

Package: loggercal (via r-universe)

September 12, 2024

Title Estimation of Calibration Equations for Temperature Data Loggers

Version 1.0-0

Description Contains all functions required to (1) Read in temperature logger calibration data (External and Internal) (2) calculate approximate calibration functions to convert raw temps to true and raw temps to SE of approx (3) output a file containing calibration results by logger for use as a bulk upload to FLEObs database.

Imports grDevices, graphics, stats, utils, mgcv, tcltk

Suggests knitr

License file LICENSE

LazyData true

VignetteBuilder knitr

RoxygenNote 7.1.1

Encoding UTF-8

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

RemoteUrl <https://github.com/faskally/loggercal>

RemoteRef HEAD

RemoteSha eece136367f3415609eb2a0dfd2564e4bb73dcdf

Contents

loggercal-package	2
calibration	2
doCalibration	3
findLag	4
findStartSec	4
findStopSec	5
getCoefs	5
lagmod	6
plot.InternalCal	6

print.ExternalCal	7
print.InternalCal	7
readExternalCal	8
readInternalCal	8
saveCalPlot	9
tableCoefs	9
trim	10

Index 11

loggercal-package	<i>Tools for calibrating field temperature loggers</i>
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Description

Contains all functions required to (1) Read in temperature logger calibration data (External and Internal) (2) calculate approximate calibration functions to convert raw temps to true and raw temps to SE of approx (3) output a file containing calibration results by logger for use as a bulk upload to FLEObs database

Author(s)

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calibration	<i>Fit a calibration regression and estimate logger error.</i>
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Description

This function: * identifies calibration loggers * chooses one calibration logger to be used * finds the best lag * fits a calibration model to each non-calibration logger * returns models for calibration and SE models

Usage

```
calibration(internalCal, externalCalMod, nsim = 999)
```

Arguments

internalCal	A number.
externalCalMod	A number.
nsim	number of simulations to run in the estimation.

Details

nsim is the simulations used to back calculate the logger error. Normally a large number like 99 or 999 should be used, but note that this can take a while to run.

Value

models for calibration and SE models.

doCalibration	<i>POINT AND CLICK CALIBRATION CODE</i>
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Description

Function to provide an easy interface to use the calibration methods in the loggercal package

Usage

```
doCalibration(path = ".", nsim = 999, trim = FALSE)
```

Arguments

path	the location on disk where the calibration folders are initially searched for (the default where the directory selection dialogue opens).
nsim	number of simulations to run (see calibration)
trim	if TRUE the user can trim internal logger data at the start and end of the data series interactively (default = FALSE)

Details

When running the function the user will be asked to set various directorise where internal and external calibration data are stored: internalCalDir = the filepath of where the internal calibration file is located externalCalDir = the filepath of where the external calibration file is located which is appropriate for the internal calibration that you are working on

Examples

```
## Not run:
# set up a demo calibration folder structure
# please set this to a suitable location on your system
path <- "D:\\temp\\Calibration_data"
caldir <- file.path(path, "Logger_calibrations", "250416")
ukasdir <- file.path(path, "External_Calibrations", "010915")
dir.create(caldir, recursive = TRUE)
dir.create(ukasdir, recursive = TRUE)
file.copy(
  system.file(
    "calibration_files", "FullCalibration_250416.csv",
    package = "loggercal"),
  caldir)
file.copy(
  system.file(
    "calibration_files", "UKASCalibration_319151.csv",
    package = "loggercal"),
```

```
    ukasdir)
doCalibration(path, nsim = 10)

## End(Not run)
```

findLag *Add together two numbers.*

Description

Description

Usage

```
findLag(internalCal, lagtry = -10:10)
```

Arguments

internalCal A number.
lagtry A number.

Value

The sum of x and y.

findStartSec *Add together two numbers.*

Description

Description

Usage

```
findStartSec(cal)
```

Arguments

cal A number.

Value

The sum of x and y.

findStopSec *Add together two numbers.*

Description

Description

Usage

`findStopSec(cal)`

Arguments

`cal` A number.

Value

The sum of x and y.

getCoefs *Add together two numbers.*

Description

Description

Usage

`getCoefs(reverseCalMod)`

Arguments

`reverseCalMod` A number.

Value

The sum of x and y.

lagmod	<i>Add together two numbers.</i>
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Description

Description

Usage

```
lagmod(x, y, lag = 0, formula = y ~ s(x, k = 3))
```

Arguments

x	A number.
y	A number.
lag	A number.
formula	A number.

Value

The sum of x and y.

plot.InternalCal	<i>Add together two numbers.</i>
------------------	----------------------------------

Description

Description

Usage

```
## S3 method for class 'InternalCal'  
plot(x, type = "scaled", xlim = NULL, ...)
```

Arguments

x	A number.
type	A number.
xlim	A number.
...	other graphics parameters to pass on to plotting commands.

Value

The sum of x and y.

`print.ExternalCal` *Add together two numbers.*

Description

Description

Usage

```
## S3 method for class 'ExternalCal'  
print(x, ...)
```

Arguments

`x` A number.
`...` Numeric, complex, or logical vectors.

Value

The sum of `x` and `y`.

`print.InternalCal` *Add together two numbers.*

Description

Description

Usage

```
## S3 method for class 'InternalCal'  
print(x, ...)
```

Arguments

`x` A number.
`...` Numeric, complex, or logical vectors.

Value

The sum of `x` and `y`.

`readExternalCal` *Add together two numbers.*

Description

Description

Usage

`readExternalCal(dirname)`

Arguments

`dirname` The directory containing the UKAS calibration files.

Value

The sum of x and y.

`readInternalCal` *Add together two numbers.*

Description

Description

Usage

`readInternalCal(dirname)`

Arguments

`dirname` A number.

Value

The sum of x and y.

saveCalPlot	<i>Save calibration plot as a png file</i>
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Description

Description

Usage

```
saveCalPlot(filename, plotFunc, width = 17, height = 17, ppi = 1200)
```

Arguments

filename	A number.
plotFunc	A function which returns a plot
width	A number.
height	A number.
ppi	A number.

Examples

```
1 + 1
```

tableCoefs	<i>Add together two numbers.</i>
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Description

Description

Description

Usage

```
tableCoefs(coefs, cal)
```

```
tableCoefs(coefs, cal)
```

Arguments

coefs	A number.
cal	A number.

Value

The sum of x and y.

The sum of x and y.

`trim`*Add together two numbers.*

Description

Description

Usage`trim(x, ...)`**Arguments**

<code>x</code>	A number.
<code>...</code>	Numeric, complex, or logical vectors.

ValueThe sum of `x` and `y`.

Index

calibration, [2, 3](#)

doCalibration, [3](#)

findLag, [4](#)

findStartSec, [4](#)

findStopSec, [5](#)

getCoefs, [5](#)

lagmod, [6](#)

loggercal (loggercal-package), [2](#)

loggercal-package, [2](#)

plot.InternalCal, [6](#)

print.ExternalCal, [7](#)

print.InternalCal, [7](#)

readExternalCal, [8](#)

readInternalCal, [8](#)

saveCalPlot, [9](#)

tableCoefs, [9](#)

trim, [10](#)