Package ‘matrixLaplacian’

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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.
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matrixLaplacian Normalized Laplacian Matrix and Laplacian Map

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
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