

Fortran 常见的开源代码库

名称	网址	功能	简介
AFNL	https://github.com/ramos/afnl	数值计算	A Fortran 90 Numerical Library (AFNL) is a set of MODULES containing definitions of Fourier series and polynomials, and able to perform linear (multi-)dimensional fittings, integrals, sorting data, compute roots of functions, and other numerical tasks.
ARPACK-NG	https://github.com/opencollab/arpac-ng	特征值问题	ARPACK-NG is a collection of Fortran77 subroutines designed to solve large scale eigenvalue problems.
AntTweakBar	http://anttweakbar.sourceforge.net/doc/	GUI/数据可视化	AntTweakBar is a small and easy-to-use C, C++, and Fortran library that allows programmers to quickly add a light and intuitive graphical user interface into graphic applications based on OpenGL to interactively tweak parameters on-screen.
BLAS	http://www.netlib.org/blas/	线性代数	The BLAS (Basic Linear Algebra Subprograms) are routines that provide standard building blocks for performing basic vector and matrix operations.
DCDFLIB	https://biostatistics.mdanderson.org/SoftwareDownload/SingleSoftware.aspx?Software_Id=21	统计	DCDFLIB (Double precision Cumulative Distribution Function LIBrary) is a collection of routines that calculate cumulative distribution functions, inverses, and parameters for common statistical distributions.
CFITSIO	http://heasarc.gsfc.nasa.gov/fitsio/	数据读取/格式转换	CFITSIO is a library of C and Fortran subroutines for reading and writing data files in FITS (Flexible Image Transport System) data format.
CHRPak	http://people.scs.fsu.edu/~jburkardt/f_src/chrpak/chrpak.html	字符串处理	CHRPak is a Fortran 90 library for handling strings and characters.
DISLIN	http://www.mps.mpg.de/dislin/	GUI/数据可视化	DISLIN is a high level library of subroutines and functions that display data graphically.
F03GL	https://www.l2000.org/my_notes/faq/fortran/index.htm	GUI/数据可视化	The F03GL library provides a Fortran 2003 interface to the OpenGL library, along with the GLU and GLUT toolkits. Users can create 3D graphics based on a thin OpenGL wrapper and construct user interfaces using the included GLUT wrapper in Fortran.
FFTW	http://www.fftw.org/index.ht	傅里叶变换	FFTW is a C subroutine library (with Fortran interface) for computing the discrete Fourier transform (DFT) in one or more

	ml		dimensions.
FISHPACK	http://www2.cisl.ucar.edu/resources/legacy/fishpack	偏微分方程组求解	FISHPACK contains a collection of Fortran77 subroutines that solve second- and fourth-order finite difference approximations to separable elliptic Partial Differential Equations (PDEs).
FITPACK	http://nalag.cs.kuleuven.be/research/topics/fitpack.shtml	曲线/曲面拟合	FITPACK is a collection of Fortran programs for CURVE and SURFACE FITTING with SPLINES and TENSOR PRODUCT SPLINES.
Fortran GSL	http://www.lrz.de/services/software/mathematik/gsl/fortran/	GNU 科学计算代码库	This package contains a portable, object-based Fortran interface to the GNU Scientific Library, a collection of numerical routines for scientific computing.
FoX	http://homepages.see.leeds.ac.uk/~earawa/FoX/	XML (可扩展标记语言) 文档的读写	FoX is an XML library written in Fortran 95. It allows software developers to read, write and modify XML documents from Fortran applications without the complications of dealing with multi-language development.
Ftcl	http://ftcl.sourceforge.net	GUI (基于 Tcl/Tk)	Ftcl is meant to offer a simple and robust way of incorporating the Tcl/Tk language in a Fortran program.
GLPK	http://www.gnu.org/software/glpk/	线性规划	The GLPK (GNU Linear Programming Kit) package is intended for solving large-scale linear programming (LP), mixed integer programming (MIP), and other related problems.
GetData	http://getdata.sourceforge.net	数据存储和读取	The GetData Project is the reference implementation of the Dirfile Standards, a filesystem-based, column-oriented database format for time-ordered binary data. The Dirfile database format is designed to provide a fast, simple format for storing and reading data.
GTK+	https://github.com/jerryd/gtk-fortran/wiki	GUI	GTK+, or the GIMP Toolkit, is a multi-platform toolkit for creating graphical user interfaces. Offering a complete set of widgets, GTK+ is suitable for projects ranging from small one-off tools to complete application suites.
LAPACK	http://www.netlib.org/lapack/	线性方程组求解、特征值问题等	LAPACK is written in Fortran 90 and provides routines for solving systems of simultaneous linear equations, least-squares solutions of linear systems of equations, eigenvalue problems, and singular value problems.
LibGD	http://nnonline.org/code/gd/	图片生成	GD is an open source code library for the dynamic creation of images by programmers. GD can create images composed of lines, arcs, text (using program-selected fonts), other images, and multiple colors.
Lis	http://www.ssi-sc.org/lis/index.en.html	线性方程组求解、特征值问题	Lis, a Library of Iterative Solvers for linear systems, is a parallel library for solving linear equations and eigenvalue problems that arise in the numerical solution of partial differential equations using iterative methods.

