

Package ‘tracrer’

October 14, 2022

Type Package

Title Tracer from R

Version 2.2.2

Maintainer Richèl J.C. Bilderbeek <richel@richelbilderbeek.nl>

Description 'BEAST2' (<<https://www.beast2.org>>) is a widely used Bayesian phylogenetic tool, that uses DNA/RNA/protein data and many model priors to create a posterior of jointly estimated phylogenies and parameters.

'Tracer' (<<https://github.com/beast-dev/tracer/>>) is a GUI tool to parse and analyze the files generated by 'BEAST2'.

This package provides a way to parse and analyze 'BEAST2' input files without active user input, but using R function calls instead.

License GPL-3

Imports jsonlite, Rcpp, testit

Suggests ape, ggplot2, hunspell, knitr, markdown, phangorn, rappdirs, rbenchmark, reshape2, rmarkdown, spelling, stringr, testthat (>= 2.1.0)

VignetteBuilder knitr

RoxygenNote 7.1.1

URL <https://docs.ropensci.org/tracrer/> (website)

<https://github.com/ropensci/tracrer/>

BugReports <https://github.com/ropensci/tracrer/issues>

LinkingTo Rcpp

Language en-US

Encoding UTF-8

NeedsCompilation yes

Author Richèl J.C. Bilderbeek [aut, cre]

(<<https://orcid.org/0000-0003-1107-7049>>),

Joëlle Barido-Sottani [rev] (Joëlle reviewed the package for rOpenSci,

see <https://github.com/ropensci/onboarding/issues/209>),
 David Winter [rev] (David reviewed the package for rOpenSci, see
<https://github.com/ropensci/onboarding/issues/209>)

Repository CRAN

Date/Publication 2021-05-30 09:40:03 UTC

R topics documented:

calc_act	3
calc_act_cpp	4
calc_act_r	4
calc_ess	5
calc_esses	6
calc_geom_mean	7
calc_hpd_interval	7
calc_mode	8
calc_stderr_mean	9
calc_std_error_of_mean_cpp	10
calc_summary_stats	10
calc_summary_stats_trace	12
calc_summary_stats_traces	13
check_trace	14
count_trees_in_file	14
cs_std_dev	15
default_params_doc	15
extract_operators_lines	16
get_tracerer_path	17
get_tracerer_paths	18
get_tracerer_tempfilename	19
is_posterior	19
is_trees_file	20
is_trees_posterior	21
parse_beast_log	21
parse_beast_output_files	22
parse_beast_posterior	23
parse_beast_state_operators	24
parse_beast_tracelog_file	25
parse_beast_trees	26
remove_burn_in	26
remove_burn_ins	27
save_beast_estimates	28
save_beast_trees	28
tracerer	29

Index

30

calc_act	<i>Calculate the auto-correlation time, alternative implementation</i>
----------	--

Description

Calculate the auto-correlation time, alternative implementation

Usage

```
calc_act(trace, sample_interval)
```

Arguments

trace	the values
sample_interval	the interval in timesteps between samples

Value

the auto_correlation time

Author(s)

The original Java version of the algorithm was from Remco Bouckaert, ported to R and adapted by Richèl J.C. Bilderbeek

See Also

Java code can be found here: <https://github.com/CompEvol/beast2/blob/9f040ed0357c4b946ea276a481a4c654ad4f/src/beast/core/util/ESS.java#L161> # nolint URLs can be long

Examples

```
trace <- sin(seq(from = 0.0, to = 2.0 * pi, length.out = 100))
# 38.18202
calc_act(trace = trace, sample_interval = 1)
```

calc_act_cpp	<i>Calculate the auto correlation time from https://github.com/beast-dev/beast-mcmc/blob/800817772033c13061f026226e41128d21fd14f3/src/dr/inference/trace/TraceCorrelation.java#L159 # nolint</i>
--------------	--

Description

Calculate the auto correlation time from <https://github.com/beast-dev/beast-mcmc/blob/800817772033c13061f026226e41128d21fd14f3/src/dr/inference/trace/TraceCorrelation.java#L159> # nolint

Usage

```
calc_act_cpp(sample, sample_interval)
```

Arguments

sample	sample
sample_interval	sample interval

Value

the auto correlation time

Author(s)

Richèl J.C. Bilderbeek

calc_act_r	<i>Calculate the auto-correlation time using only R. Consider using calc_act instead, as it is orders of magnitude faster</i>
------------	---

