

ADMB

Automatic Differentiation Model Builder

**ADMB Foundation
newsletter**

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Inside this issue:

*Bayesian analysis in
ADMB* 3

*Reading ADMB custom
output into R* 3

*Recent ADMB based
publications* 4

ADMB Course

The Quantitative Fisheries Center at Michigan State University will be teaching two short courses on the use of AD Model Builder in East Lansing, Michigan in August. The first course "AD Model Builder Basics" will be held August 18 and 19, 2009 and is intended for those who have never used the software or those needing a refresher in software basics. The second course "AD Model Builder Advanced Fishery Applications" will be held August 20 and 21, 2009 and will cover more advanced applications will cover more advanced topics (e.g., assessing uncertainty in model results; instruction on writing functions; alternative model parameterization. Instructors for the short courses are Drs. Jim Bence, Brian Irwin, and Travis Brenden. For additional information, including enrollment cost, please contact Travis Brenden at brenden@msu.edu

ADMB-IDE: Easy and efficient user interface

For over a decade, ADMB has been known for excellent performance, but somewhat tricky installation and usage. Users have been required to install and configure a C++ compiler, set environment variables, and in many cases make minor adjustments to user compilation scripts. Even after ADMB is properly set up, the workflow loop (write, compile, test) has involved switching repeatedly between the text editor and a shell. Some users have enjoyed syntax highlighting of some kind, while others have edited their code in black and white, making it harder to navigate and debug large models. Many ADMB users have found the ADMB user interface hard and inefficient.

who were already familiar with Emacs, or willing to invest time to learn and configure this complex and powerful editor. One could describe Emacs in admb-mode as a hard but efficient user interface.

current working environment is better for their needs. Longtime users of the Vi editor should try ADMB-IDE in viper-mode, which emulates Vi in Emacs.

May 2009 saw the release of ADMB-IDE (integrated development environment), an easy and efficient ADMB interface. It uses Emacs admb-mode as the engine, but instead of the default Emacs keybindings, it uses familiar ones like C-x to cut, C-c to copy, C-v to paste, f8 to build, f9 to run, C-q to quit, etc. Hence, the ADMB-IDE tagline "Emacs admb-mode without the Emacs".

Windows users can choose between two bundled ADMB-IDE formats: (1) Installer that sets up ADMB, GCC, GDB, Emacs, admb-mode, and takes care of the necessary configurations; (2) Zip archive that contains exactly the same components. One is a true click'n'go solution, the other a ready-to-assemble kit for manual installation. These two bundles are available from the ADMB Google Code website (see URL below).

In January 2009, Arni Magnusson released admb-mode for Emacs that he had been using for some years. It provides syntax highlighting, IDE compilation and file manipulation, outline code navigation, templates, and smaller tools. This contribution was only helpful for ADMB users

The intended user group is large, as ADMB-IDE can be used efficiently by ADMB beginners and experts, and it is available for Windows, Linux, and Mac OS X. ADMB-IDE is not intended for seasoned Emacs users (who are better served by plain admb-mode), and some ADMB users may feel that their

Linux and Mac OS X users should first install ADMB, Emacs, admb-mode, GCC, and optionally GDB, and then copy the ADMB-IDE configuration file (.emacs) to the user home directory. The configuration file is available from the ADMB-IDE homepage (see URL below).

continued on page 2

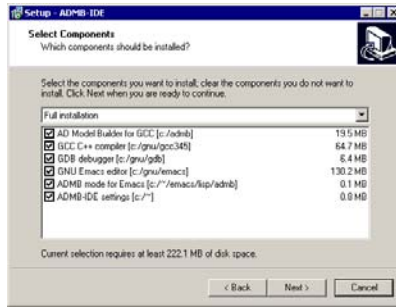
ADMB: a new pandemic!

ADMB is spreading faster than swine flue. Well, not quite, but swine flue can't estimate parameters of highly parameterized non-linear models. As can be seen on the Google Maps picture, ADMB is used across the globe, from New Zealand and Chile in the south to Alaska and Norway in the north. An updated interactive map can be found on the admb-project.org website. If you use ADMB and your institution is not on the map, let us know so we can update it.



Continued from page 1: ADMB-IDE: Easy and efficient user interface

Positive and critical user feedback from various corners of the world has improved ADMB-IDE. Johnnoel Ancheta (Manoa, Hawaii) demonstrated the Inno Windows installer, Hans Skaug (Bergen, Norway) made helpful comments on an early version of the Windows bundle, Shige Song (Los Angeles) submitted Linux bug reports, Kray Van Kirk (Juneau, Alaska) suggested improved shell interaction, and Jim Ianelli (Seattle, Washington)



ADMB-IDE installation screen

reported that viper-mode can be useful for longtime Vi users.

