

Package: ArchaeoCal (via r-universe)

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Title An R Interface to 'OxCal'

Version 0.0.0.9000

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Description What the package does (one paragraph).

License GPL (>= 3)

URL <https://archaeostat.github.io/archaeocal/>

BugReports <https://github.com/ArchaeoStat/ArchaeoCal/issues>

Imports arkhe (>= 1.4.0), graphics, grDevices, methods, V8

Suggests knitr, markdown, testthat (>= 3.0.0)

VignetteBuilder knitr

Config/testthat/edition 3

Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.2.3

Collate 'AllClasses.R' 'AllGenerics.R' 'ArchaeoCal-internal.R'
'ArchaeoCal-package.R' 'coerce.R' 'mutators.R'
'oxcal_calibrate.R' 'oxcal_configure.R' 'oxcal_execute.R'
'oxcal_install.R' 'oxcal_parse.R' 'plot.R' 'show.R'
'validate.R' 'zzz.R'

Repository <https://archaeostat.r-universe.dev>

RemoteUrl <https://github.com/ArchaeoStat/ArchaeoCal>

RemoteRef HEAD

RemoteSha 58fbb9c8722d02583ce2d0082a430f33365cce5d

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oxcal_calibrate	<i>14C Calibration with OxCal</i>
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Description

14C Calibration with OxCal

Usage

```
oxcal_calibrate(names, dates, errors, curve = "IntCal20")
```

Arguments

names	A character vector specifying the names of the dates (e.g. laboratory codes).
dates	A numeric vector giving the BP dates to be calibrated.
errors	A numeric vector giving the standard deviation of the dates to be calibrated.
curve	A character string specifying the calibration curve to be used.

Value

An [OxCalOutput](#) object.

Author(s)

N. Frerebeau

See Also

Other OxCal tools: [oxcal_configure\(\)](#), [oxcal_execute\(\)](#), [oxcal_install\(\)](#), [oxcal_parse\(\)](#), [plot\(\)](#)

Examples

```
## Not run:
## Download OxCal
oxcal_configure()

## Calibrate 14C dates
cal <- oxcal_calibrate(
  names = c("X", "Y"),
  dates = c(5000, 4500),
  errors = c(45, 35)
)

plot(cal)

## End(Not run)
```

oxcal_configure

Setup OxCal

Description

Setup OxCal

Usage

```
oxcal_configure(
  command = NULL,
  os = NULL,
  ask = TRUE,
  install_location = NULL,
  install_url = NULL,
  verbose = getOption("ArchaeoCal.verbose")
)
```

Arguments

command	A character string specifying the path to the OxCal directory.
os	A character string specifying the operating system of the workstation. It must be one of "Linux", "Windows" or "Darwin". If NULL (the default), the operating system will be determined automatically (see Sys.info()).
ask	A logical scalar: if OxCal is not installed, should the user be asked to download it? If FALSE and R is being used interactively, will raise an error if the OxCal executable cannot be found. If FALSE and R is not being used interactively, will try to download OxCal.
install_location	A character string specifying the directory to extract OxCal files to. It will be created if necessary (see utils::unzip()).

`install_url` A [character](#) string specifying the url from which OxCal could be installed.
`verbose` A [logical](#) scalar: should status updates be displayed?

Details

Downloads the latest version of Oxcal (if needed) and sets the executable path correctly.

Value

Invisibly returns the path to the OxCal executable.

Author(s)

N. Frerebeau

See Also

Other OxCal tools: [oxcal_calibrate\(\)](#), [oxcal_execute\(\)](#), [oxcal_install\(\)](#), [oxcal_parse\(\)](#), [plot\(\)](#)

Examples

```
## Not run:
## Download OxCal
oxcal_configure()

## Custom script
scr <- 'Plot()
{
  Sequence("Sequence1")
  {
    Boundary("Begin");
    Phase("Phase1")
    {
      R_Date("Lab-1", 5000, 25);
      R_Date("Lab-2", 4900, 37);
    };
    Boundary("Between");
    Phase("Phase2")
    {
      R_Date("Lab-3", 4800, 43);
    };
    Boundary("End");
  };
};'
out <- oxcal_execute(scr)
res <- oxcal_parse(out)

plot(res)
plot(res, likelihood = TRUE, posterior = FALSE)
plot(res, likelihood = FALSE, posterior = TRUE)
```

```
## End(Not run)
```

oxcal_execute	<i>Execute an Oxcal Script</i>
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Description

Execute an Oxcal Script

Usage

```
oxcal_execute(  
  script,  
  file = NULL,  
  verbose = getOption("ArchaeoCal.verbose"),  
  ...  
)
```

Arguments

script	A character string of instructions for OxCal.
file	A character string naming a file (without extension) to write script to. Output files will be named after file and written to the same directory.
verbose	A logical scalar: should status updates be displayed?
...	Further parameters to be passed to system2() .

Value

An [OxCalFiles](#) object.