Description

Calculate the auto-correlation time using only R. Consider using [calc_act](#) instead, as it is orders of magnitude faster

Usage

```
calc_act_r(trace, sample_interval)
```

Arguments

trace the values
sample_interval the interval in timesteps between samples

Value

the auto correlation time

Author(s)

The original Java version of the algorithm was from Remco Bouckaert, ported to R and adapted by Richèl J.C. Bilderbeek

See Also

Java code can be found here: <https://github.com/CompEvol/beast2/blob/9f040ed0357c4b946ea276a481a4c654ad4f/src/beast/core/util/ESS.java#L161> # nolint URLs can be long

Examples

```
trace <- sin(seq(from = 0.0, to = 2.0 * pi, length.out = 100))  
calc_act_r(trace = trace, sample_interval = 1) # 38.18202
```

calc_ess	<i>Calculates the Effective Sample Size</i>
----------	---

Description

Calculates the Effective Sample Size

Usage

```
calc_ess(trace, sample_interval)
```

Arguments

trace the values without burn-in
sample_interval the interval in timesteps between samples

Value

the effective sample size

Author(s)

The original Java version of the algorithm was from Remco Bouckaert, ported to R and adapted by Richèl J.C. Bilderbeek

See Also

Java code can be found here: <https://github.com/CompEvol/beast2/blob/9f040ed0357c4b946ea276a481a4c654ad4f/src/beast/core/util/ESS.java#L161> # nolint URLs can be long

Examples

```
filename <- get_tracerer_path("beast2_example_output.log")
estimates <- parse_beast_tracelog_file(filename)
calc_ess(estimates$posterior, sample_interval = 1000)
```

calc_esses

Calculates the Effective Sample Sizes from a parsed BEAST2 log file

Description

Calculates the Effective Sample Sizes from a parsed BEAST2 log file

Usage

```
calc_esses(traces, sample_interval)
```

Arguments

traces a dataframe with traces with removed burn-in
sample_interval the interval in timesteps between samples

Value

the effective sample sizes

Author(s)

Richèl J.C. Bilderbeek

Examples

```
# Parse an example log file
estimates <- parse_beast_tracelog_file(
  get_tracerer_path("beast2_example_output.log")
)

# Calculate the effective sample sizes of all parameter estimates
calc_esses(estimates, sample_interval = 1000)
```

calc_geom_mean	<i>Calculate the geometric mean</i>
----------------	-------------------------------------

Description

Calculate the geometric mean

Usage

```
calc_geom_mean(values)
```

Arguments

values a numeric vector of values

Value

returns the geometric mean if all values are at least zero, else returns NA

Author(s)

Richèl J.C. Bilderbeek

calc_hpd_interval	<i>Calculate the Highest Probability Density of an MCMC trace that has its burn-in removed</i>
-------------------	--

Description

Calculate the Highest Probability Density of an MCMC trace that has its burn-in removed

Usage

```
calc_hpd_interval(trace, proportion = 0.95)
```

Arguments

trace a numeric vector of parameter estimates obtained from an MCMC run. Must have its burn-in removed

proportion the proportion of numbers within the interval. For example, use 0.95 for a 95 percentage interval

Value

a numeric vector, with at index 1 the lower boundary of the interval, and at index 2 the upper boundary of the interval

Author(s)

The original Java version of the algorithm was from J. Heled, ported to R and adapted by Richèl J.C. Bilderbeek

See Also

The function `remove_burn_in` removes a burn-in. The Java code that inspired this function can be found here: <https://github.com/beast-dev/beast-mcmc/blob/98705c59db65e4f406a420bbade949aeecfe05d0/src/dr/stats/DiscreteStatistics.java#L317> # nolint URLs can be long

Examples

```
estimates <- parse_beast_tracelog_file(
  get_tracerer_path("beast2_example_output.log")
)
tree_height_trace <- remove_burn_in(
  estimates$TreeHeight,
  burn_in_fraction = 0.1
)

# Values will be 0.453 and 1.816
calc_hpd_interval(tree_height_trace, proportion = 0.95)
```

calc_mode

Calculate the mode of values If the distribution is bi or multimodal or uniform, NA is returned

Description

Calculate the mode of values If the distribution is bi or multimodal or uniform, NA is returned

Usage

```
calc_mode(values)
```

Arguments

values numeric vector to calculate the mode of

Value

the mode of the trace

Author(s)

