RESEARCH TOOLS 2011 LECTURE 01

2011-Aug-30
Kurt Schwehr
http://schwehr.org

UNH CCOM/JHC
Introduction

2011 Research Tools

Class material:

- Videos: Playlist of extra class videos on YouTube
- Audio podcasts of class
- Mercurial (hg) repository: https://bitbucket.org/schwehr/researchtools

Instructors:

All but 1 of the classes were taught by Kurt Schwehr. I am an Affiliate Research Professor in the Center for Coastal and Ocean Mapping / Joint Hydrographic Center at the University of New Hampshire and a GIS Data Engineer at Google for Oceans.
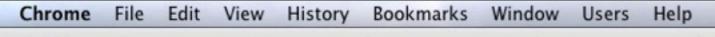
Rob Braswell taught class 25 on R for statistics. Rob is an Affiliate Faculty in EOS at UNH and works at Applied Geosolutions.

Introduction

The goal of this UNH course is to give students skills that will help them conquer data throughout their career. I am hoping to get this wrapped together as a book that people can take with them when they leave CCOM. I am releasing all course material under a creative commons non-commercial license, so that you can pass copies to your co-workers. 2011 is the first year that the course is being taught in this style. Please email me if you find any typos.

No.	Date	Title/Notes	Audio	Present	Video	Blog
Vid 20	2011-12-26	Secure shell (ssh, scp), crontab and emacs tramp		pdf key	YouTube H264	
	2011-12-25	Grades submitted				
		No Final				
28	2011-12-08	No Class				
27	2011-12-06	No Class				
HW 5	2011-12-06	Turn in final log file for the whole class				
26	2011-12-01	Python: parsing binary data - SBETs - Part 5	mp3	pdf key		comment
25	2011-11-29	Rob Braswell: 1-Intro 2-CO2 3-ANOVA	mp3	pdf-1 pdf-2		comment

The Center for Coastal and C ×

ccom.unh.edu

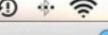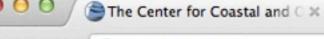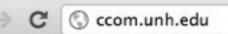# Center for Coastal and Ocean Mapping
Joint Hydrographic Center

Sear

About Us   Research   Education   Outreach   News & Events   People   Facilities   Publications   Partners

A Whale of an App!

CCOM/JHC researchers Kurt Schwehr and Roland Arsenault teamed up with multiple agencies to develop a new iPad, iPhone app that helps mariners avoid endangered right whales.

Learn More

Research Areas

AUVs

Chart of the Future

Coastal Processes

Data Processing

Data Visualization

Law of the Sea

Lidar

Seafloor Characterization

Sonar Capabilities

Water Column Mapping

CCOM/JHC News

NOAA to Commission East Coast Survey Ship
Boston Globe Jun. 7, 2012

The NOAA Ship *Ferdinand R. Hassler*, a federal research vessel that will help update nautical charts on the East Coast, will be commissioned Friday, doubling the size of the Atlantic mapping fleet. The *Hassler* will be home ported in New Castle, NH, next spring. (Image courtesy of NOAA.)

Upcoming and Recent Seminars

Who is Gideon Tibor and What Does He Do?

Gideon Tibor
Visiting Scholar
CCOM/JHC

Friday, Jun. 1, 2012, 3:00pm

More >

Atlantic Bluefin Tuna Habitat

Featured Images

Sunday, June 24, 12

Kurt Schwehr's home page

schwehr.org

Kurt Schwehr / GIS Data Engineer for Oceans at Google & Affiliate faculty in CCOM/JHC, Comp Sci, and Earth Sci at UNH

- blog - Web log mostly about my work (geology, computer science, space craft, ships, the ocean, etc)
- my web page at the UNH CCOM Vis Lab
- kurtschwehr.vcf - vcard address book entry
- publications

My Delicious Tags

3d acoustics **ais** ais-risk api auv backup Bathymetry bibtex blog blogging book books c++ ccom classb cms cooking cotf crowdsourcing data database databases deb debugging deepwaterhorizon design development django education disp emacs emergency energy erma flash food games gardening geolocation geology geophysics georss geotagging gis git google googleearth googlemaps googleoceans government gps hardware healy howto hydrography ipad iphone javascript jpl kml larrymayer latex library linux lng mac macos mapping maps marine marinespatialplanning maritime mars math matlab metadata misle mobile monitoring msp multibeam nagios nais nasa navigation networking noaa objective-c oilspill openlayers opensource org-mode osm osx packaging podcasts postgis postgresql press programming publishing python qgis rap reference research researchtools rightwhale robotics rr ruby S-AIS sais sbnms science scipy search security seismology sensors ships shipwrecks software sonar sons sqlite stanford teaching testing tide tips tools tracking tutorial tutorials tv ubuntu unh uscg vesseltracking video visualization web webmapping whalealert whales windows writing xml

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Sunday, June 24, 12

Kurt's Weblog
electronic work log

06.14.2012 19:39

HALF DAY KICKSTART ON AIS

I was just talking to a person who works for federal agency who was looking for information on AIS. Here is the list of material that I think gives a kickstart into AIS. This is a very intense half day of material, but leaves out actually processing any AIS data. I have yet to create an AIS in practice video.

First 3 videos. Each is close to an hour.

My AIS Deepwater Horizon video: http://youtu.be/t5xfs7z2VJY
My AIS for Environmental Protection video: http://youtu.be/MQBj9tlcqU0
Michael Jones of Google talking about AIS and several other technologies in industry:
http://youtu.be/Dk3IIOimGwE

After that, here are two pretty big documents:

My AIS for Deepwater Horizon paper: 2011-schwehr-ushydro-dwh.pdf
NOAA CSC BOEM AIS Data Handler presenation (cites me):
http://www.marinecadastre.gov/AIS/AIS%20Documents/AISDataHandlerTutorial_DRAFT.pdf

I haven't posted this even though it has been online for just about a month, but here it is. Michael Jones of Google talking about what industry as a whole can and does do. Keep your eyes out as he shows a photo of the SpaceQuest crew with two of their AIS satellites.

Morning Keynote: Michael Jones, Chief Technolog...   Share   ⬇ More info

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Half day kickstart on AIS
RT Lecture 20 - From BAG to summary
KML in Earth and QGIS
Research Tools Lecture 19 - plotting
BAGs and parsing metadata
A little more puppet
Multibeam advisory committee
Iceland
puppet hello world
SIO Introduction to Computing free book
More whale tracking - US West Coast
gnu screen program

categories

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NanoBlogger Help (2)
Science (1)

archives

Archive Index
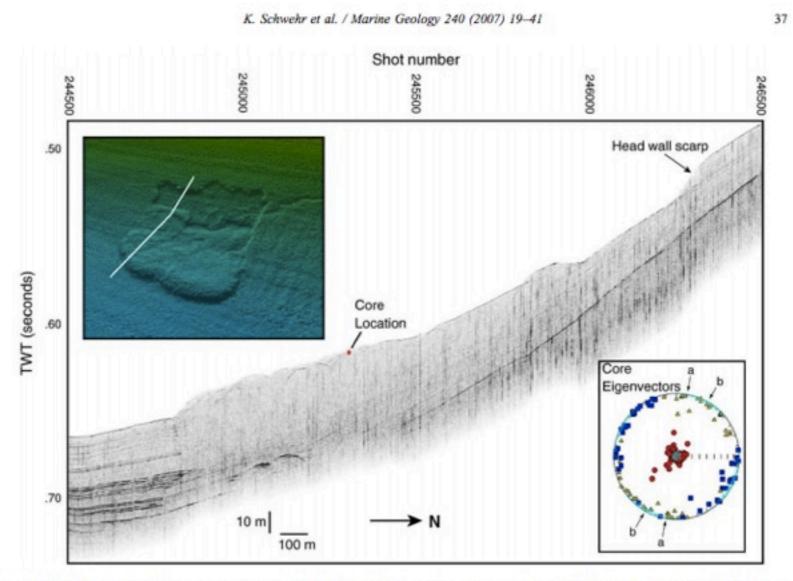June 2012 (7)

