

# Using atlas data as a spatial reference for a result of a realistic neural network simulation

## Model download

From

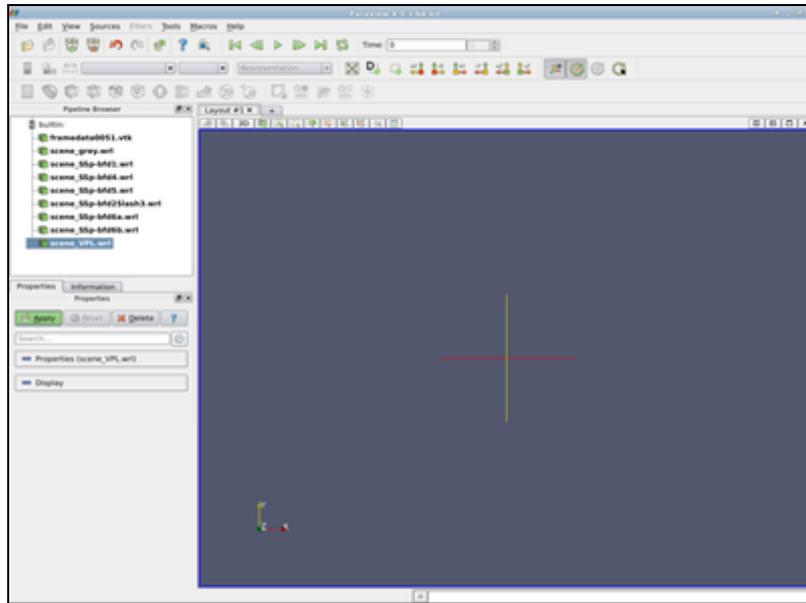
<http://www.3dbar.org:8080/getPreview?cafDatasetName=aba2011;structureName=grey,VPL,SSp-bfd1,SSp-bfd2Slash3,SSp-bfd3,SSp-bfd4,SSp-bfd5,SSp-bfd6a,SSp-bfd6b>  
The Allen Mouse Brain Reference Atlas, 2011 Segmentation download the following VRLM high quality models:

- <http://www.3dbar.org:8080/getReconstruction?cafDatasetName=aba2011&structureName=grey&qualityPreset=high>  
Basic cell groups and regions,
- <http://www.3dbar.org:8080/getReconstruction?cafDatasetName=aba2011&structureName=VPL&qualityPreset=high>  
Ventral posterolateral nucleus of the thalamus,
- <http://www.3dbar.org:8080/getReconstruction?cafDatasetName=aba2011&structureName=SSp-bfd1&qualityPreset=high>  
Primary somatosensory area, barrel field, layer 1,
- <http://www.3dbar.org:8080/getReconstruction?cafDatasetName=aba2011&structureName=SSp-bfd2Slash3&qualityPreset=high>  
Primary somatosensory area, barrel field, layer 2/3,
- <http://www.3dbar.org:8080/getReconstruction?cafDatasetName=aba2011&structureName=SSp-bfd4&qualityPreset=high>  
Primary somatosensory area, barrel field, layer 4,
- <http://www.3dbar.org:8080/getReconstruction?cafDatasetName=aba2011&structureName=SSp-bfd5&qualityPreset=high>  
Primary somatosensory area, barrel field, layer 5,
- <http://www.3dbar.org:8080/getReconstruction?cafDatasetName=aba2011&structureName=SSp-bfd6a&qualityPreset=high>  
Primary somatosensory area, barrel field, layer 6a,
- <http://www.3dbar.org:8080/getReconstruction?cafDatasetName=aba2011&structureName=SSp-bfd6b&qualityPreset=high>  
Primary somatosensory area, barrel field, layer 6b.

Download also a model of a of the barrel cortex collumn. Unwrap downloaded archives.