Richèl J.C. Bilderbeek

Examples

```
# In a unimodal distribution, find the value that occurs most
calc_mode(c(1, 2, 2))
calc_mode(c(1, 1, 2))

# For a uniform distribution, NA is returned
tracerer:::calc_mode(c(1, 2))
```

calc_stderr_mean	<i>Calculate the standard error of the mean</i>
------------------	---

Description

Calculate the standard error of the mean

Usage

```
calc_stderr_mean(trace)
```

Arguments

trace the values

Value

the standard error of the mean

Author(s)

The original Java version of the algorithm was from Remco Bouckaert, ported to R and adapted by Richèl J.C. Bilderbeek

See Also

Java code can be found here: <https://github.com/beast-dev/beast-mcmc/blob/800817772033c13061f026226e41128src/dr/inference/trace/TraceCorrelation.java#L159> # nolint URLs can be long

Examples

```
trace <- sin(seq(from = 0.0, to = 2.0 * pi, length.out = 100))
calc_stderr_mean(trace) # 0.4347425
```

calc_std_error_of_mean_cpp

Calculates the standard error of the mean

Description

Calculates the standard error of the mean

Usage

```
calc_std_error_of_mean_cpp(sample)
```

Arguments

sample numeric vector of values

Value

the standard error of the mean

Author(s)

Richèl J.C. Bilderbeek

calc_summary_stats

Calculates the Effective Sample Sizes of one estimated variable's trace.

Description

Calculates the Effective Sample Sizes of one estimated variable's trace.

Usage

```
calc_summary_stats(traces, sample_interval)
```

Arguments

traces one or more traces, supplies as either, (1) a numeric vector or, (2) a data frame of numeric values.

sample_interval the interval (the number of state transitions between samples) of the MCMC run that produced the trace. Using a different sample_interval than the actually used sampling interval will result in bogus return values.

Value

the summary statistics of the traces. If one numeric vector is supplied, a list is returned with the elements listed below. If the traces are supplied as a data frame, a data frame is returned with the elements listed below as column names.

The elements are:

- mean: mean
- stderr_mean: standard error of the mean
- stdev: standard deviation
- variance: variance
- mode: mode
- geom_mean: geometric mean
- hpd_interval_low: lower bound of 95% highest posterior density
- hpd_interval_high: upper bound of 95% highest posterior density
- act: auto correlation time
- ess: effective sample size

Note

This function assumes the burn-in is removed. Use [remove_burn_in](#) (on a vector) or [remove_burn_ins](#) (on a data frame) to remove the burn-in.

Author(s)

Richèl J.C. Bilderbeek

See Also

Use [calc_summary_stats_trace](#) to calculate the summary statistics of one trace (stored as a numeric vector). Use [calc_summary_stats_traces](#) to calculate the summary statistics of more traces (stored as a data frame).

Examples

```
estimates_all <- parse_beast_tracelog_file(
  get_tracerer_path("beast2_example_output.log")
)
estimates <- remove_burn_ins(estimates_all, burn_in_fraction = 0.1)

# From a single variable's trace
calc_summary_stats(
  estimates$posterior,
  sample_interval = 1000
)

# From all variables' traces
```

```
calc_summary_stats(  
  estimates,  
  sample_interval = 1000  
)
```

calc_summary_stats_trace

Calculates the Effective Sample Sizes of one estimated variable's trace.

Description

Calculates the Effective Sample Sizes of one estimated variable's trace.

Usage

```
calc_summary_stats_trace(trace, sample_interval)
```

Arguments

`trace` a numeric vector of values. Assumes the burn-in is removed.
`sample_interval` the interval in timesteps between samples

Value

the effective sample sizes

Author(s)

Richèl J.C. Bilderbeek

See Also

Use [remove_burn_in](#) to remove the burn-in of a trace

Examples

```
estimates_all <- parse_beast_tracelog_file(  
  get_tracerer_path("beast2_example_output.log")  
)  
estimates <- remove_burn_ins(estimates_all, burn_in_fraction = 0.1)  
  
calc_summary_stats_trace(  
  estimates$posterior,  
  sample_interval = 1000  
)
```

`calc_summary_stats_traces`

Calculates the Effective Sample Sizes of the traces of multiple estimated variables.

Description

Calculates the Effective Sample Sizes of the traces of multiple estimated variables.

