

The logo features two wireframe spheres, one white and one grey, positioned to the left of the text. The text 'the eggs' is in a bold, sans-serif font, with 'the' in black and 'eggs' in white. Below this, 'E.G.U. NEWSLETTER' is written in a smaller, grey, sans-serif font.

the eggs

E.G.U. NEWSLETTER

ISSUE 32, OCTOBER 2010

AVAILABLE ON-LINE AT www.the-eggs.org



Paper: ISSN 1027-6343
Online: ISSN 1607-7954

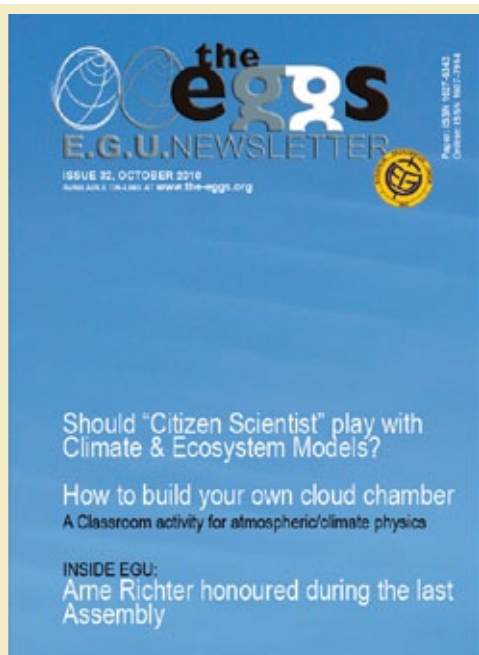
Should “Citizen Scientist” play with Climate & Ecosystem Models?

How to build your own cloud chamber

A Classroom activity for atmospheric/climate physics

INSIDE EGU:

Arne Richter honoured during the last Assembly



EDITORS

Managing Editor: Kostas Kourtidis
Department of Environmental Engineering, School of Engineering
Demokritos University of Thrace
Vas. Sofias 12, GR-67100 Xanthi, Greece
tel. +30-25410-79383, fax. +30-25410-79379
email: kourtidis@the-eggs.org

Assistant Editor: Magdelaine Pokar
Bristol Glaciology Center,
School of Geographical Sciences, University of Bristol
University Road
Bristol, BS8 1SS, United Kingdom
tel. +44(0)117 928 8186, fax. +44(0)117 928 7878
email: M.Pokar@bristol.ac.uk

Hydrological Sciences: Guenther Bloeschl
Institut für Hydraulik, Gewässerkunde und Wasserwirtschaft
Technische Universität Wien Karlsplatz 13/223,
A-1040 Wien, Austria
tel. +43-1-58801-22315, fax. +43-1-58801-22399
email: bloeschl@hydro.tuwien.ac.at

Biogeosciences: Jean-Pierre Gattuso
Laboratoire d'Océanographie de Villefranche, UMR 7093 CNRS-UPMC

B. P. 28, F-06234 Villefranche-sur-mer Cedex France
tel. +33-(0)493763859, fax. +33-(0)493763834
email: gattuso@obs-vlfr.fr

Geodesy: Susanna Zerbini
Department of Physics, Sector of Geophysics University of Bologna,
Viale Berti Pichat 8 40127 Bologna, Italy
tel. +39-051-2095019, fax +39-051-2095058
e-mail: zerbini@df.unibo.it

Geodynamics: Bert L.A. Vermeersen
Delft University of Technology DEOS - Fac. Aerospace Engineering
Astrodynamics and Satellite Systems Kluyverweg 1, NL-2629
HS Delft The Netherlands
tel. +31-15-2788272 fax. +31-15-2785322 8
e-mail: B.Vermeersen@lr.tudelft.nl

Atmospheric Sciences: Hans Xiang-Yu Huang
Danish Meteorological Institute, Lyngbyvej 100, 2100 Copenhagen,
Denmark
tel. +45-39157423, fax. +45-39157460
e-mail: xyh@dmu.dk