Sunday, June 24, 12

Fig. 18. A CHIRP seismic profile images the Gaviota Slide in the Santa Barbara Basin, southern California (Schwehr et al., in press). Note the clearly defined head scarp and thickening in the accumulation zone at the base of the slide. The inset shows the slide in EM300 from MBARI (Eichhubl et al., 2002). The expected direction of compression based on morphology is indicated by arrow (a). The direction of compression from the eigenvectors, shown by arrow (b), closely matches.

exhibit as much deflection, which may be indicative of more moderate flow. Core 2 sampled high flow conditions that appear to be centered on 325° (Table 3), which would be consistent with predicted flow directions. The observation that cores 1 and 7 do not exhibit β' zones implies that the β' zone observed in core 2 is a local feature with little lateral extent.

5.3. β — beta

thickening of 2:1 or greater on the upslope limbs. This amount of compression is expected to create fabric like that illustrated in Fig. 3c. However, the eigenvectors plotted on stereonets with bootstrap eigenvectors for β most closely resemble Fig. 3a. Core 7 is the least like Fig. 3a, but the bootstrap eigenvectors are tightly clustered near vertical. The scatter in the eigenvectors can be traced to samples in four discrete regions located at ~ 167, 261–282, 420–430, and 572 cm. These layers

La Jolla, CA – SIO – 2004

Created a fledermaus scene file containing multibeam, chirp seismic lines, geologic maps, photos and a figure from Schwehr and Tauxe (2004).

LaJolla-public.scene.gz
LaJolla 2004 demo page

SECURITY

scp/ssh/vpn/keepassx

UBUNTU LINUX

The BASH shell

Reproducible Research

Main Page

Welcome

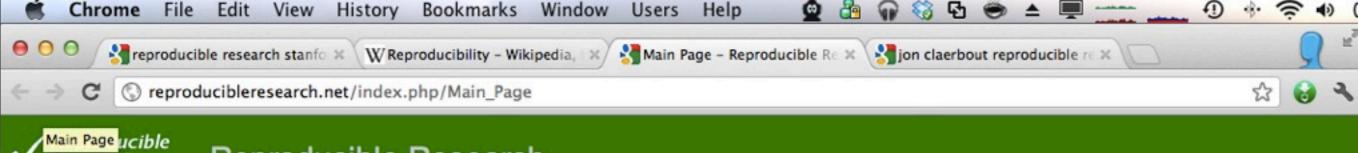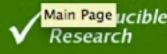Welcome on this site about reproducible research. This site is intended to gather a lot of information and useful links about reproducible research. As the authors (Patrick Vandewalle, Jelena Kovacevic and Martin Vetterli) are all doing research in signal/image processing, that is also the main focus of this site. Follow the links in the text or in the navigation bar on the left to navigate through this site.

> An article about computational science in a scientific publication is not the scholarship itself, it is merely advertising of the scholarship. The actual scholarship is the complete software development environment and the complete set of instructions which generated the figures.
>
> —D. Donoho

A description of how we make our research reproducible can be found on the How To page. The links page contains a large set of links about RR, tools, etc. And on the RR Material page, you can find a set of links to code and data for papers in signal processing.
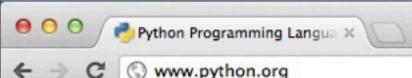
Motivation

After a colleague asked something about a paper you wrote, you spend a considerable amount of time finding back the right program files you used in that paper. Not to talk about the time to get back to the set of parameters used to produce that nice result.

Because this type of situations sounded all too familiar to many people of the lab, we are now trying to make our research reproducible. Most of the ideas about reproducible research come from Jon Claerbout and his research group at Stanford University. We believe reproducible can be helpful in many ways:

- It will help us in the first place, to reproduce figures in the revisions of a paper, to create earlier results again in a later stage of our research, etc.
- Other people who want to do research in the field can really start from the current state of the art, instead of spending months trying to figure out what was exactly done in a certain paper. It is much easier to take up someone else's work if documented code is also available.
- It highly simplifies the task of comparing a new method to existing methods. Results can be compared more easily, and one is also sure that the implementation is the correct one.

This may all sound very trivial, and in discussions with colleagues, there was a general agreement that this is how research should be performed. However, in practice, only few examples are available today. Making articles reproducible indeed requires a certain investment in time. However, we think that it is worth the investment. The interest is hard to quantify, but from download statistics and Google rankings, we can see that it really pays off!

python™

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Python Wiki
Python Insider Blog
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Python Programming Language – Official Website

Python is a programming language that lets you work more quickly and integrate your systems more effectively. You can learn to use Python and see almost immediate gains in productivity and lower maintenance costs.

Python runs on Windows, Linux/Unix, Mac OS X, and has been ported to the Java and .NET virtual machines.

Python is free to use, even for commercial products, because of its OSI-approved open source license.

New to Python or choosing between Python 2 and Python 3? Read Python 2 or Python 3.

The Python Software Foundation holds the intellectual property rights behind Python, underwrites the PyCon conference, and funds other projects in the Python community.

Read more, -or- download Python now

» Fourth alpha for Python 3.3.0 released
The fourth alpha release for Python 3.3.0 has been released for testing.

Published: Thu, 31 May 2012, 22:00 +0200

» Request for Proposal: Redesign python.org
The PSF has published an RFP for redesigning python.org. We look forward to seeing what the community can produce.

