**Brain Visualizer Toolbar**

 **Open Model:** Open a model file (using a platform-dependent file dialog).

 **Open and Load All:** Open a model file and load its corresponding firing spikes, voltages, and weights, if they exist.

 **Load Firing Spikes:** Load a firing spike file corresponding to the open model.

 **Load Voltages:** Load a voltages file corresponding to the open model.

 **Load Weights:** Load a weights file corresponding to the open model.

 **Export Image:** Export the current model area as a PNG, BMP, TGA, or PPM image.

 **Undo:** Undo the previous action (up to 50 times). Anything that modifies the navigation state (the position and orientation of the model in 3D space, and the set of selected somas) counts as an action.

 **Redo:** Redo the last undone action (up to 50 times).

 **Repeat:** Repeat the previous rotate, pan, or zoom action relative to the current state. This is useful for making incremental rotations in the same direction.

 **Copy:** Copy the current navigation state to the clipboard.

 **Paste:** Paste the saved navigation state from the clipboard. If no state has been saved, this acts like Reset.

 **Reset:** Reset the navigation state to the original when the model was first opened.

 **Axonal Connections:** Toggle showing axonal connections for selected somas (those from the selected somas to others).

 **Dendritic Connections:** Toggle showing dendritic connections for selected somas (those from other somas to the selected ones).

 **Gap Junctions:** Toggle showing gap junctions for selected somas.

 **Neuritic Fields:** Toggle showing the neuritic fields for selected somas.

 **Connected Fields:** Toggle showing the neuritic fields for somas connected to the selected somas. The connected fields are shown only if the Neuritic Fields option is on.

E:\Desktop\syn-dots.png **Synapse Dots:** Toggle showing the locations of synapses inside neuritic fields. The synapses are shown only if the Neuritic Fields option is on.

 **To Axonal Soma:** Toggle whether synaptic connections pass through the axonal soma’s location.

 **To Via Point:** Toggle whether synaptic connections pass through the *via* point.

 **To Synapse:** Toggle whether synaptic connections pass through the synapse location.

 **To Dendritic Soma:** Toggle whether synaptic connections pass through the dendritic soma’s location.

 **Allow Letters:** Toggle allowing somas to be displayed as letters if their types are configured for it. This is off by default to improve performance.

 **Only Show Selected:** Toggle only showing selected somas (and the ones connected to them, if axonal or dendritic connections are shown).

**E:\Desktop\conn-selected-24.png** **Only Connect Selected:** Toggle only showing synaptic connections between pairs of selected somas.

**E:\Desktop\show-marked-24.png** **Only Show Marked:** Toggle only showing marked synapses.

 **Only Show Clipped:** Toggle only showing somas inside the clipping region. The hidden outside somas will only be displayed if they are connected to a selected soma.

 **Orthographic Projection:** Toggle the use of orthographic projection. The default perspective projection shows further-away points as closer together, whereas orthographic projection does not distort distance.

 **Select:** Click a soma to select it. Hold down Shift or turn on Caps Lock while clicking to select multiple somas. Up to 1,000 somas can be selected at once. Click in empty space to deselect them. Hold down Ctrl while clicking a soma, or right-click it, to bring up a summary dialog with detailed information about the soma. Do the same in empty space for information about the whole model.

 **Clip:** Click and drag to draw a box around a group of somas. The box will then be projected into 3D space, and all somas outside of it will be clipped. Somas outside the clipping region can be hidden or disabled. Clipping also changes the center of the model to be in the middle of the somas within the clipping box, which affects rotation.

 **Rotate:** Click and drag to rotate the model around the center of the clipping region. By default, a wireframe sphere with three axes is superimposed on the model while rotating to make results clearer. There are five rotation modes, accessible via the dropdown arrow to the right of the Rotate button:

* **2D Arcball:** Dragging left, right, up, and down rotates the model in the direction it was dragged. The initially clicked point is irrelevant; only the dragging direction affects the model.
* **3D Arcball:** Clicking a point figuratively grabs a point on the sphere surrounding the clipping region (or the whole model, if it has not been clipped), and dragging moves that point to where it was dragged. This lets dragging in two dimensions affect the orientation around all three axes. This is the default mode.
* **X-Axis:** Dragging perpendicular to the *x*-axis rotates the model around that axis. If the *x*-axis is nearly perpendicular to the screen, then clicking figuratively grabs a point on the cylinder surrounding the *x*-axis, and dragging moves that point to where it was dragged.
* **Y-Axis:** Behaves like the *x*-axis mode, but for the *y*-axis.
* **Z-Axis:** Behaves like the *x*-axis mode, but for the *z*-axis.

 **Pan:** Click and drag to pan (translate) the model in the desired direction. Panning too far away from the center can cause parallax distortion when using perspective projection.

 **Zoom:** Click and drag upwards to zoom in (making the model larger) and downwards to zoom out (making it smaller). Zooming is relative to the center of the clipping region. If Tools → Invert Zoom is on, the directions are reversed.

 **Mark Synapse:** Click a synapse dot to mark or unmark it. Hold down Shift or turn on Caps Lock while clicking to mark multiple synapses. Click in empty space to unmark them. Hold down Ctrl while clicking a synapse, or right-click it, to bring up a summary dialog with detailed information about the synapse.

 **Snap to Axes:** Rotate the model so that its axes are aligned straight horizontally and vertically.

E:\Desktop\Untitled.png **Reset Settings:** Reset the menu and toolbar toggle settings to their default values.