Summary

This work looks at hypothesis testing in fMRI data, specifically the effect of using parametric over nonparametric methods. They show that the commonly used parametric tests (e.g., t test) have a large FWER than they should, resulting in much literature in this area may be unreliable. They show that using nonparametric methods (such as a permutation test) are useful when the assumptions of parametric tests might not hold, specifically in the case of analyzing clusters of voxels.

Reaction

Seems like a good paper people in this field should read. I’m not sure why they are checking these assumptions now after a long time of performing these tests. Also, they blend together their methods and results in the same section (“Results”), which makes it slightly annoying to read.

Questions

Are they comparing mean values of the time series in each voxel/cluster? It wasn’t obvious they were doing something else.

I wonder how they chose the number of samples to use? It seems like this would be a very important part of their analysis (careful not to choose a number that’s too big but not too small)