Seismology: Marco Mucciarelli
Università della Basilicata Di.S.G.G.
Campus Macchia Romana, 85100 Potenza Italy
tel. (39) 0971-205094, fax. (39) 0971-205070
e-mail: mucciarelli@unibas.it

Climate: Yu Shaocai
Atmospheric Sciences Modeling Division (E243-01), National
Exposure Research Laboratory U.S. Environmental Protection
Agency

RTP, NC 27711, USA
tel. +1-919-541-0362, fax. +1-919-541-1379
e-mail: yu.shaocai@epamail.epa.gov

Atmospheric Chemistry: Kostas Kourtidis
Department of Environmental Engineering,
School of Engineering, Demokritos University of Thrace
Vas. Sofias 12, GR-67100 Xanthi, Greece
tel. +30-25410-79383, fax. +30-25410-79379
e-mail: kourtidis@env.duth.gr

GENERAL CONTACT

For general matters please contact Kostas Kourtidis,
at: kourtidis@the-eggs.org

SUBMISSION OF MATERIAL

For material submission, please contact the Editor-in-chief or the
appropriate Section Editor.

ADVERTISING

For advertising information,
please contact: adinfo@the-eggs.org

TECHNICAL

For technical questions, please contact: support@dotsoft.gr

THE EGGS | ISSUE 32 | OCTOBER 2010

3 EGU News

6 Should "Citizen Scientist" play with Climate & Ecosystem Models?

8 How to build your own cloud chamber A Classroom activity for atmospheric/climate physics

11 Arne Richter honoured during the last Assembly

13 News

20 Journal watch

23 Education

24 New books

29 Book reviews

31 Events

36 Job positions

Cover photo: Cirrus clouds with almost equally spaced features, due to a gravity wave train.
Wind direction is vertical to the cloud lines. Image: Kostas Kourtidis.

Distributed by EGU via www.imagegeo.net

© European Geosciences Union, 2010

Reproduction is authorised, provided the source is acknowledged, save where otherwise stated.
Where prior permission must be obtained for the reproduction or use of textual and multimedia
information (sound, images, software, etc.), such permission shall cancel the abovementioned
general permission and indicate clearly any restrictions on use.



Should “Citizen Scientist” play with Climate & Ecosystem Models?

An introduction to the Clear Climate Code Project

By Ivo Grigorov

A series of recent events has fuelled a hot debate over the transparency and credibility of climate research. While the debate between sceptics and believers may continue, the circumstances have provided good context for “citizen science” to spill over into climate research.

The concept is not a new one and already applied in astronomy & planetary science, archaeology and biodiversity studies. The idea is that volunteers participate in tasks where human perception and common sense are needed, without the time-consuming scientific training. So could the concept work in something as technical, multi-disciplinary and complex as Global Climate Change modelling?

Earlier this year, the Clear Climate Code Project (CCC; <http://clearclimatecode.org>) set up by the staff of the Cambridge-based Ravenbrook Limited software engineering consultancy (<http://www.ravenbrook.com>), published their own version of NASA's Goddard Institute for Space Studies GISTEMP Model.

CCC is a volunteer-based project founded on the premise that “The results of some climate-related software are used as the basis for important public policy decisions. If the software is not clearly correct, decision-making will be obscured by debates about it”. The goals of the small group of software engineers are to: 1) produce clear climate science software; 2) encourage the production of clear climate science software; 3) increase public confidence in climate science results, without judgement or arbitration of climate science.

Why start with GISTEMP1?

GISTEMP is just one of the instrumentation record analyses openly available² but one has to start somewhere. The CCC team took the original version and re-wrote it in a single software, Python, in order to restructure the code for clarity for competent users who are not necessarily scientists, while attempting to independently reproduce Hansen's originally published results.

The results were not only reproduced³ (Figure 1), but the Python version of the model is significantly lighter (40% of original code), clearer (with half the codelines carrying explanation and comments) and significantly faster. Moreover, Hansen's collaborator at NASA GISS, Dr Reto Ruedy, has openly praised the re-coding of the model by saying “I hope to switch

to your version of that program ...Ideally, we would like to replace our whole code”⁴.