## Visualisation

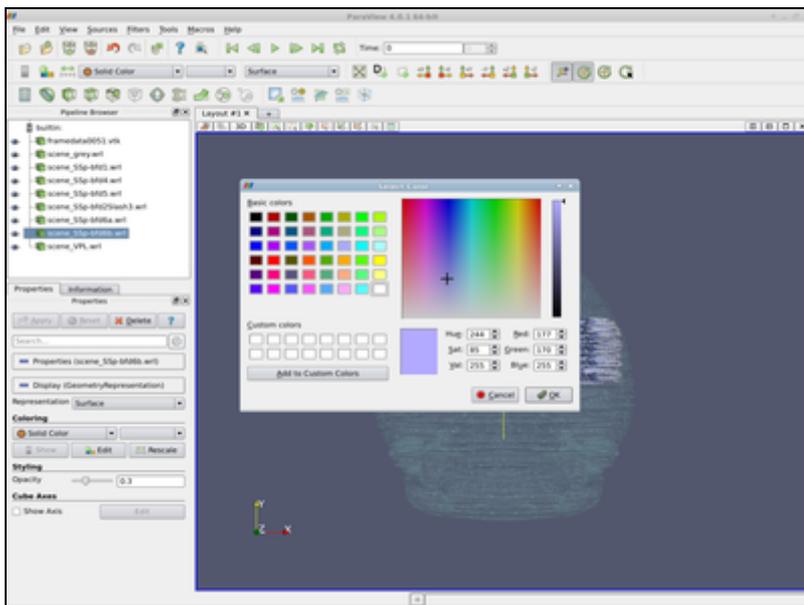
Run <http://www.paraview.org> ParaView software. Open downloaded \*.wrl and \*.vtk files. Click the *Apply* button



(in the tab *Properties*). Loaded models.

In the tab *Properties* set *Styling: Opacity* to 0.1 for *scene\_grey.wrl* model. For every *scene\_SSp\_bfd\*.wrl* model set *Styling: Opacity* to 0.3, then change *Coloring* from *VRMLColor* to *Solid Color*. Click *Coloring: Edit* and select color to:

- Red = 250, Green: 245, Blue: 255 for *scene\_SSp\_bfd1.wrl*,
- Red = 153, Green: 163, Blue: 255 for *scene\_SSp\_bfd2Slash3.wrl*,
- Red = 74, Green: 77, Blue: 128 for *scene\_SSp\_bfd4.wrl*,
- Red = 171, Green: 177, Blue: 255 for *scene\_SSp\_bfd5.wrl*,
- Red = 145, Green: 149, Blue: 213 for *scene\_SSp\_bfd6a.wrl*,
- Red = 177, Green: 170, Blue: 255 for *scene\_SSp\_bfd6b.wrl*.



Color and opacity settings.

- 1 - Open Grayscale Image... - Tutorial: How to use labeled volumes?
- 2 - Choose NIfTI volume you extracted - Tutorial: How to use labeled volumes?

- [4 - Choose 'Segmentation', then 'Load from image' - Tutorial: How to use labeled volumes?](#)
- [5 - Select the same NIfTI file - Tutorial: How to use labeled volumes?](#)
- [7 - "Segmentation", "Load Label Descriptions..." - Tutorial: How to use labeled volumes?](#)
- [8 - Select file with the lookup table - Tutorial: How to use labeled volumes?](#)
- [9 - - Tutorial: How to use labeled volumes?](#)
- [10 - Click 'update mesh' button - Tutorial: How to use labeled volumes?](#)
- [11 - "Segmentation", "Export As Surface Mesh" - Tutorial: How to use labeled volumes?](#)
- [12 - - Tutorial: How to use labeled volumes?](#)
- [13 - Downloading labeled volume from 'Atlas Details' tab - Tutorial: How to use labeled volumes?](#)
- [14 - Downloading labeled volume from 'Live preview' tab - Tutorial: How to use labeled volumes?](#)
- [15 - You have to be logged in in order to access the \*Custom Reconstruction Wizzard. Structures loaded in Live preview window are automatically transferred to the reconstruction wizard.\* - \*Accessing the Custom Reconstruction Wizzard\*](#)
- [16 - Accessing the reconstruction wizzard from the \*Reconstructions\* tab. - \*Accessing the Custom Reconstruction Wizzard\*](#)
- [17 - Visualisation01 - Loaded models.](#)
- [18 - Visualisation02 - Color and opacity settings.](#)
- [19 - Visualisation03 - Voltage to color mapping.](#)
- [20 - Visualisation04 - The transformation filter.](#)
- [21 - Visualisation05.png - A complete scene.](#)
- [22 - Visualisation06.png - The complete scene at another viewpoint.](#)
- [23 - Visualisation07.png - The complete scene - focus on the model of barrel cortex column.](#)