Package 'SpaDES'

January 20, 2025

Type Package

Title Develop and Run Spatially Explicit Discrete Event Simulation Models

Description Metapackage for implementing a variety of event-based models, with a focus on spatially explicit models. These include raster-based, event-based, and agent-based models. The core simulation components (provided by 'SpaDES.core') are built upon a discrete event simulation (DES; see Matloff (2011) ch 7.8.3 <https://nostarch.com/artofr.htm>) framework that facilitates modularity, and easily enables the user to include additional functionality by running user-built simulation modules (see also 'SpaDES.tools'). Included are numerous tools to visualize rasters and other maps (via 'quickPlot'), and caching methods for reproducible simulations (via 'reproducible'). Tools for running simulation experiments are provided by 'SpaDES.experiment'. Additional functionality is provided by the 'SpaDES.addins' and 'SpaDES.shiny' packages.

URL https://spades.predictiveecology.org, https://github.com/PredictiveEcology/SpaDES

Date 2024-04-16

Version 2.0.11

Depends R (>= 4.2)

Imports methods, quickPlot (>= 1.0.2), reproducible (>= 2.0.10), SpaDES.core (>= 2.0.3), SpaDES.tools (>= 2.0.5), utils

Suggests covr, knitr, rmarkdown, testthat

Encoding UTF-8

Language en-CA

License GPL-3

VignetteBuilder knitr, rmarkdown

BugReports https://github.com/PredictiveEcology/SpaDES/issues

ByteCompile yes

Collate 'spades-package.R' 'zzz.R'

RoxygenNote 7.3.1

NeedsCompilation no

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Repository CRAN

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`SpaDES-package` *Categorized overview of the* `SpaDES` *package*

Description

Metapackage for implementing a variety of event-based models, with a focus on spatially explicit models. These include raster-based, event-based, and agent-based models. The core simulation components (provided by **SpaDES.core**) are built upon a discrete event simulation (DES; see Matloff (2011) ch 7.8.3 https://nostarch.com/artofr.htm) framework that facilitates modularity, and easily enables the user to include additional functionality by running user-built simulation modules (see also **SpaDES.tools**). Included are numerous tools to visualize rasters and other maps (via **quickPlot**), and caching methods for reproducible simulations (via **reproducible**). Additional functionality is provided by the suggested **SpaDES.addins** and `SpaDES.shiny` packages (see below).

Bug reports:

- `quickPlot` package: https://github.com/PredictiveEcology/quickPlot/issues
- `reproducible` package: https://github.com/PredictiveEcology/reproducible/issues
- `SpaDES.addins` package: https://github.com/PredictiveEcology/SpaDES.addins/issues
- `SpaDES.core` package: https://github.com/PredictiveEcology/SpaDES.core/issues
- `SpaDES.shiny` package: https://github.com/PredictiveEcology/SpaDES.shiny/issues
- `SpaDES.tools` package: https://github.com/PredictiveEcology/SpaDES.tools/issues

Module repository: https://github.com/PredictiveEcology/SpaDES-modules

Wiki: https://github.com/PredictiveEcology/SpaDES/wiki

The SpaDES.core package

The core discrete event simulation framework. See [SpaDES.core]{SpaDES.core-package}, and the vignettes therein (browseVignettes()).

The SpaDES.tools package

Additional utilities for developing ecological simulation models. See [SpaDES.tools]{SpaDES.tools-package}.

The SpaDES.addins package

A set of RStudio addins to assist with SpaDES module development.

The SpaDES.shiny package

Utilities for developing and running shiny-based app interfaces to SpaDES simulations.

The quickPlot package

The core SpaDES plotting engine, build upon speed and modularity.

The reproducible package

Provides several aspects of reproducible simulations, including simulation caching.

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See Also

Useful links:

- https://spades.predictiveecology.org
- https://github.com/PredictiveEcology/SpaDES
- Report bugs at https://github.com/PredictiveEcology/SpaDES/issues

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