Package: FIMS (via r-universe)

August 25, 2024

Title The Fisheries Integrated Modeling System

Version 0.2.0.0

Description The Fisheries Integrated Modeling System is a next-generation framework of stock assessment models, assisting fishery managers with the goal of achieving sustainable fisheries. This system, when completed in a few years, offers the NOAA Fisheries and global fisheries science communities an advanced set of stock assessment models. These tools can be used separately or in combination to incorporate ecosystem and socioeconomic data and models, as well as climate effects and other drivers within the marine environment, into stock assessment models.

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URL https://github.com/noaa-fims/fims, https://noaa-fims.github.io

BugReports https://github.com/noaa-fims/fims/issues

Depends R (>= 4.0)

Imports dplyr, ggplot2, jsonlite, methods, Rcpp, scales, TMB (>= 1.8.0)

Suggests covr, knitr, parallel, remotes, rmarkdown, snowfall, testthat (>= 3.0.0), tidyverse, usethis, withr

LinkingTo Rcpp, RcppEigen, TMB

VignetteBuilder knitr

Config/testthat/edition 3

Config/testthat/parallel true

Encoding UTF-8

LazyData true

NeedsCompilation yes

Roxygen list(markdown = TRUE)

RoxygenNote 7.3.2

SystemRequirements GNU make

Repository https://noaa-fims.r-universe.dev

RemoteUrl https://github.com/noaa-fims/fims

RemoteRef HEAD

RemoteSha f0d4e766ddfc70c6dbb99e92385298c31ccff136

Contents

`data_mile1` *FIMS input data frame for milestone 1*

Description

A dataset containing information necessary to run an age-structured stock assessment model in FIMS for milestone 1. This data was generated using the `ASSAMC` package written for the model comparison project.

Usage

```
data_mile1
```

Format

A data frame with 1140 observations of 8 variables:

type The type of data the row contains. Allowed types include `age`, `index`, `landings`, and `weight-at-age` data.

name A character string providing the name of the information source that the data was collected from, e.g., `"Trawl fishery"`

age An integer age. Entry can be `NA` if information pertains to multiple ages, e.g., total catch rather than catch of age-4 fish.

datestart,dateend Start and end dates of the data collection period. Format all dates using `yyyy-mm-dd`, which can accommodate fake years such as `0001-01-01`.

value The measurement of interest.

unit A character string specifying the units of `value`. Allowed units for each data type are as follows. `mt` is used for `index`, `landings`, and `weight-at-age` data. `number` or `proportion` are each viable units for the composition data, where the former is the preferred unit of measurement.

uncertainty A real value providing a measurement of uncertainty for value. For catches and survey indices of abundance this should be the standard deviation of the logged observations if you are using the lognormal distribution to fit your data. For composition data it will be your input sample size.

Source

`www.github.com/Bai-Li-NOAA/Age_Structured_Stock_Assessment_Model_Comparison`

`FIMSFrame` *Class constructors for* `FIMSFrame` *and associated child classes*

Description

All constructor functions take a single input and build an object specific to the needs of each model type within **FIMS**. `FIMSFrame` is the parent class and the associated child classes have additional slots needed for each model type.

Usage

```
FIMSFrame(data)
```

Arguments

`data`	A `data.frame` that contains the necessary columns to construct a data frame of a given `FIMSFrame-class`.

Value

An object of the S4 class `FIMSFrame` or one of its child classes is validated and then returned. All objects will at a minimum have a slot called `data` to store the input data frame. Additional slots are dependent on the child class. Use `showClass()` to see all available slots.

m_agecomp *Get the age-composition data to be used in the model*

Description

Get the age-composition data to be used in the model

Usage

```
m_agecomp(x, fleet_name)
```

Arguments

x	The object containing the age-composition data.
fleet_name	The name of the fleet for the age-composition data.

m_agecomp,FIMSFrame-method *Get the age-composition data data to be used in the model*

Description

Get the age-composition data data to be used in the model

Usage

```
## S4 method for signature 'FIMSFrame'
m_agecomp(x, fleet_name)
```

Arguments

x	The FIMSFrame containing age-composition data.
fleet_name	The name of the fleet for the age-composition data.

`m_index` *Get the index data to be used in the model*

Description

Get the index data to be used in the model

Usage

```
m_index(x, fleet_name)
```

Arguments

`x`	The object containing index.
`fleet_name`	The name of the fleet for the index data.

`m_index,FIMSFrame-method` *Get the index data to be used in the model*

Description

Get the index data to be used in the model

Usage

```
## S4 method for signature 'FIMSFrame'
m_index(x, fleet_name)
```

Arguments

`x`	The FIMSFrame object containing index.
`fleet_name`	The name of the fleet for the index data.

`m_landings` *Get the landings data to be used in the model*

Description

Get the landings data to be used in the model

Usage

```
m_landings(x)
```

Arguments

`x` The object containing landings.

`m_landings,FIMSFrame-method` *Get the landings data to be used in the model*

Description

Get the landings data to be used in the model

Usage

```
## S4 method for signature 'FIMSFrame'
m_landings(x)
```

Arguments

`x` The FIMSFrame object containing landings.

`run_gtest` *Run the google test suite*

Description

Intended for developers to run the google test suite from R.

Usage

```
run_gtest(...)
```

Arguments

`...` Additional arguments to `ctest --test-dir build` such as "`--rerun-failed --output-on-failure`".

`setup_and_run_gtest` *Setup and run the google test suite*

Description

Intended for developers to set up their local environment and run the google test suite from R.

Usage

```
setup_and_run_gtest(...)
```

Arguments

`...`	Additional arguments to `ctest --test-dir build` such as `"--rerun-failed --output-on-failure"`.

`setup_gtest` *Set up your local environment to run the google tests locally*

Description

Intended for developers to set up their local environment prior to running the integration tests.

Usage

```
setup_gtest()
```

Examples

```
## Not run:
setup_gtest()

## End(Not run)
```

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