

Cryosphere Working Group Meeting

6 April 2014

09:00-18:00

Helsinki, Finland

The Dynamicum, Finnish Meteorological Institute

Draft Minutes

Participants:

WG MEMBERS PRESENT:

MARTIN SHARP - CANADA, CHAIR
JON OVE HAGEN - NORWAY, VICE CHAIR
PENTTI KUJALA - FINLAND
JARI HAAPALA - FINLAND
HIROYUKI ENOMOTO - JAPAN
HYUN CHEOL KIM - KOREA
ELISABETH ISAKSSON - NORWAY
JACEK JANIA - POLAND
MARTIN LÜTHI - SWITZERLAND
MARTIN SCHNEEBELI - SWITZERLAND
ELIZABETH HUNKE - USA

WG MEMBERS NOT PRESENT:

JULIAN DOWDESWELL - UK, VICE CHAIR
WALT MEIER - USA, VICE CHAIR
JAN KAVAN - CZECH REPUBLIC
RENÉ FORSBERG - DENMARK
SIGNE BECH ANDERSON - DENMARK
MICHEL FILY - FRANCE
HANS-WOLFGANG HUBBERTEN - GERMANY
PETER LEMPKE - GERMANY
THORSTEINN THORSTEINSSON - ICELAND

PARMANAND SHARMA - INDIA

SHIN SUGIYAMA - JAPAN

SOON DO HUR - KOREA

FRANCISCO NAVARRO - SPAIN

VEIJO POHJOLA - SWEDEN

PEDRO ELOSEGUI - SPAIN

CARLEEN TIMJM-REIJMER - THE NETHERLANDS

SUN BO - CHINA

KRZYSZTOF MIGALA - POLAND

HELGI BJORNSSON - ICELAND

ARUN CHATURVEDI - INDIA

GUESTS AND OBSERVERS:

HUGUES LANTUIT - AWI

JENNY BAESEMAN - CLIC

SECRETARIAT

VOLKER RACHOLD (IASC EXECUTIVE SECRETARY)

HEIKE MIDLEJA (IASC SECRETARITAT)

ELENA KUTZNETSOVA (APECS PARTICIPANTS)

LOUIS-PHILIPPE ROY (APECS PARTICIPANTS)

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1 OPENING AND REPORTING

1.1 WELCOME AND INTRODUCTIONS (MARTIN SHARP)

The Chair opened the meeting and introductions were made around the room.

1.2 REPORT FROM THE CHAIR (MARTIN SHARP)

1.3 APPROVAL OF THE MINUTES OF THE LAST MEETING (MARTIN SHARP)

The minutes of the 2013 meeting were approved by the membership without modifications.

1.4 ADOPTION OF THE AGENDA (MARTIN SHARP)

The agenda was approved and adopted.

2 MAIN ISSUES

2.1 REPORTS ON CWG ACTIVITIES

2.1.1 GTN-P (HUGUES LANTUIT)

Hugues Lantuit gave a report on the Geneva National Correspondents' Workshop which was held on 6-8 May 2013 Geneva. 19 National Correspondents (NC) were recently appointed by the countries involved in GTN-P (Global Terrestrial Network for Permafrost) and representing Austria, Canada, China, Denmark/Greenland, France, Germany, Japan, Italy, South Korea, Kyrgyz Republic, Norway, Poland, Portugal, Russia, Sweden, Switzerland, USA, Antarctica, Svalbard. The main goal of the workshop was to discuss how to partner with other international organizations and platforms of climate data collection, and how to provide products to the public. White paper on Permafrost Research priorities is going to be released in 2015 for ICARP III conference. Also the group chaired by S. Gruber (CAN) was tasked with setting the framework for the creation of a new permafrost map, which is planned to be released after 2016.

The presentation is given in ANNEX 2.1.1.

2.1.2 ISMASS (JON OVE HAGEN ON BEHALF OF FRANCISCO NAVARRO)

An overview of the conclusion of the Ice Sheet Mass Balance and Sea Level (ISMASS) 2013 workshop that was held in Sheffield, UK on October 7th 2013 was presented.

Following this workshop a Marine ice-sheet model inter-comparison splinter group meeting will to be held at EGU in spring 2014. A workshop on ice-sheet future projections linked with the SCAR New Zealand workshop in August 2014 was also proposed.

The presentation is given in ANNEX 2.1.2.

