



Modeling Dansgaard-Oeschger interstadials 8 and 14 with a coupled earth system model

C. Van Meerbeeck, H. Renssen, D. Roche

Dept. of Paleoclimatology and Geomorphology, Vrije Universiteit Amsterdam, Amsterdam,
Netherlands (cedric.van.meerbeeck@falw.vu.nl / Fax: +31 20-5989941 / Phone: +31
20-5987144)

In the framework of the RESOLuTION project of the EUROCORES – EuroCLIMATE programme, it was decided to simulate two typical Dansgaard-Oeschger (DO) cycles, including Greenland Interstadials 8 and 14, with the 3D coupled earth system model LOVECLIM (formerly known as ECBilt-CLIO-Vecode). A first step is to set up time-varying forcings for those intervals: orbital forcing, greenhouse gas concentrations, aerosol levels, solar irradiance variations and freshwater fluxes. The next step consists of the setup of the initial state, being stable stadial conditions in a control run. In the years to come, several hypotheses on the cause of DO cycles, as described in literature, will be tested by means of several experiments. The main issue is the weakening or possible collapse of the thermohaline circulation due to freshwater pulses in the high northern latitudes. Evidence for such events is found in reconstructions of past oceanic circulation and climate, in part provided by RESOLuTION. By comparing our model results with proxy-data reconstructions, we try to find further support for one or several of causal relationships.

Acknowledgements

This poster/oral presentation is made possible thanks to the support from the European Science Foundation (ESF) under the EUROCORES Programme EuroCLIMATE, through contract No. ERAS-CT-2003-980409 of the European Commission, DG Research, FP6.