Resource Summary Report

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fMRI-CPCA

RRID:SCR_009520
Type: Tool

Proper Citation

fMRI-CPCA (RRID:SCR_009520)

Resource Information

URL: http://www.nitrc.org/projects/fmricpca/

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Description: Constrained Principal Component Analysis (CPCA) combines regression analysis and principal component analysis into a unified framework. This method derives images of functional neural networks from singular-value decomposition of BOLD signal time series, and allows derivation of images when the analyzed BOLD signal is constrained to the scans occurring in peristimulus time, using all other scans as baseline. CPCA provides allows (1) determination of multiple functional networks involved in a task, (2) estimation of the pattern of BOLD changes associated with each functional network over peristimulus time points, (3) quantification of the degree of interaction between these multiple functional networks, and (4) a statistical test of the degree to which experimental manipulations affect each functional network. fMRI CPCA provides all results in matlab.mat file format, as well as writing images in analyze format for all components, rotated and unrotated.

Abbreviations: fMRI-CPCA, fMRI CPCA

Synonyms: fMRI-Constrained Principal Component Analysis, fMRI Constrained Principal Component Analysis

Resource Type: software resource, software application

Keywords: analyze, linux, macos, matlab, microsoft, magnetic resonance, nifti, posix/unix-like, principal component analysis, regression, statistical operation, windows

Availability: Free

Resource Name: fMRI-CPCA

Resource ID: SCR_009520

Alternate IDs: nlx_155682

Record Creation Time: 20220129T080253+0000

Record Last Update: 20260808T190516+0000

Ratings and Alerts

No rating or validation information has been found for fMRI-CPCA.

No alerts have been found for fMRI-CPCA.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 7 mentions in open access literature.

Listed below are recent publications. The full list is available at SPARC SAWG .

Dutt TS, et al. (2022) Mucosal exposure to non-tuberculous mycobacteria elicits B cell-mediated immunity against pulmonary tuberculosis. Cell reports, 41(11), 111783.

Lavigne KM, et al. (2018) Hallucination- and speech-specific hypercoupling in frontotemporal auditory and language networks in schizophrenia using combined task-based fMRI data: An fBIRN study. Human brain mapping, 39(4), 1582.

Larivi??re S, et al. (2018) Disrupted functional network integrity and flexibility after stroke: Relation to motor impairments. NeuroImage. Clinical, 19, 883.

Engen HG, et al. (2017) The neural component-process architecture of endogenously generated emotion. Social cognitive and affective neuroscience, 12(2), 197.

Metzak PD, et al. (2015) Functional brain networks involved in reality monitoring. Neuropsychologia, 75, 50.

Liu Z, et al. (2015) Neural networks supporting switching, hypothesis testing, and rule application. Neuropsychologia, 77, 19.

Whitman JC, et al. (2013) Functional connectivity in a frontoparietal network involving the dorsal anterior cingulate cortex underlies decisions to accept a hypothesis. Neuropsychologia, 51(6), 1132.