Author(s)

N. Frerebeau

References

https://c14.arch.ox.ac.uk/oxcalhelp/hlp_analysis_file.html

See Also

Other OxCal tools: [oxcal_calibrate\(\)](#), [oxcal_configure\(\)](#), [oxcal_install\(\)](#), [oxcal_parse\(\)](#), [plot\(\)](#)

Examples

```
## Not run:
## Download OxCal
oxcal_configure()

## Custom script
scr <- 'Plot()
{
  Sequence("Sequence1")
  {
    Boundary("Begin");
    Phase("Phase1")
    {
      R_Date("Lab-1",5000,25);
      R_Date("Lab-2",4900,37);
    };
    Boundary("Between");
    Phase("Phase2")
    {
      R_Date("Lab-3",4800,43);
    };
    Boundary("End");
  };
};'
out <- oxcal_execute(scr)
res <- oxcal_parse(out)

plot(res)
plot(res, likelihood = TRUE, posterior = FALSE)
plot(res, likelihood = FALSE, posterior = TRUE)

## End(Not run)
```

oxcal_install

Download OxCal

Description

Download OxCal

Usage

```
oxcal_install(
  install_url = NULL,
  install_location = NULL,
  verbose = getOption("ArchaeoCal.verbose")
)
```

Arguments

`install_url` A **character** string specifying the url from which OxCal could be installed.
`install_location` A **character** string specifying the directory to extract OxCal files to. It will be created if necessary (see `utils::unzip()`).
`verbose` A **logical** scalar: should status updates be displayed?

Value

Invisibly returns the path to the OxCal directory.

Author(s)

N. Frerebeau

See Also

Other OxCal tools: `oxcal_calibrate()`, `oxcal_configure()`, `oxcal_execute()`, `oxcal_parse()`, `plot()`

Examples

```
## Not run:
## Download OxCal
oxcal_configure()

## Custom script
scr <- 'Plot()
{
  Sequence("Sequence1")
  {
    Boundary("Begin");
    Phase("Phase1")
    {
      R_Date("Lab-1", 5000, 25);
      R_Date("Lab-2", 4900, 37);
    };
    Boundary("Between");
    Phase("Phase2")
    {
      R_Date("Lab-3", 4800, 43);
    };
    Boundary("End");
  };
};'
out <- oxcal_execute(scr)
res <- oxcal_parse(out)

plot(res)
plot(res, likelihood = TRUE, posterior = FALSE)
plot(res, likelihood = FALSE, posterior = TRUE)
```

```
## End(Not run)
```

oxcal_parse	<i>Read and Parse OxCal Output</i>
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Description

Read and Parse OxCal Output

Usage

```
oxcal_parse(object)  
  
## S4 method for signature 'OxCalFiles'  
oxcal_parse(object)  
  
## S4 method for signature 'character'  
oxcal_parse(object)
```

Arguments

object A [character](#) string naming a JavaScript file which the data are to be read from (or an [OxCalFiles](#) object returned by [oxcal_execute\(\)](#)).

Value

An [OxCalOutput](#) object.

Author(s)

N. Frerebeau

References

https://c14.arch.ox.ac.uk/oxcalhelp/hlp_analysis_file.html

See Also

Other OxCal tools: [oxcal_calibrate\(\)](#), [oxcal_configure\(\)](#), [oxcal_execute\(\)](#), [oxcal_install\(\)](#), [plot\(\)](#)

Examples

```
## Not run:
## Download OxCal
oxcal_configure()

## Custom script
scr <- 'Plot()
{
  Sequence("Sequence1")
  {
    Boundary("Begin");
    Phase("Phase1")
    {
      R_Date("Lab-1",5000,25);
      R_Date("Lab-2",4900,37);
    };
    Boundary("Between");
    Phase("Phase2")
    {
      R_Date("Lab-3",4800,43);
    };
    Boundary("End");
  };
};'
out <- oxcal_execute(scr)
res <- oxcal_parse(out)

plot(res)
plot(res, likelihood = TRUE, posterior = FALSE)
plot(res, likelihood = FALSE, posterior = TRUE)

## End(Not run)
```

plot

Plot OxCal Output

Description

Plot OxCal Output

Usage

```
## S4 method for signature 'OxCalOutput,missing'
plot(
  x,
  likelihood = TRUE,
  posterior = TRUE,
  warnings = TRUE,
  col.likelihood = "grey",
```

```

col.posterior = "blue",
lty.likelihood = "solid",
lty.posterior = "dashed",
main = NULL,
sub = NULL,
ann = graphics::par("ann"),
axes = TRUE,
frame.plot = FALSE,
panel.first = NULL,
panel.last = NULL,
...
)

```

Arguments

x	An OxCalOutput object.
likelihood	A logical scalar: should likelihood be drawn?
posterior	A logical scalar: should posterior distribution be drawn?
warnings	A logical scalar: should warnings be plotted?
col.likelihood, col.posterior	A character string specifying the color of the density.
lty.likelihood, lty.posterior	A character string or numeric value specifying the line type of the lines.
main	A character string giving a main title for the plot.
sub	A character string giving a subtitle for the plot.
ann	A logical scalar: should the default annotation (title and x, y and z axis labels) appear on the plot?
axes	A logical scalar: should axes be drawn on the plot?
frame.plot	A logical scalar: should a box be drawn around the plot?
panel.first	An expression to be evaluated after the plot axes are set up but before any plotting takes place. This can be useful for drawing background grids.
panel.last	An expression to be evaluated after plotting has taken place but before the axes, title and box are added.
...	Other graphical parameters may also be passed as arguments to this function.

Value

plot() is called it for its side-effects: it results in a graphic being displayed. Invisibly returns x.

Author(s)

N. Frerebeau

See Also

Other OxCal tools: [oxcal_calibrate\(\)](#), [oxcal_configure\(\)](#), [oxcal_execute\(\)](#), [oxcal_install\(\)](#), [oxcal_parse\(\)](#)

Examples

```
## Not run:  
## Download OxCal  
oxcal_configure()  
  
## Calibrate 14C dates  
cal <- oxcal_calibrate(  
  names = c("X", "Y"),  
  dates = c(5000, 4500),  
  errors = c(45, 35)  
)  
  
plot(cal)  
  
## End(Not run)
```

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