Package 'mdftracks'

February 6, 2017

Type Package

Title Read and Write 'MTrackJ Data Files'

Version 0.2.0

Description 'MTrackJ' is an 'ImageJ' plugin for motion tracking and analysis (see <https://imagescience.org/meijering/software/mtrackj/>). This package reads and writes 'MTrackJ Data Files' ('.mdf', see <https://imagescience.org/meijering/software/mtrackj/format/>). It supports 2D data and read/writes cluster, point, and channel information. If desired, generates track identifiers that are unique over the clusters.
See the project page for more information and examples.

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LazyData TRUE

Depends R (>= 2.10)

Imports hellno

URL https://github.com/burgerga/mdftracks

BugReports https://github.com/burgerga/mdftracks/issues

RoxygenNote 6.0.0

Suggests testthat, tools

NeedsCompilation no

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Repository CRAN

Date/Publication 2017-02-06 14:33:22

R topics documented:

`mdftracks` *mdftracks: Read and Write MTrackJ Data Files*

Description

Reads and writes MTrackJ Data Files (`.mdf`). Supports clusters, 2D data, and channel information. If desired, generates unique track identifiers based on cluster and id data from the `.mdf` file.

See Also

MTrackJ Data Format

`mdftracks.example.data`

Example data to show mdftracks functionality

Description

Example data to show mdftracks functionality

Usage

```
mdftracks.example.data
```

Format

A data frame with 10 rows and 9 variables

cl track cluster

id track identifier (in cluster)

p point in track (not necessarily the same as frame number)

x x-coordinate of point

y y-coordinate of point

z z-coordinate of point

t time of point

ch track channel

uid track identifier (unique over clusters)

Source

Self-generated

read.mdf *Read an MTrackJ Data File (.mdf)*

Description

Reads an MTrackJ Data File (.mdf) file in a data.frame.

Usage

```
read.mdf(file, drop.Z = F, include.point.numbers = FALSE,
  include.channel = F, generate.unique.ids = F, text, fileEncoding = "")
```

Arguments

file	MTrackJ Data File (.mdf) file with tracking data.
drop.Z	drop z-coordinate (for 2D data)
include.point.numbers	include the point numbers in the mdf file (**NB** these can be different from the time/frame points)
include.channel	include channel information
generate.unique.ids	combine cluster and id columns to get unique ids
text	character string: if file is not supplied and this is, then data are read from the value of text via a text connection. Notice that a literal string can be used to include (small) data sets within R code.
fileEncoding	character string: if non-empty declares the encoding to be used on a file (not a connection) so the character data can be re-encoded as they are written. See base::file().

See Also

MTrackJ Data Format

Other mdftracks functions: write.mdf

Examples

```
read.mdf(system.file("extdata", "example.mdf", package = 'mdftracks'))
```

write.mdf *Write an MTrackJ Data File (.mdf)*

Description

Writes a data.frame with tracking information as an MTrackJ Data File (.mdf) file. Allows flexible column specification, and to avoid errors the column mapping used for writing is reported back to the user. Writing tracking data in 'id time x y z' format, for example, from the MotilityLab package, doesn't require additional arguments.

Usage

```
write.mdf(x, file = "", cluster.column = NA, id.column = 1,
  time.column = 2, scale.time = 1, pos.columns = c(3, 4, 5),
  channel.column = NA, point.column = NA, default.channel = 1,
  fileEncoding = "")
```

Arguments

x	the data.frame with track information.
file	either a character string naming a file or a connection open for writing. "" indicates output to the console.
cluster.column	index or name of the column that contains the cluster ID.
id.column	index or name of the column that contains the track ID (either the id in the cluster or a unique id).
time.column	index or name of the column that contains elapsed time
scale.time	a value by which to multiply each time point. Useful for changing units, or specifying the time between positions if the time is given in frames.
pos.columns	vector containing indices or names of the columns that contain the spatial coordinates. If this vector has two entries, the data is assumed to be 2D and the z coordinate is set to 1.0.
channel.column	index or name of the column that contains channel information. If there is no channel column default.channel will be used.
point.column	index or name of the column that contains point ID. If there is no point column, points will be numbered automatically (**NB** points are not necessarily the same as frames).
default.channel	channel to be used if channel.column is not specified.
fileEncoding	character string: if non-empty declares the encoding to be used on a file (not a connection) so the character data can be re-encoded as they are written. See base::file().

See Also

MTrackJ Data Format

Other mdftracks functions: `read.mdf`

Examples

```
## Not run:
# Output to file
write.mdf(mdftracks.example.data, '~/example.mdf', id.column = 'uid',
          time.column = 't', pos.columns = letters[24:26])

## End(Not run)

# Output to stdout with cluster column
write.mdf(mdftracks.example.data, cluster.column = 'cl',
          id.column = 'id', time.column = 't', pos.columns = letters[24:26])

# Output to stdout using data in (id, t, x, y, z) format
write.mdf(mdftracks.example.data[, c('uid', 't', letters[24:26])])
```

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