



# Cryosphere Working Group Meeting

23 April 2015

14:00-17:30

(Lunch 12.30-14.00, Coffee Breaks 16.10-16.30)

Toyama, Japan  
Toyama International Conference Centre

## *Draft Agenda*

### **Participants:**

#### **WG MEMBERS PRESENT:**

ANNETT BARTSCH – AUSTRIA  
WOLFGANG SCHÖNER – AUSTRIA  
SUN BO – CHINA  
JAN KAVAN – CZECH REPUBLIC  
RENÉ FORSBERG – DENMARK  
SIGNE BECH ANDERSEN – DENMARK  
JARI HAAPALA – FINLAND  
PENTTI KUJALA – FINLAND  
MICHEL FILY – FRANCE  
HUGUES LANTUIT – GERMANY  
GUDFINNA TH. ADALGEIRSDOTTIR – ICELAND  
ARUN CHATURVEDI – INDIA  
PARMANAND SHARMA – INDIA  
HIROYUKI ENOMOTO – JAPAN  
SHIN SUGIYAMA – JAPAN  
HYUN CHEOL KIM – KOREA  
SOON DO HUR – KOREA  
ELISABETH ISAKSSON – NORWAY  
JON OVE HAGEN – NORWAY  
JACEK JANIA – POLAND  
KRZYSZTOF MIGALA – POLAND  
FRANCISCO NAVARRO – SPAIN  
PEDRO ELOSEGUI – SPAIN

VEIJO POHJOLA – SWEDEN  
MARTIN SCHNEEBELI – SWITZERLAND  
ELIZABETH HUNKE – USA  
WALTER MEIER – USA

#### **GUESTS AND OBSERVERS:**

#### **WG MEMBER NOT PRESENT:**

MARTIN SHARP – CANADA  
JULIAN DOWDESWELL – UK  
LARS KALESCHKE – GERMANY  
THORSTEINN THORSTEINSSON – ICELAND  
CARLEEN TIJM-REIJMER – THE NETHERLANDS  
MARTIN LÜTHI – SWITZERLAND

#### **SECRETARIAT**

TETSUO SUEYOSHI (EXECUTIVE OFFICER)  
ELENA KUZNETSOVA (IASC FELLOW)  
LOUIS-PHILIPPE ROY (IASC FELLOW)  
ROBERT WAY (IASC FELLOW)



## Table of Content

<b>1</b>	<b>OPENING AND REPORTING</b> .....	<b>3</b>
1.1	WELCOME AND INTRODUCTIONS .....	3
1.2	REPORT FROM THE CHAIR .....	3
1.3	APPROVAL OF THE MINUTES OF THE LAST MEETING.....	3
1.4	ADOPTION OF AGENDA .....	3
<b>2</b>	<b>MAIN ISSUES</b> .....	<b>3</b>
2.1	REPORTS ON CWG ACTIVITIES .....	3
2.1.1	INTERNATIONAL WORKSHOP ON CALVING .....	3
2.1.2	INTERCOMPARISON OF SNOW GRAIN SIZE MEASUREMENTS WORKSHOP .....	4
2.1.3	QUANTIFYING ALBEDO FEEDBACKS AND THEIR ROLE IN THE MASS BALANCE OF THE ARCTIC TERRESTRIAL CRYOSPHERE .....	4
2.1.4	1ST EUROPEAN SNOW SCIENCE WINTER SCHOOL .....	5
2.1.5	WORKSHOP ON THE DYNAMICS AND MASS BUDGET OF ARCTIC GLACIERS & IASC NETWORK ON ARCTIC GLACIOLOGY ANNUAL MEETING .....	5
2.2	REVIEW OF IASC ACTIVITIES RELATED TO CWG .....	5
2.2.1	.....	5
2.3	OTHER CRYOSPHERE ACTIVITIES EXTERNAL TO IASC .....	5
2.4	REVIEW OF WG FOCI.....	5
2.5	UPCOMING ACTIVITIES .....	6
2.5.1	TIDEWATER GLACIER INITIATIVE AND ICE SHEET MASS BALANCE AND SEA LEVEL (ISMALSS).....	6
2.5.2	POLAR AND ALPINE MICROBIOLOGY CONFERENCE .....	6
2.6	PROPOSED ACTIVITIES .....	5
2.6.1	NEW ACTIVITIES/TASKS BROUGHT FORWARD BY THE MEMBERS.....	5
2.6.1.1	ILULISSAT CLIMATE DAYS.....	5
2.6.1.2	PERMAFROST CARBON NETWORK.....	6