Usage

```
calc_summary_stats_traces(traces, sample_interval)
```

Arguments

`traces` a data frame with traces of estimated parameters. Assumes the burn-ins are removed.

`sample_interval` the interval in timesteps between samples

Value

the effective sample sizes

Author(s)

Richèl J.C. Bilderbeek

See Also

Use [remove_burn_ins](#) to remove the burn-ins of all traces

Examples

```
estimates_all <- parse_beast_tracelog_file(
  get_tracerer_path("beast2_example_output.log")
)
estimates <- remove_burn_ins(estimates_all, burn_in_fraction = 0.1)

calc_summary_stats_traces(
  estimates,
  sample_interval = 1000
)
```

check_trace *Check if the trace is a valid. Will [stop](#) if not*

Description

Check if the trace is a valid. Will [stop](#) if not

Usage

```
check_trace(trace)
```

Arguments

trace the values

Author(s)

Richèl J.C. Bilderbeek

Examples

```
check_trace(seq(1, 2))
```

count_trees_in_file *Count the number of trees in a .trees file*

Description

Count the number of trees in a .trees file

Usage

```
count_trees_in_file(trees_filename)
```

Arguments

trees_filename name of a BEAST2 posterior .trees file, as can be read using [parse_beast_trees](#)

Value

the number of trees

Author(s)

Richèl J.C. Bilderbeek

See Also

if the .trees file is invalid, use [is_trees_file](#) with verbose = TRUE for the reason

`cs_std_dev`*Calculate the corrected sample standard deviation.*

Description

Calculate the corrected sample standard deviation.

Usage

```
cs_std_dev(values)
```

Arguments

values numeric values

Value

the corrected sample standard deviation

Author(s)

Richèl J.C. Bilderbeek

`default_params_doc`*Documentation of general function arguments. This function does nothing. It is intended to inherit function argument documentation.*

Description

Documentation of general function arguments. This function does nothing. It is intended to inherit function argument documentation.

Usage

```
default_params_doc(  
  log_filename,  
  sample_interval,  
  state_filename,  
  trace,  
  tracelog_filename,  
  trees_filename,  
  trees_filenames,  
  verbose  
)
```

Arguments

log_filename	deprecated name of the BEAST2 tracelog .log output file. Use tracelog_filename instead
sample_interval	the interval in timesteps between samples
state_filename	name of the BEAST2 state .xml.state output file
trace	the values
tracelog_filename	name of the BEAST2 tracelog .log output file, as can be read using parse_beast_tracelog_file
trees_filename	name of a BEAST2 posterior .trees file, as can be read using parse_beast_trees
trees_filenames	the names of one or more a BEAST2 posterior .trees file. Each .trees file can be read using parse_beast_trees
verbose	set to TRUE for more output

Note

This is an internal function, so it should be marked with @noRd. This is not done, as this will disallow all functions to find the documentation parameters

Author(s)

Richèl J.C. Bilderbeek

extract_operators_lines

Extract the JSON lines out of a .xml.state with the unparsed BEAST2 MCMC operator acceptances file with the operators

Description

Extract the JSON lines out of a .xml.state with the unparsed BEAST2 MCMC operator acceptances file with the operators

Usage

```
extract_operators_lines(filename)
```

Arguments

filename	name of the BEAST2 .xml.state output file
----------	---

Value

the JSON lines of a .xml.state file with the unparsed BEAST2 MCMC operator acceptances

Author(s)

Richèl J.C. Bilderbeek

get_tracerer_path *Get the full path of a file in the inst/extdata folder*

Description

Get the full path of a file in the inst/extdata folder

Usage

```
get_tracerer_path(filename)
```

Arguments

filename the file's name, without the path

Value

the full path to the filename

Author(s)

Richèl J.C. Bilderbeek

See Also

for more files, use [get_tracerer_paths](#)

Examples

```
get_tracerer_path("beast2_example_output.log")
get_tracerer_path("beast2_example_output.trees")
get_tracerer_path("beast2_example_output.xml")
get_tracerer_path("beast2_example_output.xml.state")
```

get_tracerer_paths *Get the full paths of files in the inst/extdata folder*

Description

Get the full paths of files in the inst/extdata folder

Usage

```
get_tracerer_paths(filenamees)
```

Arguments

filenamees the files' names, without the path

Value

the filenamees' full paths

Author(s)

Richèl J.C. Bilderbeek

See Also

for one file, use [get_tracerer_path](#)

Examples

```
get_tracerer_paths(  
  c(  
    "beast2_example_output.log",  
    "beast2_example_output.trees",  
    "beast2_example_output.xml",  
    "beast2_example_output.xml.state"  
  )  
)
```

get_tracerer_tempfilename
Get a temporary filename

Description

Get a temporary filename, similar to [tempfile](#), except that it always writes to a temporary folder named [tracerer](#).

