

Package ‘rmet’

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Type Package

Title Download and Read Brazilian Meteorological Data from INMET

Version 0.2.0

Description Automates the download and processing of historical weather data from the Brazilian National Institute of Meteorology (INMET). It provides a cached catalogue of automatic stations, resumable and validated downloads, and parsers for formatting inconsistencies in raw CSV files across different years. It removes structural artifacts, standardizes column names, parses timestamps, and returns data frames ready for analysis. Data are retrieved from
<<https://portal.inmet.gov.br/dadoshistoricos>> and
<<https://apitempo.inmet.gov.br/estacoes/T>>.

Depends R (>= 4.0.0)

Encoding UTF-8

LazyData true

Language en-US

License GPL (>= 3)

URL <https://github.com/rodrigorsqrt3/rmet>

BugReports <https://github.com/rodrigorsqrt3/rmet/issues>

RoxygenNote 7.3.3

Imports curl, jsonlite

Suggests spelling, testthat (>= 3.0.0), knitr, rmarkdown

VignetteBuilder knitr

Config/testthat/edition 3

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inmet_cache_clear	<i>Clear the rmet cache</i>
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Description

Clear the rmet cache

Usage

```
inmet_cache_clear(  
  years = NULL,  
  dest_dir = tools::R_user_dir("rmet", "cache"),  
  ask = interactive(),  
  catalog = FALSE  
)
```

Arguments

- years Integer years to remove, or NULL for every archive.
- dest_dir Cache directory.
- ask Ask for confirmation before deleting.
- catalog Also remove the cached official station catalogue.

Value

Invisible NULL.

inmet_cache_status	<i>Inspect downloaded INMET archives</i>
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Description

Inspect downloaded INMET archives

Usage

```
inmet_cache_status(dest_dir = tools::R_user_dir("rmet", "cache"))
```

Arguments

dest_dir Cache directory used by `inmet_download()`.

Value

Invisibly, a data frame with archive year, path, size, validity, and whether a partial download exists.

inmet_download	<i>Download INMET historical data archives</i>
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Description

Downloads one or more annual ZIP files from INMET's historical data portal. Complete archives already in the cache are reused. Interrupted downloads are kept in a .part file and resumed on the next attempt.

Usage

```
inmet_download(
  years = as.integer(format(Sys.Date(), "%Y")),
  dest_dir = tools::R_user_dir("rmet", "cache"),
  max_tries = 15L,
  quiet = FALSE,
  force = FALSE
)
```

Arguments

years	Integer vector of years to download. Available years start in 2000. Defaults to the current year.
dest_dir	Character. Cache directory. It is created when necessary.
max_tries	Positive integer. Maximum attempts per year.
quiet	Logical. Suppress progress messages.
force	Logical. Download again even when a valid archive is cached.

Details

Files are first written to <year>.zip.part. A partial file is never exposed as a complete ZIP. After an integrity check succeeds, the file is atomically moved to <year>.zip whenever the operating system permits it.

Value

Invisibly, a named character vector containing the paths of all successfully downloaded archives.

See Also

[inmet_read\(\)](#), [inmet_get\(\)](#), [inmet_extract\(\)](#)

Examples

```
paths <- inmet_download(2023, dest_dir = tempdir())
```

inmet_extract	<i>Extract INMET archives</i>
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Description

Extract INMET archives

Usage

```
inmet_extract(
  years,
  dest_dir = tools::R_user_dir("rmet", "cache"),
  out_dir = file.path(dest_dir, "csv"),
  overwrite = FALSE,
  quiet = FALSE
)
```

Arguments

years	Integer years to extract.
dest_dir	Directory containing annual ZIP files.
out_dir	Destination directory.
overwrite	Overwrite existing files.
quiet	Suppress progress messages.

Value

Invisibly, paths returned by [utils::unzip\(\)](#).

inmet_get

Download and read INMET data in one call

Description

This is the recommended high-level interface. It downloads missing annual archives, reuses valid cached files, and returns the result of [inmet_read\(\)](#).

