



EuroMARC CRP: Atlantic Meridional Overturning Circulation During Interglacials (AMOCINT)

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A key way of narrowing down uncertainties in climate projections that may originate from the interaction between natural and man made changes, is to identify the possible breadth of natural climate system behavior and response to climate forcings using paleoclimate data and climate model experiments from a range of pre-Holocene warm phases with different mean states and external forcing. Through AMOCINT new data syntheses for previous warm phases (interglacials) with a wider range of climate forcings from the different orbital configurations of these times will become available, thus broadening the foundation for model based estimates of climate sensitivity and responses to major feedbacks.

AMOCINT aims to decipher for the North Atlantic the spatial and temporal structure of the interglacial peaks and demises and their timing with forcing variations. It will provide multiproxy data sets to correlate land and ocean climate records and forcings, focusing in particular on two prominent interglacials: MIS 5e (the last interglacial) and MIS 11 (which was the last time the Earth's orbital parameters were similar to those prevailing today). Records of past climate system behavior will be quantified with a century scale resolution for the glacial inception following MIS 5e and MIS 11. Through these studies the groundwork will be laid to justify coring the complete suite of interglacials over the past 1 million years through IODP.

In the AMOCINT project 4 main European laboratories in paleoceanography, representing 4 countries, join forces to develop a stepwise project to:

1. Survey key sites where High-quality Holocene records exist for Calypso-coring and IODP drilling targets to recover sediments from previous interglacials.
2. Core targets during summer 2008 that are within reach of the Calypso system on-board the R/V *Marion Dufresne* provided by the Institut Polaire Paul Emile Victor (IPEV) within the framework of the International Marine Global Changes (IMAGES) program.
3. Document and test the feasibility of such studies of interglacials by providing century scale records of the past interglacial based on Calypso cored sediments.
4. Produce a mature proposal for IODP drilling to recover sediments that are beyond reach for the Calypso system.

The partners are: Bjerknes Centre for Climate Research (PI E. Jansen), Laboratoire des Sciences du Climat et de l'Environnement CEA/CNRS/UVSQ (PI. C. Kissell), Institut für Geowissenschaften Christian-Albrechts-Universität zu Kiel (PI M. Weinelt), INETI- Instituto Nacional de Engenharia, Tecnologia e Inovação, (PI S. Nave)