Usage

```
get_tracerer_tempfilename(pattern = "file", fileext = "")
```

Arguments

pattern	a non-empty character vector giving the initial part of the name.
fileext	a non-empty character vector giving the file extension

Value

name for a temporary file

Note

this function is added to make sure no temporary cache files are left undeleted

is_posterior *Determines if the input is a BEAST2 posterior*

Description

Determines if the input is a BEAST2 posterior

Usage

```
is_posterior(x)
```

Arguments

x	the input
---	-----------

Value

TRUE if the input contains all information of a BEAST2 posterior. Returns FALSE otherwise.

Author(s)

Richèl J.C. Bilderbeek

Examples

```
trees_filename <- get_tracerer_path("beast2_example_output.trees")
tracelog_filename <- get_tracerer_path("beast2_example_output.log")
posterior <- parse_beast_posterior(
  trees_filename = trees_filename,
  tracelog_filename = tracelog_filename
)
is_posterior(posterior)
```

is_trees_file	<i>Measure if a file a valid BEAST2 .trees file</i>
---------------	---

Description

Measure if a file a valid BEAST2 .trees file

Usage

```
is_trees_file(trees_filename, verbose = FALSE)
```

Arguments

trees_filename name of a BEAST2 posterior .trees file, as can be read using [parse_beast_trees](#)
verbose set to TRUE for more output

Value

TRUE if trees_filename is a valid .trees file

Author(s)

Richèl J.C. Bilderbeek

See Also

Most of the work is done by [read.nexus](#)

Examples

```
# TRUE
is_trees_file(get_tracerer_path("beast2_example_output.trees"))
is_trees_file(get_tracerer_path("unplottable_anthus_aco.trees"))
is_trees_file(get_tracerer_path("anthus_2_4_a.trees"))
is_trees_file(get_tracerer_path("anthus_2_4_b.trees"))
# FALSE
is_trees_file(get_tracerer_path("mcbette_issue_8.trees"))
```

is_trees_posterior	<i>Determines if the input is a BEAST2 posterior, as parsed by parse_beast_trees</i>
--------------------	--

Description

Determines if the input is a BEAST2 posterior, as parsed by parse_beast_trees

Usage

```
is_trees_posterior(x)
```

Arguments

x	the input
---	-----------

Value

TRUE or FALSE

Author(s)

Richèl J.C. Bilderbeek

parse_beast_log	<i>Deprecated function to parse a BEAST2 .log output file. Use parse_beast_tracelog_file instead</i>
-----------------	--

Description

Deprecated function to parse a BEAST2 .log output file. Use [parse_beast_tracelog_file](#) instead

Usage

```
parse_beast_log(tracelog_filename, filename = "deprecated")
```

Arguments

tracelog_filename	name of the BEAST2 tracelog .log output file, as can be read using parse_beast_tracelog_file
filename	deprecated name of the BEAST2 .log output file

Value

data frame with the parameter estimates

Author(s)

Richèl J.C. Bilderbeek

Examples

```
# Deprecated
parse_beast_log(
  tracelog_filename = get_tracerer_path("beast2_example_output.log")
)
# Use the function 'parse_beast_tracelog_file' instead
parse_beast_tracelog_file(
  tracelog_filename = get_tracerer_path("beast2_example_output.log")
)
```

parse_beast_output_files

Parse all BEAST2 output files

Description

Parse all BEAST2 output files

Usage

```
parse_beast_output_files(log_filename, trees_filenames, state_filename)
```

Arguments

`log_filename` deprecated name of the BEAST2 tracelog .log output file. Use `tracelog_filename` instead

`trees_filenames` the names of one or more a BEAST2 posterior .trees file. Each .trees file can be read using [parse_beast_trees](#)

`state_filename` name of the BEAST2 state .xml.state output file

Value

a list with the following elements:

- `itemestimates`: parameter estimates item `[alignment_id]_trees`: the phylogenies in the BEAST2 posterior. `[alignment_id]` is the ID of the alignment.
- `itemoperators`: the BEAST2 MCMC operator acceptances

