**Useful guis**

See ‘D:\Depth electrode github example\Rat\_055\Useful guis’ on harddrive or ‘eit-nas/shared/Mayo Depth electrode github example\Rat\_055\Useful guis’ on eit-nas for example of output from guis and examples of info parameter needed

1. **recongui.m**

Overview

Allows you to visualise reconstruction from depth probes around depth probes at all time points. Can change threshold of reconstruction.

Code/files required

1. prepare\_info\_for\_recongui.m
2. Mesh\_hex\_RatXX\_depth.mat
3. Mesh\_rods\_RatXX.mat
4. pos\_depth.m
5. recon\_RatXX\_depth\_tik0.mat or recon\_RatXX\_depth\_tik1.mat (N.B in prepare\_info\_recongui must be the same Mesh tetra and Mesh hex that you used to create Jacobians for reconstructions)

Input

1. In prepare\_info\_recongui.m change lines 1,2 and 14 to point to correct files

Output

1. Save info.mat

Execution

[S] = recongui(ABS, info) (where ABS = X./SD)

1. See recon\_gui\_example.png
2. **cortex\_depth\_gui.m**

Overview

Allows you to visualise reconstruction in whole mesh all time points. Can change threshold of reconstruction. Use when you have reconstructed in depth and cortex simultaneously on same mesh. Or if you just want to visualise the depth or cortex reconstruction individually

Code/files required

1. prepare\_info\_depth.m
2. prepare\_info\_cortex.m
3. Mesh\_rods\_ratXX.mat
4. Mesh\_hex\_rods\_ratXX.mat
5. Mesh\_ratXX.mat
6. Mesh\_cortical\_layers.mat (found in eit-nas or hardrive)
7. Pos\_depth.mat
8. recon\_RatXX\_depth\_tik0.mat or recon\_RatXX\_depth\_tik1.mat or recon\_RatXX\_cortex\_tik0.mat or recon\_RatXX\_cortex\_tik1.mat

Input

1. In prepare\_info\_depth.m change lines to point to correct files
2. In prepare\_info\_cortex.m change lines to point to correct files
3. N.B if hex mesh is the same for cortex and depth then only need to run one as the output will be equivalent

Output

1. Save info.mat

Execution

[S] = cortex\_depth\_gui(ABS, info) (where ABS = X./SD)

See cortex\_depth\_gui\_example\_depth.png and cortex\_depth\_gui\_example\_cortex.png

1. **cortex\_depth\_sep\_gui.m**

Overview

Allows you to visualise reconstruction in whole mesh all time points. Can change threshold of reconstruction. Use when you have reconstructed in depth and cortex on different meshes and want to visualise simultaneously

Code/files required

1. prepare\_info\_cortex\_depth\_sep.m
2. Mesh\_rods\_ratXX.mat
3. Mesh\_hex\_rods\_ratXX.mat
4. Mesh\_ratXX.mat
5. Mesh\_cortical\_layers.mat
6. Pos\_depth.mat
7. recon\_RatXX\_depth\_tik0.mat and recon\_RatXX\_cortex\_tik0.mat or recon\_RatXX\_depth\_tik1.mat or recon\_RatXX\_cortex\_tik1.mat

Input

1. In prepare\_info\_cortex\_depth\_sep.m change lines to point to correct files

Output

1. Save info.mat

Execution

[S] = cortex\_depth\_gui(ABS\_c, ABS\_d, info)

- ABS\_d from depth reconstruction

-ABS\_c from cortical reconstruction

See cortex\_depth\_sep\_gui\_example.png

1. **topoplot\_gui.m**

Overview

Allows you to visualise topoplot of LFP on surface of cortex, topoplot of MUAe on surface of cortex and reconstruction in cortex with time

Code/files required

1. Need example of EIT\_avg.EP\_avg for one injection pair and to decimate
2. Need example of MUAE (this can be obtained by changing filter settings in filter\_data (see commented section) Only run this for the same injection pair as you have the LFP data for. Also decimate
3. See example in (eit-nas / harddirve) for how data should be stored
4. prepare\_info\_topo.m
5. cortex\_map.mat
6. cortex\_pos.mat

Input

1. Need to generate EP\_mua from data (see above)
2. In prepare\_info\_topo.m change lines to point to relevant files

Output

1. Save topo.mat

Execution

[S] = topoplot\_gui(topo, ABS, thres)

- ABS - cortical reconstruction

-thres – what you want to threshold cortical reconstruction to (50)

See topoplot\_gui\_example.png for example