2.1.3 INTERNATIONAL SEA ICE PRIORITIES (JENNY BAESEMAN)

The workshop on Sea Ice Modelling and Observing was held in Tromsø on 5-7 June 2013, and brought together Arctic and Antarctic sea ice researchers to define priority research areas for the coming years. The workshop identified current observations, model shortcomings and priority research areas.

Two online tools were presented: ICEPLAN and ICEWATCH. The first one allows people to collaborate better by gathering information about ongoing field works. The second one is the Arctic Shipborne-Sea Ice Standardization Tool (ASSIST) Data Network.

Many activities were suggested, including MOSAIC, Sea Ice Climatology for the Arctic and Antarctic and many others, which were discussed during the workshop.

The presentation is given in ANNEX 2.1.3.

2.2 REVIEW OF IASC ACTIVITIES RELATED TO THE CWG

2.2.1 19TH NORTHERN RESEARCH BASINS WORKSHOP (MARTIN SHARP)

The 19th NRB Symposium and Workshop was held in Alaska, USA on August 11-17 2013. The CWG co-sponsored this activity and provided travel support for one participant.

2.2.2 NETWORK ON ARCTIC GLACIOLOGY (MARTIN SHARP)

A workshop was held in Ottawa on 3-5 February 2014. There was some interest on creating a program with the collaboration of ISAC and CliC, to look at albedo feedbacks and how they affect the mass balance of Arctic glaciers and the

Greenland ice sheet. Another area of interest is the role of firn processes in buffering the surface runoff response to increasing rates of surface melt, and the implications for the contributions of Arctic land ice to the global sea level change in a warming world.

2.2.3 THAW – 2014: WORKSHOP ON FRESHWATER ECOSYSTEMS IN PERMAFROST LANDSCAPES (WARWICK F. VINCENT)

The 2014 THAW Workshop on Freshwater Ecosystems in Permafrost Landscapes was held in Quebec City on 12-15 March 2014, and it was a great success. The discussions were divided into three major themes: Physical aspects and dynamics of permafrost aquatics systems, biogeochemical properties of permafrost aquatics systems and biodiversity and food webs of aquatic systems.

Following this workshop the CWG is supporting a special issue of Bioscience called THAW: Freshwater ecosystems in permafrost landscapes. There will also be a special session held during the 2014 Arctic Change symposium in Ottawa, Canada (8-12 December) on Permafrost Landscapes in Transition.

The presentation is given in ANNEX 2.2.3.

2.2.4 SECRETARIAL SUPPORT (VOLKER RACHOLD)

Volker Rachold introduced the APECS secretarial early career scientists. He proposed to the CWG to support this initiative to young researchers for a year, bringing the benefits for both sides – getting help for IASC activities and letting early career scientists to be involved in committee work and to establish their network with senior researchers.

2.3 OTHER CRYOSPHERE ACTIVITIES EXTERNAL TO IASC

2.3.1 CliC (Climate and Cryosphere) (JENNY BAESEMAN)

A brief update on joint IASC/CliC activities was presented. Among them are: **Arctic Freshwater Synthesis**, which gathers the information from the historical trends, literature and from climate models; **ISMASS** (Ice sheet mass balance and sea level), which will be sponsoring a workshop next year in Sheffield (March or April 2015) for 2 days on Greenland Ice Sheet ocean interactions.

Another CliC activity is **Polar CORDEX** (Arctic and Antarctic), which includes adaptation actions for a changing climate. Finally, a list of permafrost research priorities and activities was presented.

Following the sea-ice workshop (see agenda item 2.1.3), many research priorities and observations were brought up. Participants to this workshop decided to endorse and expand the IASC Data Policy, which builds on the IPY Data Policy. A technical Committee on Integrating In-Situ Sea Ice Observations was created under the CliC Arctic Sea Ice Working Group and the SCAR/ASPeCT group.

Jenny Baeseman also reminded the abundance of online resources which may be of interest to ECS and WG members.

The presentation is given in ANNEX 2.3.1.

2.3.2 INTERNATIONAL ASSOCIATION OF CRYOSPHERIC SCIENCES (HIROYUKI ENOMOTO)

Hiroyuki Enomoto presented the current IACS working groups and recent publications. It was also brought to the attention of the working group that the 2015 IUGG will be held in Prague, Czech Republic from June 22nd to July 2nd.

