

# Package ‘CQ2’

April 25, 2024

**Type** Package

**Title** Objective Calibration of Quick-Slow CQ Models

**Version** 0.1.0

**Author** person("`Thomas", "`Westfall", email = "`tomwestfall27@gmail.com", role = c("`aut", "`cre"), comment = c(ORCID = "`TBD"))

**Maintainer** Thomas Westfall <tomwestfall27@gmail.com>

**Description** This R package fits C-Q models with slow and quick flow components. The parameters of the Eckhardt (2005) baseflow filter are objectively calibrated to partition streamflow into these components while fitting the quick-slow C-Q model.

**License** What license is it under?

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 7.3.1

## R topics documented:

Chat1 . . . . .	1
hello . . . . .	2
<b>Index</b>	<b>3</b>

---

Chat1	<i>Runs simple C-Q model</i>
-------	------------------------------

---

## Description

Chat1 get simple CQ model

## Usage

Chat1(params, flow)

Arguments

params	are two values for setting parameters $a$ and $b$ . The parameters can be a single value or a vector. The calibration procedure runs the model in vector form, calling Chat1 with a vector of guesses for each parameter. The bounds and initial guess are set using getBounds Note: $a = 10^{params[1]}$ and $b = params[2]$
flow	streamflow dataframe. Vector or array with duplicates in each column for model calibration

Details

Chat1 runs the simple CQ model:  $C=aQ^b$ . This predicts in-stream concentration  $C$  based on observed streamflow  $Q$  data.

The input requires observed streamflow data on a daily timescale and two parameters,  $a$  and  $b$ .

Value

A  $Pred$  data frame with predicted concentrations for each time-step. If called in calibration mode, array returned with predictions in each column.

---

hello	<i>Hello, World!</i>
-------	----------------------

---

Description

Prints 'Hello, world!'.

Usage

hello()

Examples

hello()

# Index

- \* **C-Q**  
Chat1, [1](#)
- \* **Chat1**  
Chat1, [1](#)
- \* **simple**  
Chat1, [1](#)

Chat1, [1](#)

hello, [2](#)