Resource Summary Report

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LEAD-DBS

RRID:SCR_002915
Type: Tool

Proper Citation

LEAD-DBS (RRID:SCR_002915)

Resource Information

URL: http://www.lead-dbs.org/

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Description: MATLAB toolbox for deep-brain-stimulation (DBS) electrode reconstructions and visualizations based on postoperative MRI and computed tomography (CT) imaging. The toolbox also facilitates visualization of localization results in 2D/3D, analysis of DBS-electrode placement's effects on clinical results, simulation of DBS stimulations, diffusion tensor imaging (DTI) based connectivity estimates, and fiber-tracking from the VAT to other brain regions (connectomic surgery).

Synonyms: Lead-DBS, LEAD DBS, Lead DBS

Resource Type: software toolkit, software resource

Keywords: matlab, deep brain stimulation, structural mri, reconstruction, dwi, dti, volume of activated tissue, modeling, subcortical atlas, depression, mri, computed tomography, atlas application, simulation, diffusion mr fiber tracking, three dimensional display, two dimensional display, surface rendering, volume rendering, workflow, neuroimaging, data repository

Related Condition: Parkinson's disease, Dystonia, Depressive Disorder

Funding: DFG KFO 247

Availability: Free, Available for download, Freely available

Resource Name: LEAD-DBS

Resource ID: SCR_002915

Alternate IDs: SciRes_000188

Alternate URLs: http://www.nitrc.org/projects/lead-dbs

License: GNU General Public License version 3

Record Creation Time: 20220129T080216+0000

Record Last Update: 20260729T044033+0000

Ratings and Alerts

No rating or validation information has been found for LEAD-DBS.

No alerts have been found for LEAD-DBS.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 213 mentions in open access literature.

Listed below are recent publications. The full list is available at kravitz2 .

Filip P, et al. (2025) Sweet spot for resting-state functional MRI effect of deep brain stimulation in dystonia lies in the lower pallidal area. NeuroImage. Clinical, 45, 103750.

Pang JC, et al. (2025) Geometric influences on the regional organization of the mammalian brain. bioRxiv : the preprint server for biology.

Alijanpourotaghsara A, et al. (2025) B(RAIN)2-BRAIN integrated Resource for Anatomy and Intracranial Neurophysiology. Scientific data, 12(1), 442.

Herz DM, et al. (2025) Low-Frequency Deep Brain Stimulation in Non-Rapid Eye Movement Sleep Modifies Memory Retention in Parkinson's Disease. Movement disorders : official journal of the Movement Disorder Society, 40(2), 285.

Chua MMJ, et al. (2025) Optimal focused ultrasound lesion location in essential tremor. Science advances, 11(20), eadp0532.

Jo S, et al. (2025) Connectivity-Based Analysis of the Stimulation Effects of Globus Pallidus Interna Deep Brain Stimulation in Parkinson's Disease: A Focus on Freezing of Gait. Journal of movement disorders, 18(4), 327.

Acero-Pousa I, et al. (2025) Reconfiguration of functional brain hierarchy in schizophrenia. Translational psychiatry, 15(1), 356.

Balachandar A, et al. (2025) Status dystonicus is a distinct state characterized by pallidal beta-band activity. Nature communications, 16(1), 9352.

Wang L, et al. (2025) Prefrontal-bed nucleus of the stria terminalis physiological and neuropsychological biomarkers predict therapeutic outcomes in depression. Nature

communications, 16(1), 10034.

Darmani G, et al. (2025) Individualized non-invasive deep brain stimulation of the basal ganglia using transcranial ultrasound stimulation. Nature communications, 16(1), 2693.

Haque S, et al. (2025) Remission of alcohol use disorder following traumatic brain injury with focal orbitofrontal cortex hemorrhage: case report and network mapping. Communications medicine, 5(1), 69.

Lamoš M, et al. (2025) Noninvasive Temporal Interference Stimulation of the Subthalamic Nucleus in Parkinson's Disease Reduces Beta Activity. Movement disorders : official journal of the Movement Disorder Society, 40(6), 1051.

Campisi C, et al. (2025) Clinical MRI to predict motor and non-motor effects of deep brain stimulation in Parkinson disease. La Radiologia medica, 130(8), 1263.

de Almeida Marcelino AL, et al. (2025) Lesion distribution and network mapping in dyskinetic cerebral palsy. Brain communications, 7(3), fcaf228.

Yan J, et al. (2025) Sweet spot mapping and structural connectivity in subthalamic stimulation: predicting neuropsychiatric outcomes in Parkinson's disease. Frontiers in neuroscience, 19, 1577588.

Abbass M, et al. (2025) The impact of localization and registration accuracy on estimates of deep brain stimulation electrode position in stereotactic space. Imaging neuroscience (Cambridge, Mass.), 3.

Senova S, et al. (2025) Deep brain stimulation is well tolerated and effective following ProSavin® gene therapy for Parkinson's disease. Neurotherapeutics : the journal of the American Society for Experimental NeuroTherapeutics, 22(5), e00629.

Ge S, et al. (2025) Effects of deep brain stimulation of the nucleus accumbens and anterior limb of the internal capsule on heroin addiction: Over five years of long-term follow-up in a prospective open-label pilot study. Translational psychiatry, 15(1), 415.

Cavallo A, et al. (2025) Differential modulation of movement speed with state-dependent deep brain stimulation in Parkinson's disease. Science advances, 11(37), eadx6849.

D'Onofrio V, et al. (2025) Local field potentials survey to guide DBS programming in Parkinson's disease: a clinical-neurophysiological longitudinal study. NPJ Parkinson's disease, 12(1), 1.