The 2015 ASSW that will be held in Toyama, Japan was introduced.

The presentation is given in ANNEX 2.3.2.

2.3.3 NORDIC CENTRE OF EXCELLENCE PROGRAMME (JON OVE HAGEN)

The Top-level Research Initiative is a joint initiative funded by the Nordic countries and is running a Sub-programme named Interaction between Climate Change and the Cryosphere (ICCC). Under this there are three Nordic Center of Excellences (NCoEs). These are SVALI, CRAICC and DEFROST. A short overview of each of them was presented. Their main foci are distinct, but they are all related to the Cryosphere.

The presentation is given in ANNEX 2.3.3.

2.3.4 WMO POLAR PREDICTION INITIATIVE (THOMAS JUNG)

This is a 10 year project focusing on climate change and the risks associated with it (2013-2022). The main goal is to promote cooperative international research to improve prediction services for Polar Regions. For more details and information visit: www.polarprediction.net. Different research areas were set and main focuses were identified and combined in different groups: sea ice

prediction; linkages between Polar Regions and lower-latitudes; availability of observations from Polar Regions; year of polar prediction (YOPP). After presenting the focuses, Thomas Jung gave more details on each of these topics. Finally, a list of possible areas for future collaborations was discussed.

The presentation is given in ANNEX 2.3.4.

2.4 3RD INTERNATIONAL CONFERENCE ON ARCTIC RESEARCH PLANNING (ICARP III) (VOLKER RACHOLD)

Volker Rachold introduced the different activities and theme to be discussed by the different working groups during the Third International Conference on Arctic Research Planning (ICARP III), which will be held in conjunction with the ASSW 2015 in April 2015.

2.4.1 Albedo (MARTIN SHARP)

Martin Sharp gave a presentation titled “Quantifying Albedo feedbacks and Their Role in the Mass Balance of the Arctic Terrestrial Cryosphere”, which addressed several foci of the CWG including:

- i) The Cryosphere as a climate amplifier,
- ii) The role of the Cryosphere in Arctic hydrology, and
- iii) The surface energy balance of the Arctic

It was also suggested to include the influence of vegetation change on surface albedo and its implications for surface energy balance, ground temperatures and permafrost, and that early career scientists should be involved in the project.

2.4.2 MOSAIC (MATTHEW SHUPE)

The Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAIC) is now in design phase. The team is in the process of finding possible sources of funding. To do so, they have been involved in many workshop in the last year, and they expect to do the same this year.

An overview of the scientific plan was given. The main focus revolve around the Arctic sea ice cover cycle while considering the sea-ice energy budgets, ice motion and deformation, clouds/precipitations/aerosols and BioGeoChemical processes and large scale implications.

- **ACTION: MOSAIC needs a strong endorsement from IASC, supportive dialogue with funding agencies and scientific input on priorities and strategies.**

The presentation is given in ANNEX 2.4.2.

2.5 PROPOSED ACTIVITIES

2.5.1 NEW ACTIVITIES/TASKS BROUGHT FORWARD BY THE MEMBERS

Hugues Lantuit reminded the CWG about the International Permafrost Association (IPA) workshop on the new subsea permafrost map at EUCOP4 in Evora. It was mentioned that the MWG might be interested to get involved.

2.5.1.1 SEA ICE AND POLAR CLIMATE PREDICTABILITY ACTIVITIES (ELIZABETH HUNKE)

Elizabeth gave a presentation titled "Polar Predictability activities. A potential IASC Network?" with main attention to create a potential sea ice IASC network to synthesize all available predictions and observations. There are already at least 4 different efforts: the WCRP Polar Climate Predictability Initiative, the WWRP Polar Prediction Project, CliC workshops on sea ice modeling, and the Sea Ice Prediction Network (SPIN), which is a U.S. interagency-funded follow-on to the SEARCH Sea Ice Outlook. All of these groups are planning workshops in the next several years.

- **COMMENTS:** There is a need of working group on promoting of sea-ice modelling. IASC can be a powerful forum to put people together. All activities should be connected but not overlapping. Good idea will be to make mailing list of people who are interested in it for better connection.

The presentation is given in ANNEX 2.5.1.1.

3 NEXT MEETINGS (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.

3.2 ASSW 2016

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

3.3 **ASSW 2017**

The 2017 meeting of the WG will be held in conjunction with the ASSW 2017 in Prague, Czech Republic.

