Package 'ACWR'

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Type Package

Title Acute Chronic Workload Ratio Calculation

Version 0.1.0

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Description Functions for calculating the acute chronic workload ratio using three different methods: exponentially weighted moving average (EWMA), rolling average coupled (RAC) and rolling averaged uncoupled (RAU). Examples of this methods can be found in Williams et al. (2017) <doi:10.1136/bjsports-2016-096589> for EWMA and Windt & Gabbet (2018) for RAC and RAU <doi:10.1136/bjsports-2017-098925>.

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Encoding UTF-8

LazyData true

Imports r2d3

Depends R (>= 2.10)

RoxygenNote 7.1.1

URL https://github.com/JorgeDelro/ACWR

BugReports https://github.com/JorgeDelro/ACWR/issues

Suggests testthat (>= 3.0.0)

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NeedsCompilation no

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Contents

ACWR *Acute Chronic Workload Ratio*

Description

Acute Chronic Workload Ratio

Usage

```
ACWR(
  db,
  ID,
  TL,
  weeks,
  days,
  training_dates,
  ACWR_method = c("EWMA", "RAC", "RAU")
)
```

Arguments

db	a data frame
ID	ID of the subjects
TL	training load
weeks	training weeks
days	training days
training_dates	training dates
ACWR_method	method to calculate ACWR

Value

a data frame with the acute & chronic training load and ACWR calculated with the selected method/s and added on the left side of the data frame

Examples

```
## Not run:
# Get old working directory
oldwd <- getwd()

# Set temporary directory
setwd(tempdir())

# Read dfs
data("training_load", package = "ACWR")

# Convert to data.frame
training_load <- data.frame(training_load)

# Calculate ACWR
result_ACWR <- ACWR(db = training_load,
                    ID = "ID",
                    TL = "TL",
                    weeks = "Week",
                    days = "Day",
                    training_dates = "Training_Date",
                    ACWR_method = c("EWMA", "RAC", "RAU"))

# set user working directory
setwd(oldwd)

## End(Not run)
```

EWMA *Exponentially Weighted Moving Average*

Description

Exponentially Weighted Moving Average

Usage

```
EWMA(TL)
```

Arguments

TL	training load

Value

This function returns the following variables:

- EWMA_chronic: EWMA - chronic training load.
- EWMA_acute: EWMA - acute training load.
- EWMA_ACWR: EWMA - Acute-Chronic Workload Ratio.

Examples

```
## Not run:
# Get old working directory
oldwd <- getwd()

# Set temporary directory
setwd(tempdir())

# Read db
data("training_load", package = "ACWR")

# Convert to data.frame
training_load <- data.frame(training_load)

# Select the first subject
training_load_1 <- training_load[training_load[["ID"]] == 1,  ]

# Calculate ACWR
result_EWMA <- EWMA(TL = training_load_1$TL)

# set user working directory
setwd(oldwd)

## End(Not run)
```

`plot_ACWR` *ACWR plots using d3.js*

Description

ACWR plots using d3.js

Usage

```
plot_ACWR(
  db,
  TL,
  ACWR,
  day,
  ID = NULL,
  colour = NULL,
  xLabel = NULL,
  y0Label = NULL,
  y1Label = NULL,
  plotTitle = NULL
)
```

Arguments

db	a data frame
TL	training load
ACWR	Acute Chronic Workload Ratio
day	training days
ID	ID of the subjects
colour	colour of the bars. By default "#87CEEB" (skyblue)
xLabel	x-axis label. By default "Days"
y0Label	left y-axis label. By default "Load [AU]"
y1Label	right y-axis label. By default "Acute:chronic worload ratio"
plotTitle	Title of the plot. By default "ACWR"

Value

This function returns a d3.js object for a single subject. For several subjects it returns a list of d3.js objects.

Examples

```
## Not run:
# Get old working directory
oldwd <- getwd()

# Set temporary directory
setwd(tempdir())

# Read db
data("training_load", package = "ACWR")

# Convert to data.frame
training_load_db <- data.frame(training_load)

# Calculate ACWR
result_ACWR <- ACWR(db = training_load_db,
                    ID = "ID",
                    TL = "TL",
                    weeks = "Week",
                    days = "Day",
                    training_dates = "Training_Date",
                    ACWR_method = c("EWMA", "RAC", "RAU"))

# Plot for 1 subject
# Select the first subject
result_ACWR_1 <- result_ACWR[result_ACWR[["ID"]] == 1,  ]

# plot ACWR (e.g. EWMA)
ACWR_plot_1 <- plot_ACWR(db = result_ACWR_1,
                         TL = "TL",
```

```
                          ACWR = "EWMA_ACWR",
                          day = "Day")

# Plot for several subjects
# plot ACWR (e.g. RAC)
ACWR_plot <- plot_ACWR(db = result_ACWR,
                          TL = "TL",
                          ACWR = "RAC_ACWR",
                          day = "Day",
                          ID = "ID")

# set user working directory
setwd(oldwd)

## End(Not run)
```

RAC *Rolling Average Coupled*

Description

Rolling Average Coupled

Usage

```
RAC(TL, weeks, training_dates)
```

Arguments

TL	training load
weeks	training weeks
training_dates	training dates

Value

This function returns the following variables:

- RAC_chronic: RAC - chronic training load.
- RAC_acute: RAC - acute training load.
- RAC_ACWR: RAC - Acute-Chronic Workload Ratio.

Examples

```
## Not run:
# Get old working directory
oldwd <- getwd()

# Set temporary directory
setwd(tempdir())

# Read db
data("training_load", package = "ACWR")

# Convert to data.frame
training_load <- data.frame(training_load)

# Select the first subject
training_load_1 <- training_load[training_load[["ID"]] == 1,  ]

# Calculate ACWR
result_RAC <- RAC(TL = training_load_1$TL,
                  weeks = training_load_1$Week,
                  training_dates = training_load_1$Training_Date)

# set user working directory
setwd(oldwd)

## End(Not run)
```

RAU *Rolling Average Uncoupled*

Description

Rolling Average Uncoupled

Usage

```
RAU(TL, weeks, training_dates)
```

Arguments

TL	training load
weeks	training weeks
training_dates	training dates

Value

This function returns the following variables:

- RAU_chronic: RAU - chronic training load.
- RAU_acute: RAU - acute training load.
- RAU_ACWR: RAU - Acute-Chronic Workload Ratio.

Examples

```
## Not run:
# Get old working directory
oldwd <- getwd()

# Set temporary directory
setwd(tempdir())

# Read db
data("training_load", package = "ACWR")

# Convert to data.frame
training_load <- data.frame(training_load)

# Select the first subject
training_load_1 <- training_load[training_load[["ID"]] == 1,  ]

# Calculate ACWR
result_RAU <- RAU(TL = training_load_1$TL,
                  weeks = training_load_1$Week,
                  training_dates = training_load_1$Training_Date)

# set user working directory
setwd(oldwd)

## End(Not run)
```

---

training_blocks *Create Training Blocks*

Description

Create Training Blocks

Usage

```
training_blocks(training_dates, actual_TL, diff_dates)
```

Arguments

training_dates	training dates
actual_TL	position of the actual training load
diff_dates	difference in days

---

training_load *Training load dataframe*

Description

A dataframe with the training load of 3 subjects.

Usage

```
data("training_load", package = "ACWR")
```

Format

An object of class tbl_df (inherits from tbl, data.frame) with 84 rows and 5 columns.

Variables

ID ID of the subjects

Week training weeks

Day training days

TL training load (arbitrary units)

Training_Date training dates

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