



Marine Working Group Meeting

Arctic Ocean Science Board (AOSB)

5 April 2014

09.00-18.00

(Lunch 12.00-14.00, Coffee Breaks 10.30-10.45 and 16.10-16.30)

Helsinki, Finland

The Dynamicum, Finnish Meteorological Institute

Agenda

Participants:

WG MEMBERS PRESENT:

BERT RUDELS - FINLAND, CHAIR
JINPING ZHAO - CHINA, VICE CHAIR
ROLF GRADINGER - USA, VICE CHAIR
SAVITHRI NARAYANAN - PAST CHAIR, CANADA
OLEG DITRICH - CZECH REPUBLIC
NAJA MIKKELSEN - DENMARK
KARI STRAND - FINLAND
HEIDI KASSENS - GERMANY
MICHIEL RUTGERS VAN DER LOEFF - GERMANY
JÓNSSON STEINGRIMUR - ICELAND
K.P. KRISHNAN - INDIA
STEFANO ALIANI - ITALY
KOJI SHIMADA - JAPAN
HAJIME YAMAGUCHI - JAPAN
SUNG-HO KANG - KOREA
BAEK MIN KIM - KOREA
MARIT REIGSTAD - NORWAY
FRANCISCO GORDILLO - SPAIN
PAULINE SNOEIJNS LEIJONMALM - SWEDEN
JEREMY WILKINSON - UK
MARY-LOUISE TIMMERMANS - USA

GUESTS AND OBSERVERS:

JACQUELINE GREBMEIER - PAG CHAIR
NATHALIE MORATA – ART CO-CHAIR

WG MEMBER NOT PRESENT:

MORTEN HOLTEGAARD NIELSEN - DENMARK
GUDRUN MARTEINSDOTTIR - ICELAND
RANDI INGVALDSEN - NORWAY
WALDEMAR WALCZOWSKI - POLAND
JAN MARCIN WESLAWSKI - POLAND
MIQUEL CANALS - SPAIN
HEIN J.W. DE BAAR - THE NETHERLANDS
SHELDON BACON - UK

SECRETARIAT

VOLKER RACHOLD (IASC EXECUTIVE SECRETARY)
HIEKE MIDLEJA (IASC SECRETARIAT)
EMILY CHOY (APECS PARTICIPANTS)
PAUL SUPRENAND (ECS PARTICIPANTS)



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1 OPENING AND REPORTING (10.00-10.30)

1.1 WELCOME AND INTRODUCTIONS BERT RUDELS

1.2 REPORT FROM THE CHAIR BERT RUDELS

1.3 APPROVAL OF THE MINUTES OF THE LAST MEETING VOLKER RACHOLD

- The minutes of the 2013 meeting is given in ANNEX 1.3

1.4 ADOPTION OF THE AGENDA BERT RUDELS

2 MAIN ISSUES (10.30-16.00)

2.1 REPORTS ON MWG ACTIVITIES

2.1.1 INTERNAL MIXING PROCESSES IN THE ARCTIC OCEAN BERT RUDELS

The workshop was held in 21-22 October 2013 in Woods Hole, USA. Close to 40 scientists attended. The workshop was organized thematically with introductions by invited speakers, presenting different processes present in the Arctic Ocean. The presentations were organized into four themes: The upper Ocean Mixing in the interior, Mixing at the boundaries and interaction with the interior, and the Large-scale Picture.

- The workshop report is given in ANNEX 2.1.1.

2.1.2 DISTRIBUTED BIOLOGICAL OBSERVATORY (DBO)

JACQUELINE GREBMEIER

A DBO data workshop was held at the NOAA Pacific Marine Environmental Laboratory (PMEL) in Seattle on 27 February -1 March 2013. The meeting brought together scientists and associated project data sets collected during the 2010 - 2012 DBO pilot effort. The purpose of the meeting was to discuss the results, share data sets, develop an international data policy for this observing effort, and organize collaborative publications. A report on the workshop will be provided and the MWG will discuss its continued involvement in the DBO effort.

