

Demonstration Video

Voxler – Part 3

Creating an Isosurface and Changing Properties

PART 1

1. Introduction
 2. Creating an Isosurface using the Gridder Module
 3. Creating an Isosurface without using the Gridder Module
 4. Changing the properties of a module
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1. In this part I will demonstrate how to create an isosurface and change the properties of various modules.
 2. To start I am going to demonstrate how to convert a Scattered data set into a three dimensional object. The Gridder module converts the Scattered data to an array of data known as a lattice, which can then be used to create an isosurface or other 3D graphical output.
 - a. Go to File | New to start with a new project, then go to File | Load Data, navigate to the Voxler Data folder, select xyzc1.dat, and click Open. @ data import options dialog boxes will open, Click OK on both of them to use the default settings and import the data.
 - b. Select the xyzc1.dat module in the network window and double click on the Gridder module in the Computational folder in the module library.
 - c. Select the Gridder module in the network window, notice the indicator led on the Gridder module glows yellow until the gridding process is complete. When complete the indicator led will glow green. Now look at the properties window.
 - d. You can change the Gridder properties in this window, such as the grid geometry, the gridding method, and the search type. When the settings are what you want, click Begin Gridding. A Progress dialog box will show you the progress of the gridding calculation. For this demonstration the default settings will be fine so click on Begin Gridding.
 - e. Now the isosurface can be added. An isosurface is a three-dimensional surface of constant value that quickly reconstructs a shape from the data. With the Gridder module selected in the network window, double click on the isosurface module in the module library. The isosurface is viewable in the viewer window
 3. I will now demonstrate how to create an isosurface that doesn't require the Gridder module.
 - a. To get started, go to File | New. When prompted to save the changes, click No.
 - b. Go to File | Load Data, select CT_foot.vdat from the Voxler Data folder, and click open. The module CT_foot.vdat appears in the network window.
 - c. Add the isosurface module by selecting the CT_foot.vdat module and double clicking on Isosurface in the module library window. The visual form of the data appears in the viewer window.

4. Now I will demonstrate how to change the properties of a module. When the properties of a module are changed, the image in the viewer window is automatically updated.
 - a. Select the isosurface module in the network window and its properties are displayed in the properties window.
 - b. The isovalue separates data less than and greater than the selected value. As this value changes the image in the viewer window is updated accordingly. To change the isovalue you can either click and move the slider left or right, or click on the number to the left of the slider and enter an exact value. Enter the number 60 in the Isovalue row.
 - c. You can change the color map by clicking on the example of the colors and selecting the new color map from the pull down menu.
 - d. The opacity option determines the transparency of the surface allowing you to see the layers underneath. You can change the opacity value either by clicking and moving the slider left or right, or by clicking on the number to the left of the slider and entering an exact number. Click on the opacity value and change it to 0.25. Notice when you rotate the image that you can see through the outermost layer and into the shape.
 - e. A legend of what each color represents can be displayed by checking the checkbox next to Legend.