What next?

Clear Climate Code are currently working on an integrated graphic visualisation tools for GISTEMP. Beyond that, CCC are looking to repeat the demonstration with other global models focussed on Arctic Sea Ice Extent and past temperature reconstructions.

The goals of the computer engineers are also very complementary to those of Marine Ecosystem Evolution in a Changing Environment (MEECE)⁵ Project. Funded by Framework Programme 7, the MEECE project, coordinated by Plymouth Marine Laboratory (UK), aims to 1) improve the knowledge base on marine ecosystems and their response to climate and anthropogenic pressure, as well as 2) develop innovative predictive management tools based on the current generation of marine ecosystem models.

A central step in that ambition is making the current generation of marine ecosystem models more transparent and usable by any competent user outside the original development team. Making source code accessible and readily usable is a skill in itself and a task that often does not make the list of priorities when there are pressing scientific questions to be answered.

The CCC demonstration shows that the benefits can be beyond simple transparency and public confidence in research. Accessible and readily usable model code can invite constructive contribution from outside the research domain, and poses the question whether the GISTEMP code clarification can spill over into other of Global Climate Change modelling fields, if “citizen scientist” are given the minimum of technical documentation and access to the source code?

Clear Climate Code (<http://clearclimatecode.org>) is set up by the staff of the Cambridge-based Ravenbrook Limited software engineering consultancy (<http://www.ravenbrook.com>). Contact: Nick Barnes, nb@ravenbrook.com.

MEECE Integrated Project (<http://www.meece.eu>) is a research project funded by Framework Programme 7. Through its Model Library (<http://www.meece.eu/library.html>) the project aims to bring transparency to marine ecosystem models by providing access to the minimum technical information necessary for a competent non-expert to apply the models.

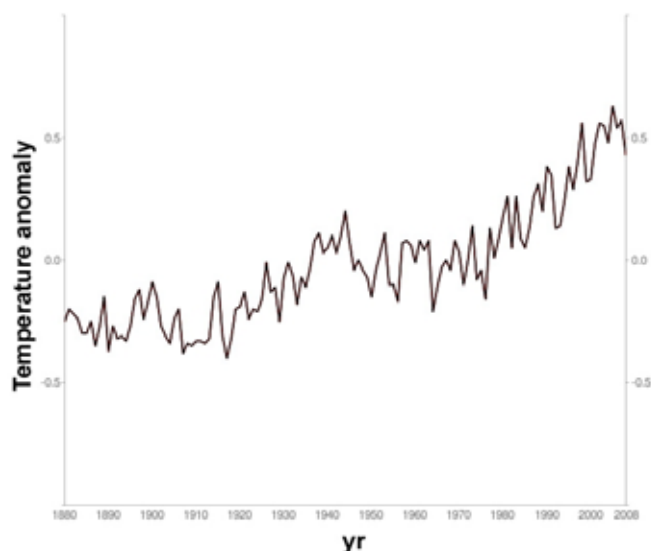


Figure 1. Global annual temperature anomaly. Without an offset, the CCC-version (red) replicates GISS original output (black) so well that it is barely visible. For full GISTEMP-CCC comparison, [visit http://clearclimatecode.org/category/status/](http://clearclimatecode.org/category/status/)

References

1. Hansen, J.E., and S. Lebedeff, 1987: Global trends of measured surface air temperature. J. Geophys. Res., 92, 13345-13372
2. Code source: <http://data.giss.nasa.gov/gistemp/sources/>
3. <http://ccc-gistemp.googlecode.com/files/ccc-gistemp-0.2.0-comparison-2010-01-11.html>
4. Reto Ruedy-CCC communication on Google Groups - <http://groups.google.com/group/ccc-gistemp-discuss/msg/bd-ba6c032080f05b>
5. MEECE Integrated Project is funded by Framework Program 7, www.meece.eu

Ivo Grigorov (ivo_grigorov@hotmail.com) is a European Programs Officer at CNRS, France (IUEM, Place Copernic, Technopole, Plouzane, France 29200) and DTU-Aqua, Denmark.