- The workshop report is given in ANNEX 2.1.2.

2.2 UPDATES ON UPCOMING ACTIVITIES

2.2.1 ARCTIC COD

ROLF GRADINGER

The workshop, to be held in 7-9 April 2014, Copenhagen, Denmark, aims to bring together experts from around the circumpolar North to share knowledge about Arctic cods from the Pacific and Atlantic regions, synthesize what we currently know, and plant the seed for future comparative analyses. Specific objectives to be addressed during the workshop include: (1) Review and synthesize existing information on the circumpolar distribution, stock structure, early life history (spawning, egg and larval distributions), movements, and basic biology (fecundity, maturity, growth and energetics) of Arctic cods; (2) Characterize the vertical and horizontal distribution of Arctic cods during the ice-free season from the nearshore to the Arctic basin in different regions and compare across regions; and (3) Review available information on under-ice distribution.

2.3 REVIEW OF IASC ACTIVITIES RELATED TO THE MWG

2.3.1 SECRETARIAL SUPPORT

VOLKER RACHOLD

- The White Paper is given in ANNEX 2.3.1.

2.4 OTHER MARINE ACTIVITIES EXTERNAL TO IASC

2.4.1 PACIFIC ARCTIC GROUP (PAG)

JACQUELINE GREBMEIER

An update on Pacific Arctic Group (PAG) activities will be given.

2.4.2 ARCTIC IN RAPID TRANSITION (ART)

NATHALIE MORATA

The ART (Arctic in Rapid Transitions) Science Plan was approved by the Marine WG in 2010 and the Implementation Plan in 2011. In October 2013, ART committees were restructured: new members were welcomed in the Executive Committee while some of the founding generation members joined the Scientific Advisory Board. ART is planning its first official ART scientific project “TRANSSIZ,” which will take place onboard the RV Polastern in May/June 2015. ART has also been very active in meetings and workshops. ART organized its first ART science symposium in October 2012 in Sopot, Poland in cooperation with the Association of Polar Early Career Scientists (APECS), which led to the submission of papers for a special issue. The second ART-led science workshop “Integrating spatial and temporal scales in the changing Arctic System: towards future research priorities,” will take place in October 2014 in France, which will later feed into the larger ICARP III meeting in Toyama. Furthermore, ART was presented at the Arctic Observing Summit week in Vancouver in April 2013, has successfully organized a session at the Ocean Science Meeting 2014 in Honolulu, and is one of the organizer of the scientific conference at the Arctic Frontiers Conference in 2017. Finally ART is putting together a proposal application for an EU Innovative Training Network, to bring PhD researchers into the ART framework and carry out research from upcoming cruises under the second “active research” phase of ART.

2.5 3RD INTERNATIONAL CONFERENCE ON ARCTIC RESEARCH PLANNING (ICARP III)

BERT RUDELS

Under this agenda item, the Chair will introduce the selected proposals from the ExCom meeting. The IASC WGs are expected to play an important role in the ICARP III.

- The ICARP III proposals are given in ANNEX 2.5.1 to 2.5.6. respectively

2.5.1 GREENLAND ICESHEET/OCEAN INTERACTION (GROCE)

MICHIEL RUTGERS VAN DER LOEFF AND URSULA SCHAUER

The mass loss from the Greenland ice sheet has increased rapidly over the last few decades. One candidate for the ice sheet mass loss is the dynamics of marine terminating outlet glaciers which have a direct link to warming ocean waters. Uniting national and disciplinary studies towards better understanding the interaction between Greenland ice sheet and ocean will therefore be one challenge of future Arctic research. This will be the theme of a workshop supported in the framework of ICARP III.

