

# C

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## *Computer Resources*

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### C.1 Wavelet Internet Resources

The *Wavelet Digest* is a free electronic newsletter for the wavelet community. It was originally started by Wim Sweldens, and is now managed by Michael Unser. You can find back issues and subscription information at:

[www.wavelet.org](http://www.wavelet.org)

There are many web sites devoted to wavelets. Some of them come and go, some are more stable. The three sites listed here are meta-sites containing many links to other wavelet-related sites with tutorials, bibliographies, software and more, and they have all been around for many years.

- Amara Graps maintains a wavelet site at:

[www.amara.com/current/wavelet.html](http://www.amara.com/current/wavelet.html)

- The *Wavelet Net Care* site at Washington University, Saint Louis, can be found at at:

[www.math.wustl.edu/wavelet](http://www.math.wustl.edu/wavelet)

- Andreas Uhl is in charge of the wavelet site in Salzburg, Austria, at:

[www.cosy.sbg.ac.at/~uhl/wav.html](http://www.cosy.sbg.ac.at/~uhl/wav.html)

I am not aware of any web site specifically for multiwavelets. The listed sites all include multiwavelet material.

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### C.2 Wavelet Software

There are many wavelet toolboxes available. Most of them are for Matlab or are stand-alone programs, but there are tools for Mathematica, MathCAD and other systems as well.

**Free packages**

- WaveLab (for Matlab) was developed at Stanford University; you can find it at:

`www-stat.stanford.edu/~wavelab`

- LastWave (written in C) was developed by Emmanuel Bacry; you can find it at:

`www.cmap.polytechnique.fr/~bacry/LastWave/index.html`

- The Rice Wavelet Toolbox (for Matlab, with some parts in C) was developed at Rice University; it is available at:

`www-dsp.rice.edu/software/rwt.shtml`

- LiftPack (written in C) was developed by Gabriel Fernández, Senthil Periaswamy and Wim Sweldens; it is available at:

`www.cs.dartmouth.edu/~sp/liftpack/lift.html`

- WAILI (Wavelets with Integer Lifting) (written in C++) was developed by Geert Uytterhoeven, Filip Van Wulpen, Maarten Jansen in Leuven, Belgium; it is available at:

`www.cs.kuleuven.ac.be/~wavelets`

- Angela Kunoth wrote a program package to compute integrals of refinable functions. The programs are available at:

`www.igpm.rwth-aachen.de/kunoth/prog/bw`

The documentation is available at:

`ftp://elc2.igpm.rwth-aachen.de/pub/kunoth/papers/inn.ps.Z`

- The AWFDF software package (Adaptivity, Wavelets and Finite Differences) (Matlab and C++) for wavelet solution of partial differential and integral equations was developed at the University of Bonn; it is available at:

`wissrech.iam.uni-bonn.de/research/projects/AWFD/index.html`

### Commercial packages

- MathWorks is the maker of Matlab, so the MathWorks wavelet toolbox is the “official” Matlab wavelet toolbox. Their home page is:

[www.mathworks.com](http://www.mathworks.com)

- WavBox (for Matlab) was developed by Carl Taswell; you can find information at:

[www.wavbox.com](http://www.wavbox.com).

Early versions of this software were free. There may still be some copies archived somewhere.

- Wavelet Packet Lab (stand-alone for Microsoft Windows machines) was written by Victor Wickerhauser at Washington University, Saint Louis; you can find information at:

[www.ibuki-trading-post.com/dir\\_akp/akp\\_wavpac.html](http://www.ibuki-trading-post.com/dir_akp/akp_wavpac.html)

Free earlier versions for NeXT machines can be found at:

[www.math.wustl.edu/~victor/software/WPLab/index.html](http://www.math.wustl.edu/~victor/software/WPLab/index.html)

None of these programs can handle multiwavelets, as far as I know. A longer list of wavelet software can be found at:

[www.amara.com/current/wavesoft.html](http://www.amara.com/current/wavesoft.html)

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## C.3 Multiwavelet Software

This list is very short:

- MWMP (the Multiwavelet Matlab Package) was written by Vasily Strela; you can find it at:

[www.mcs.drexel.edu/~vstrela/MWMP](http://www.mcs.drexel.edu/~vstrela/MWMP)

- My own set of Matlab routines will be available via my personal home page at:

<http://www.math.iastate.edu/keinert>

and via the CRC Press download page at:

`www.crcpress.com/e_products/downloads/default.asp`

My routines include a new Matlab data type `@mpoly` which represents Laurent matrix polynomials, plus routines for multiwavelet transforms, plotting multiwavelets, determining their properties, performing TSTs, lifting steps, and so on. Documentation is provided with the package.

This is a work in progress, so new features will probably be added periodically. Send bug reports or other suggestions to:

`keinert@iastate.edu`.

An errata listing for this book will be available at the same two locations.