

Call for papers
for a **Thematic Issue with Environmental Modelling and Software**, on:
**Agricultural systems modelling and software: current status and
future prospects**

Guest Editors:

Dean Holzworth (CSIRO), Ioannis N. Athanasiadis (DUTH), Sander Janssen (WUR), Marcello Donatelli (CRA), Val Snow (AgResearch), Gerrit Hoogenboom (WSU), Peter Thorburn (CSIRO)

Environmental Modelling and Software: <http://www.journals.elsevier.com/environmental-modelling-and-software>

Scope:

Process-based, agricultural systems models have been in use over the last 40 years as tools to evaluate the agronomic, economic and environmental performance of farming systems. They are increasingly used in applications of both short (i.e. farm performance, crop production monitoring) and long term (i.e. climate change impacts, food security, environmental policy) impacts. In 2003, a special issue appeared in European Journal of Agronomy (Van Ittersum and Donatelli, 2003) titled 'Modelling Cropping Systems'. Since that special issue, the demands facing agricultural models have changed significantly. Global food security and climate change are large external drivers and the production context is more complicated, largely because of the greater demands from the natural resource management aspects of agricultural systems. This has driven many relevant developments in improving the modelling of these systems, their implementation as software programs, their inter-comparison in ensemble modelling, and their integration into larger frameworks. This Thematic Issue reflects on the drivers of change in agricultural systems in the last ten years and how the models have changed as a result. It describes these changes from a methodological, technical and application perspective, and suggests a research agenda for the future. Contributions are sought from process-based modelling groups around the world, dealing with agricultural systems in its various aspects.

Participation and timelines

The Guest Editors would like to extend an open opportunity to the membership of iEMSs and the wider science community (e.g. AgMIP, MACSUR, GYGA, GEOGLAM) to participate in the development of the Thematic Issue, through either submitting or reviewing papers. Please feel free to promote the issue with colleagues unfamiliar with iEMSs and the journal EMS, noting for them that the journal has created a strong niche and has a rising Impact Factor of over 3.

If you are interested in participating, please email your contact details and intended contribution (title, authors, abstract) to crop.modelling.ems@gmail.com by **May 17, 2013**. After an initial screening of abstracts, the EMS editorial system will be open for receiving full papers by **September 30, 2013**.

It is also envisaged that an open workshop will be conducted at the 4th AgMIP Annual Global Workshop to be held in New York in October 2013. This workshop will debate the alternative futures and upcoming challenges for crop models and will form the basis for the position paper for this Thematic Issue.

The three step review process:

1. Extended abstracts will be reviewed by the Guest Editors and recommendations will be made regarding the scope of the full paper; extended abstracts should be about 1,000 words plus a strong bibliography that indicates the literature that the paper will build upon
2. Full papers will be sent out for external peer review following Environmental Modelling & Software policy that, among other things, requires at least 3 independent reviews per paper plus valuable editorial comment
3. Revised manuscripts will be examined by the Guest Editors and, where necessary, the external reviewers. Major revisions go back to reviewers.

Possible contributions

- Editorial: overview of the Thematic Issue
- Main achievements and research agenda for crop modelling (Dean Holzworth, Ioannis Athanasiadis, Sander Janssen, Marcello Donatelli, Peter Thorburn, Gerrit Hoogenboom, Val Snow, Jeff White; Position Paper/Overview Issues (PP/OIP) paper)

- Towards a standard for describing crop model interoperability: lessons learned from translator development in AgMIP IT: Cheryl Porter, Chris Villalobos, Dean Holzworth, Ioannis Athanasiadis, Dirk Raes, Rob Knapen, Johnny teRoller, Roger Nelson, Naveen Kalra, Meng Zhang, Henri Songoti, Steve Welch, Domi Ripoché, Julien Cufi, Sander Janssen, Daniel van Kraalingen, Jeff White
- The BioMA framework for biophysical modelling in agriculture: Marcello Donatelli, Roberto Confalonieri, Simone Bregaglio, Iacopo Cerrani, Davide Fanchini, Davide Fumagalli, Marco Acutis, Andrea Rizzoli
- Advances in APSIM: Dean Holzworth, Peter Thorburn, John Hargreaves
- Advances in DSSAT: Gerrit Hoogenboom, Kenneth Boote, Cheryl Porter, Jim Jones, Senthold Asseng, Jeff White
- Large scale ensemble of maize production: advances of AgMIP: combination of AgMIP IT and AgMIP crop modelling authors
- Advances in Stics and Record modelling platform: Dominique Ripoché, Julien Cufi, and others...
- SIMPLACE as a EU wide component-based tool for simulating climate change impacts: Frank Ewert, Andreas Enders ...
- An operational system for crop yield forecasting: solutions for scaling, performance and visualization from remote sensing to estimates within the growing season: Alterra(Hendrik, Daniel), JRC (Stefan, Bettina), Vito
- INFOCROP
- A strategic research agenda on crop modelling as an EU wide effort: Frank Ewert, Reimund Roetter, with MACSUR partners.
- Other potentially interested groups are:
 - OpenMI
 - TIME
 - OMS3 (Olaf David, Jim Ascough, et al)
 - JAMS (Peter Krause, Sven Kralisch)
 - DAYCENT
 - CROPSYST
 - ORYZA
 - INFOCROP