Published: Thu, 31 May 2012, 10:00 +0200

Python 3 Poll

I wish there was Python 3 support in

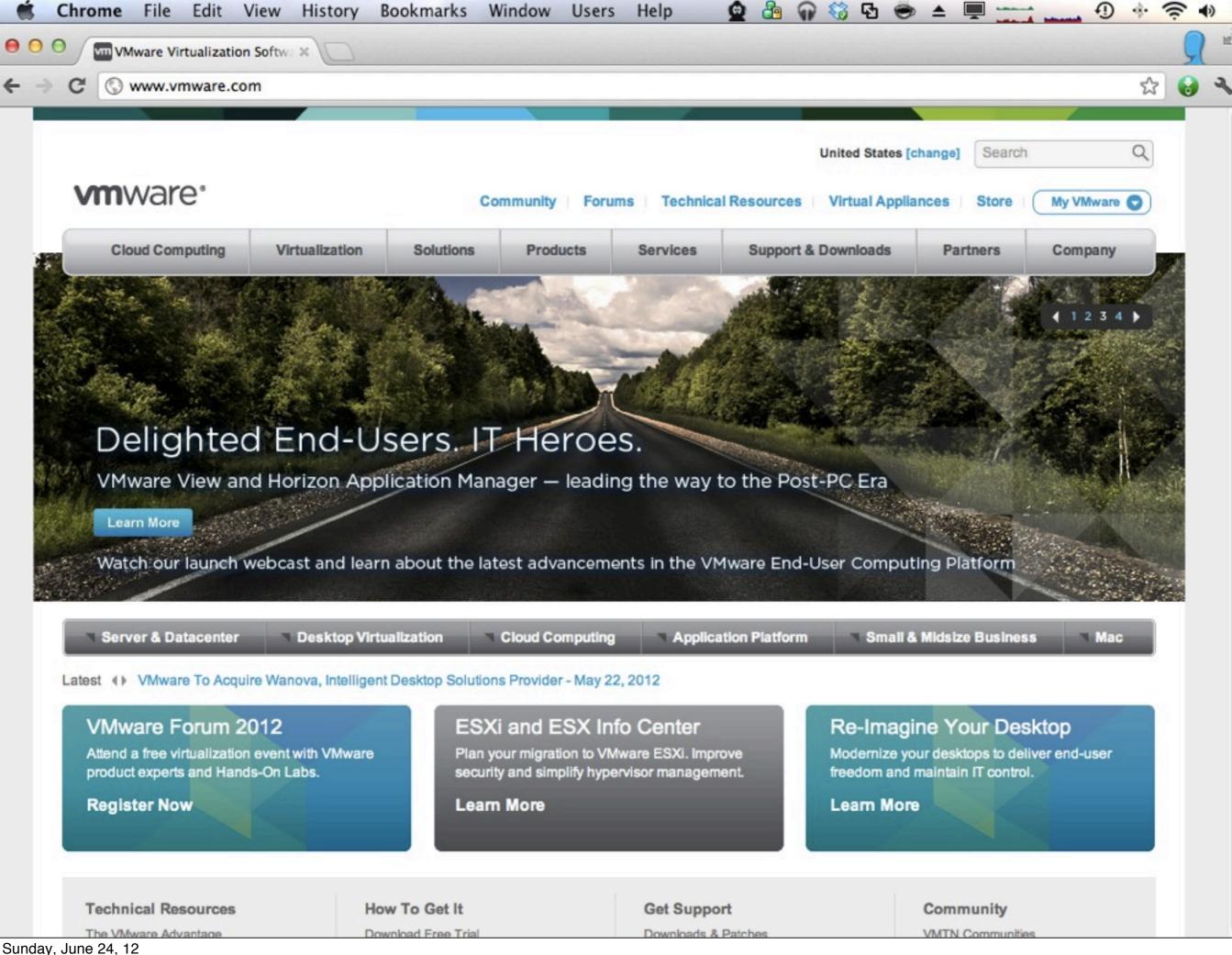(enter PyPI package name)

Vote   Results

NASA uses Python...

... joining users such as Rackspace, Industrial Light and Magic, AstraZeneca, Honeywell, and many others.

What they are saying...
Ubuntu Linux:

Ubuntu prefers the community to contribute work in Python. We develop our own tools and scripts in Python and it's much easier for us to integrate your work if you use the same

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Welcome.

SQLite is a software library that implements a self-contained, serverless, zero-configuration, transactional SQL database engine. SQLite is the most widely deployed SQL database engine in the world. The source code for SQLite is in the public domain.

Sponsors

Ongoing development and maintenance of SQLite is sponsored in part by SQLite Consortium members, including:

mozilla

Mozilla - Working to preserve choice and innovation on the internet.

ORACLE

Oracle - Software. Hardware. Complete.

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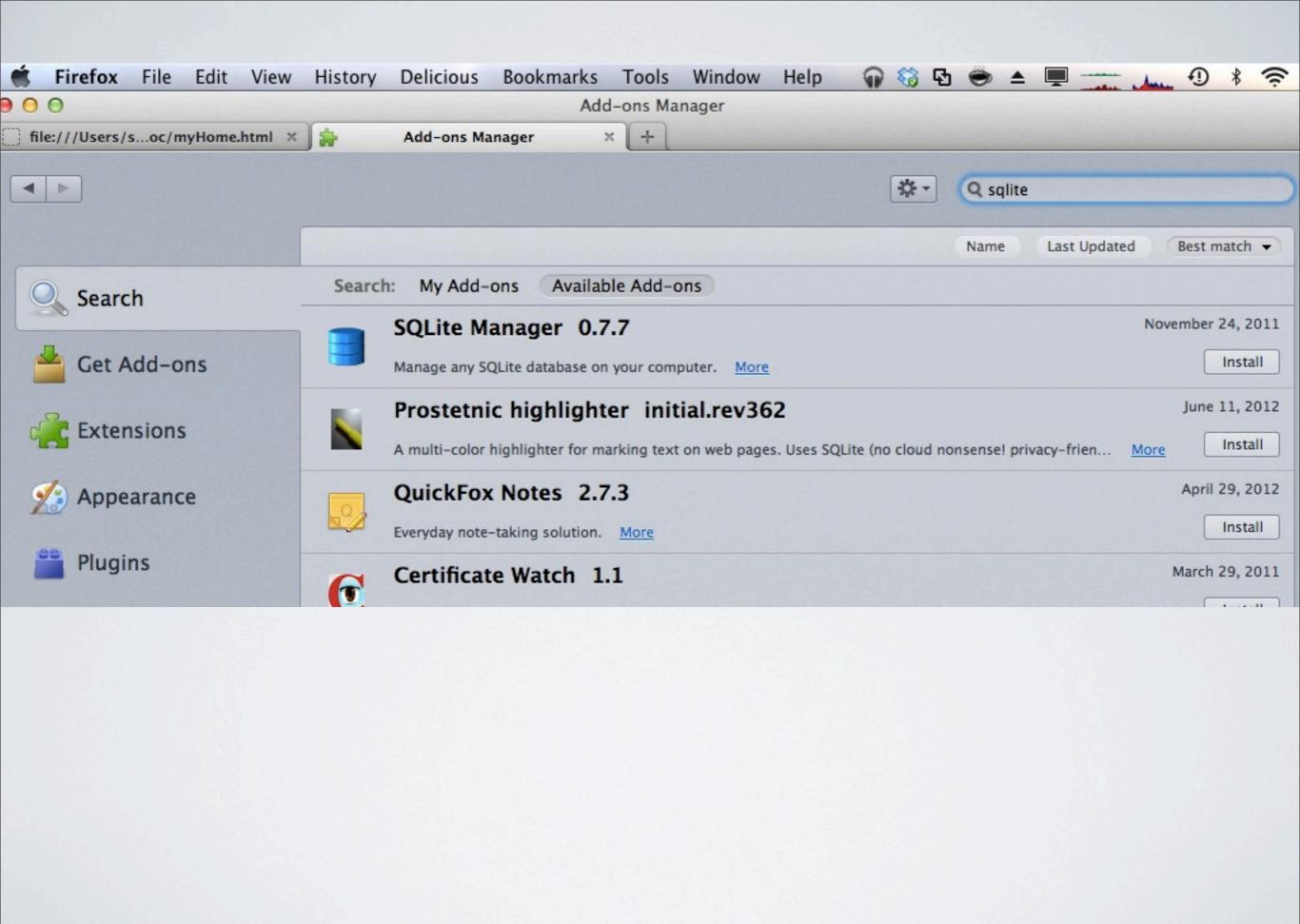Bloomberg - A world leader in financial-information technology.

