

Statistical Parametric Maps for Functional MRI Experiments in R: The Package *fmri*

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The purpose of the package **fmri** is the analysis of single subject functional magnetic resonance imaging (fMRI) data. It provides fMRI analysis from time series modeling by a linear model to signal detection and publication quality images. Specifically, it implements structural adaptive smoothing methods with signal detection for adaptive noise reduction which avoids blurring of activation areas.

We describe the complete pipeline for fMRI analysis using **fmri**, i.e., reading from various medical imaging formats, the linear modeling used to create the statistical parametric maps, signal detection and visualization of results. We review the rationale behind the structural adaptive smoothing algorithms and explain their usage from the package **fmri**. We demonstrate how such an analysis is performed using experimental data.

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