

Rossby Centre Newsletter

No 1

June 2004

This is the first issue of the Rossby Centre electronic Newsletter. It aims to provide useful information, to stakeholders on climate change research and policies, on the work and results of the Rossby Centre. This newsletter will be published 2-6 times a year, depending on the need.

The following topics are covered in this Newsletter:

1. **Introduction to the Rossby Centre at SMHI**
2. **A new version of the regional climate model RCA**
3. **An upcoming regional climate simulation**
4. **ENSEMBLES**
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6. **A special SWECLIM issue of Ambio**
7. **Regional climate change study day on October 6**
8. **Subscriptions**

1. Introduction to the Rossby Centre

The Rossby Centre is the regional climate modelling research unit of the Swedish Meteorological and Hydrological Institute, SMHI. The Centre was built up within SWECLIM, the Swedish Regional Climate Modelling Programme, 1996-2003. Research activities at the Rossby Centre focus on regional climate modelling covering meteorological, oceanographic and hydrological aspects as well as supercomputing. Work is conducted both on model development and evaluation as well as modelling applications on process studies, climate system studies, climate change research and impact studies. The regional climate models developed at the Rossby Centre are the atmospheric model RCA, the oceanographic model RCO models as well as their coupled set-up, the RCAO system. Use is made also of the HBV hydrological model of SMHI. The Rossby Centre is involved in a number

of projects, many of which are funded by EU, on climate modelling and other aspects of climate and climate change research. The projects are carried out in co-operation with other research groups on a national as well as on an international level. In 2003-2005 work at the Rossby Centre is funded also by SMHI, Naturvårdsverket (the Swedish EPA), Statens energimyndighet (the Swedish Energy Agency) and Mistra (the Foundation for Strategic Environmental Research).

The homepages of the Rossby Centre are in English and can be found via www.smhi.se. (Click on "Forsknings" [on the Swedish version] and "Research" [on the English version] at the top of the welcome page of SMHI, after which the link to Rossby Centre will appear on the list to the left of the page that opens.)

2. A new version of the regional climate model RCA

The working version 2 of the Rossby Centre atmospheric model RCA is about to be succeeded by version 3. In addition to improvements made in the description of turbulence, the so-called moist physics (parameterisation of clouds and precipitation) and radiation, a major change is made in the description of land surface and soil. The new scheme features additional processes and provides more detail on forested and snow surfaces. Additional detail is also included in simulating soil temperatures. The new land surface scheme also reacts faster to changes in the atmosphere, thus addressing some of the earlier shortcomings of RCA. The evaluations

made so far indicate that RCA3 provides either as good or better simulation of the regional climate of Northern Europe than the earlier RCA2. Even "as good" is a noteworthy accomplishment as the model includes additional complexities and provides more information than before. The RCA is probably one of the most computationally efficient regional climate model systems internationally, thanks to co-operative efforts with the international HIRLAM project and regional modellers in Ireland and Spain. RCA3 will be provided in versions suitable for regional simulations for Europe and for the Arctic region. Expected release date is during the summer of 2004.

3. An upcoming regional climate simulation

The first climate change application of RCA3 will be a transient regional climate change projection

covering the 140-year period from 1961 to 2100. The large-scale boundary conditions for the

projections have been imported from global model simulations at DKRZ, the Deutsches Klimarechenzentrum GmbH and the Max-Planck Institute for Meteorology in Hamburg. The global modelling in question has been done using the

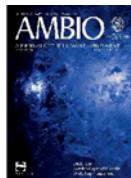
4. ENSEMBLES

The Rossby Centre contributes to the planned EU/FP6 Integrated Project ENSEMBLES (ENSEMBLE-based Predictions of Climate Changes and their Impacts) that is being negotiated with the EC. ENSEMBLES is planned as a 5-year research effort with contributions from in excess of 70 partners. The EC might fund the project with up to 15 MEURO, on top of which come national funding from many of the partners. ENSEMBLES will construct scenarios of future climate change with ensemble simulations of Earth-System Models addressing different time

5. SweCLICS

The Swedish Knut and Alice Wallenberg foundation granted recently 5.4 MSEK, to SMHI/Rossby Centre, Linköping University/National Supercomputer Centre and Stockholm University/Department of Meteorology, for the

6. A special SWECLIM issue of Ambio



A special SWECLIM issue of Ambio, vol. 33, No. 4-5, has just appeared in print (see www.ambio.kva.se). It includes 14 articles by the Rossby Centre staff and the other partners in the now finished Swedish Regional Climate Modelling Programme, including model descriptions, regional climate change scenario analysis, Baltic Sea and Arctic studies as well as hydrological impact assessment.

7. Regional climate change study day on October 6

On the 6th of October, regional climate modellers, impact researchers and other users meet and discuss the possibilities and limitations of model outputs. In addition to a general introduction to the RCAO model system and a more thorough presentation of the different parts with emphasis on model output, users will be given the oppor-

tunity to present their work. There will be time for questions and discussions during the day as well as opportunities for more informal and individual discussions the day after. There is a limit of maximum 80 participants.

Contact Gunn.Persson@smhi.se for more information.

Mailing is done as a blind copy to provide email address privacy.

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