Adobe revolutionizes

Current Status

- Version 3.7.13 of SQLite is recommended for all new development. Upgrading from version 3.7.6.3, 3.7.7, 3.7.7.1, 3.7.8, 3.7.9, 3.7.11, 3.7.12, or 3.7.12.1 is optional. Upgrading from all other SQLite versions is recommended.

Common Links

- Features
- Frequently Asked Questions
- Well-known Users
- Getting Started
- SQL Syntax
  - Pragmas
  - SQL functions
  - Date & time functions
  - Aggregate functions
- C/C++ Interface Spec
  - Introduction
  - List of C-language APIs
- The TCL Interface Spec
- Development Timeline
- Report a Bug

Extensible Markup Language ✕

← → C 🌐 www.w3.org/XML/ ☆

W3C® Ubiquitous Web domain

about XML . XML Activity Statement

Extensible Markup Language (XML)

1. Introduction
2. Working Groups
3. Events
4. Other Resources
5. Contact

Nearby: XML Specifications and Translations of them.

Recent: Balisage Conference [details]

Introduction

Extensible Markup Language (XML) is a simple, very flexible text format derived from SGML (ISO 8879). Originally designed to meet the challenges of large-scale electronic publishing, XML is also playing an increasingly important role in the exchange of a wide variety of data on the Web and elsewhere.
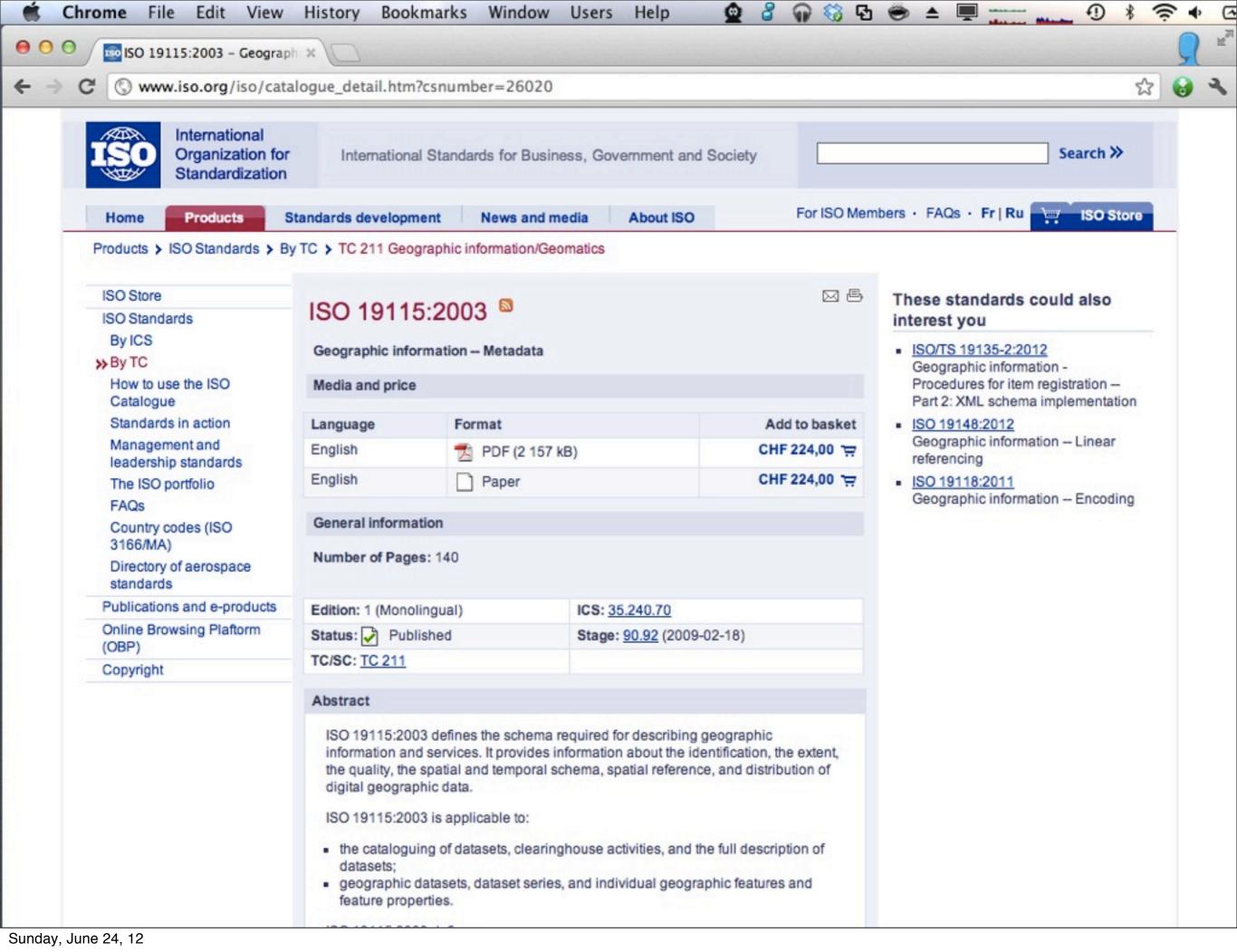
This page describes the work being done at W3C within the XML Activity, and how it is structured. Work at W3C takes place in *Working Groups*. The Working Groups within the XML Activity are listed below, together with links to their individual web pages.
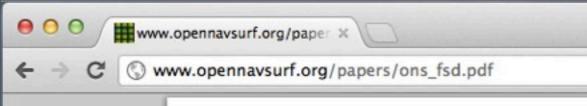
You can find and download formal technical specifications here, because we publish them. This is *not* a place to find tutorials, products, courses, books or other XML-related information. There are some links below that may help you find such resources.

You will find links to W3C Recommendations, Proposed Recommendations, Working Drafts, conformance test suites and other documents on the pages for each Working Group. Each document also contains email addresses you can use to send comments or questions, for example if you have been writing software to implement them and have found problems or errors.

Please do *not* send us email asking us to help you learn a language or specification; there are plenty of resources online, and the people editing and developing the specifications are very busy. We *are* interested in technical comments and errata.

If your organization would like to join the W3C, or if you would like to participate formally in a working group (and have the necessary resources to attend meetings), you can read more about the Consortium.

ISO 19115:2003 – Geograph

www.iso.org/iso/catalogue_detail.htm?csnumber=26020

ISO International Organization for Standardization

International Standards for Business, Government and Society

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  Standards in action
  Management and leadership standards
  The ISO portfolio
  FAQs
  Country codes (ISO 3166/MA)
  Directory of aerospace standards
Publications and e-products
Online Browsing Platform (OBP)
Copyright

ISO 19115:2003

Geographic information — Metadata

Media and price

Language	Format	Add to basket
English	PDF (2 157 kB)	CHF 224,00
English	Paper	CHF 224,00

General information

Number of Pages: 140

Edition: 1 (Monolingual)	**ICS:** 35.240.70
Status: Published	**Stage:** 90.92 (2009-02-18)
TC/SC: TC 211	

Abstract

ISO 19115:2003 defines the schema required for describing geographic information and services. It provides information about the identification, the extent, the quality, the spatial and temporal schema, spatial reference, and distribution of digital geographic data.

