

Software Programs for MEG Source Estimation and Analysis

DipoleFit

<https://www.ctf.com/>

CTF MEG Systems, Inc., Vancouver, Canada

This program is offered as part of the software package for the CTF MEG system.

XFit

https://ecatalog.elekta.com/neuroscience/ecatalog_home.aspx

Elekta-Neuromag

This dipole fitting program is part of an analysis software suite for the Elekta-Neuromag system.

FieldTrip

<http://www.fieldtriptoolbox.org/>

This is an open source MATLAB software toolbox that offers preprocessing and analysis functions, including dipole fitting, distributed source modeling, and scanning functions. Data formats from all major MEG systems are supported.

Brainstorm

<https://neuroimage.usc.edu/brainstorm/>

Brainstorm is an open-source application that supports MEG data file formats from Elekta-Neuromag, CTF, and BTi/4D-Neuroimaging systems and can be used independent of MATLAB. It offers both preprocessing and analysis functions, including dipole fitting, distributed source modeling, and scanning functions.

Brain Electrical Source Analysis (BESA)

<https://www.besa.de/>

BESA software interfaces with MATLAB to offer preprocessing, dipole fitting, distributed

source modeling, and connectivity analysis for MEG and EEG data.

MNE

<https://mne.tools/stable/overview/index.html>

MNE is an open source Python software that offers dipole fitting, distributed source modeling, and scanning functions for MEG and EEG data.

MRVIEW

<https://www.mrn.org/common/megsim-mrview>

MRVIEW is an open source software tool that allows for use of volumetric MRI data as an anatomical reference for MEG and EEG dipole fitting procedures.

EEGLAB

<https://sccn.ucsd.edu/eeglab/index.php>

EEGLAB is a MATLAB toolbox that offers dipole fitting, time-frequency analysis, ICA, and preprocessing functions for MEG data.

Low Resolution Electromagnetic Tomography (LORETA)

<https://www.uzh.ch/keyinst/loreta.htm>

LORETA is an open source software that offers distributed source modeling functions for MEG.

Statistical Parametric Mapping (SPM)

<https://www.fil.ion.ucl.ac.uk/spm/software/>

SPM is an open source software compilation of MATLAB functions that offers distributed source modeling and dynamic causal modeling functions for connectivity estimation.

Neurodynamic Utility Toolbox for Magnetoencephalo- and Electroencephalo- Graphy (NUTMEG)

<https://www.nitrc.org/plugins/mwiki/index.php/nutmeg:MainPage>

NUTMEG is an open source analysis toolbox that runs via MATLAB and offers both distributed source modeling and scanning functions for source estimation. Data can be read from FieldTrip to NUTMEG and converted from NUTMEG to FieldTrip.