Package: align (via r-universe)

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Type Package

Title A Modified DTW Algorithm for Stratigraphic Time Series Alignment

Version 0.1.0

Author Cedric Hagen

Maintainer Cedric Hagen <ch0934@princeton.edu>

Description A dynamic time warping (DTW) algorithm for stratigraphic alignment, translated into R from the original published 'MATLAB' code by Hay et al. (2019) <doi:10.1130/G46019.1>. The DTW algorithm incorporates two geologically relevant parameters (g and edge) for augmenting the typical DTW cost matrix, allowing for a range of sedimentologic and chronologic conditions to be explored, as well as the generation of an alignment library (as opposed to a single alignment solution). The g parameter relates to the relative sediment accumulation rate between the two time series records, while the edge parameter relates to the amount of total shared time between the records. Note that this algorithm is used for all DTW alignments in the Align Shiny application, detailed in Hagen et al. (in review).

Imports matlab, stats

License GPL-3

Encoding UTF-8

LazyData true

RoxygenNote 7.2.3

Depends R (>= 2.10)

NeedsCompilation no

Repository CRAN

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Contents

candidate_data 2
dtw_r 2
target_data 3

Index **4**

`candidate_data` *Synthetic Candidate Data*

Description

A synthetic record, resembling d13C data, for testing the DTW algorithm

Usage

```
candidate_data
```

Format

'candidate_data' An array with 50 rows and 2 columns:

d13c Synthetic d13C values

m Synthetic meterage values ...

Source

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`dtw_r` *dtw_r*

Description

dtw_r

Usage

```
dtw_r(target, candidate, g, edge)
```

Arguments

`target`	The target time series
`candidate`	The candidate time series
`g`	The g parameter value for alignment
`edge`	The edge parameter value for alignment

Value

The aligned candidate dataset (ri,t_out) and the corresponding Pearson's correlation coefficient (xc).

Examples

```
dtw_r(target_data,candidate_data,0.98,0.15)
```

`target_data` *Synthetic Target Data*

Description

A synthetic record, resembling d13C data, for testing the DTW algorithm

Usage

```
target_data
```

Format

'target_data' An array with 251 rows and 2 columns:

d13c Synthetic d13C values

m Synthetic meterage values ...

Source

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Index

∗ **datasets**
candidate_data, 2
target_data, 3

candidate_data, 2

dtw_r, 2

target_data, 3