

Package ‘matrixLaplacian’

July 14, 2016

Title Normalized Laplacian Matrix and Laplacian Map

Version 1.0

Imports scatterplot3d, graphics

Description Constructs the normalized Laplacian matrix of a square matrix, returns the eigenvectors (singular vectors) and visualization of normalized Laplacian map.

Depends R (>= 3.2.2)

License GNU General Public License version 2

Encoding UTF-8

LazyData true

RoxygenNote 5.0.1

NeedsCompilation no

Author Tianhao Wu [aut, cre]

Maintainer Tianhao Wu <tianhao.wu@yale.edu>

Repository CRAN

Date/Publication 2016-07-14 15:57:37

R topics documented:

matrixLaplacian	1
Index	3

matrixLaplacian	<i>Normalized Laplacian Matrix and Laplacian Map</i>
-----------------	--

Description

Constructs the normalized Laplacian matrix of a square matrix, returns the eigenvectors (singular vectors) and visualization of normalized Laplacian map.

Usage

```
matrixLaplacian(A, plot2D=TRUE, plot3D=TRUE)
```

Arguments

A	a numeric or complex matrix whose normalized Laplacian matrix is to be computed
plot2D	a logical value indicating whether a 2-D map should be plotted
plot3D	a logical value indicating whether a 3-D map should be plotted

Value

LaplacianMatrix	the symmetric normalized Laplacian matrix
eigenvector	the eigenvectors of normalized Laplacian matrix, which are same as singular vectors

Examples

```
#Create a square matrix
A <- matrix(c(1:16), 4, 4)
#Construct normalized Laplacian matrix and plot map
m <- matrixLaplacian(A, plot2D=TRUE, plot3D=TRUE)
#See the eigenvectors
vector<-m$eigenvector
```

Index

`matrixLaplacian`, 1