Author(s)

Richèl J.C. Bilderbeek

See Also

Use [remove_burn_ins](#) to remove the burn-in from `out$estimates`

Examples

```
trees_filenames <- get_tracerer_path("beast2_example_output.trees")
log_filename <- get_tracerer_path("beast2_example_output.log")
state_filename <- get_tracerer_path("beast2_example_output.xml.state")
parse_beast_output_files(
  log_filename = log_filename,
  trees_filenames = trees_filenames,
  state_filename = state_filename
)
```

`parse_beast_posterior` *Parses BEAST2 output files to a posterior*

Description

Parses BEAST2 output files to a posterior

Usage

```
parse_beast_posterior(
  trees_filenames,
  tracelog_filename,
  log_filename = "deprecated"
)
```

Arguments

`trees_filenames` the names of one or more a BEAST2 posterior `.trees` file. Each `.trees` file can be read using [parse_beast_trees](#)

`tracelog_filename` name of the BEAST2 tracelog `.log` output file, as can be read using [parse_beast_tracelog_file](#)

`log_filename` deprecated name of the BEAST2 tracelog `.log` output file. Use `tracelog_filename` instead

Value

a list with the following elements:

`itemestimates`: parameter estimates item `[alignment_id]_trees`: the phylogenies in the BEAST2 posterior. `[alignment_id]` is the ID of the alignment.

Author(s)

Richèl J.C. Bilderbeek

See Also

Use [remove_burn_ins](#) to remove the burn-ins from the posterior's estimates (`posterior$estimates`)

Examples

```
trees_filenames <- get_tracerer_path("beast2_example_output.trees")
tracelog_filename <- get_tracerer_path("beast2_example_output.log")
posterior <- parse_beast_posterior(
  trees_filenames = trees_filenames,
  tracelog_filename = tracelog_filename
)
```

parse_beast_state_operators

Parses a BEAST2 state .xml.state output file to get only the operators acceptances

Description

Parses a BEAST2 state .xml.state output file to get only the operators acceptances

Usage

```
parse_beast_state_operators(
  state_filename = get_tracerer_path("beast2_example_output.xml.state"),
  filename = "deprecated"
)
```

Arguments

`state_filename` name of the BEAST2 state .xml.state output file
`filename` deprecated name of the BEAST2 .xml.state output file, use `state_filename` instead

Value

data frame with all the operators' success rates

Author(s)

Richèl J.C. Bilderbeek

Examples

```
parse_beast_state_operators(  
  state_filename = get_tracerer_path("beast2_example_output.xml.state")  
)
```

parse_beast_tracelog_file

Parses a BEAST2 tracelog .log output file

Description

Parses a BEAST2 tracelog .log output file

Usage

```
parse_beast_tracelog_file(tracelog_filename)
```

Arguments

tracelog_filename
name of the BEAST2 tracelog .log output file, as can be read using [parse_beast_tracelog_file](#)

Value

data frame with the parameter estimates

Author(s)

Richèl J.C. Bilderbeek

See Also

Use [remove_burn_ins](#) to remove the burn-in from the returned parameter estimates. Use [save_beast_estimates](#) to save the estimates to a .log file.

Examples

```
parse_beast_tracelog_file(  
  tracelog_filename = get_tracerer_path("beast2_example_output.log")  
)
```

parse_beast_trees *Parses a BEAST2 .trees output file*

Description

Parses a BEAST2 .trees output file

Usage

```
parse_beast_trees(filename)
```

Arguments

filename name of the BEAST2 .trees output file

Value

the phylogenies in the posterior

Author(s)

Richèl J.C. Bilderbeek

See Also

Use [save_beast_trees](#) to save the phylogenies to a .trees file. Use [is_trees_file](#) with verbose = TRUE to find out why a file is invalid

Examples

```
trees_filename <- get_tracerer_path("beast2_example_output.trees")
parse_beast_trees(trees_filename)
```

remove_burn_in *Removed the burn-in from a trace*

Description

Removed the burn-in from a trace

Usage

```
remove_burn_in(trace, burn_in_fraction)
```

Arguments

trace the values
burn_in_fraction the fraction that needs to be removed, must be $[0,1[$

Value

the values with the burn-in removed

Author(s)

