

# Package ‘shinyTempSignal’

October 14, 2022

**Title** Explore Temporal Signal of Molecular Phylogenies

**Version** 0.0.3

**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.

**License** GPL-3

**Depends** R (>= 3.3.0)

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

**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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dateNumeric	<i>Convert dates according to date format</i>
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### 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")
```

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dateType1	<i>Method 1 for finding the date inside the label</i>
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### 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	<i>Method 2 for finding the date inside the label</i>
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**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*

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### 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*

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### 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")
```

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MCC_FluA_H3_tree	<i>Example data: a tree of 76 H3 hemagglutinin gene sequences of a lineage containing swine and human influenza A viruses</i>
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**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	<i>Combining data from the same years</i>
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**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)
```

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run\_shinyTempSignal    *Run the Shiny Application*

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**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 <a href="#">enableBookmarking()</a> . See <a href="#">enableBookmarking()</a> 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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