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

Author Claudia Vitolo [aut, cre], Allan Tucker [aut], Andrew Russell [aut]

Maintainer Claudia Vitolo <cvitolodev@gmail.com>

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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R topics documented:

kehra-package *Collect, Assemble and Model Air Pollution, Weather and Health Data*

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Details

The DESCRIPTION file:

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windDirection           Wind Direction
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```

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 *Fill missing values*

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	Bolean, if TRUE parallel jobs are allowed
formatDT	format of the datetime variable

Value

updated df with infilled values

Examples

```
# fillMissingValues(clima)
```

getSeason *Get season a date belongs to*

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.

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` *Get data from ECMWF ERA_Interim*

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`	Bolean, 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 *Wind Direction*

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 *Wind Speed*

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)
```

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