Richèl J.C. Bilderbeek

Examples

```
# Create a trace from one to and including ten  
v <- seq(1, 10)  
  
# Remove the first ten percent of its values,  
# in this case removes the first value, which is one  
w <- remove_burn_in(trace = v, burn_in_fraction = 0.1)
```

remove_burn_ins *Removed the burn-ins from a data frame*

Description

Removed the burn-ins from a data frame

Usage

```
remove_burn_ins(traces, burn_in_fraction = 0.1)
```

Arguments

traces a data frame with traces
burn_in_fraction the fraction that needs to be removed, must be $[0,1[$. Its default value of 10 as of Tracer

Value

the data frame with the burn-in removed

Author(s)

Richèl J.C. Bilderbeek

save_beast_estimates *Save the BEAST2 estimates as a BEAST2 .log file. There will be some differences: a BEAST2 .log file also saves the model as comments and formats the numbers in a way non-standard to R*

Description

Save the BEAST2 estimates as a BEAST2 .log file. There will be some differences: a BEAST2 .log file also saves the model as comments and formats the numbers in a way non-standard to R

Usage

```
save_beast_estimates(estimates, filename)
```

Arguments

estimates	a data frame of BEAST2 parameter estimates
filename	name of the .log file to save to

Value

nothing

Author(s)

Richèl J.C. Bilderbeek

See Also

Use [parse_beast_log](#) to read a BEAST2 .log file

save_beast_trees *Save the BEAST2 trees as a BEAST2 .log file. There will be some differences: a BEAST2 .log file also saves the model as comments and formats the numbers in a way non-standard to R*

Description

Save the BEAST2 trees as a BEAST2 .log file. There will be some differences: a BEAST2 .log file also saves the model as comments and formats the numbers in a way non-standard to R

Usage

```
save_beast_trees(trees, filename)
```

Arguments

trees BEAST2 posterior trees, of type `ape::multiPhylo`
filename name of the `.trees` file to save to

Value

nothing

Author(s)

Richèl J.C. Bilderbeek

See Also

Use [parse_beast_log](#) to read a BEAST2 `.log` file

tracrer *tracrer: A package to parse BEAST2 output files.*

Description

tracrer allows to parse BEAST2 input files, using an R interface. 'tracrer' closely follows the functionality of Tracer, a GUI tool bundled with BEAST and BEAST2, including its default settings.

See Also

These are packages associated with tracrer:

- The package `beautier` can create BEAST2 input files from R
- The package `beastier` can run BEAST2 from R
- The package `mauricer` manages BEAST2 packages from R
- The package `babette` combines the functionality of `beautier`, `beastier`, `tracrer` and `mauricer` and into a single workflow

If something is (still) missing from tracrer, the `coda` package may have the functionality you need.

Index

calc_act, [3](#), [4](#)
calc_act_cpp, [4](#)
calc_act_r, [4](#)
calc_ess, [5](#)
calc_esses, [6](#)
calc_geom_mean, [7](#)
calc_hpd_interval, [7](#)
calc_mode, [8](#)
calc_std_error_of_mean_cpp, [10](#)
calc_stderr_mean, [9](#)
calc_summary_stats, [10](#)
calc_summary_stats_trace, [11](#), [12](#)
calc_summary_stats_traces, [11](#), [13](#)
check_trace, [14](#)
count_trees_in_file, [14](#)
cs_std_dev, [15](#)

default_params_doc, [15](#)

extract_operators_lines, [16](#)

get_tracerer_path, [17](#), [18](#)
get_tracerer_paths, [17](#), [18](#)
get_tracerer_tempfilename, [19](#)

is_posterior, [19](#)
is_trees_file, [14](#), [20](#), [26](#)
is_trees_posterior, [21](#)

parse_beast_log, [21](#), [28](#), [29](#)
parse_beast_output_files, [22](#)
parse_beast_posterior, [23](#)
parse_beast_state_operators, [24](#)
parse_beast_tracelog_file, [16](#), [21](#), [23](#), [25](#),
[25](#)
parse_beast_trees, [14](#), [16](#), [20](#), [22](#), [23](#), [26](#)

read.nexus, [20](#)
remove_burn_in, [8](#), [11](#), [12](#), [26](#)
remove_burn_ins, [11](#), [13](#), [23–25](#), [27](#)

save_beast_estimates, [25](#), [28](#)
save_beast_trees, [26](#), [28](#)
stop, [14](#)

tempfile, [19](#)
tracerer, [19](#), [29](#)