

1. Supplemental Figures

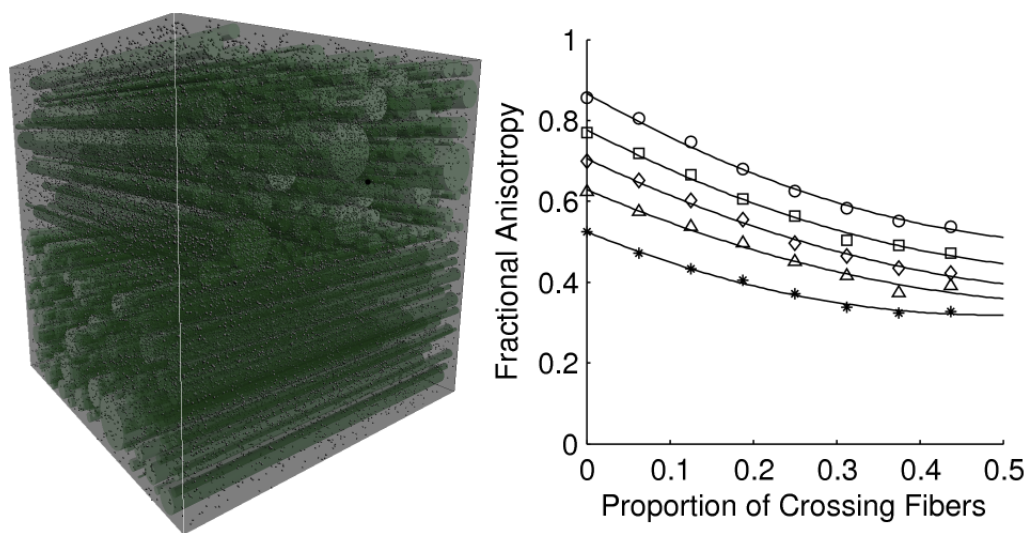


Figure 1: (Left) An example of the simulated voxel to show the crossing geometry that we used. We show only a $20\mu\text{m}$ voxel rather than the full $200\mu\text{m}$ voxel for clarity. The points represent the diffusing particles in the diffusion simulation and the green cylinders represent the fibers. (Right) Diffusion simulation results in the presence of crossing fibers. The FA drops significantly as the proportion of crossing fibers increases. Results for five different fiber volume fractions are shown: 0.59 (circles), 0.52 (squares), 0.45 (diamonds), 0.36 (triangles), and 0.24 (stars).

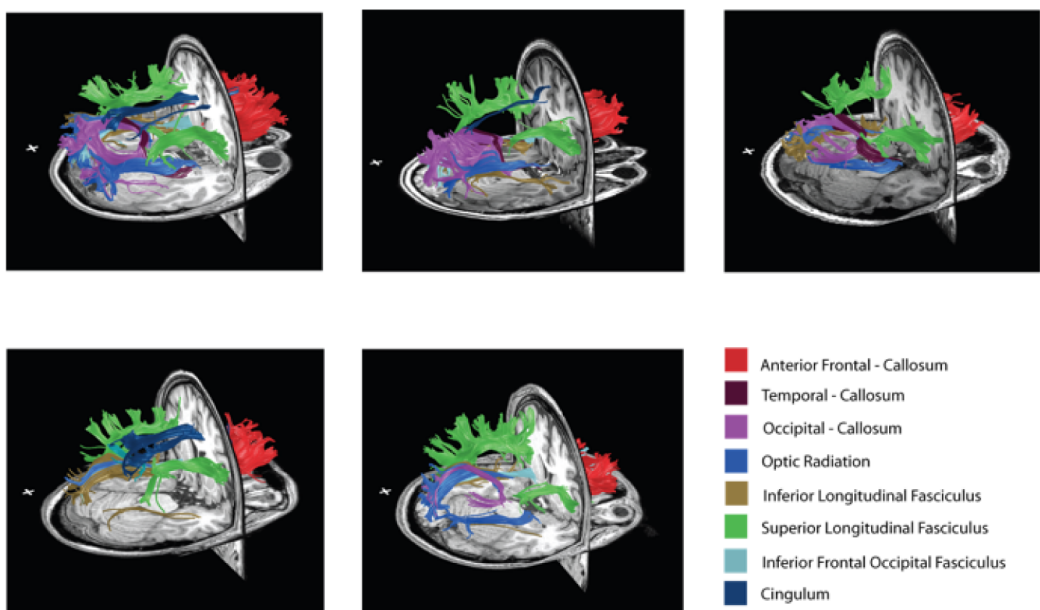


Figure 2: Fiber groups with high BPF in five healthy volunteers. The anterior frontal callosal and superior longitudinal fasciculus groups are prominent in all subjects. Also, we see the optic radiation in all five subjects. While many fiber groups are similar across subjects, there are interesting individual differences. For example, the cingulum is among the high-BPF fibers in only three of the five subjects.