

Package ‘porce’

October 18, 2023

Title Photosynthesis, allocation, Organic matter dynamics and
RadioCarbon Exchange (Porce) model

Version 0.0.1

Description

Set of functions, classes and methods to model carbon and radiocarbon dynamics in ecosystems.

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Encoding UTF-8

Imports methods

LazyData true

Roxygen list(markdown = TRUE)

RoxygenNote 7.2.3.9000

NeedsCompilation no

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Depends R (>= 3.5.0)

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equilibriumOutflux	<i>Equilibrium output flux for a linear autonomous model</i>
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Description

Equilibrium output flux for a linear autonomous model

Usage

```
equilibriumOutflux(model)
```

Arguments

model an object of class lam, a linear autonomous model

Value

a vector with the output fluxes for all compartments

equilibriumStock	<i>Equilibrium stocks for a linear autonomous model</i>
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Description

Equilibrium stocks for a linear autonomous model

Usage

```
equilibriumStock(model)
```

Arguments

model an object of class lam, a linear autonomous model

Value

a vector with the equilibrium stocks for all compartments

inputGPP	<i>Input vector from a scalar gpp value</i>
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Description

Input vector from a scalar gpp value

Usage

```
inputGPP(gpp, npools = 7)
```

Arguments

gpp a scalar value of gross primary production
 npools integer. Number of pools in the system

Value

a vector of npool elements with GPP as first argument

Examples

```
inputGPP(25, 7)
```

`lam-class`*Linear autonomous model*

Description

Linear autonomous model

Value

An object of lam class

Slots

`input` numeric vector with inputs for each compartment.

`matrix` a compartmental matrix with dimension equal to length of input.

Examples

```
toyModel<-lam(input=c(1,2,3), matrix=diag(-1,3,3))
```

`makeB`*Compartmental matrix from a set of prior parameters of Porce model*

Description

This function builds a compartmental matrix of seven pools using a set of 16 parameter values. It is mostly used to build a matrix from the parameter values stored in the modpars dataset.

Usage

```
makeB(pars)
```

Arguments

`pars` a numeric vector of 16 parameter values

Value

A compartmental matrix of dimension 7

Examples

```
makeB(pars=modpars[1,])
```

`modpars`*Model parameters for Porce*

Description

A dataset of model parameters that can be used as prior information for the Porce model. The dataset corresponds to a seven pool model developed for the Porce region of Colombia.

Usage

```
data(modpars)
```

Format

An object of class `matrix` (inherits from `array`) with 1000 rows and 16 columns.

References

Sierra et al. (2021). *Journal of Ecology* 109(8): 2845–2855.

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