<https://fsl.fmrib.ox.ac.uk/fsl/fslwiki>

# **FMRIB Software Library v6.0**

Created by the [Analysis Group](https://www.win.ox.ac.uk/research/copy_of_analysis-research/analysis-research), FMRIB, Oxford, UK.

FSL is a comprehensive library of analysis tools for FMRI, MRI and DTI brain imaging data. It runs on Apple and PCs (both Linux, and Windows via a Virtual Machine), and is very easy to install. Most of the tools can be run both from the command line and as GUIs ("point-and-click" graphical user interfaces). To quote the relevant references for FSL tools you should look in the individual tools' manual pages, and also please reference one or more of the FSL overview papers:

[*1.*](http://www.ncbi.nlm.nih.gov/pubmed/19059349) *M.W. Woolrich, S. Jbabdi, B. Patenaude, M. Chappell, S. Makni, T. Behrens, C. Beckmann, M. Jenkinson, S.M. Smith. Bayesian analysis of neuroimaging data in FSL. NeuroImage, 45:S173-86, 2009*

[*2.*](http://www.ncbi.nlm.nih.gov/pubmed/15501092) *S.M. Smith, M. Jenkinson, M.W. Woolrich, C.F. Beckmann, T.E.J. Behrens, H. Johansen-Berg, P.R. Bannister, M. De Luca, I. Drobnjak, D.E. Flitney, R. Niazy, J. Saunders, J. Vickers, Y. Zhang, N. De Stefano, J.M. Brady, and P.M. Matthews. Advances in functional and structural MR image analysis and implementation as FSL. NeuroImage, 23(S1):208-19, 2004*

[*3.*](http://www.ncbi.nlm.nih.gov/pubmed/21979382) *M. Jenkinson, C.F. Beckmann, T.E. Behrens, M.W. Woolrich, S.M. Smith. FSL. NeuroImage, 62:782-90, 2012*

* [Download/Install](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FslInstallation), [patches](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FslInstallation/Patches) and [licence](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/Licence)
* [Overview of FSL tools](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FslOverview)
  + Functional MRI: [FEAT](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FEAT), [MELODIC](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/MELODIC), [FABBER](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FABBER), [BASIL](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/BASIL), [VERBENA](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/verbena)
  + Structural MRI: [BET](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/BET), [FAST](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FAST), [FIRST](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FIRST), [FLIRT](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FLIRT) & [FNIRT](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FNIRT), [FSLVBM](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FSLVBM), [SIENA & SIENAX](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/SIENA), [MIST](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/MIST), [BIANCA](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/BIANCA), [MSM](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/MSM), [fsl\_anat](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/fsl_anat)
  + Diffusion MRI: [FDT](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FDT), [TBSS](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/TBSS), [XTRACT](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/XTRACT), [eddy](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/eddy), [topup](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/topup), [eddyqc](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/eddyqc)
  + GLM / Stats: [GLM general advice](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/GLM), [Randomise](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/Randomise), [Cluster](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/Cluster), [FDR](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FDR), [Dual Regression](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/DualRegression), [Mm](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/Mm), [FLOBS](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FLOBS)
  + Other: [FSLeyes](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FSLeyes), [FSLView](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FslView), [Fslutils](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/Fslutils), [Atlases](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/Atlases), [Atlasquery](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/Atlasquery), [SUSAN](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/SUSAN), [FUGUE](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FUGUE), [MCFLIRT](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/MCFLIRT), [Miscvis](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/Miscvis), [POSSUM](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/POSSUM), [BayCEST](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/baycest)
* [Version history and release notes](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/WhatsNew)
* [Support: Email forum, FAQ, tutorials](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/Support)
* [FSL Course: lecture slides, practicals and example data](http://fsl.fmrib.ox.ac.uk/fslcourse)
* [Contributors](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/Contributors)
* [Related software & FSL plugins](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/OtherSoftware)

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<https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/Support>

# **DOCUMENTATION, SUPPORT, TUTORIALS & TRAINING**

For anyone new to FSL we recommend working through the relevant parts of the FSL course tutorial/practical exercises initially (see below).

## **Documentation**

* [List of individual tools' documentation pages](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FslTools)
* [Glossary of acronyms and abbreviations](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/Glossary)
* [Data formats in FSL](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/Formats)

## **Support**

* [FSL FAQ](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FSL%20FAQ) - general Frequently-Asked Questions (though many individual tool pages have their own FAQ too)
* [FSL support forum](http://www.jiscmail.ac.uk/lists/fsl.html) (email list)
  + please join this for all email support regarding FSL (signup specifically to the FSL list on the jiscmail website, then follow instructions in an email sent by jiscmail to verify your signup)
  + or just search its archives to see previous questions and answers
* Data Upload - if, after discussion on the FSL support forum, we need to see your data to answer your query, the person dealing with the request will contact you with a web page address to use for uploading your data.
* [SGE submission FAQ](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/SGE%20submission%20FAQ) - a guide to using FSL scripts and programs on an SGE-capable system

## **Tutorials & Training**

* [FSL course](http://www.fmrib.ox.ac.uk/fslcourse/) - this contains data and self-paced practical/tutorial exercises that are an excellent way to learn how to use the tools. In addition, an intensive, hands-on course is run every year; follow the link for more information on the course as well as lecture slides, practical instructions and data for downloading.
* [FEEDS example data](https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FEEDS) - useful for testing that the FSL installation is working, benchmarking the speed and initial playing with the tools.

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<https://fsl.fmrib.ox.ac.uk/fslcourse/>