ISO 19115:2003 is applicable to:

- the cataloguing of datasets, clearinghouse activities, and the full description of datasets;
- geographic datasets, dataset series, and individual geographic features and feature properties.

These standards could also interest you

- ISO/TS 19135-2:2012
  Geographic information - Procedures for item registration — Part 2: XML schema implementation
- ISO 19148:2012
  Geographic information — Linear referencing
- ISO 19118:2011
  Geographic information — Encoding

Sunday, June 24, 12

Open Navigation Surface

Format Specification Document

Description of Bathymetric Attributed Grid Object (BAG)
Version 1.0.0

Document Version
RELEASE 1.0

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Uploaded by goatbar on Jun 5, 2010

by
Open Navigation Surface Working Group

Translations of this page | Accessibility

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Releases | Supported Platforms | Obtaining Emacs | Documentation | Support | Further information

GNU Emacs

GNU Emacs is an extensible, customizable text editor—and more. At its core is an interpreter for Emacs Lisp, a dialect of the Lisp programming language with extensions to support text editing. The features of GNU Emacs include:

- Content-sensitive editing modes, including syntax coloring, for a variety of file types including plain text, source code, and HTML.
- Complete built-in documentation, including a tutorial for new users.
- Full Unicode support for nearly all human languages and their scripts.
- Highly customizable, using Emacs Lisp code or a graphical interface.
- A large number of extensions that add other functionality, including a project planner, mail and news reader, debugger interface, calendar, and more. Many of these extensions are distributed with GNU Emacs; others are available separately.

New to Emacs?
Take the Emacs tour

Releases

The current stable release is 24.1. To obtain it, visit the obtaining section.

Emacs 24 has a wide variety of new features, including:

- A packaging system and interface (`M-x list-packages`) for downloading and installing extensions. A default package archive is hosted by GNU and maintained by the Emacs developers.
- Support for displaying and editing bidirectional text, including right-to-left scripts such as Arabic and Hebrew.
- Support for lexical scoping in Emacs Lisp.

orgmode.org

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Org: an Emacs Mode for Notes, Planning, and Authoring


```
File  Edit  Options  Buffers  Tools  Org  Tbl  Help

          Save      Undo

* Org starts as a simple outline

** ... written on top of outline-mode...
** TODO which allows to set timestamps
   SCHEDULED: <2011-12-14 mer.>

** TODO and deadlines
   DEADLINE: <2011-12-21 mer.>

* Continues as a TODO lists manager...
* But is also a nice authoring tool...

U:**-  test.org      Top L1    (Org +3)
```

Mentions of Org mode
#orgmode

jcazevedo
#orgmode should keep track of the amount of times I reschedule a task.
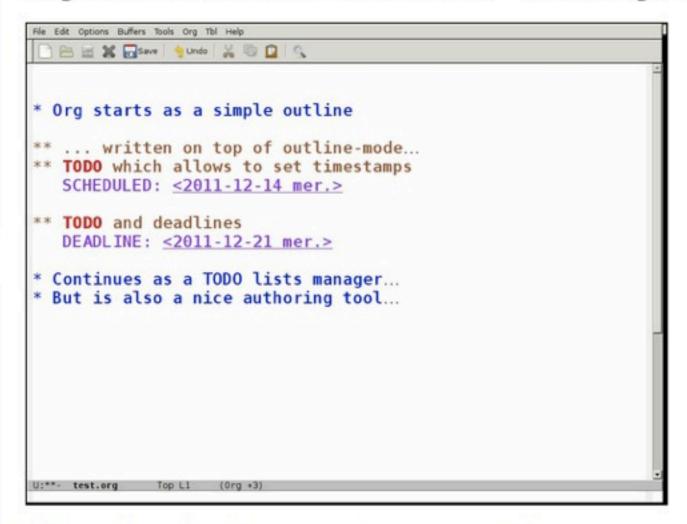5 days ago · reply · retweet · favorite

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(Click to enlarge the picture – press Escape to lower it.)

Org mode is for keeping notes, maintaining TODO lists, doing project planning, and authoring with a fast and effective plain–text system.

296

Flattr   +1

J'aime 314

I USE IT

Keep simple things simple... and do more

Simplicity

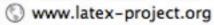# LaTeX – A document preparation system

LATEX – A document preparation system

LaTeX home

Introduction
LaTeX news
Documentation
Books

LaTeX3 project
Project articles
Development code
LaTeX3 news

How to get it
Get help!
Browse bugs database
How to report a bug

Site news
Site news feed
The LPPL
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News

Seventh issue of LaTeX3 news released
   (February 26, 2012)

TUGboat paper on LPPL history
   (October 14, 2011)

Sixth issue of LaTeX3 news released

LaTeX is a high-quality typesetting system; it includes features designed for the production of technical and scientific documentation. LaTeX is the *de facto* standard for the communication and publication of scientific documents. LaTeX is available as free software.

LaTeX the product

What is LaTeX?
If you do not yet know what LaTeX is all about, have a look at our short introduction to LaTeX.

The latest version of LaTeX
We provide a newsletter (as a PDF file) about each release of LaTeX created since 1994.

Documentation
Each release of LaTeX provides a number of guides for users.

Getting LaTeX
If you need to know how and where to get LaTeX, please have a look at our instructions.

Getting help
If you are in trouble and need to get some help, please read our hints on where you might find help.

The LaTeX3 project

The LaTeX3 project
Do you want to know more about the LaTeX3 project? If so, then please have a look at a (short) description of the LaTeX3 Project.

Ongoing work of the LaTeX3 project
Over the years a number of articles, conference papers, etc., have been produced and published by the LaTeX3 project. A selection of these are available in Portable Document Format (PDF files).

Experimental, new products
We would also like to make development code available to you via this site. We are continuing to add new material at this location so as to stimulate further discussion of the underlying concepts.
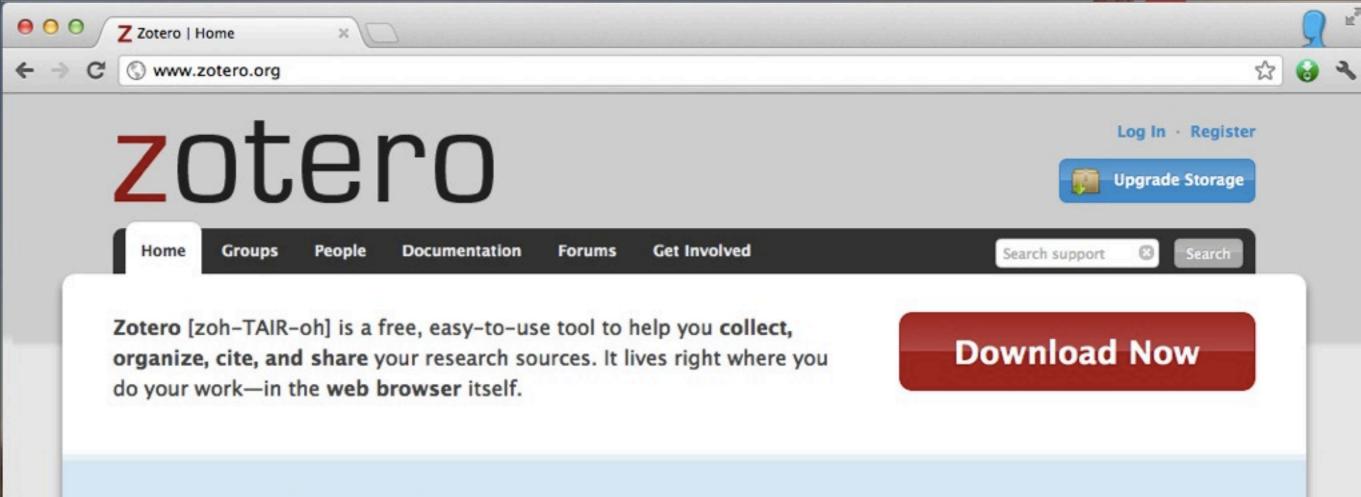
BIBTEX.org

