Package: mode (via r-universe)

June 11, 2024

Title Solve Multiple ODEs

Version 0.1.14

Description Solve multiple ODEs in parallel.

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Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.2.0

URL https://github.com/mrc-ide/mode

BugReports https://github.com/mrc-ide/mode/issues

Imports R6, cpp11, dust (>= 0.12.9), glue, pkgbuild (>= 1.2.0), pkgload

Suggests callr, decor, dde, mockery, testthat (>= 3.0.0)

Config/testthat/edition 3

SystemRequirements C++11

Remotes mrc-ide/dust

Repository https://mrc-ide.r-universe.dev

RemoteUrl https://github.com/mrc-ide/mode

RemoteRef main

RemoteSha 3f920b62d5857815c858f6399789a427dcdf8ddb

Contents

mode *Create a mode model from a C++ input file*

Description

Create a mode model from a C++ input file. This function will compile the mode support around your model and return an object that can be used to work with the model.

Usage

```
mode(filename, quiet = FALSE, workdir = NULL, skip_cache = FALSE)
```

Arguments

filename	The path to a single C++ file
quiet	Logical, indicating if compilation messages from pkgbuild should be displayed. Error messages will be displayed on compilation failure regardless of the value used.
workdir	Optional working directory to use. If NULL uses a temporary directory. By using a different directory of your choosing you can see the generated code.
skip_cache	Logical, indicating if the cache of previously compiled models should be skipped. If TRUE then your model will not be looked for in the cache, nor will it be added to the cache after compilation.

Value

A generator object based on your source files

mode_control *Create a mode_control object.*

Description

Create a mode control object for controlling the adaptive stepper. The returned object can be passed into a mode model on initialisation.

Usage

```
mode_control(
  max_steps = NULL,
  atol = NULL,
  rtol = NULL,
  step_size_min = NULL,
  step_size_max = NULL,
  debug_record_step_times = NULL
)
```

Arguments

max_steps	Maxmimum number of steps to take. If the integration attempts to take more steps that this, it will throw an error, stopping the integration.
atol	The per-step absolute tolerance.
rtol	The per-step relative tolerance. The total accuracy will be less than this.
step_size_min	The minimum step size. The actual minimum used will be the largest of the absolute value of this step_size_min or .Machine$double.eps. If the integration attempts to make a step smaller than this, it will throw an error, stopping the integration.
step_size_max	The largest step size. By default there is no maximum step size (Inf) so the solver can take as large a step as it wants to. If you have short-lived fluctuations in your rhs that the solver may skip over by accident, then specify a smaller maximum step size here.
debug_record_step_times	Logical, indicating if we should record the steps taken. This information will be available as part of the statistics() output

Value

A named list of class "mode_control"

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