Helmholtz Graduate School for Polar and Marine Research

Course announcement: POLMAR Introductory Type

An introduction to GMT (Generic Mapping Tools)

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Date & Time:	**4 - 6 July 2018**
Location:	E-4025
Language:	English
POLMAR credit points:	3
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Course content:

The open source project Generic Mapping Tools (GMT) is a collection of about 80 command-line tools for manipulating geographic and Cartesian datasets (including filtering, trend fitting, gridding, and projecting…). GMT can produce PostScript illustrations ranging from simple x-y diagrams via contour maps to illuminated surfaces and 3D perspective views in over 30 map projections. Using command-line tools (like GMT) has many advantages, but young scientists without programming / GMT experience are often discouraged. This 3-day course is introductory to scientists who would like to learn GMT from the beginning and to gain some basic shell programming skills. After this course the participants should be able to independently create their own maps using the GMT software.

Target group:

Ocean / Earth Scientists at all academic levels without or with little GMT and / or programming experience who like to learn how to create their own maps or how to plot their own data onto maps.

Course structure:

Day 1 - $9^{\underline{00}}$ - $17^{\underline{00}}$:

Part A: Introduction to GMT (and usage of the command-line)

Part B: Specifying projection and regions (psbasemap and pscontour)

Part C: Using raster data (makecpt, grdimage, grdsample, grdcontour, grdmath, psscale)

Day 2 - $9^{\underline{00}}$ - $17^{\underline{00}}$:

Part A: Displaying data on maps (psxy, pstext)

Part B: Extracting raster data (project, grdtrack, gmtconvert)

Part C: 3-dimensional views (grdview, psxyz)

Day 3 $9^{\underline{00}}$ – open end:

Buffer / Assisted work on your own projects / open questions

Pre-requisites:

Course participants are kindly asked to bring their laptops to be able to create maps with the GMT software. This course is based on GMT release 5.2.1 or higher, which is required to be installed on the laptop.

Installing instructions for all platforms are listed here:

http://gmt.soest.hawaii.edu/projects/gmt/wiki/Installing

A standard text editor is usually pre-installed on all platforms but, however, the installation of an improved text editor like “Notepad++” on Windows and “Geany” on Mac OSX

Notepad++ for Windows: https://notepad-plus-plus.org

Geany for Mac OS: https://www.geany.org

Only for windows users: Windows has no pre-installed program to display the produced PostScript images. Therefore, it is necessary to install another program. I recommend “GSview” which, however, requires that “GPL Ghostscript” to be also installed on the system.

GPL Ghostscript: http://www.ghostscript.com/download/gsdnld.html

GSview: http://www.gsview.com/downloads.html

If you need any further support please contact: florian.riefstahl@awi.de

More information:

Overview: http://gmt.soest.hawaii.edu

Man pages: http://gmt.soest.hawaii.edu/doc/5.2.1/index.html

45 examples: http://gmt.soest.hawaii.edu/doc/5.2.1/Gallery.html#the-45-examples

GMT Tutorials: http://gmt.soest.hawaii.edu/doc/5.2.1/tutorial.html

Our courses are generally free of charge for all participants. However, they do have a price and can cost POLMAR as much as 150 € per day per student. Please take this into account when cancelling your place at the last minute.