Your BibTeX resource

Here you will find everything you need to know about BibTeX

The word ,,BibTeX" stands for a tool and a file format which are used to describe and process lists of references, mostly in conjunction with LaTeX documents.

Here you can learn about the BibTeX File Format, How to use BibTeX and BibTeX Tools which can help you to ease your BibTeX usage.

NEW: Be sure to try the *Bib2x Online Converter* which allows you to **convert your BibTeX bibliographies** into a few target formats. It is meant to serve as a demonstration of Bib2x⧉, a tool that allows arbitrary conversion of BibTeX bibliographies using templates.
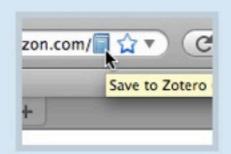
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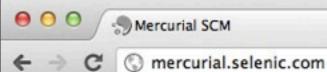
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Shakespeare's birth

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Mercurial is a free, distributed source control management tool. It efficiently handles projects of any size and offers an easy and intuitive interface.

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Mercurial **2.2.2**
Mercurial 2.2.2 for MacOS X

Another OS?
Get Mercurial for:
» Mac OS X
» Windows
» other

How you can benefit from Mercurial

It is fast and powerful
Mercurial efficiently handles projects of any size and kind. Every clone contains the whole project history, so most actions are local, fast and convenient. Mercurial supports a multitude of workflows and you can easily enhance its functionality with extensions.

It is easy to learn
You can follow our simple guide to learn how to revision your documents with Mercurial, or just use the quick start to get going instantly. A short overview of Mercurial's decentralized model is also available.

And it just works
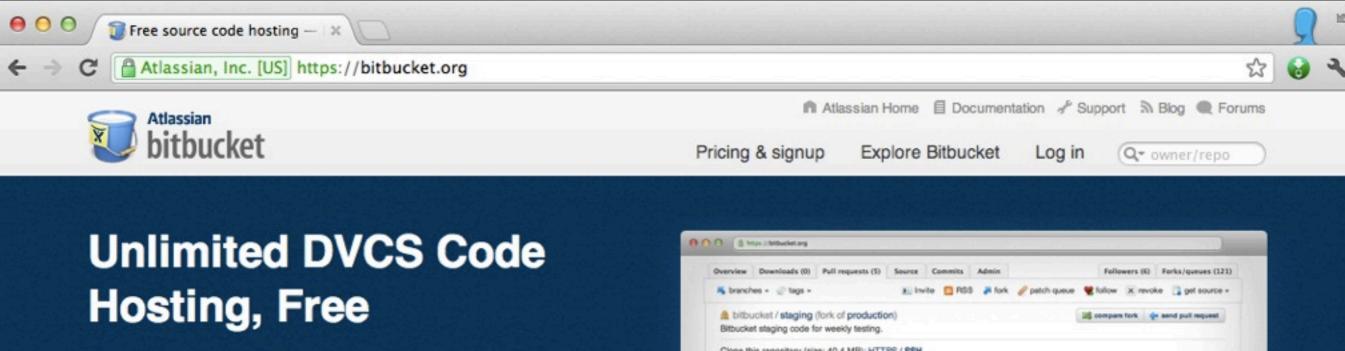Mercurial strives to deliver on each of its promises. Most

Quick Start

Clone a project and push changes

```
$ hg clone http://selenic.com/repo/h
$ cd hello
$ (edit files)
$ hg add (new files)
$ hg commit -m 'My changes'
$ hg push
```
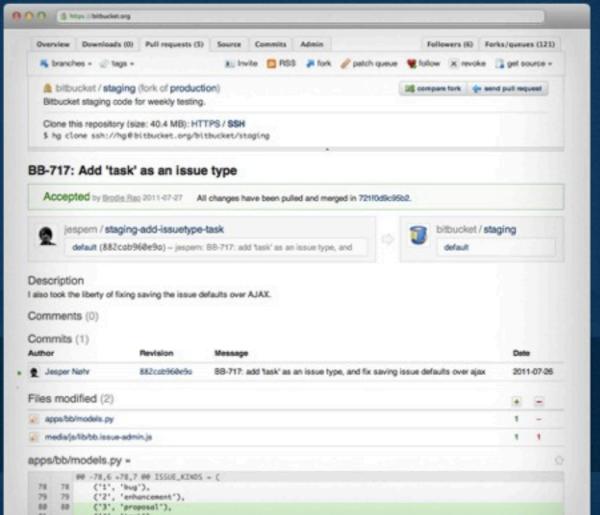
Create a project and commit

```
$ hg init (project-directory)
$ cd (project-directory)
$ (add some files)
$ hg add
```

Atlassian, Inc. [US] https://bitbucket.org

Atlassian bitbucket

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Sunday, June 24, 12

THE GENERIC MAPPING TOOLS

HOME
EXAMPLES
FAQ
DOWNLOAD
DOCS
MAILINGLISTS
REGISTRATION
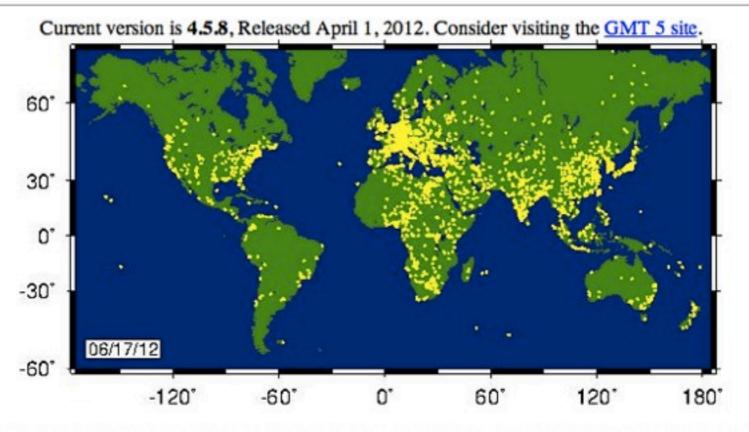MIRRORS
RESOURCES
BUGS
ARRRGHH!
RELEASES

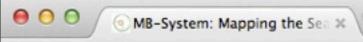GMT Pages maintained by:
Paul Wessel

Last updated:
April 1, 2012

What is GMT?