### *EXECUTIVE (CLOSED) SESSION*

<b>3</b>	<b>CWG BUSINESS</b> .....	<b>9</b>
3.1	BUDGET 2014 AND 2015/2016.....	9
3.2	ALLOCATION OF FUNDS FOR 2015/2016 .....	9
3.3	ELECTIONS.....	9

# 1 OPENING AND REPORTING (14.00-14.10)

## 1.1 WELCOME AND INTRODUCTIONS JON OVE HAGEN

## 1.2 REPORT FROM THE CHAIR JON OVE HAGEN

## 1.3 APPROVAL OF THE MINUTES OF THE LAST MEETING TETSUO SUEYOSHI

- The minutes of the 2014 meeting is given in ANNEX 1.3

## 1.4 ADOPTION OF THE AGENDA JON OVE HAGEN

# 2 MAIN ISSUES (14.10-15.00)

## 2.1 REPORTS ON CWG ACTIVITIES

### 2.1.1 INTERNATIONAL WORKSHOP ON CALVING 1-2 JUNE 2014, GRENOBLE, FRANCE JON OVE HAGEN ON BEHALF OF MARTIN SHARP

The International Workshop on Calving was organized by Martin Sharp from the University of Alberta (Canada) and Jean Krug and Olivier Gagliardini from the LGGE (University of Grenoble, France). During two days, 34 participants from 11 countries, worked around the question of calving of icebergs, from the modelling and observational point of views.

The main objectives of the workshop were:

For observers - to learn whether they are observing what the modelers think needs to be observed - and if not to figure out what changes are needed. For modelers - to learn whether they are simulating what is being observed - and, if so, how successfully they are doing it. We may not be able to answer that

question - but a numerical benchmarking experiment linked to both simple experiments and attempts to replicate observations could be a big step forward in establishing where we are at. The workshop consisted in 7 keynote lectures on different thematic (see program below), followed by discussions.

The website of the workshop contains a lot of available material: <http://www.lgge.obs.ujf-grenoble.fr/calving2014/>.

- The Workshop report is given in ANNEX 2.1.1

### **2.1.2 INTERCOMPARISON OF SNOW GRAIN SIZE MEASUREMENTS WORKSHOP MARCH 2014, DAVOS, SWITZERLAND MARTIN SCHNEEBELI**

The workshop "Intercomparison of Snow Grain Size Measurements Workshop" in Davos, Switzerland, gathered 25 snow researchers with many different methods to measure snow grain size. In two field days and two days in the cold laboratories of the WSL Institute for Snow and Avalanche Research hundreds of snow grain size measurement could be gathered. The first step to develop protocols to establish future international standards could be reached. An evaluation workshop will follow in August 2014 in Reading before the results are published publicly.

- The Workshop reports are given in ANNEX 2.1.2

### **2.1.3 QUANTIFYING ALBEDO FEEDBACKS AND THEIR ROLE IN THE MASS BALANCE OF THE ARCTIC TERRESTRIAL CRYOSPHERE SEPTEMBER 2014, BRISTOL, UK JON OVE HAGEN ON BEHALF OF MARTIN SHARP**

The goals of this workshop were to articulate scientific priorities and a research agenda related to the topic "Quantifying Albedo Feedbacks and their Role in the Mass Balance of the Arctic Terrestrial Cryosphere" and to formulate these in a way that would allow them to be presented at the Toyama Symposium and incorporated into the ICARP III products, which will include a "consensus statement identifying the most important Arctic research needs for the next decade".

The workshop started with five plenary presentations to provide an initial basis for discussion, followed by a brainstorming session. From the breakout groups and open discussion, issues are arisen on: albedo measurements, temporal

evolution of albedo, impacts of mineral impurities and black carbon on snow/ice albedo, biological impacts on cryospheric albedo.

