Resource Summary Report

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SPM Anatomy Toolbox

RRID:SCR_013273
Type: Tool

Proper Citation

SPM Anatomy Toolbox (RRID:SCR_013273)

Resource Information

URL: http://www.fz-juelich.de/ime/spm_anatomy_toolbox

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Description: A MATLAB toolbox which uses three dimensional probabilistic cytoarchitechtonic maps to correlate microscopic, anatomic and functional data of the cerebral cortex. Correlating the activation foci identified in functional imaging studies of the human brain with structural (e.g., cytoarchitectonic) information on the activated areas is a major methodological challenge for neuroscience research. We here present a new approach to make use of three-dimensional probabilistic cytoarchitectonic maps, as obtained from the analysis of human post-mortem brains, for correlating microscopical, anatomical and functional imaging data of the cerebral cortex. We introduce a new, MATLAB based toolbox for the SPM2 software package which enables the integration of probabilistic cytoarchitectonic maps and results of functional imaging studies. The toolbox includes the functionality for the construction of summary maps combining probability of several cortical areas by finding the most probable assignment of each voxel to one of these areas. Its main feature is to provide several measures defining the degree of correspondence between architectonic areas and functional foci. The software, together with the presently available probability maps, is available as open source software to the neuroimaging community. This new toolbox provides an easy-to-use tool for the integrated analysis of functional and anatomical data in a common reference space.

Abbreviations: SPM Anatomy Toolbox

Resource Type: software resource

Defining Citation: PMID:15850749

Keywords: human, brain, imaging, functional magnetic resonance imaging, structure,

mapping, atlas, pet, neuroimaging

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Alternate IDs: nif-0000-10477

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Ratings and Alerts

No rating or validation information has been found for SPM Anatomy Toolbox.

No alerts have been found for SPM Anatomy Toolbox.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 106 mentions in open access literature.

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

Borhanazad M, et al. (2024) Lateralized modulation of cortical beta power during human gait is related to arm swing. iScience, 27(7), 110301.

Aberg KC, et al. (2024) The neurobehavioral correlates of exploration without learning: Trading off value for explicit, prospective, and variable information gains. Cell reports, 43(3), 113880.

Knobloch S, et al. (2024) Empathy in schizophrenia: neural alterations during emotion recognition and affective sharing. Frontiers in psychiatry, 15, 1288028.

Riva F, et al. (2023) Age-related differences in interference control in the context of a finger-lifting task: an fMRI study. Social cognitive and affective neuroscience, 18(1).

Stalter J, et al. (2023) The impact of aging on morphometric changes in the cerebellum: A voxel-based morphometry study. Frontiers in aging neuroscience, 15, 1078448.

Raithel CU, et al. (2023) Recruitment of grid-like responses in human entorhinal and piriform cortices by odor landmark-based navigation. Current biology : CB, 33(17), 3561.

Soyman E, et al. (2022) Intracranial human recordings reveal association between neural activity and perceived intensity for the pain of others in the insula. eLife, 11.

Fourcade A, et al. (2022) Enhanced processing of aversive stimuli on embodied artificial limbs by the human amygdala. Scientific reports, 12(1), 5778.

De Havas J, et al. (2022) Neural dynamics of illusory tactile pulling sensations. iScience, 25(9), 105018.

Peelle JE, et al. (2022) Increased Connectivity among Sensory and Motor Regions during Visual and Audiovisual Speech Perception. The Journal of neuroscience : the official journal of the Society for Neuroscience, 42(3), 435.

Yousuf M, et al. (2021) Functional coupling between CA3 and laterobasal amygdala supports schema dependent memory formation. NeuroImage, 244, 118563.

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Weilnhammer V, et al. (2021) An active role of inferior frontal cortex in conscious experience. Current biology : CB, 31(13), 2868.

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Argiris G, et al. (2020) Neurosurgical lesions to sensorimotor cortex do not impair action verb processing. Scientific reports, 10(1), 523.

Takami K, et al. (2020) Dissociable Behavioral and Neural Correlates for Target-Changing and Conforming Behaviors in Interpersonal Aggression. eNeuro, 7(3).

Kuhnke P, et al. (2020) Left posterior inferior parietal cortex causally supports the retrieval of action knowledge. NeuroImage, 219, 117041.

Kogler L, et al. (2020) Do I feel or do I know? Neuroimaging meta-analyses on the multiple facets of empathy. Cortex; a journal devoted to the study of the nervous system and behavior, 129, 341.

Tsushima Y, et al. (2020) Task-dependent fMRI decoder with the power to extend Gabor patch results to Natural images. Scientific reports, 10(1), 1382.

Evans SL, et al. (2020) Mid age APOE ?4 carriers show memory-related functional differences and disrupted structure-function relationships in hippocampal regions. Scientific

reports, 10(1), 3110.