GMT is an open source collection of ~65 tools for manipulating geographic and Cartesian data sets (including filtering, trend fitting, gridding, projecting, etc.) and producing Encapsulated PostScript File (EPS) illustrations ranging from simple x-y plots via contour maps to artificially illuminated surfaces and 3-D perspective views; the GMT supplements add another ~70 more specialized tools. GMT supports over 30 map projections and transformations and comes with support data such as GSHHS coastlines, rivers, and political boundaries. **GMT** is developed and maintained by Paul Wessel and Walter H. F. Smith with help from a global set of volunteers, and is supported by the National Science Foundation. It is released under the GNU General Public License.

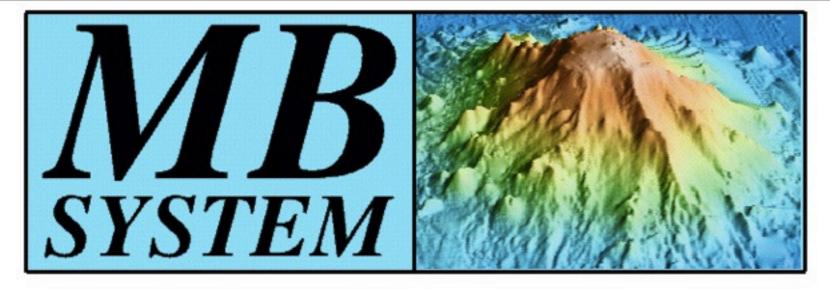Current version is **4.5.8**, Released April 1, 2012. Consider visiting the GMT 5 site.

GMT is used all over the world. Each yellow dot represent a 15x15 arc minute block with one or more registered users or institutions. So far, over 2100 such blocks have been registered, representing more than 25,000 individual GMT users. To add your dot, fill out the registration form.

MB SYSTEM

Mapping the Seafloor:

Software for the Processing and Display

of Swath Sonar Data

David W. Caress (1) and Dale N. Chayes (2)

1. Monterey Bay Aquarium Research Institute

2. Lamont-Doherty Earth Observatory

of Columbia University

Introduction

MB-System is an open source software package for the processing and display of bathymetry and backscatter imagery data derived from multibeam, interferometry, and sidescan sonars. The source code for MB-System is freely available (for free) by anonymous ftp (including "point and click" access through these web pages). A complete description is provided in web pages accessed through links below.

MB-System was originally developed at the Lamont-Doherty Earth Observatory of Columbia University (L-DEO) and is now a collaborative effort between the Monterey Bay Aquarium Research Institute (MBARI) and L-DEO. The National Science Foundation has provided the primary support for MB-System development since 1993. The Packard Foundation has provided significant support through MBARI since 1998. Additional support has derived from SeaBeam Instruments (1994-1997), NOAA (2002-2004), and others.

Quantum GIS

Search...

NathanW: "I must say, I think the thing that has really attracted me to try and do some development on QGIS is just how well the code is organized. It's very easy to just pick a class and go and build something. Good work guys. I don't even really know C++ very well and I have found it very easy to get into."

Quantum GIS
Version 1.7.4
"Wrocław"

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Upcoming Events

Foss4G 2012, Beijing
(Sept. 10-15, 2012)

QGIS User Meeting, Kassel
(September 21, 2012)

QGIS Developer Meeting, Essen
(October 03-07, 2012)

OGRS 2012, Yverdon,
(October. 24 -26, 2012)

Welcome to the Quantum GIS Project

Quantum GIS (QGIS) is a user friendly Open Source Geographic Information System (GIS) licensed under the GNU General Public License. QGIS is an official project of the Open Source Geospatial Foundation (OSGeo). It runs on Linux, Unix, Mac OSX, Windows and Android and supports numerous vector, raster, and database formats and functionalities.

Our latest release is QGIS 1.7.4 you can read the release annoucement here

Learn more about QGIS

Quantum GIS provides a continously growing number of capabilities provided by core functions and plugins. You can visualize, manage, edit, analyse data, and compose printable maps. Get a first impression with some screenshots and a more detailed feature list.

Want to learn even more?

Check the latest User Guide or learn how you can customize QGIS to fit your needs with our API Documentation and PyQGIS Cookbook.

How to contribute

Quantum GIS is a volunteer driven project. We welcome contributions in the form of code contributions, bug fixes, bug reports, contributed documentation, advocacy and supporting other users on our mailing lists and gis.stackexchange.com. If you are interested in actively supporting the project, you can find more information under the development menu and on the QGIS Wiki. We also welcome financial contributions in the form of sponsoring and funding.

Download Now
Free!

Get the User Manual

Need help?
Find it here!

Main Page	Related Pages	Classes	Files

GDAL – Geospatial Data Abstraction Library

Select language: [English][Russian][Portuguese][French/Francais]

GDAL is a translator library for raster geospatial data formats that is released under an X/MIT style Open Source license by the Open Source Geospatial Foundation. As a library, it presents a **single abstract data model** to the calling application for all supported formats. It also comes with a variety of useful **commandline utilities** for data translation and processing. The NEWS page describes the May 2012 GDAL/OGR 1.9.1 release.

The related OGR library (which lives within the GDAL source tree) provides a similar capability for simple features vector data.

Master: http://www.gdal.org
Download: ftp at remotesensing.org, http at download.osgeo.org

User Oriented Documentation

- Wiki – Various user and developer contributed documentation and hints
- Downloads – Ready to use binaries (executables)
- Supported Formats : GeoTIFF, Erdas Imagine, SDTS, ECW, MrSID, JPEG2000, DTED, NITF, ...
- GDAL Utility Programs : gdalinfo, gdal_translate, gdaladdo, gdalwarp, ...
- GDAL FAQ
- GDAL Data Model
- GDAL/OGR Governance and Community Participation
- GDAL Service Provider Listings (not vetted)
- Sponsors, Acknowledgements and Credits
- Software Using GDAL

Developer Oriented Documentation

- Building GDAL From Source
- Downloads – source code
- API Reference Documentation
- GDAL API Tutorial
- GDAL Driver Implementation Tutorial
- GDAL Warp API Tutorial
- OGRSpatialReference Tutorial
- GDAL C API
- GDAL Algorithms C API
- GDALDataset C++ API
- GDALRasterBand C++ API
- GDAL for Windows CE

Mailing List

A gdal-announce mailing list subscription is a low volume way of keeping track of major developments with the GDAL/OGR project.

trac.osgeo.org/proj/

PROJ.4

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PROJ.4 - Cartographic Projections Library

This web page relates to the PROJ.4 Cartographic Projections library originally written by Gerald Evenden then of the USGS.

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Related Resources
  Documentation
  Language bindings
  Other projections libraries/software

Download

The current development source is available by anonymous SVN from ⇨http://svn.osgeo.org/metacrs/proj/trunk/proj.

The following files are available from the ⇨proj ftp directory or ⇨http mirror.