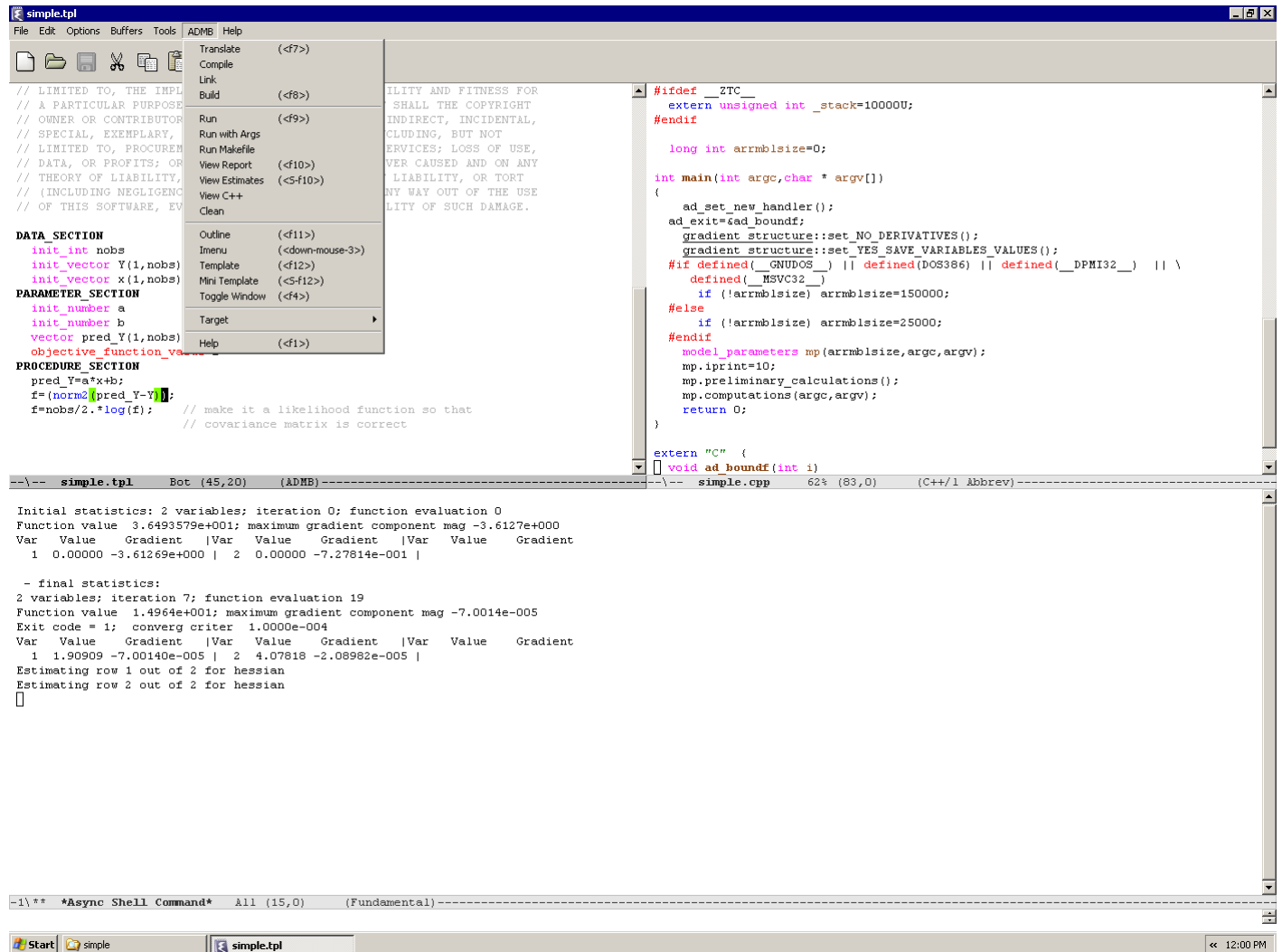
ADMB-IDE is an efficient working environment for existing ADMB users, and also a friendly interface (colorful with buttons) that will attract many new users.

URLS

ADMB Google Code (<http://code.google.com/p/admb-project/>)

provides fast download mirrors for the large ADMB-IDE Windows bundles (~60 MB). ADMB-IDE homepage

(<http://admb-project.org/community/editing-tools/admb-ide>) provides individual components of ADMB-IDE, such as the configuration file and user manual.



ADMB-IDE session, showing the ADMB menu entries, TPL code (upper right), C++ code (upper left), and optimization report (lower panel)

ADMB course in Spain

The ADMB Foundation offered an introductory course on AD Model Builder 6-7 July 2009 in Donostia-San Sebastián, Spain. Fourteen students from fisheries research agencies in Spain and France attended the two-day course. Anders Nielsen, Danish Technical University, and John Sibert, University of Hawaii, were the instructors. Installation, automatic differentiation, specification of model parameters, data input, reporting results, likelihood-based inference, random effects models and uncertainty were among the topics discussed in the course. Participants provided feedback on the course which will be used to improve the next course scheduled for 17-18 August in Copenhagen. The Foundation thanks to AZTI-Tecnalia for hosting the course at their Pasaia headquarters and Haritz Arrizabalaga and Paul de Bruyn for making local arrangements.