Resource Summary Report

Generated by <u>NIF</u> on May 11, 2025

EEGLAB

RRID:SCR_007292 Type: Tool

Proper Citation

EEGLAB (RRID:SCR_007292)

Resource Information

URL: http://sccn.ucsd.edu/eeglab/index.html

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Description: Interactive Matlab toolbox for processing continuous and event-related EEG, MEG and other electrophysiological data incorporating independent component analysis (ICA), time/frequency analysis, artifact rejection, event-related statistics, and several useful modes of visualization of the averaged and single-trial data. First developed on Matlab 5.3 under Linux, EEGLAB runs on Matlab v5 and higher under Linux, Unix, Windows, and Mac OS X (Matlab 7+ recommended). EEGLAB provides an interactive graphic user interface (GUI) allowing users to flexibly and interactively process their high-density EEG and other dynamic brain data using independent component analysis (ICA) and/or time/frequency analysis (TFA), as well as standard averaging methods. EEGLAB also incorporates extensive tutorial and help windows, plus a command history function that eases users" transition from GUI-based data exploration to building and running batch or custom data analysis scripts. EEGLAB offers a wealth of methods for visualizing and modeling eventrelated brain dynamics, both at the level of individual EEGLAB "datasets" and/or across a collection of datasets brought together in an EEGLAB "studyset." For experienced Matlab users, EEGLAB offers a structured programming environment for storing, accessing, measuring, manipulating and visualizing event-related EEG data. For creative research programmers and methods developers, EEGLAB offers an extensible, open-source platform through which they can share new methods with the world research community by publishing EEGLAB "plug-in" functions that appear automatically in the EEGLAB menu of users who download them. For example, novel EEGLAB plug-ins might be built and released to "pick peaks" in ERP or time/frequency results, or to perform specialized import/export, data visualization, or inverse source modeling of EEG, MEG, and/or ECOG data. EEGLAB Features * Graphic user interface * Multiformat data importing * High-density data scrolling * Defined EEG data structure * Open source plug-in facility * Interactive plotting functions * Semi-automated artifact removal * ICA & time/frequency transforms * Many advanced plug-in toolboxes * Event & channel location handling * Forward/inverse head/source modeling

Abbreviations: EEGLAB

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

Defining Citation: PMID:15102499

Keywords: visualization, eeg modeling, independent component analysis, meg modeling, eeg, erp, spectral decomposition, single-trial, matlab, meg, electrophysiology, format conversion, source separation analysis, fourier time-domain analysis, spectral analysis, temporal wavelet analysis, anova, event related potential, three dimensional display, two dimensional display

Funding: NINDS

Availability: GNU General Public License

Resource Name: EEGLAB

Resource ID: SCR_007292

Alternate IDs: nif-0000-00076

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

Old URLs: http://www.nitrc.org/projects/incf_eeglab/

Record Creation Time: 20220129T080241+0000

Record Last Update: 20250509T055839+0000

Ratings and Alerts

No rating or validation information has been found for EEGLAB.

No alerts have been found for EEGLAB.

Data and Source Information

Source: <u>SciCrunch Registry</u>

Usage and Citation Metrics

We found 5887 mentions in open access literature.

Listed below are recent publications. The full list is available at <u>NIF</u>.

De Martino E, et al. (2025) Increase in beta frequency phase synchronization and power after a session of high frequency repetitive transcranial magnetic stimulation to the primary motor cortex. Neurotherapeutics : the journal of the American Society for Experimental NeuroTherapeutics, 22(1), e00497.

Lin W, et al. (2025) Source Causal Connectivity Noninvasively Predicting Surgical Outcomes of Drug-Refractory Epilepsy. CNS neuroscience & therapeutics, 31(1), e70196.

López-Caballero F, et al. (2025) Auditory sensory processing measures using EEG and MEG predict symptom recovery in first-episode psychosis with a single-tone paradigm. NeuroImage. Clinical, 45, 103730.

Huang C, et al. (2025) There is a party in my head and no one is invited: Resting-state electrocortical activity and solitude. Journal of personality, 93(1), 155.

Anderson K, et al. (2025) Generalisation of EEG-Based Pain Biomarker Classification for Predicting Central Neuropathic Pain in Subacute Spinal Cord Injury. Biomedicines, 13(1).

Guan C, et al. (2025) Greater neural delay discounting on reward evaluation in anhedonia. International journal of clinical and health psychology : IJCHP, 25(1), 100542.

Qiao X, et al. (2025) Exploring the neural mechanisms underlying cooperation and competition behavior: Insights from stereo-electroencephalography hyperscanning. iScience, 28(2), 111506.

Mäki-Marttunen V, et al. (2025) Strength of Low-Frequency EEG Phase Entrainment to External Stimuli Is Associated with Fluctuations in the Brain's Internal State. eNeuro, 12(1).

Charlebois-Poirier AR, et al. (2025) The level of cognitive functioning in school-aged children is predicted by resting EEG Directed Phase Lag Index. Scientific reports, 15(1), 1531.

Hasegawa Y, et al. (2025) Interaction between Facial Expression and Color in Modulating ERP P3. eNeuro, 12(1).

Harada T, et al. (2025) No significant relationship found between spontaneous motor tempo, heartbeat, and individual alpha frequency: an analysis of internal tempos. Scientific reports, 15(1), 2310.

Hong H, et al. (2025) The Impact of Long-Term Tai Chi Practice on the Trust Behavior of Middle-Aged People. Brain and behavior, 15(1), e70254.

Li RH, et al. (2025) Acute Concurrent Exercise Improves Inhibitory Control Without Mediating the Role of Lactate: An Event-Related Potential Study. Sports medicine - open, 11(1), 12.

Rodrigues J, et al. (2025) Electrophysiological correlates of why humans deviate from rational decision-making: A registered replication study. Psychophysiology, 62(1), e14665.

Naumann S, et al. (2025) Enhanced neural sensitivity to brief changes of happy over angry facial expressions in preschoolers: A fast periodic visual stimulation study. Psychophysiology, 62(1), e14725.

Abid A, et al. (2025) Emotion regulation strategies explain associations of theta and Beta with positive affect. Psychophysiology, 62(1), e14745.

Kisker J, et al. (2025) Visual information processing of 2D, virtual 3D and real-world objects marked by theta band responses: Visuospatial processing and cognitive load as a function of modality. The European journal of neuroscience, 61(1), e16634.

Anderson L, et al. (2025) A safety and feasibility randomized placebo controlled trial exploring electroencephalographic effective connectivity neurofeedback treatment for fibromyalgia. Scientific reports, 15(1), 209.

Jiang Y, et al. (2025) Optimizing electrode configurations for EEG mild cognitive impairment detection. Scientific reports, 15(1), 578.

Wu H, et al. (2025) The Neural Development of Chinese Lexical Tone Perception: A Mismatch Negativity Study Across Childhood, Adolescence, and Adulthood. Brain sciences, 15(1).