

Surface Extractor: Contour Surface Extraction

Contour surface extraction is the process of converting an object in the voxel-based volume to a representation of the surface of the object, expressed as a series of stacked contours. This surface extraction is a precursor to other applications, such as CAD/CAM modeling, rapid prototyping (model building), and finite element analysis. This exercise demonstrates how to use the Contours algorithm.

1. Load the **MRI_3D_Head.avw** data set from the **\$(\BIR\images\TutorialData** directory.
2. Open the **Surface Extractor** module (**Segment > Surface Extractor**).
3. Choose **File > Load Object Map** and load the **MRI_3D_Head.obj** object map.
4. Open the **Extraction Parameters** window (**Generate > Extraction**).
5. Click **Objects** at the top of the Extraction Parameters window (figure 1). In the window returned, switch the **Ventricle** to **On** and set everything else **Off**. Click **Done** to dismiss the window.
6. Create a contour surface of the 'Ventricle' object using the **Contours** algorithm with the default parameters. Select the **Contours** tab and click **Extract**.
7. A dialog box will be returned stating the number of slices for which contours were generated. Note the number of slices used (60), then click Done.
8. To create a rendering of the extracted contour model, choose **Generate > Render**.
9. In the Extraction Parameters window, click **Advanced** in the 'Contours' tab. Check the **Subvolume Extraction** option and click **Done** to dismiss the window (figure 2).
10. Rebuild the contour surface by clicking **Extract** in the Extraction Parameters window. Note the number of slices used (108). This resamples and reformats the object and thus changes the number of slices.
11. Choose **Generate > Render** to create a rendering of the extracted contour model (figure 3).
12. Close the Surface Extractor module before proceeding to the next exercise.

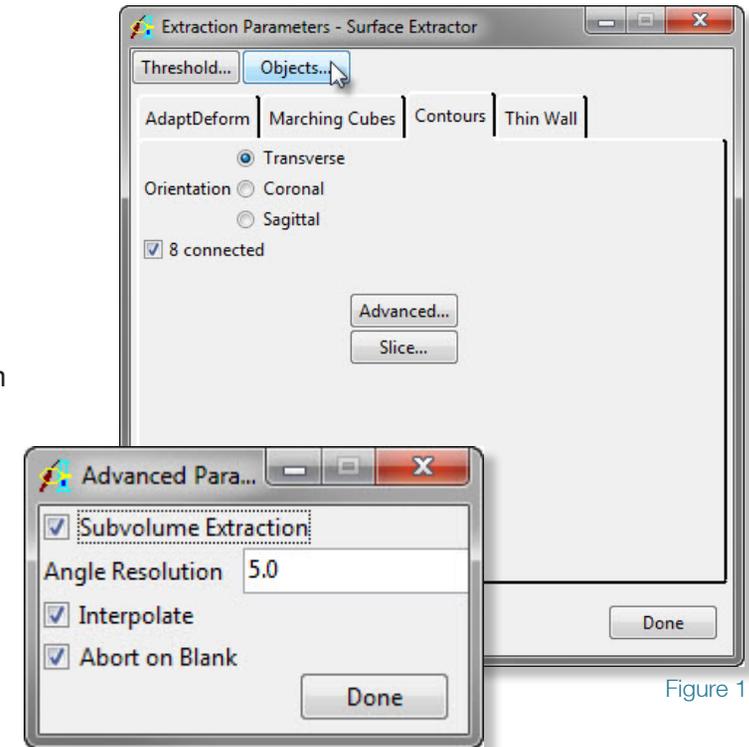


Figure 1

Figure 2

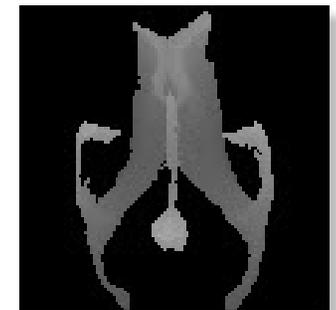


Figure 3