

Resource Summary Report

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NIRS-SPM

RRID:SCR_009630

Type: Tool

Proper Citation

NIRS-SPM (RRID:SCR_009630)

Resource Information

URL: <http://bisp.kaist.ac.kr/NIRS-SPM>

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Description: A SPM and MATLAB-based software package for statistical analysis of near-infrared spectroscopy (NIRS) signals. Based on the general linear model (GLM), and Sun's tube formula / Lipschitz-Killing curvature (LKC) based expected Euler characteristics, NIRS-SPM not only provides activation maps of oxy-, deoxy-, and total-hemoglobin, but also allows for super-resolution activation localization. Additional features, including a wavelet-minimum description length detrending algorithm and cerebral metabolic rate of oxygen (CMRO₂) estimation without hypercapnia, were implemented in the NIRS-SPM software package.

Abbreviations: NIRS-SPM

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

Keywords: optical imaging, near-infrared spectroscopy, spm, matlab

Funding:

Availability: GNU General Public License

Resource Name: NIRS-SPM

Resource ID: SCR_009630

Alternate IDs: nlx_155885

Alternate URLs: http://www.nitrc.org/projects/nirs_spm

Record Creation Time: 20220129T080254+0000

Record Last Update: 20250514T061504+0000

Ratings and Alerts

No rating or validation information has been found for NIRS-SPM.

No alerts have been found for NIRS-SPM.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 121 mentions in open access literature.

Listed below are recent publications. The full list is available at [dkNET](#).

Nemoto M, et al. (2025) Long-Term Multimodal Exercise Intervention for Patients with Frontotemporal Lobar Degeneration: Feasibility and Preliminary Outcomes. *Dementia and geriatric cognitive disorders extra*, 15(1), 19.

Zhang H, et al. (2024) Neurovascular coupling in the attention during visual working memory processes. *iScience*, 27(4), 109368.

Lu J, et al. (2024) Age-related differences of subjective visual vertical perception in adults-a functional near-infrared spectroscopy study. *Frontiers in aging neuroscience*, 16, 1449455.

Liu Y, et al. (2024) Brain activation patterns in patients with post-stroke cognitive impairment during working memory task: a functional near-infrared spectroscopy study. *Frontiers in neurology*, 15, 1419128.

Wu J, et al. (2024) Effects of rhythmic visual cues on cortical activation and functional connectivity features during stepping: an fNIRS study. *Frontiers in human neuroscience*, 18, 1337504.

Wang J, et al. (2024) Comparison of different rhythmic auditory stimuli on prefrontal cortex cortical activation during upper limb movement in patients with Parkinson's disease: a functional near-infrared spectroscopy study. *Frontiers in neurology*, 15, 1336268.

Wang H, et al. (2024) Effects of two-person synchronized cycling exercise on interpersonal cooperation: A near-infrared spectroscopy hyperscanning study. *International journal of*

clinical and health psychology : IJCHP, 24(3), 100492.

Chen S, et al. (2024) Cortical activity in patients with high-functioning ischemic stroke during the Purdue Pegboard Test: insights into bimanual coordinated fine motor skills with functional near-infrared spectroscopy. *Neural regeneration research*, 19(5), 1098.

Eken A, et al. (2024) Explainable fNIRS-based pain decoding under pharmacological conditions via deep transfer learning approach. *Neurophotonics*, 11(4), 045015.

Zhang X, et al. (2024) Support vector machine prediction of individual Autism Diagnostic Observation Schedule (ADOS) scores based on neural responses during live eye-to-eye contact. *Scientific reports*, 14(1), 3232.

Gan L, et al. (2024) Effects of low-frequency rTMS combined with speech and language therapy on Broca's aphasia in subacute stroke patients. *Frontiers in neurology*, 15, 1473254.

Okumura Y, et al. (2024) The Impact of Listening to Background Music on Inhibition Control and Prefrontal Cortical Activation in Healthy Older Adults: A Study Using Functional Near-Infrared Spectroscopy. *Cureus*, 16(9), e69445.

Huo C, et al. (2024) Effectiveness of unilateral lower-limb exoskeleton robot on balance and gait recovery and neuroplasticity in patients with subacute stroke: a randomized controlled trial. *Journal of neuroengineering and rehabilitation*, 21(1), 213.

Wang C, et al. (2023) An fNIRS investigation of novel expressed emotion stimulations in schizophrenia. *Scientific reports*, 13(1), 11141.

Alcock L, et al. (2023) Faster Walking Speeds Require Greater Activity from the Primary Motor Cortex in Older Adults Compared to Younger Adults. *Sensors (Basel, Switzerland)*, 23(15).

Lee G, et al. (2023) HyperOptoNet: a MATLAB-based toolbox for inter-brain neuronal synchrony analysis using fNIRS hyperscanning. *Neurophotonics*, 10(2), 025015.

Crum J, et al. (2022) Decreased Exercise-Induced Changes in Prefrontal Cortex Hemodynamics Are Associated With Depressive Symptoms. *Frontiers in neuroergonomics*, 3, 806485.

Hirsch J, et al. (2022) Neural correlates of eye contact and social function in autism spectrum disorder. *PloS one*, 17(11), e0265798.

Chen L, et al. (2022) Distinct Contributions of Genes and Environment to Visual Size Illusion and the Underlying Neural Mechanism. *Cerebral cortex (New York, N.Y. : 1991)*, 32(5), 1014.

Cheng X, et al. (2022) Integration of social status and trust through interpersonal brain synchronization. *NeuroImage*, 246, 118777.