

IASC Cryosphere Working Group and CliC Activities

Walt Meier
NASA Goddard Space Flight Center
Vice-Chair IASC CWG
Member CliC Sea Ice Working Group

IARPC Glaciers and Fjords Implementation Team Telecon
10 July 2014





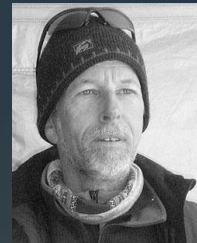
Steering Group



Chair
Martin Sharp
Canada



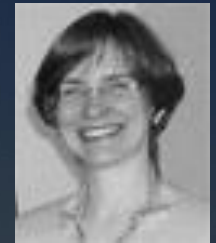
Vice-Chair
Julian Dowdeswell
United Kingdom



Vice-Chair
Jon Ove Hagen
Norway



Vice-Chair
Walt Meier
USA



USA Rep.
Elizabeth Hunke
LANL

The **geographic scope** of the Cryosphere Working Group shall be those areas of the Arctic and contiguous areas of the sub-Arctic where one or more element of the cryosphere plays an important role in surface-climate interactions and/or the freshwater budget. It will include the Arctic Ocean and surrounding seas, Alaska, Canada's Northern Territories, Greenland, Iceland, Svalbard, and the Russian Arctic archipelagos, and parts of Canada, Scandinavia, and Northern Russia that lie poleward of the southern limit discontinuous permafrost.

The **scientific scope** of the Cryosphere Working Group shall include any scientific or engineering research relating to the Arctic and sub-Arctic cryosphere, including its interactions with climate, oceans, and biosphere.



Scientific Foci

Sea-ice boundary layer dynamics, particularly as they relate to biogeochemical exchanges and polar amplification.

Permafrost, including support of activities being undertaken by the International Permafrost Association.

Tidewater glacier dynamics and response to climate change, with a focus on methods for studying these issues. This activity is intended to have a large early career scientist and training component.



ICARP III



- Third International Conference on Arctic Research Planning
 - Toyama, Japan, April 2015
 - Goals are to identify Arctic science priorities for the next decade, coordinate research agendas, inform policymakers
 - Unlike ICARP II, will not develop new science plans
 - Coordinate and focus existing plans
 - IASC lead, with many partners (AMAP, APECS, CliC, IACS, FARO, IPA, etc.)
 - Meeting in Potsdam, 30-31 Jan, to review related proposals
 - <http://icarp.arcticportal.org>
 - Substantial planning took place at the Arctic Science Summit Week, 5-11 April 2014, Helsinki, Finland

WCRP CliC and IASC CWG Activities

- CliC/IASC International Sea Ice Priorities Workshop
 - Tromso, 5-7 June 2013
 - Organized by Jenny Baeseman (CliC), Walt Meier (IASC and CliC Sea Ice WG) on organizing committee
 - Brought together modelers, observationalists, remote sensing scientists
 - Improving coordination of field expeditions
 - Ship observation protocols
 - Coordination website – being updated, iceplan.org
 - Improve linkages between models and observations
 - Improving use of observations in models
 - What do models need?
 - Better links between observational data and operational centers

WCRP CliC and IASC CWG Activities

- Meeting after IGS symposium in Hobart, Australia in March 2014
 - One-day meeting, follow-on from previous years meeting
 - Half-day joint with ASPeCt/SCAR
 - Sea ice observation protocols
 - Data issues, etc.

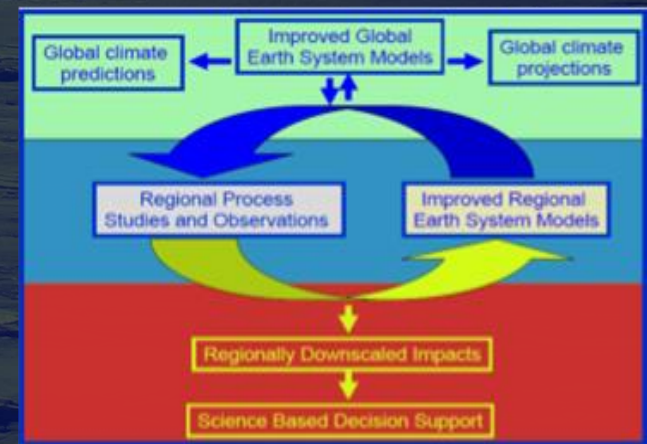
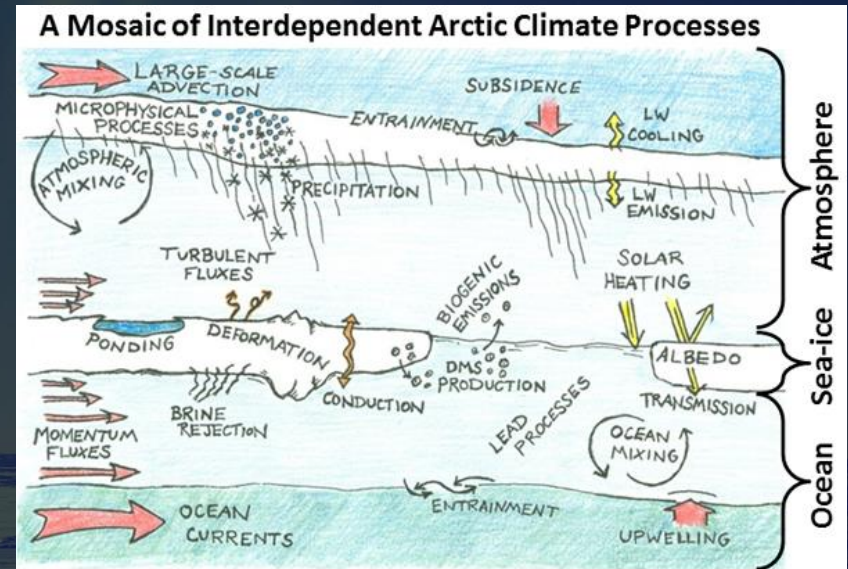


