Package 'riem'

July 23, 2025

Type Package

Title Accesses Weather Data from the Iowa Environment Mesonet

Version 1.0.0

Description Allows to get weather data from Automated Surface Observing System (ASOS) stations (airports) in the whole world thanks to the Iowa Environment Mesonet website.

License GPL (>= 2)

URL https://docs.ropensci.org/riem/, https://github.com/ropensci/riem

BugReports https://github.com/ropensci/riem/issues

Imports cli, httr2, jsonlite (>= 0.9.19), lubridate (>= 1.9.0.9000), magrittr, purrr, rlang, tibble

Suggests dplyr, forecast, ggplot2, httptest2, knitr, rmarkdown, testthat (>= 3.0.0), weathermetrics, xts

Config/testthat/edition 3

Encoding UTF-8

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NeedsCompilation no

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`riem_measures` *Get weather data from one station*

Description

Get weather data from one station

Usage

```
riem_measures(
  station,
  date_start,
  ...,
  date_end = as.character(Sys.Date()),
  data = "all",
  elev = FALSE,
  latlon = FALSE,
  report_type = NULL
)
```

Arguments

`station`	station ID, see riem_stations()
`date_start`	date of start of the desired data, e.g. "2016-01-01"
`...`	These dots are for future extensions and must be empty.
`date_end`	date of end of the desired data, e.g. "2016-04-22". Default value is today. # nolint: line_length_linter
`data`	A vector of strings, representing the data columns to return. The available options are: all, tmpf, dwpf, relh, drct, sknt, p01i, alti, mslp, vsby, gust, skyc1, skyc2, skyc3, skyc4, skyl1, skyl2, skyl3, skyl4, wxcodes, ice_accretion_1hr, ice_accretion_3hr, ice_accretion_6hr, peak_wind_gust, peak_wind_drct, peak_wind_time, feel, metar, snowdepth # nolint: line_length_linter Default value is ‘all‘.
`elev`	If TRUE, the elevation (m) of the station will be included in the output, in an ‘elevation‘ column. # nolint: line_length_linter Default value is ‘FALSE‘.
`latlon`	Default to ‘FALSE‘ since riem 1.0.0. If ‘TRUE‘, the latitude and longitude of the station will be included in the output, in ‘lat‘ and ‘lon‘ columns. # nolint: line_length_linter Default value is ‘FALSE‘.
`report_type`	A vector of strings, representing report types to query. The available options are ‘"hfmetar"‘, ‘"routine"‘, ‘"specials"‘. Default value is ‘c("routine", "specials")‘.

Details

The data is queried through https://mesonet.agron.iastate.edu/request/download.phtml.# nolint: line_length_linter

Value

a data.frame (tibble tibble) with measures, the number of columns can vary from station to station, but possible variables are

- station: three or four character site identifier
- valid: timestamp of the observation (UTC)
- tmpf: Air Temperature in Fahrenheit, typically @ 2 meters
- dwpf: Dew Point Temperature in Fahrenheit, typically @ 2 meters
- relh: Relative Humidity in
- drct: Wind Direction in degrees from north
- sknt: Wind Speed in knots
- p01i: One hour precipitation for the period from the observation time to the time of the previous hourly precipitation reset. This varies slightly by site. Values are in inches. This value may or may not contain frozen precipitation melted by some device on the sensor or estimated by some other means. Unfortunately, we do not know of an authoritative database denoting which station has which sensor.
- alti: Pressure altimeter in inches
- mslp: Sea Level Pressure in millibar
- vsby: Visibility in miles
- gust: Wind Gust in knots
- skyc1: Sky Level 1 Coverage
- skyc2: Sky Level 2 Coverage
- skyc3: Sky Level 3 Coverage
- skyc4: Sky Level 4 Coverage
- skyl1: Sky Level 1 Altitude in feet
- skyl2: Sky Level 2 Altitude in feet
- skyl3: Sky Level 3 Altitude in feet
- skyl4: Sky Level 4 Altitude in feet
- presentwx: Present Weather Codes (space seperated), see e.g. Chapter 8 of [this manual](https://www.ofcm.gov/publica for further explanations.# nolint: line_length_linter
- feel: Apparent Temperature (Wind Chill or Heat Index) in degF
- ice_accretion_1hr: Ice Accretion over 1 Hour in inch
- ice_accretion_3hr: Ice Accretion over 3 Hour in inch
- ice_accretion_6hr: Ice Accretion over 6 Hour in inch
- relh: Relative Humidity in

- metar: unprocessed reported observation in METAR format
- peak_wind_gust: Wind gust in knots from the METAR PK WND remark, this value may be different than the value found in the gust field. The gust field is derived from the standard METAR wind report.
- peak_wind_drct: The wind direction in degrees North denoted in the METAR PK WND remark.
- peak_wind_time: The timestamp of the PK WND value in the same timezone as the valid field and controlled by the tz parameter.

Examples

```
## Not run:
riem_measures(
  station = "VOHY",
  date_start = "2016-01-01",
  date_end = "2016-04-22"
)

## End(Not run)
```

`riem_networks` *Get ASOS and AWOS networks*

Description

Get ASOS and AWOS networks

Usage

```
riem_networks()
```

Value

a data.frame (tibble tibble) with the names and codes of available networks.

Examples

```
## Not run:
riem_networks()

## End(Not run)
```

`riem_stations` *Get stations of an ASOS network*

Description

Get stations of an ASOS network

Usage

```
riem_stations(network)
```

Arguments

`network`	A single network code, see riem_networks() for finding the code corresponding to a name.

Details

You can see a map of stations in a network at https://mesonet.agron.iastate.edu/request/download.phtml.

Value

a data.frame (tibble tibble) with the id, name, longitude (lon) and latitude (lat) of each station in the network.

Examples

```
## Not run:
riem_stations(network = "IN__ASOS")

## End(Not run)
```

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