Package 'shinyTempSignal'

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Title Explore Temporal Signal of Molecular Phylogenies

Version 0.0.2

Description
Sequences sampled at different time points can be used to infer molecular phylogenies on natural time scales, but if the sequences records inaccurate sampling times, that are not the actual sampling times, then it will affect the molecular phylogenetic analysis. This shiny application helps exploring temporal characteristics of the evolutionary trees through linear regression analysis and with the ability to identify and remove incorrect labels.

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Depends R (>= 3.3.0)

Imports ape, aTSA, Cairo, config (>= 0.3.1), forecast, ggplot2, ggpubr, ggtree, golem (>= 0.3.1), shiny (>= 1.6.0), shinydashboard, shinyjs, stringr, treeio, TSA

Suggests attempt, conflicted, DT, glue, htmltools, processx, testthat (>= 3.0.0), thinkr

Encoding UTF-8

RoxygenNote 7.1.2

Config/testthat/edition 3

NeedsCompilation no

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R topics documented:

`dateNumeric` *Convert dates according to date format*

Description

Convert dates according to date format

Usage

```
dateNumeric(date, format)
```

Arguments

`date`	input a data extracted from labels, character
`format`	input format of the date, character

Value

Returns a date of numeric type, numeric

Examples

```
dateNumeric(date="1999-12-07", format="yyyy-MM-dd")
```

`dateType1` *Method 1 for finding the date inside the label*

Description

Method 1 for finding the date inside the label

Usage

```
dateType1(tree, order)
```

Arguments

tree	A tree of sequences, phylo
order	Location of the date, character or numeric

Value

date, character

Examples

```
data("MCC_FluA_H3_tree")
dateType1(MCC_FluA_H3_tree, "last")
```

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dateType2 *Method 2 for finding the date inside the label*

Description

Method 2 for finding the date inside the label

Usage

```
dateType2(tree, order, prefix)
```

Arguments

tree	A tree of sequences, phylo
order	Location of the date, character or numeric
prefix	prefix for dates, character

Value

date, character

Examples

```
data("MCC_FluA_H3_tree")
dateType2(MCC_FluA_H3_tree, "last","/")
```

dateType3 *Method 3 for finding the date inside the label*

Description

Method 3 for finding the date inside the label

Usage

```
dateType3(tree, pattern)
```

Arguments

tree	A tree of sequences, phylo
pattern	Canonical matching command, character

Value

date, character

Examples

```
data("MCC_FluA_H3_tree")
dateType3(MCC_FluA_H3_tree, "(?<=/)\\d+$")
```

getdivergence *Calculating the divergence of sequences*

Description

Calculating the divergence of sequences

Usage

```
getdivergence(tree, date, method)
```

Arguments

tree	A tree of sequences, phylo
date	dates of numeric type, numeric
method	one of "correlation", "rms", or "rsquared", character

Value

the divergence of sequences, data.frame

Examples

```
data("MCC_FluA_H3_tree")
date <- dateType3(MCC_FluA_H3_tree, "(?<=/)\\d+$")
date <- dateNumeric(date, "yyyy")
getdivergence(MCC_FluA_H3_tree, date, "rms")
```

MCC_FluA_H3_tree *Example data: a tree of 76 H3 hemagglutinin gene sequences of a lineage containing swine and human influenza A viruses*

Description

This example data was reported on Liang et al. 2014

Format

a tree with 76 sequences

Value

a tree, phylo

Examples

```
data(MCC_FluA_H3_tree)
```

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meangroup *Combining data from the same years*

Description

Combining data from the same years

Usage

```
meangroup(d)
```

Arguments

d	a data frame with "time" in the column name

Value

The processed data frame, data.frame

Examples

```
x <- c(1999, 2002  ,2005, 2000,2004 ,2004, 1999)
y <- c(1, 1.5, 2, 3 ,4 ,5 ,6)
d <- data.frame(time=x, score=y)
meangroup(d)
```

`run_shinyTempSignal` *Run the Shiny Application*

Description

Run the Shiny Application

Usage

```
run_shinyTempSignal(
  onStart = NULL,
  options = list(),
  enableBookmarking = NULL,
  uiPattern = "/",
  ...
)
```

Arguments

`onStart`	A function that will be called before the app is actually run. This is only needed for `shinyAppObj`, since in the `shinyAppDir` case, a `global.R` file can be used for this purpose.
`options`	Named options that should be passed to the `runApp` call (these can be any of the following: "port", "launch.browser", "host", "quiet", "display.mode" and "test.mode"). You can also specify `width` and `height` parameters which provide a hint to the embedding environment about the ideal height/width for the app.
`enableBookmarking`	Can be one of `"url"`, `"server"`, or `"disable"`. The default value, `NULL`, will respect the setting from any previous calls to `enableBookmarking()`. See `enableBookmarking()` for more information on bookmarking your app.
`uiPattern`	A regular expression that will be applied to each `GET` request to determine whether the `ui` should be used to handle the request. Note that the entire request path must match the regular expression in order for the match to be considered successful.

...	arguments to pass to golem_opts. See '?golem::get_golem_options' for more details.

Value

Shiny application object

Examples

```
if (interactive()) {run_shinyTempSignal()}
```

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