Usage

```
inmet_get(  
  years,  
  stations = NULL,  
  dest_dir = tools::R_user_dir("rmet", "cache"),  
  tz = "UTC",  
  variables = NULL,  
  start_date = NULL,  
  end_date = NULL,  
  max_tries = 15L,  
  force = FALSE,  
  quiet = FALSE  
)
```

Arguments

years	Integer vector of years.
stations	Optional station codes. Matching is case-insensitive.
dest_dir	Directory containing <year>.zip archives.
tz	Output time zone. Defaults to "UTC", the time standard used in the source files. Any name in OlsonNames() is accepted.
variables	Optional meteorological columns to retain.
start_date, end_date	Optional inclusive date limits in YYYY-MM-DD format, interpreted in tz.
max_tries	Maximum download attempts per year.
force	Download archives again even if they are valid.
quiet	Suppress progress messages.

Value

A data frame as documented in [inmet_read\(\)](#).

Examples

```
weather <- inmet_get(
  years = 2023,
  stations = "A801",
  variables = c("temp_dry_c", "precip_mm"),
  dest_dir = tempdir()
)
```

inmet_read

Read cached INMET historical data

Description

Parses CSV files inside annual INMET archives into a consistent data frame.

Usage

```
inmet_read(
  years,
  stations = NULL,
  dest_dir = tools::R_user_dir("rmet", "cache"),
  tz = "UTC",
  variables = NULL,
  start_date = NULL,
  end_date = NULL,
  quiet = FALSE
)
```

Arguments

years	Integer vector of years.
stations	Optional station codes. Matching is case-insensitive.
dest_dir	Directory containing <year>.zip archives.
tz	Output time zone. Defaults to "UTC", the time standard used in the source files. Any name in OlsonNames() is accepted.
variables	Optional meteorological columns to retain.
start_date, end_date	Optional inclusive date limits in YYYY-MM-DD format, interpreted in tz.
quiet	Suppress progress messages.

Value

A data frame. Identifier and station metadata columns are always retained when data are available.

See Also

`inmet_get()`, `inmet_download()`, `inmet_stations()`

Examples

```
df <- inmet_read(2023, stations = "A801", dest_dir = tempdir())
```

inmet_stations	<i>Search the INMET automatic-station catalogue</i>
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Description

Returns automatic weather stations published by INMET. By default, the function uses a cached copy of the official API response and refreshes stale caches periodically. If the service is unavailable, it falls back to an older cache or to the smaller catalogue bundled with the package.

Usage

```
inmet_stations(
  region = NULL,
  state = NULL,
  search = NULL,
  status = NULL,
  entity = NULL,
  source = c("auto", "remote", "bundled"),
  refresh = FALSE,
  max_age = 30,
  cache_dir = tools::R_user_dir("rmet", "cache"),
  quiet = FALSE
)
```

Arguments

<code>region</code> , <code>state</code>	Optional region or state abbreviations.
<code>search</code>	Optional literal text contained in the station name or code.
<code>status</code>	Optional operational status, such as "Operante" or "Pane".
<code>entity</code>	Optional station owner/provider, such as "INMET".
<code>source</code>	One of "auto", "remote", or "bundled". "auto" uses the cache, then the official API, then the bundled fallback.
<code>refresh</code>	Force a fresh request to the official API.
<code>max_age</code>	Maximum cache age in days before an automatic refresh.
<code>cache_dir</code>	Directory used for the catalogue cache.
<code>quiet</code>	Suppress informational messages.

Value

A data frame with station code, name, region, state, coordinates, altitude, operational dates and status, and provider metadata. The legacy `start_year` column is retained for compatibility.

See Also

`inmet_get()`, `inmet_read()`

Examples

```
# Offline, reproducible example using the bundled fallback
inmet_stations(state = "RS", source = "bundled")

# Current official catalogue (downloaded once and then cached)
inmet_stations(state = "RS", refresh = TRUE, cache_dir = tempdir())
```

`rmet_example`*Hourly weather data from INMET station A801 (Porto Alegre), 2023*

Description

A dataset containing one year of hourly meteorological observations from the automatic station A801 (Porto Alegre, RS), downloaded from INMET.

Usage

```
rmet_example
```

Format

A data frame with columns as returned by `inmet_read()`. See `?inmet_read` for the full variable reference.

Source

INMET – Instituto Nacional de Meteorologia

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* **datasets**

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