repository CRAN

RoxygenNote 5.0.1

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Contents

kehra-package	2
fillMissingValues	3
getSeason	3
pointInspection	4
windDirection	5
windSpeed	5

Index	6
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 kehra-package

Collect, Assemble and Model Air Pollution, Weather and Health Data

Description

Collection of utility functions used in the KEHRA project (see <http://www.brunel.ac.uk/ife/britishcouncil>). It refers to the multidimensional analysis of air pollution, weather and health data.

Details

The DESCRIPTION file:

```

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```

Index of help topics:

```

fillMissingValues  Fill missing values
getSeason           Get season a date belongs to
kehra-package       Collect, Assemble and Model Air Pollution,
                    Weather and Health Data
pointInspection     Get data from ECMWF ERA_Interim
windDirection       Wind Direction
windSpeed           Wind Speed
  
```

Collection of utility functions used in the KEHRA project

Author(s)

Claudia Vitolo [aut, cre], Allan Tucker [aut], Andrew Russell [aut] Maintainer: Claudia Vitolo <cvitolodev@gmail.com>

fillMissingValues	<i>Fill missing values</i>
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Description

Fill missing values

Usage

```
fillMissingValues(ids, df, maxgap = 12, parallel = FALSE,  
  formatDT = "%Y-%m-%d %H:%M")
```

Arguments

ids	site identification codes
df	dataframe containing the timeseries in columns separated by ID (header must follow this convention: column 1 = "datetime", column 2 = "SiteID", column 3 = "variable name"). df can be the result of GetDataFromECMWF().
maxgap	maximum gap to interpolate (e.g. 6 hours)
parallel	Boolean, if TRUE parallel jobs are allowed
formatDT	format of the datetime variable

Value

updated df with infilled values

Examples

```
# fillMissingValues(clima)
```

getSeason	<i>Get season a date belongs to</i>
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Description

Get season a date belongs to. This function was taken from the following stackoverflow post: <http://stackoverflow.com/questions/9500114/find-which-season-a-particular-date-belongs-to>.

Usage

```
getSeason(DATES)
```

Arguments

DATES	a date.
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Value

returns the name of the season (e.g. "Fall")

Examples

```
# my.dates <- as.Date("2011-12-01", format = "%Y-%m-%d") + 0:60
# getSeason(my.dates)
```

pointInspection	<i>Get data from ECMWF ERA_Interim</i>
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Description

Get data from ECMWF ERA_Interim

Usage

```
pointInspection(years, points, var, prefix = "", path = "~",
  parallel = FALSE)
```

Arguments

years	years to retrieve data for
points	are lat/lon coordinates of points (e.g. stations)
var	variable to retrieve
prefix	string starting netcdf file name
path	folder path where netcdf files are stored
parallel	Boolean, if TRUE parallel jobs are allowed

Details

Possible variables names are: "t2m" (2m temperature, in K), "u10" (10 metres wind U component, in m/s), "v10" (10 metres wind V component, in m/s), "tp" (total precipitation, in m), "blh" (boundary layer height, in m), "ssr" (surface net solar radiation, in W/m2s).

Value

time series variable

Examples

```
# pointInspection(years = 1981:2014, points, var = "t2m")
```

windDirection	<i>Wind Direction</i>
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Description

Calculate wind direction in degrees from u & v components

Usage

```
windDirection(u, v)
```

Arguments

u	first component of wind speed
v	second component of wind speed

Value

direction in degrees from u & v components

Examples

```
# windDirection(u, v)
```

windSpeed	<i>Wind Speed</i>
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Description

Calculate wind speed in m/s from u & v components

Usage

```
windSpeed(u, v)
```

Arguments

u	first component of wind speed
v	second component of wind speed

Value

Speed in m/s

Examples

```
# windSpeed(u, v)
```

Index

*** package**

kehra-package, [2](#)

fillMissingValues, [3](#)

getSeason, [3](#)

kehra (kehra-package), [2](#)

kehra-package, [2](#)

pointInspection, [4](#)

windDirection, [5](#)

windSpeed, [5](#)