MARGO
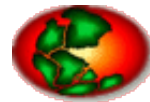Multiproxy Approach for the Reconstruction of the
Glacial Ocean surface

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Brief report on the first workshop of MARGO

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Under the auspices of IMAGES-EPILOG, the HANSE Institute of Advanced Study (Delmenhorst, Germany), and the Research Center Ocean Margins (RCOM, Bremen University, Germany).

The first MARGO workshop, that was held from 1 to 6 September, 2002, initiated the compilation of core-top, Late Holocene, and LGM data sets for geochemical and microfossil-based SST estimates with global coverage. The main objective was to formulate recommendations and action plans for the international community that will stimulate the compilation of large data sets for global-scale calibration as well as Late Holocene and LGM reconstruction of surface ocean temperatures and the organisation of corresponding archives in one concerted effort.

This workshop was considered as the second step for improving the knowledge of last glacial maximum (LGM) temperatures at the ocean surface, fostered by the EPILOG working group of IMAGES. Three years after the first EPILOG workshop at the HANSE Institute for Advanced Study, the MARGO workshop assembled and discussed the new SST proxy data that have been generated since the initiation of the international collaboration within EPILOG in 1999. The data sets considered for the LGM synthesis were diatom, radiolarian, foraminifera and dinoflagellate counts, alkenone unsaturation ratios, and Mg/Ca records of foraminifera that are available to date. It is furthermore intended to compare SST estimates with a global data set of oxygen isotope values from planktonic foraminifera. The more detailed objectives of MARGO can be found on the MARGO website.

The major result of the MARGO workshop was the agreement of participants on a list of recommendations for the global multiproxy SST syntheses, on a list of key actions and responsibilities for the next year, on templates for data submission to the MARGO archive, and on the time frame for publication of individual products (Phase 1) as well as on a plan for a final synthesis that also will contain several products but on a global scale (Phase 2). While publication of individual products, e.g., regional or basin-wide LGM syntheses, new calibrations and methods of SST estimation, is proposed for a special issue of QSR within the next 12 months, final syntheses with global coverage will be generated on a second MARGO workshop scheduled for September 2003. The recommendations and action plans are twofold. One set reports the general items for the content and structure of the synthesis that are valid for all the different proxies. The other addresses in particular issues related to (i) microfossil-based SST reconstructions, (ii) alkenones and foraminiferal Mg/Ca, (iii) foraminiferal oxygen isotopes, and (iv) the use of different mapping methods and the extraction of ocean temperature atlas data for calibration with core-top SST estimates. In parallel to group and plenary discussions leading to the recommendations and action plans, the workshop participants started to build up the MARGO archive in the PANGAEA-WDC MARE data base. The MARGO archive now contains over 20 individual data sets, that

range from individual core data to basin-wide compilations for the LGM time slice as well as core-top data sets for regional or global calibration of different proxies. It is planned that in one year from now, three different types of data sets should be available with global coverage: core-top raw data for each of the proxies as well as raw data and SST estimates for the late Holocene and LGM time slices.

All further details about MARGO recommendations, action plans, templates, and available data sets can be found under www.pangaea.de/Projects/MARGO/data. For getting in contact with MARGO please email to margo@pangaea.de or to one of the workshop convenors.

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