

## **THE INTERNATIONAL OCEAN CARBON COORDINATION PROJECT (IOCCP)**

*A joint project of SCOR and IOC and an affiliate program of the Global Carbon Project.*

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- \*\*\* Cluster of Excellence "The Future Ocean" Kiel and Leibniz Institutes
  - \*\*\* Potential for use of the Swedish icebreaker Oden for Southern Ocean research
  - \*\*\* Excel macro developed to calculate CO<sub>2</sub> system parameters
  - \*\*\* UNESCO-SCOPE Policy brief on the Global Carbon Cycle published
  - \*\*\* Systematic Observation Requirements for Satellite-based Products for Climate
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### **Cluster of Excellence "The Future Ocean" Established at the University of Kiel and Leibniz Institutes**

With the establishment of The Future Ocean Cluster of Excellence, a network of researchers at the Christian-Albrechts-University in Kiel (CAU) and the participating Leibniz Institutes will investigate past, present and future ocean change, explore marine resources, develop strategies for their sustainable use and study hazards arising from the seas. Research within the Cluster will be organized under two themes (A) Oceans in the Greenhouse World and (B) Marine Resources and Risks, with specific topics including ocean acidification, carbon sequestration, chemistry of the air-sea interface, and methane hydrate dynamics.

Within both themes, strong existing research groups will be strategically augmented by new Junior Research Groups (JRG's) and integrated curricula for training Ph.D. and Master's students will be developed in a new school of ocean sciences. Most of the funding requested will be used to establish and endow Junior Research Groups in emerging research fields currently not covered by, but complementary to, those of the proponents. Junior Research Group leaders will be recruited from the international scientific community, with a tenure-track option for permanent professor positions (W2/W3) for highly successful researchers. Significant Cluster funding and the tenure-track perspective provided by the University and the participating Leibniz Institutes will permit the Cluster to attract, recruit and integrate truly outstanding young scientists. Through these means, the Cluster will strengthen and promote the University's profile as a leading European center for the study of the ocean system at large.

For further details, visit the web site at <http://www.uni-kiel.de/future-ocean/> or contact Doug Wallace at [dwallace@ifm-geomar.de](mailto:dwallace@ifm-geomar.de)

### **Potential for use of the Swedish icebreaker Oden for Southern Ocean research**

As part of the International Polar Year effort, the Swedish icebreaker Oden will be used by Swedish Polar Research Secretariat and the US National Science Foundation to assist in icebreaking and resupply of McMurdo Station this year. While transiting from Punta Arenas to McMurdo in

December, a suite of basic underway observations involving a small international group of scientists will be carried out in the Southern Ocean and Ross Sea. Oden leaves Sweden in November and the researchers from the Swedish side have already been appointed.

While Oden's main mission this year is to break ice for NSF transports to McMurdo, the use of Oden in the Southern Ocean after the coming season, both within IPY and post IPY, is open for discussion. A future partnership between SPRS and NSF involving the Oden might present opportunities for collaborative oceanographic research but it also could include broader opportunities for cooperation between SPRS and NSF's US Antarctic Program. Interested parties are invited to express their potential research and collaborative plans to Magnus Tannerfeldt (magnus.tannerfeldt@polar.se) at the SPRS. For more information, contact Richard Bellerby, University of Bergen.

### **Excel Macro developed to calculate CO2 System parameters**

Dr. Denis Pierrot of NOAA AOML has developed an EXCEL Macro spreadsheet that calculates the concentrations of inorganic carbon system parameters if two of the parameters are provided along with temperature, pressure, total phosphate concentration, and total silicate concentration. This macro is a direct adaptation of the CO2Sys.BAS program from Lewis and Wallace (1998). The macros for Mac and PC versions, along with a Quickstart information guide, are available on the CDIAAC web-site at: <http://cdiac.ornl.gov/oceans/co2rprt.html>

This new tool is an excellent complement to several existing calculation tools we have collected and made available on the IOCCP web-site, including:

-Lewis, E., and D. W. R. Wallace. 1998. Program Developed for CO2 System Calculations. ORNL/CDIAC-105. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, Tennessee.

-Zeebe, R.E. and D.A. Wolf-Gladrow. 2001. CO2 in Seawater: Equilibrium, Kinetics, Isotopes. Elsevier Oceanography Book Series, 65. Matlab files for calculations available on Web site

Proye A. & Gattuso J.-P., 2003. Seacarb, an R package to calculate parameters of the seawater carbonate system. [Accessed: date you accessed the site].

-SEA-MAT: Matlab tools for oceanographic analysis, from the USGS / Woods Hole Science Center.

### **UNESCO-SCOPE Policy brief on the Global Carbon Cycle published**

The Scientific Committee on Problems of the Environment (SCOPE) and UNESCO have begun a series of policy briefs, the second of which covers the global carbon cycle. Led by scientists from the Global Carbon Project ([www.globalcarbonproject.org](http://www.globalcarbonproject.org)) the brief focuses on the carbon-climate-human interactions and addresses problems such as how to close the 'energy gap' and the potential for the additional release of carbon from vulnerable natural reservoirs. It also considers the inertia of the climate-human system, highlighting the need to act now as changes will take decades to take effect. To download the brochure:

<http://www.unesco.org/mab/publications/pdf/carbonBriefsNo2.pdf>

## **Systematic Observation Requirements for Satellite-based Products for Climate**

Systematic Observation Requirements for Satellite-based Products for Climate ("Satellite Supplement") is now available on the website of the Global Climate Observing System (GCOS) Secretariat at: <http://www.wmo.int/web/gcos/gcoshome.html>. This document provides supplementary detail to the satellite component of the GCOS Implementation Plan (GCOS-92, October 2004). To achieve effective and comprehensive climate monitoring from space, 9 cross-cutting needs and 35 satellite-based products that address Essential Climate Variables have been identified for priority action by space agencies and other institutions working with satellite data.

The Satellite Supplement specifies climate-specific requirements for the accuracy, stability and resolution of satellite-based products, along with the Fundamental Climate Data Records necessary for the generation of these products. In addition, the report makes recommendations related to calibration and validation, associated in situ observations, reprocessing and reanalysis, the adequacy of the current situation, immediate actions, and additional research needs.