Package ‘meteor’

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Type Package
Title Meteorological Data Manipulation
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LinkingTo Rcpp
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Imports methods, Rcpp (>= 0.12.4)
Date 2019-08-07
Description A set of functions for weather and climate data manipulation, and other helper functions, to support dynamic ecological modelling, particularly crop and crop disease modeling.
License GPL (>= 3)

BugReports https://github.com/cropmodels/meteor/issues/
NeedsCompilation yes
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The meteor package

Description

This package contains a number of meteorological data manipulation functions. Some of these are also available in other R packages. The context of this package is to make the functions available from dynamic simulation models of crops and crop diseases.

dates

date manipulation

Description

Helper functions for manipulation of dates, including conversion between (day of year) (DOY) to date and back, and extraction of parts of a date.

Usage

dateFromDoy(doy, year)
doyFromDate(date)
dayFromDate(date)
monthFromDate(date)
yearFromDate(date)
isLeapYear(year)
daysInYear(year)

Arguments

doy integer. Day of the year (1..365) or (1..366) for leap years
year integer. Year, e.g. 1982
date Date object or character formatted 'yyyy-mm-dd', e.g. '1982-11-23'

Value

integer or Date

Examples

doy <- 88
year <- 1970
date <- dateFromDoy(doy, year)
dayFromDoy(-15, 2000)
doyFromDoy(date)
isLeapYear(2000)
daysInYear(2000)
daysInYear(1999)
Read or write FSE formatted weather data

Usage

readFSEwth(f)

Arguments

f    character. filename

Value

data.frame

generics  Generic functions

These are generic functions that are declared in this package but have no implementation here. They are to be used by packages that depend on this package.

photoperiod  photoperiod

Compute photoperiod (daylength, sunshine duration) at a given latitude and day of the year.

Usage

photoperiod(doy, latitude)

Arguments

doy    integer. Day of the year. Integer between 1 and 365
latitude    numeric. Latitude, in degrees, should be between -90 and 90
Value
double. Photoperiod in hours

References

Examples
photoperiod(50, 52)
photoperiod(50, 5)
photoperiod(180, 55)

p <- photoperiod(1:365, 52)
d <- dateFromDoy(1:365, 2001)
plot(d, p)

Description
Weather data

Objects from the Class
Objects can be created by calls of the form new("Weather", ...), or with the helper functions such as weather.

Slots
Slots of Weather objects
data: data.frame with the weather data
ID: character
name: character
country: character
longitude: numeric
latitude: numeric
elevation: numeric

Examples
showClass("Weather")
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