**Processing times**

We run the system on a desktop computer with the following configuration: Intel core i7 with 8 cores CPU, 12 GB of RAM. Image pre-processing time was (mean+/-std) 107 +/- 2 min, ventricle segmentation took 19 +/- 1 min, HC and AG segmentation took 78 +/- 1 min, other segmentations (sulci, temporal GM) took 11 +/- 0.4 min, skull extraction and normal calculation took 24 +/- 2 min, and vessel extraction took 24 +/- 1 min. Total image processing time was in average 196 min (3h 16min) per patient, when running segmentations in parallel.

The optimization algorithm took in average 20.6 min per 3-electrode set. In detail, to generate possible trajectories took 44 +/- 3 sec, risk avoidance calculation took 128 +/- 33 sec, to compute the recording volume took 18 +/- 5 min, and the global optimization took 0.32 +/- 1 sec. Re-estimation of best trajectories, by modifying the weights or fixing one trajectory and optimizing the others, takes less than one second.