WCRP CliC and IASC CWG Activities

- Polar Prediction Project
 - 2nd planning meeting in Helsinki, 8 April
 - Year of Polar Prediction (YOPP), mid-2017 to mid-2019
 - Coordinated effort to improve model predictions, data for models, etc.
 - Focus on sea ice and the atmosphere
 - Report available on-line
 - <http://polarprediction.net>
 - Contributor to Global Integrated Polar Prediction System (GIPPS), which also addresses ice sheets

CWG Activities

- Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC)
 - Atmosphere lead WG, CWG and Marine WG are co-sponsors
 - Jim Overland (NOAA PMEL, chair AWG), Matthew Shupe and Ola Persson (NOAA ESRL) are U.S. leads
 - Drifting ice station(s) for at least one year
 - Draft science plan released 3 July 2014 (avail. on website); comment period until 1 September
 - Focus on transfer of heat, moisture, density, momentum, and nutrients through the Arctic system
 - Currently aiming for fall 2018 start
 - <http://www.mosaicobservatory.org>



WCRP CliC and IASC CWG Activities

- ISMASS – Ice-Sheet Mass Balance and Sea Level
 - IASC/SCAR/WCRP sponsored – renewed and expanded from initial SCAR project
 - <http://www.climate-cryosphere.org/activities/groups/ismass>
 - Kick-off workshop, July 2012, Portland, Oregon; report published
 - <http://www.climate-cryosphere.org/en/events/2012/ISMASS/Home.html>
 - Facilitate international coordination of observation and modeling of ice sheet mass balance and contribution to sea level rise
 - Steering committee: Francisco Navarro, Frank Pattyn, and Edward Hanna

WCRP CliC and IASC CWG Activities

- ISMASS – cont.
 - Short meeting planned after SCAR open science conference in Auckland, NZ on 26 August: “Modeling strategy for ice sheet mass balance projections”
 - Improve methods, agree on common frameworks
 - “Ice Sheet MIP for CMIP6” meeting at Goddard, 16-18 July (Sophie Nowicki, local organizer)
 - <http://www.climate-cryosphere.org/meetings/ice-sheet-modeling-for-cmip6-meeting>
 - Goal is to develop an ice sheet MIP proposal for participation in CMIP6

CWG Activities

- Network on Arctic Glaciology (NAG)
 - Workshops on the dynamics and mass budget of Arctic glaciers
 - Obergurgl, Austria, 26-28 Feb 2013, and 3-5 Feb 2014 in Ottawa, Canada
 - Organized by Carleen Tijm-Reimer (Utrecht Univ., IASC CWG)
 - Discussion of tidewater glaciers (next slide)
 - Discussion of a mass balance comparison exercise for glaciers outside of the ice sheets
 - Next meeting 23-25 Mar 2015, Obergurgl, Austria
 - <http://www.projects.science.uu.nl/iceclimate/iasc-nag/>

CWG Activities

- Tidewater Glaciers Training Workshop
 - Svalbard, 26-31 August 2012
 - Polish Research Vessel MV Horyzont II
 - 10 senior scientists, 14 early career scientists
 - Report published:
 - http://svalglac.eu/TGW2012_report_fin.pdf
 - Focus on field observations, remote sensing methods, and modeling
 - Follow-up workshop in Grenoble, France, 1-2 June 2014, International Workshop on Calving
 - Martin Sharp (Univ. Alberta, IASC) co-organizer
 - <http://www-lgge.obs.ujf-grenoble.fr/calving2014/>
 - focusing on modeling and observing the calving process

CWG Activities

- Intercomparison of Snow Grain Size Measurements Workshop
 - 9-14 Mar 2014, Davos, Switzerland
 - 25 researchers, two field days and two lab days
 - Hundreds of snow grain size measurements collected
 - Evaluation workshop in August 2014 in Reading, England
 - http://iasc.info/images/Cryosphere/Report_for_IA_CS_from_ISGSW_Davos.pdf

CWG Activities

- THermokarst Aquatic ecosystems Workshop (THAW)
 - 12-15 March 2014, Quebec City
 - <http://www.cen.ulaval.ca/thaw2014/>
 - Cryosphere and Terrestrial WGs
 - Themes:
 - Physical aspects and dynamics of permafrost
 - Biogeochemical properties of permafrost aquatic ecosystems
 - Biodiversity and food webs





Thanks!

