Package 'BMLGrid'

May 18, 2015

Type Package

Title Bihman-Middleton-Levin Traffic Model Simulation

Version 2.0

Date 2015-05-17

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Description Tools to analyse Bihman-Middleton-Levin Traffic Model. It includes a function to create matrix for BML Model, a function to plot this matrix, a function to measure average speeds at each step

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Imports Rcpp (>= 0.11.4)

LinkingTo Rcpp

Suggests testthat

R topics documented:

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createBMLGrid   *Creates a matrix for the BML Model.*

Description

Creates a matrix for the BLM Model with size r times c. This matrix has entries 0, 1, 2 that corresponds to none, red, blue cars. Returns an object with class "BMLGrid". You can specify either the density of cars (between 0 and 1) or the number of cars with ncars.

Usage

```
createBMLGrid(density, r = 100, c = 100, ncars)
```

Arguments

density	optional, double, density of cars (should be between 0 and 1)
r	integer, number of rows of the matrix
c	integer, number of columns of the matrix
ncars	optional, integer vector of length two, first component is the number of red cars, second component is the number of blue cars

Details

You should specify either density or ncars. Default values r=c=100.

Value

Returns an object of classes "BMLGrid", "matrix". This matrix has entries 0, 1, 2 that corresponds to none, red, blue cars.

Author(s)

Vladimir Pchelin

Examples

```
##example1
g=createBMLGrid(0.2,10,10)
g=runBMLGrid(g,100)
par(mfrow=c(1,2))
plot(g,"density=0.2")
g=createBMLGrid(0.5)
g=runBMLGrid(g,100)
plot(g,"density=0.5")
```

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crunBMLGrid   *Moves both types of cars in a matrix.*

Description

Moves both types of cars in a matrix with 0, 1, 2 values as entries. These 1's and 2's move according to the BML Model. Does that numSteps times. Returns an object with class "BMLGrid".

Usage

```
crunBMLGrid(g, numSteps = 1)
```

Arguments

g	a matrix with 0, 1, 2 entries, which correspond to none, red, blue cars
numSteps	integer, number of moves you want cars to make

Value

Matrix with classes "BMLGrid", "matrix".

Author(s)

Vladimir Pchelin

Examples

```
##Example1
g=createBMLGrid(0.2,10,10)
g=crunBMLGrid(g,100)
par(mfrow=c(1,2))
plot(g,"density=0.2")
g=createBMLGrid(0.5)
g=crunBMLGrid(g,100)
plot(g,"density=0.5")
```

---

runBMLGrid *Moves both types of cars in a matrix.*

Description

Moves both types of cars in a matrix with 0, 1, 2 values as entries. These 1's and 2's move according to the BML Model. Does that numSteps times. Returns an object with class "BMLGrid".

Usage

```
runBMLGrid(g, numSteps = 1)
```

Arguments

g	a matrix with 0, 1, 2 entries, which correspond to none, red, blue cars
numSteps	integer, number of moves you want cars to make

Value

Matrix with classes "BMLGrid", "matrix".

Author(s)

Vladimir Pchelin

Examples

```
##Example1
g=createBMLGrid(0.2,10,10)
g=runBMLGrid(g,100)
par(mfrow=c(1,2))
plot(g,"density=0.2")
g=createBMLGrid(0.5)
g=runBMLGrid(g,100)
plot(g,"density=0.5")
```

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