# Resource Summary Report

Generated by NIF on Apr 20, 2025

## LDDMM

RRID:SCR_009590
Type: Tool

### Proper Citation

LDDMM (RRID:SCR_009590)

### Resource Information

**URL:** http://cis.jhu.edu/software

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**Description:** Software application which aims to assign metric distances on the space of anatomical images in Computational Anatomy thereby allowing for the direct comparison and quantization of morphometric changes in shapes. As part of these efforts the Center for Imaging Science at Johns Hopkins University developed techniques to not only compare images, but also to visualize the changes and differences. For additional information please refer to: Faisal Beg, Michael Miller, Alain Trouve, and Laurent Younes. Computing Large Deformation Metric Mappings via Geodesic Flows of Diffeomorphisms. International Journal of Computer Vision, Volume 61, Issue 2; February 2005. M.I. Miller and A. Trouve and L. Younes, On the Metrics and Euler-Lagrange Equations of Computational Anatomy, Annual Review of biomedical Engineering, 4:375-405, 2002. Software developed with support from National Institutes of Health NCRR grant P41 RR15241.

**Abbreviations:** LDDMM

**Synonyms:** Large Deformation Diffeomorphic Metric Mapping

**Resource Type:** software application, software resource

**Keywords:** analyze, c++, console (text based), linux, microsoft, magnetic resonance, posix/unix-like, shape analysis, win32 (ms windows), windows

**Funding:**

**Resource Name:** LDDMM

**Resource ID:** SCR_009590

**Alternate IDs:** nlx_155780

**Alternate URLs:** http://www.nitrc.org/projects/lddmm-volume

**Record Creation Time:** 20220129T080253+0000

**Record Last Update:** 20250420T015808+0000

## Ratings and Alerts

No rating or validation information has been found for LDDMM.

No alerts have been found for LDDMM.

## Data and Source Information

**Source:** SciCrunch Registry

## Usage and Citation Metrics

We found 28 mentions in open access literature.

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

Wang Z, et al. (2024) Baseline functional connectivity predicts who will benefit from neuromodulation: evidence from primary progressive aphasia. medRxiv : the preprint server for health sciences.

Stouffer KM, et al. (2024) Cross-modality mapping using image varifolds to align tissue-scale atlases to molecular-scale measures with application to 2D brain sections. Nature communications, 15(1), 3530.

Yin M, et al. (2024) A scalable framework for learning the geometry-dependent solution operators of partial differential equations. Nature computational science, 4(12), 928.

Younes L, et al. (2024) Normal and equivolumetric coordinate systems for cortical areas. MethodsX, 12, 102689.

Clifton K, et al. (2023) Alignment of spatial transcriptomics data using diffeomorphic metric mapping. bioRxiv : the preprint server for biology.

Morelli KH, et al. (2023) An RNA-targeting CRISPR-Cas13d system alleviates disease-related phenotypes in Huntington's disease models. Nature neuroscience, 26(1), 27.

Clifton K, et al. (2023) STalign: Alignment of spatial transcriptomics data using diffeomorphic metric mapping. Nature communications, 14(1), 8123.

Stouffer KM, et al. (2023) Early amygdala and ERC atrophy linked to 3D reconstruction of rostral neurofibrillary tau tangle pathology in Alzheimer's disease. NeuroImage. Clinical, 38, 103374.

Haast RAM, et al. (2023) Multi-scale structural alterations of the thalamus and basal ganglia in focal epilepsy using 7T MRI. Human brain mapping, 44(13), 4754.

Heywood A, et al. (2022) The unique effect of TDP-43 on hippocampal subfield morphometry and cognition. NeuroImage. Clinical, 35, 103125.

Liang Z, et al. (2022) Virtual mouse brain histology from multi-contrast MRI via deep learning. eLife, 11.

Huang W, et al. (2021) Down-sampling template curve to accelerate LDDMM-curve with application to shape analysis of the corpus callosum. Healthcare technology letters, 8(3), 78.

Lee BC, et al. (2021) Multimodal cross-registration and quantification of metric distortions in marmoset whole brain histology using diffeomorphic mappings. The Journal of comparative neurology, 529(2), 281.

Kulason S, et al. (2020) Entorhinal and Transentorhinal Atrophy in Preclinical Alzheimer's Disease. Frontiers in neuroscience, 14, 804.

Peralta M, et al. (2020) Striatal shape alteration as a staging biomarker for Parkinson's Disease. NeuroImage. Clinical, 27, 102272.

Fan LY, et al. (2020) Developmental Differences of Structural Connectivity and Effective Connectivity in Semantic Judgments of Chinese Characters. Frontiers in human neuroscience, 14, 233.

Zhang C, et al. (2020) Abnormal Brain Development in Huntington' Disease Is Recapitulated in the zQ175 Knock-In Mouse Model. Cerebral cortex communications, 1(1), tgaa044.

Jenkins LM, et al. (2020) Subcortical structural variations associated with low socioeconomic status in adolescents. Human brain mapping, 41(1), 162.

Cury C, et al. (2019) Spatiotemporal analysis for detection of pre-symptomatic shape changes in neurodegenerative diseases: Initial application to the GENFI cohort. NeuroImage, 188, 282.

Kulason S, et al. (2019) Cortical thickness atrophy in the transentorhinal cortex in mild cognitive impairment. NeuroImage. Clinical, 21, 101617.