

Recent developments in optimal experimental designs for functional MRI

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Functional magnetic resonance imaging (fMRI) is one of the leading brain mapping technologies for studying brain activity in response to mental stimuli. For neuroimaging studies utilizing this pioneering technology, high-quality experimental designs help to collect informative data to make precise and valid statistical inference about functions of the brain, and are very important. Here, we present some recently developed analytical and computational results on fMRI designs with a focus on the former. The performance of some traditionally popular fMRI designs as well as some newly developed fMRI designs is discussed.