MUDPACK	https://www2.cisl.ucar.edu/resources/legacy/mudpack	偏微分方程求解 (组)	MUDPACK is a collection of portable, Fortran 77 subprograms, with a few Fortran90 extensions, for efficiently solving linear elliptic Partial Differential Equations (PDEs) using multigrid iteration.
MUMPS	http://mumps.enseiht.fr	线性方程组求解	MUMPS, or MULTifrontal Massively Parallel sparse direct Solver, is a library for solving large linear systems.
MathGL	http://mathgl.sourceforge.net/doc_en/Main.html	GUI/数据可视化	MathGL is a free library of fast C++ routines for the plotting of the data varied in one or more dimensions. MathGL has more than 50 general types of graphics for 1d, 2d and 3d data arrays. It has OpenGL interface and can be used from console programs.
Matran	http://www.cs.umd.edu/~stewart/matran/Matran.html	矩阵操作	Matran (pronounced MAY-tran) is a Fortran 95 wrapper that implements matrix operations and computes matrix decompositions using Lapack and the Blas.
Minpack	http://www.netlib.org/minpack/	非线性方程组求解、非线性最小二乘问题	Minpack includes software for solving nonlinear equations and nonlinear least squares problems.
ORDERPACK	http://www.fortran-2000.com/rank/index.html	数组排序	ORDERPACK provides routines to perform sorts or ranks full or small proportions of an array (partial ordering).
PGPLOT	http://www.astro.caltech.edu/~tjp/pgplot/	GUI/数据可视化	The PGPLOT Graphics Subroutine Library is a Fortran-callable, device-independent graphics package for making simple scientific graphs. It is intended for making graphical images of publication quality with minimum effort on the part of the user.
PLplot	http://plplot.sourceforge.net	GUI/数据可视化	PLplot is a cross-platform software package for creating scientific plots.
PCRE	http://www.pcre.org	正则表达式	The PCRE library is a set of functions that implement regular expression pattern matching using the same syntax and semantics as Perl 5.
SLATEC	http://www.netlib.org/slatec/	数值计算和统计分析工具集	SLATEC is a comprehensive software library containing over 1400 general purpose mathematical and statistical routines written in Fortran 77. Included are routines for calculating special functions, linear algebra, interpolation, nonlinear solvers, optimization, differentiation/integration, and statistics.
SPARSKIT	http://www-users.cs.umn.edu/~saad/software/SPARSKIT/	稀疏矩阵操作 (格式转换)、稀疏线性方程组求解	SPARSKIT is a package of Fortran subroutines for working with sparse matrices. It includes general sparse matrix manipulation routines as well as a few iterative solvers.
UMFPACK	http://www.cise.ufl.edu/research/sparse/um	非对称稀疏线性方程组求解	UMFPACK is a set of routines for solving unsymmetric sparse linear systems, $Ax=b$, using the Unsymmetric MultiFrontal method.

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XZ	http://tukaani.org/xz/	数据压缩 / 解压	XZ Utils is free general-purpose data compression software with high compression ratio.
bzip2	http://www.bzip.org	数据压缩 / 解压	bzip2 is a freely available, patent free (see below), high-quality data compressor. It typically compresses files to within 10% to 15% of the best available techniques (the PPM family of statistical compressors), whilst being around twice as fast at compression and six times faster at decompression.
curl	https://curl.haxx.se	网络操作相关	curl is comprised of two main products: curl and libcurl. curl is a command line tool for getting or sending files using URL syntax. libcurl is a reliable and portable library which provides you with an easy interface to a range of common Internet protocols.
modFileSys	https://bitbucket.org/aradi/modfilesys/src	文件操作	The Modern Fortran File System Interface is designed to provide modern Fortran wrappers around the file system interface of libc. With its help you can carry out those basic file system operations you were always missing in Fortran, including: rename and remove files, recursively create and remove directories, obtain the name of files in a given directory, check whether a given file exists, obtain the current working directory and change to a directory, and canonize path names.