AnalyzeFMRI: an R package to perform statistical analysis on FMRI datasets

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AnalyzeFMRI is a developing package, initiated by J. Marchini, for the processing and analysis of large structural Magnetic Resonance Imaging (MRI) and Functional MRI (FMRI) datasets. In this presentation, we first introduce MRI and fMRI to enlight the data specificities and the main image processing steps. We then describe the current package version and the functionnalities we have recently added, mainly NFTI format management, cross-platform visualization based on Tcl/TK components and temporal and spatial IC analysis. We illustrate our presentation with examples coming from human visual experiments [1,2], especially demonstrating the interest of spatial and temporal IC analysis [3] compared to standard general linear model [4]. We conclude about the interest of the AnalyzeFMRI package for the exploration of MRI data and outline our plans for future extensions.

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