2.5.2 SEASONAL ICE COVER

BERT RUDELS

The proposal aims at identifying and evaluating the likelihood and the effects of these, and other, changes that might occur. It will also confront the issues why and when the Arctic Ocean might become ice free in summer, and if it does, under what circumstances can it revert back to a permanently ice covered ocean (multiple equilibria). The work during the first part of the 10 years period will mainly be conceptual and concentrate on what consequences possible changes might have and how these changes could be observed, should they take place. Where are similar conditions to be seen today, in the marginal ice zone, in the southern ocean, along high latitude shelf breaks? The second part of the period will encompass more field work and tests of concepts.

2.5.3 PAST GATEWAYS

KARI STRAND

Palaeo-Arctic Spatial and Temporal Gateways (PAST Gateways): a multidisciplinary, pan-Arctic network researching Arctic palaeoclimate, aims to establish the nature of Arctic climate change prior to instrumental records, focusing on the transitions between different climate states. Two conferences and an associated special publication related to the network were proposed. The underlying motivation is that understanding rapid climate change in the Arctic and its causes, and predicting its future magnitude, requires assessment of long-term palaeo-records of climate and environmental change beyond the period of instrumental records as well as the transitions between different climate states.

2.5.4 CULTURE AND CLIMATE IN THE ARCTIC

MARY-LOUISE TIMMERMANS

Under this initiative, we will bring together researchers across a range of disciplines (anthropology, palaeoclimate and contemporary climate, biology, history and others) to explore relationships between culture and the Arctic environment. Central themes that we hope to address relate to understanding how elements of the Arctic archeological record may be related to past changes to the climate.

2.5.5 MOSAIC **MATTHEW SHUPE**

The Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAIC) is motivated by dramatic changes observed in the Arctic related to rapid sea-ice loss and other processes, and by the difficulties in understanding and modeling these changes and processes. The observatory will spend at least one year embedded within the Arctic sea ice to collect the interdisciplinary, process-level observations necessary to evaluate and improve model parameterizations in the central Arctic to support advances in sea ice prediction and numerical weather and climate models.

2.5.6 LINKAGES **JAMES OVERLAND**

The proposed Linkage activities have two goals, first, to produce a synthesis manuscript on Linkages for submission to a leading peer-review climate/science journal during 2014, which provide **consensus** statements on the state of the science and future directions as the basis for an ICARP III symposium session. Second, to promote Linkages research by supporting participation by leading scientists and early-career investigators in workshops and symposium sessions.

2.6 PROPOSED ACTIVITIES

2.6.1 NEW ACTIVITIES/TASKS BROUGHT FORWARD BY THE MEMBERS

2.6.1.1 FOLLOW UP IN THE MIXING WORKSHOP **BERT RUDELS**

2.6.1.2 NEW ACTIVITIES PROPOSED BY MEMBER OF THE MWG

Under this agenda item, new suggestions and proposals on WG activities will be brought forward by members of the Working Groups. This will include short presentations followed by a discussion.

2.6.2 NEW ACTIVITIES/TASKS FROM EXTERNAL INPUTS

2.6.2.1 POLAR MARINE DIATOM WORKSHOP ROLF GRADINGER

The next Polar Marine Diatom workshop is to be held in Salamanca, Spain from 19-24 July 2015, hosted by Maria Angeles Barcena. This workshop will provide the international community of polar diatom specialists and students with a unique opportunity to interact and discuss topical issues and new results that bear on recent and future research activities in the Polar Regions.

- The Proposal is given in ANNEX 2.6.2.1.

2.6.2.2 SCIENTIFIC COMMITTEE OF OCEAN RESEARCH (SCOR) MICHIEL VAN DER LOEFF

3 NEXT MEETING (16.00-16.10) VOLKER RACHOLD

3.1 ASSW 2015

The 2015 meeting will be held at the ASSW 2015 in Toyoma, Japan on 23-30 April 2015, in conjunction with IASC's 25th Anniversary, the ICARP III and the 4th International Symposium on Arctic Research.

- The First Circular is given in ANNEX 3.1.

3.2 ASSW 2016

The 2016 meeting of the WG will be held in conjunction with the ASSW 2016 in Fairbanks, Alaska, USA.