- The Workshop reports are given in ANNEX 2.1.3

**2.1.4 1ST EUROPEAN SNOW SCIENCE WINTER SCHOOL  
FEBRUARY 2015, SODANKYLÄ, FINLAND  
MARTIN SCHNEEBELI**

The 1st European Snow Science Winter School (ESSWS) took place in Sodankylä, Northern Finland, from 8. - 14. February 2015 and brought together 27 students from many 13 countries. Organized by the Finish Meteorological Institute FMI and the WSL Institute for Snow and Avalanche Research SLF from Davos, Switzerland, the snow school focused on modern snow measurement techniques. Traditional and modern field instruments were available for the students to get hands-on experience in the field, together with introductory lectures. A full field exercise was organized in the Saariselkä Tundra region in Northern Finland, and gave a first feeling for a self-organized expedition. The success motivated the lecturers to prepare a 2nd ESSWS that will take place 2016 in the Swiss Alps, in Preda and Davos, Switzerland.

- The Workshop reports are given in ANNEX 2.1.4

**2.1.5 WORKSHOP ON THE DYNAMICS AND MASS BUDGET OF ARCTIC GLACIERS &  
IASC NETWORK ON ARCTIC GLACIOLOGY ANNUAL MEETING  
MARCH 2015, OBERGURGL, AUSTRIA  
JON OVE HAGEN ON BEHALF OF CARLEEN H. TIJM-REIJMER**

From 23 to 25 March 2015 the workshop on the Dynamics and Mass budget of Arctic glaciers & the IASC Network on Arctic glaciology annual meeting took place at the University Centre Obergurgl, Austria. The objective of this meeting was:

- present and discuss new results on observations and modelling of the dynamics and mass budget of Arctic glaciers
- plan and coordinate field work on Arctic glaciers with the aim of using the available infrastructure and logistics in the most efficient way
- develop ideas for future projects and collaboration

A variety of topics within the field of dynamics and mass budget of Arctic glaciers were discussed, ranging from in situ observations to satellite techniques, observational to modelling approaches, and geographically

covering the whole Arctic region. A total of 34 participants attended the workshop representing about 12 different countries. Next years meeting will be held in Benasque, Spain.

- The Workshop reports are given in ANNEX 2.1.5

## **2.2 REVIEW OF IASC ACTIVITIES RELATED TO THE CWG**

### **2.2.1 RAPID ARCTIC TRANSITIONS RELATED TO INFRASTRUCTURE AND CLIMATE CHANGE (RATIC)**

**SKIP WALKER**

A Rapid Arctic Transitions due to Infrastructure and Climate (RATIC) workshop and topical session was held at the Arctic Change 2014 conference in Ottawa, 8 – 12 December 2014. The RATIC meetings were organized so that international scientists who have been working independently in several areas of the Arctic on issues related to Arctic infrastructure could network with each other and share their findings. The studies at the Ottawa workshop and topical sessions document reported major changes to local social-ecological systems, including alternations to permafrost, landforms, hydrology, vegetation, wildlife, and people's livelihoods. The workshop focused on case studies, mainly in small communities of northern Alaska.

- Summary of the RATIC program is given in ANNEX 2.2.1.

## **2.3 OTHER CRYOSPHERE ACTIVITIES EXTERNAL TO IASC**

**JON OVE HAGEN**

### **2.3.1 IPA (INTERNATIONAL PERMAFROST ASSOCIATION)**

**HUGUES LANTUIT**

### **2.3.2 CliC (CLIMATE AND CRYOSPHERE)**

**JENNY BAESEMAN**

### **2.3.3 IACS (INTERNATIONAL ASSOCIATION OF CRYOSPHERIC SCIENCES)**

**HIROYUKI ENOMOTO**

## **2.4 REVIEW OF WG FOCI**

**JON OVE HAGEN**

The Scientific Foci of the Working Group had been discussed and agreed upon at the first WG meeting in Potsdam (Germany) in January 2011. Under this agenda item, the WG is asked to revisit these foci and to discuss possible changes or additions.

## **2.5 UPCOMING ACTIVITIES**

### **2.5.1 TIDEWATER GLACIER INITIATIVE AND ICE SHEET MASS BALANCE AND SEA LEVEL (ISMASS)**

**JON OVE HAGEN ON BEHALF OF MARTIN SHARP**

CWG will initiate a study to look at the problem of getting regional scale estimates of glacier mass balance for areas outside the ice sheets, especially during periods when there are gaps in satellite records or when available sensors change.