- Source Code:
    - ⇨http://download.osgeo.org/proj/proj-4.8.0.tar.gz or ⇨http://download.osgeo.org/proj/proj-4.8.0.zip: Current source release.
- Datum shift grids:
    - ⇨proj-datumgrid-1.5.zip: US, Canadian, French and New Zealand datum shift grids - unzip in the nad directory before configuring to add NAD27/NAD83 and NZGD49 datum conversion.
    - SwissGrid
    - NonFreeGrids
    - HarnGrids
    - HTDPGrids - NAD83/WGS84 conversion grids based on NOAA/NGS HTDP Model.
    - ⇨Geocentric Datum of Australia AGD66/AGD84
    - ⇨Canadian grid for NAD27.
    - ⇨German BeTA2007 DHDN GK3 => ETRS89/UTM
    - ⇨UK's OSTN02_NTv2: OSGB 1936 => ETRS89
    - ⇨Austrian Grid for MGI.
    - ⇨Spanish grids for ED50.
    - ⇨Portuguese grids for ED50, Lisbon 1890, Lisbon 1937 and Datum 73.
    - ⇨Brazilian grids for datums Corrego Alegre 1961, Corrego Alegre 1970-72, SAD69 and SAD69(96).
    - ⇨South African grid (Cape to Hartebeesthoek94 or WGS84).

- Binaries:
    - ⇨PostgreSQL RPM Repository: Up2date Proj (and other GIS) RPMs
    - ⇨proj446_win32_bin.zip: Prebuilt Win32 executables, DLL including NAD27 grid shift files.
    - The ⇨openSUSE Application:Geo Repository offers current PROJ.4 RPMs for SuSe.

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INTERNET RELAY CHAT
IRC

CCOMwiki

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Welcome to the CCOM Wiki

- In-Brief
- Computers
- Calendars
- Facilities
- Field Equipment
- Administration
- Research
- Wiki Admin
- Jobs/Interns

Making a Start with the Wiki

If you haven't used a Wiki before, and need some guidelines on what to add, or how to add it, there's advice available in the Wiki Guide.

IT Service Announcements

The network at CCOM is, like all networks, a work in progress. When things change, they will be announced here (hopefully some time in advance, but possibly in arrears). Please check here for new information before contacting the IT Group if something appears broken.

Current Announcements   [edit]

- There are no announcements at this time.

Ongoing Concerns   [edit]

- There are no ongoing concerns at this time. To report a technical problem, please contact the CCOM IT Helpdesk ✉

(All announcements)

IT Systems

The IT Group have the responsibility for running all of the computing and network infrastructure in CCOM. We operate a full backup system, and support Windows, MacOS and Linux systems for both desktop and server use. If it's broken and needs fixing, or if you need a new service, a modification to the firewall or other information, they can help.

(Start Here)

In-Brief Information

There are a bunch of things you need to know about working at CCOM, and more to know if you're part of one or more sub-groups of the population, such as:

- Faculty
- Staff
- Graduate Students
- NOAA Graduate Students
- GEBCO Students

There's also an IT In-Brief that you should read, and an Acceptable Use Policy to which you need to adhere. Also see CCOM's Safety Information section.

(Start Here)

Administration Announcements

Current Annoucements   [edit]

- Summer 2012 Class Schedule
- Current Mileage Rate
- CCOM Seminar Series Calendar 🔒
- The Anchor ⧉

Administration

- UNH - A Section 501(c)(3) Nonprofit Educational Organization
- Forms

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www.geomapapp.org

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- Education
- GeoMapApp At Sea
- Image Gallery
- Development History
- eNewsletters

Download Links

- Unix/Linux
- Macintosh
- Windows

GeoMapApp on Facebook

Like

New! June 13, 2012: GeoMapApp version 3.2.0

Click **here** to launch version 3.2.0 of *GeoMapApp* using Java WebStart (?) or select from the **Download Links** menu to the left to install the application.

GeoMapApp is an earth science exploration and visualization application that is continually being expanded as part of the Marine Geoscience Data System (MGDS) at the Lamont-Doherty Earth Observatory of **Columbia University**. The application provides direct access to the Global Multi-Resolution Topography (GMRT) compilation that hosts high resolution (~100 m node spacing) bathymetry from multibeam data for ocean areas and ASTER (Advanced Spaceborne Thermal Emission and Reflection Radiometer) and NED (National Elevation Dataset) topography datasets for the global land masses.
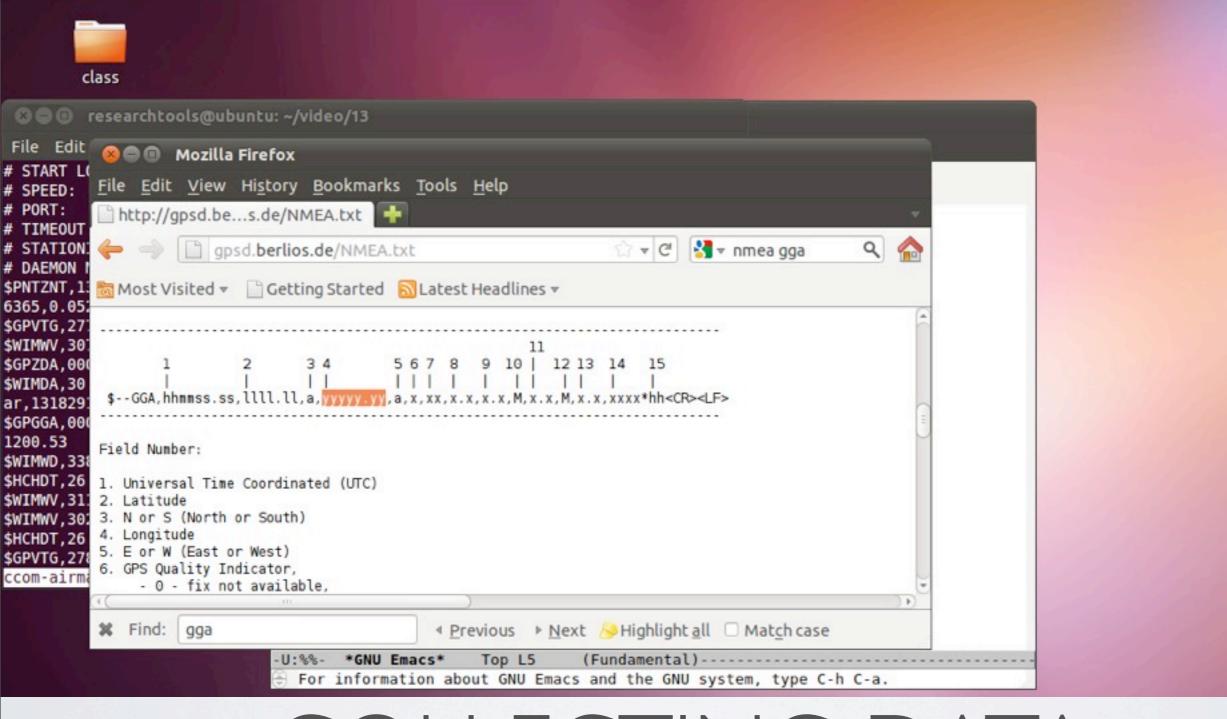
Requirements

The application runs in the Windows XP, Windows Vista, Windows 7, Mac OS X (10.4, 10.5), Linux and Solaris operating systems using the Java Runtime Environment (requires **version 1.5.0_08 or more recent**).

Important News

If you're running GeoMapApp with Debian GNU/Linux 5.0 OS please view an important update **here**. (02.20.2010)

COLLECTING DATA
NMEA/TCP/UDP