Package 'CortSineScore'

October 20, 2025

Title Compute Cortisol Sine Score (CSS) for Diurnal Cortisol Analysis

Version 0.1.0

Description Computes a single scalar metric for diurnal cortisol cycle analysis, the Cortisol Sine Score (CSS). The score is calculated as the sum over time points of concentration multiplied by sin(2 * pi * time / 24), giving positive weights to morning time points and negative weights to evening ones. The method is model-free, robust, and suitable for regression, classification, clustering, and biomarker research.

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Encoding UTF-8

Language en-US

RoxygenNote 7.3.2

Depends R (>= 4.1.0)

Imports purrr, magrittr, dplyr

Suggests tibble

URL https://github.com/simone-anza/CortSineScore

BugReports https://github.com/simone-anza/CortSineScore/issues

NeedsCompilation no

Author Simone Anzà [aut, cre]

Maintainer Simone Anzà <simoneanza@gmail.com>

Repository CRAN

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compute_css *Compute Cortisol Sine Score (CSS)*

Description

Calculates the Cortisol Sine Score using timepoint-specific sine weights extracted from column names like "time_0200", "time_1400", etc.

Usage

```
compute_css(data, verbose = FALSE)
```

Arguments

data	A data.frame or tibble with subject ID in the first column and cortisol values in time_* columns. The time columns must be named using 24-hour format, e.g. time_0200, time_1400, etc.
verbose	Logical; if TRUE, returns the contribution of each timepoint to the CSS.

Value

A tibble with subject ID and cortisol_sin_score. If `verbose = TRUE`, includes individual contributions.

Examples

```
# Minimal, always-runnable example using base data.frame
df <- data.frame(
  subject_ID = c("S1", "S2"),
  time_0200 = c(2, 1),
  time_0600 = c(5, 2),
  time_1000 = c(4, 3),
  time_1400 = c(3, 2),
  time_1800 = c(1, 1),
  time_2200 = c(0.5, 0.3),
  stringsAsFactors = FALSE
)
compute_css(df)
```

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