

MARUM / GLOMAR Expert Course:

The Global Carbon Cycle: Carbon burps and hiccups: the global carbon cycle during the Cenozoic – a hands-on course

Prof. Dr. Heiko Pälike

*University of Bremen, Center for Environmental Research and Sustainable Technology (UFT),
MARUM – Center for Marine Environmental Sciences*

30 January – 01 February 2013, MARUM, Bremen

Objectives

The objectives are to get a broader overview of the Cenozoic climatic evolution and to get some hands-on experience with carbon chemistry and models. Case studies include altered boundary conditions during the Paleocene-Eocene Thermal Maximum and its records, and the Eocene-Oligocene climatic transition into the late Cenozoic “Icehouse”. The primary goal is to ‘get your hands dirty’ by running and understanding carbon cycle models.

Morning lectures:

Principles and observations of the global carbon cycle
importance of the carbon cycle to determine $p\text{CO}_2$
global budgets and fluxes, (simplified) carbon chemistry
carbonate sedimentation and Cenozoic history

Geological examples of large or rapid carbon cycle shifts
PETM, Eocene/Oligocene transition, Miocene transition
glacial-interglacial carbondioxide cycles

Fundamentals of carbon-cycle modeling
(over time periods of thousands to millions of years)
Box modeling fundamentals, Examples of very simple, and more complicated
box models of the carbon cycle

Afternoon practicals:

a simple carbon cycle toy model (Excel), web-based models
(e.g., <http://www.noc.soton.ac.uk/jmodels/>); simple box (e.g. Simile and Stella)

Time

09.00 – 17.00

Location

MARUM, University of Bremen, 28359 Bremen, Germany, Room 2070

To subscribe

Please send a mail to Christina Klose (glomar-courses@marum.de). Please give your name, status (PhD student, Postdoc or Master Student), institute / university and research area / working group as well as your field of study.