Package 'rmarchingcubes'

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Type Package

Title Calculate 3D Contour Meshes Using the Marching Cubes Algorithm

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Description A port of the C++ routine for applying the marching cubes algorithm written by Thomas Lewiner et al. (2012) <doi:10.1080/10867651.2003.10487582> into an R package. The package supplies the contour3d() function, which takes a 3-dimensional array of voxel data and calculates the vertices, vertex normals, and faces for a 3d mesh representing the contour(s) at a given level.

URL https://github.com/shwilks/rmarchingcubes

BugReports https://github.com/shwilks/rmarchingcubes/issues

Language en-US

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Imports Rcpp (>= 1.0.5)

LinkingTo Rcpp, RcppArmadillo

RoxygenNote 7.3.1

Suggests rmarkdown, knitr, testthat (>= 3.0.0)

Config/testthat/edition 3

VignetteBuilder knitr

Encoding UTF-8

NeedsCompilation yes

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Repository CRAN

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Contents

`contour3d` *Compute Isosurface, a Three Dimension Contour*

Description

Computes a 3D contours or isosurface by the marching cubes algorithm.

Usage

```
contour3d(griddata, level, x, y, z)
```

Arguments

`griddata`	A three dimensional array from which to calculate the contour
`level`	The level at which to construct the contour surface
`x`, `y`, `z`	locations of grid planes at which values in `griddata` are measured

Value

Returns a list with coordinates of each surface vertex, indices of the vertices that make up each triangle, and surface normals at each vertex

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