

MRIs Surfaces Curves (MSC dataset)

The objective of this website is to provide researchers with a high quality cross checked dataset of brain MRIs, surfaces and sulcal curves.

What is available?

We provide, for 12 subjects, T1 MRI brain scans (skull extracted), the corresponding mid cortical surfaces, manually traced sulcal curves. All the data is cross checked by expert neuroanatomists.

Description

The structural scans of subjects were obtained as part of a functional imaging study independently from the present study and comprised 12 subjects (6 males, 6 females) with mean age 26 years and range 22 to 28 years. They were all right-handed (score of +70 or more on the Edinburgh Handedness Inventory).

The subjects were scanned at the Dornsife Cognitive Neuroscience Imaging Center at the University of Southern California using a 3-T Siemens MAGNETOM Trio scanner. High-resolution T1-weighted anatomical volumes were acquired for each subject with an MPRAGE scan using the following protocol: TR = 2350 ms, TE = 4.13 ms, 192 slices, field of view = 256 mm, voxel size = 1.0×1.0×1.0 mm. Preprocessing included transforming mris the 12 subjects into the Talairach coordinate system, as required by the BrainVoyager automatic registration procedure for optimal results. This transformation, an affine registration aligning the anterior and posterior commissures and forcing each brain in the same bounding box, was performed in BrainVoyager. Cortical surfaces were then extracted with the FreeSurfer software using default parameters. The mid cortical surfaces were computed by averaging inner and pial surfaces. The sulcal curves were then traced using the brainsuite software. Our protocol uses the 26 sulcal curves. The sulci are consistently seen in normal brains and are distributed throughout the entire cortical surface. A thorough description of the sulcal curves with instructions on how to trace them is available on our Web site: <http://neuroimage.usc.edu/CurveProtocol.html>.

Download

The data can be downloaded from:

<http://sipi.usc.edu/~ajoshi/MSC/download.tar.gz>

Reading the data

The surfaces and curves are available in dfs and dfc file formats respectively. The MRI data is in ANALYZE format. All the data can be visualized in Brainsuite software. The download above also includes code (readdfc.m, readdfs.m) for reading the surfaces and curves in Matlab. The MRI ANALYZE data can be read in MATLAB using [NIFTI Toolbox](#).

We hope that the dataset is useful to your research. Please cite our papers and include the following acknowledgement:

Acknowledgement:

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References

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Please feel free to contact us with your questions:

Contact Information

Richard M Leahy

Professor

Signal and Image Processing Institute,
(Fellow, Brain and Creativity Institute)

University of Southern California
3740 McClintock Ave., Room 400
Los Angeles, CA 90089-2564.

email: leahy@sipi.usc.edu

213 740 4659(t) 213 740 4651(f)

<http://neuroimage.usc.edu>

Contributors

Dimitrios Pantazis, Anand A Joshi, Hanna Damasio, David Shattuck, Richard Leahy