- The next phase of the Tidewater Glacier initiative will be a CWG initiated study to look at the problem of getting regional scale estimates of glacier mass balance for areas outside the ice sheets, especially during periods when there are gaps in satellite records or when available sensors change.
- CWG will also continue its support of the Ice Sheet Mass Balance and Sea Level (ISMASS) group which is now co-sponsored by IASC, the Scientific Committee on Antarctic Research (SCAR) and the Climate and Cryosphere (CliC) project.

### **2.5.2 POLAR AND ALPINE MICROBIOLOGY CONFERENCE**

**JOSEF ELSTER**

The 6th International Conference on Polar and Alpine Microbiology is to be held in 6 – 9 September 2015 in České Budějovice, Czech Republic. This meeting is a continuation of the highly successful meetings previously held in Rovaniemi 2004 (Finland), Innsbruck 2006 (Austria), Banff 2008 (Canada), Ljubljana 2011 (Slovenia) and Big Sky 2013 (USA). The conference will bring together the scientific community for discourse on the latest aspects of cold-living microorganisms and their role in polar and alpine environments. The 2015 conference will again provide an opportunity to share ideas and build research collaborations addressing the latest developments in microbiology in polar and alpine habitats.

## **2.6 PROPOSED ACTIVITIES**

### **2.6.1 NEW ACTIVITIES/TASKS BROUGHT FORWARD BY THE MEMBERS**

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.

#### **2.6.1.1 ILULISSAT CLIMATE DAYS**

**RENE FORSBERG**

"Ilulissat Climate Days" will be held in Greenland, June 2-5, 2015. This meeting is a stakeholder/science meeting, following up on the highly successful Nuuk Climate Days 2009, where cryosphere changes in Greenland were in focus, and more than 150 participants came from Greenland, Europe and the US.

- WG request of the workshop is given in ANNEX 2.6.1.1

#### **2.6.1.2 PERMAFROST CARBON NETWORK**

**CHRISTINA SCHAEDEL**

A Working Group Lead Meeting of the Permafrost Carbon Networks will take place in Flagstaff, Arizona, 11 – 12 May 2015. The upcoming meeting brings together network participants that have been leading syntheses in the last four years and continue to be engaged in new synthesis activities planned over the next couple of years. This workshop is also a key event in engaging new participants to start new synthesis activities that have been identified in previous meetings based on missing gaps and important research areas.

- WG request of the workshop is given in ANNEX 2.6.1.2

#### **2.6.1.2 2<sup>ND</sup> GTN-P NATIONAL CORRESPONDENTS WORKSHOP ASSOCIATED TO THE 7<sup>TH</sup> CANADIAN PERMAFROST CONFERENCE**

**HUGUES LANTUIT**

The workshop proposed to IASC is a follow-up to the Data Management GTN-P Workshop for data providers, users and national correspondents held in November 2011 in Potsdam, Germany. During this workshop GTN-P was upgraded to a professional operational level, the Strategy and Implementation





Plan was finalized and the user requirements were defined to establish the GTN-P Data Management System. Since then, the GTN-P Data Management System was developed ([gtnp.arcticportal.org](http://gtnp.arcticportal.org) and [gtnpdatabase.org](http://gtnpdatabase.org)) and is extremely successfully creating the primary place for finding, exchanging and visualizing standardized thermal permafrost data on global scale.

- WG request of the workshop is given in ANNEX 2.6.1.3

*EXECUTIVE (CLOSED) SESSION*

### **3 CWG BUSINESS**

#### **3.1 STRATEGY FOR ALLOCATING FUNDING**

**JON OVE HAGEN**

#### **3.2 BUDGET 2015 AND 2016/2017**

**TETSUO SUEYOSHI**

The Secretariat will present the WG accounts for 2015 and the budget for 2016/2017

- The WG budget is given in ANNEX 3.2.

#### **3.3 ALLOCATION OF FUNDS FOR 2016/2017**

**JON OVE HAGEN**

Under this agenda item, the WG is asked to discuss the proposed new activities presented under agenda item 2.6 and to allocate WG funds to ongoing and new WG activities.

#### **3.4 ELECTIONS**

**TETSUO SUEYOSHI**

According to the WG Terms of Reference, the Chair and Vice Chairs shall be elected for a term of two years, and may be re-elected for one additional term. The first term of the current WG Steering Group members comes to an end this year and thus elections are due at the meeting.

- The Election procedure is given in ANNEX 3.4