

Outline for the meeting at EGU 2009

COSMOS – Paleo activities

Monday 20 April 2009, 17:30-18:30
Session SPM8 in room SM5 of the Vienna congress centre
Gerrit Lohmann

Let us continue on our last year meeting about the paleo activities within COSMOS. In the mean time, there is the web page: <http://cosmos.enes.org/COSMOS-Paleo.319.0.html>
Here is the proposed agenda for the meeting:

1) Challenges for future modelling

For the Earth System dynamic on long time scales, many model components are required. Within COSMOS, it would be ideal if a group of people feel responsible for Earth System Model components. To start with something, please find below a proposal including people we have already spoken to or Martin Claussen and I thought that they be interested.

2) There are ideas to propose a coordinated effort (Konsortialrechnung at DKRZ) for the calculation of glacial cycles.

Proposed time: After the IPCC experiments

The main idea is to use COSMOS to simulate the climate evolution covering the last 150,000 years using COSMOS in a low-resolution version, but interactive carbon cycle, ice sheet development etc.. Parallel to that a high resolution simulation of the LGM time slice with the same model as used in the IPCC report is foreseen.

Similar to the STORM project, there would be a phase of ~1 year for model preparation, and a phase of ~1 year for model runs. At least part of the above mentioned components shall be coupled into the system.

People already showed interest were Martin Werner, Thomas Laepple, Gregor Knorr, Klaus Grosfeld, Peter Köhler, Martin Claussen, Viktor Brovkin, Christian Reick, Ralf Greve, Martin Heimann, Wolfgang Hiller, Kerstin Fieg, Dieter Wolf-Gladrow, *I guess the list will be much longer, and the aim of the meeting is to identify researchers interested in such effort.* The technical coordination is then typically done by MaD and DKRZ, as well as the institutes of the proposers. A proposal of such effort could be suggested at the Wissenschaftlicher Lenkungsausschuss (WLA) in 2009.

3) PMIP project 3rd phase

The COSMOS model shall participate in the PMIP project 3rd phase (<http://pmip.lsce.ipsl.fr/>). The list of experiments will be provided by email and web page within PMIP. The involved persons were already contacted in PMIP. A short report will be given.

A suggestion: For an overview of the activities and consistency, please contact Victor Brovkin (victor.brovkin@zmaw.de) and Gerrit Lohmann (Gerrit.Lohmann@awi.de) in order to document them for COSMOS on the COSMOS paleo web page. Points to be discussed:

- a) is it possible to have similar setup, even common control integrations
- b) ensemble simulations, sensitivity simulations
- c) runs with different resolution

4) Offline modules

It would be nice to hear from initiatives for modelling of proxies: Tree rings, forams, ice cores, etc.

5) Any other business

- Terrestrial feedbacks and biogeochemical cycles (Claussen, Brovkin, Reick, MPI-M)
- River routing and lakes (Hagemann, MPI-M)
- Permafrost (Dethloff, AWI; Stendel, DK ; Hagemann, MPI-M; Heimann, MPI-Jena)
- Ice sheets and shelves (Greve, Japan; Grosfeld, Lohmann, AWI; Clond, Mikolajewicz, MPI-M)
- Ocean dynamics (Jungclaus, Haak, v. Storch, MPI-M; Schröter, Danilov, AWI)
- Atmospheric chemistry (fast) (Steil, Feichter, MPI; Schultz, FZ Jülich)
- Silicate weathering (Kleidon, MPI-J, Brovkin, MPI-M; Francois, Liege; Butzin, Bremen; Köhler, AWI)
- Isotopes (Werner, Butzin, Lohmann, AWI; Sturm, Norway; Hoffmann, LSCE; Cuntz, Jena; Maier-Reimer, Mikolajewicz, MPI-M)
- Marine biological cycles and Ecosystem dynamics (Maier-Reimer, MPI-M; Schartau, GKSS; Völker, Köhler, Wolf-Gladrow, AWI)
- Sediment dynamics (Heinze, Bergen; Wolf-Gladrow, AWI)
- Solid Earth (Thoma, AWI; Thomas, GFZ)
- Coupling issues: unstructured grids, variable Land Sea mask (Bierkamp, Budich, Legutke, MPI-M; Hiller, Fieg; AWI)
- Volcanoes (Timmreck, MPI-M)

This is an incomplete and open list. For more information come to the meeting and contact the persons.