Resource Summary Report

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PHYCAA+: adaptive physiological noise correction for BOLD fMRI

RRID:SCR_002514
Type: Tool

Proper Citation

PHYCAA+: adaptive physiological noise correction for BOLD fMRI (RRID:SCR_002514)

Resource Information

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

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Description: Software algorithm that automatically estimates and removes physiological noise in BOLD fMRI data, including the effects of heartbeat and respiration. This algorithm (1) masks out high-variance CSF and vascular tracts that may otherwise confound analyses, and (2) regresses out noise timeseries in grey matter tissue, using an adaptive multivariate component decomposition (Canonical Autocorrelations Analysis). PHYCAA+ is an efficient, automated procedure that does NOT require external measures of physiology, nor does it require the user to manually identify noise components. Based on the peer-reviewed article: Churchill & Strother (2013). PHYCAA+: An Optimized, Adaptive Procedure for Measuring and Controlling Physiological Noise in BOLD fMRI. NeuroImage 82: 306-325

Abbreviations: PHYCAA+

Resource Type: image processing software, software application, software resource, data processing software

Defining Citation: PMID:23727534

Keywords: algorithm, matlab, magnetic resonance, nifti, os independent, fmri, bold, bold fmri, multivariate, physiological noise

Funding:

Availability: GNU Lesser General Public License

Resource Name: PHYCAA+: adaptive physiological noise correction for BOLD fMRI

Resource ID: SCR_002514

Alternate IDs: nlx_155913

Record Creation Time: 20220129T080213+0000

Record Last Update: 20250412T054714+0000

Ratings and Alerts

No rating or validation information has been found for PHYCAA+: adaptive physiological noise correction for BOLD fMRI.

No alerts have been found for PHYCAA+: adaptive physiological noise correction for BOLD fMRI.

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 FDI Lab - SciCrunch.org.

Churchill NW, et al. (2021) Disturbances in Brain Physiology Due to Season Play: A Multi-Sport Study of Male and Female University Athletes. Frontiers in physiology, 12, 653603.

Churchill NW, et al. (2020) Scale-free functional brain dynamics during recovery from sport-related concussion. Human brain mapping, 41(10), 2567.

Hassel S, et al. (2020) Reliability of a functional magnetic resonance imaging task of emotional conflict in healthy participants. Human brain mapping, 41(6), 1400.

Churchill NW, et al. (2018) Connectomic markers of symptom severity in sport-related concussion: Whole-brain analysis of resting-state fMRI. NeuroImage. Clinical, 18, 518.

Churchill NW, et al. (2017) The first week after concussion: Blood flow, brain function and white matter microstructure. NeuroImage. Clinical, 14, 480.

Churchill NW, et al. (2017) Optimizing fMRI preprocessing pipelines for block-design tasks

as a function of age. NeuroImage, 154, 240.

Churchill NW, et al. (2015) An Automated, Adaptive Framework for Optimizing Preprocessing Pipelines in Task-Based Functional MRI. PloS one, 10(7), e0131520.