

Volume Edit: 4D Segmentation

Segmentation is often the precursor to other image analysis applications such as image measurement. Volume Edit provides a gamut of tools for a variety of segmentation tasks not only applicable to 2D-ROI and 3D-VOI measurement but also 4D-VOIs. In this exercise we will use the Volume Edit module to segment the left atrium in the heart using the Object Extractor tool over a series of 18 3-D volumes that span the entire cardiac cycle. The segmentation result can then be used for a number of applications such as calculation of blood volumes in the region over different stages of the cardiac cycle or cardiac ejection fraction.

1. Load the mouse dataset **BeatVol** from `$(\BIR\images\TutorialData` directory.
2. Use **File > Load** to load the data set into Analyze.
3. Next select the **BeatVol** data set and open **Segment > Volume Edit**.
4. Note that there is an additional Volume control option. Use the Volume slider to navigate through all 18 volumes. Set the volume back to 1 when done.
5. The “Segment All Volumes” option will be checked by default, with this option checked the semi-automatic segmentation task performed on the currently selected volume will be propagated to each volume in the series.
6. Click on the **Semi-Automatic** tab and choose the Object Extractor option.
7. Set a seed point in the Left Atrium. Set the **Min Threshold** to **154** and the **Max Threshold** to **255**, then click **Extract Object**. The Object will be segmented in all 18 volumes. Review the segmentation by moving through the Volume Slider.
8. Save the object map by selecting **File > Save Object Map**.
9. Exit the Volume Edit module.

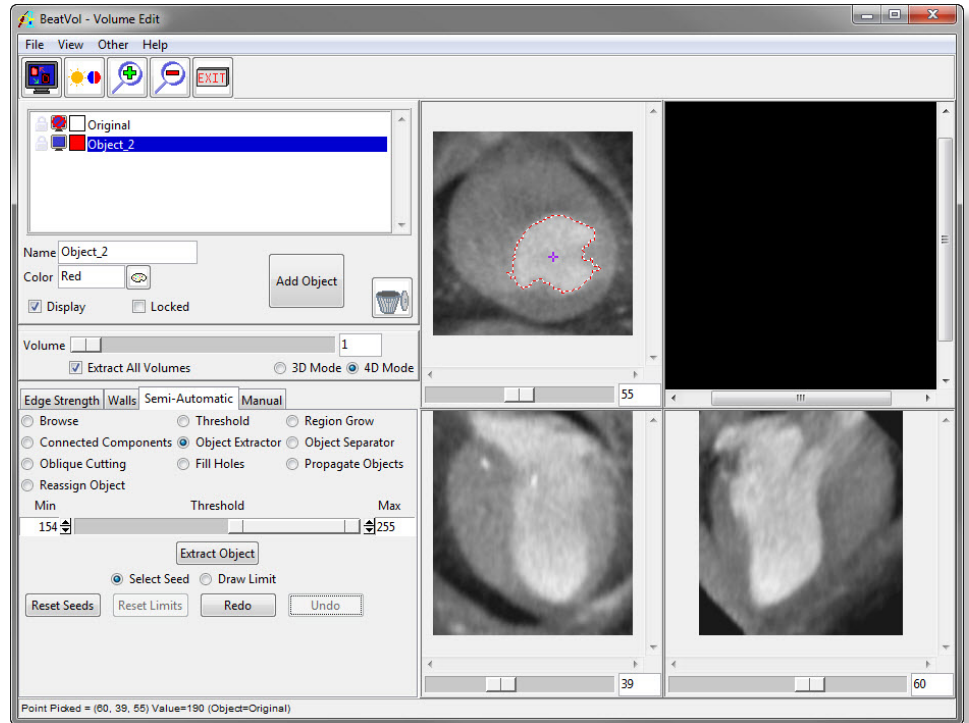


Figure 1

